THE EFFECTS OF EXPOSURE TO FEMALE ROLE MODELS ON
FEMALE CAREER SELF-EFFICACY FOR PERCEIVED
MALE-DOMINATED OCCUPATIONS

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
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in
Psychology

By
Beverly Jean Hines
June 1993
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ABSTRACT

The effects of exposure to varying numbers of female role models on female career self-efficacy for perceived male-dominated occupations is investigated. Female subjects (N = 304) completed a survey which included the short version of the Bem Sex-Role Inventory, and three occupational vignettes (accountant, architect, newspaper reporter) which were each followed by an intermediate self-efficacy scale. The first hypothesis states that female self-efficacy for a male-dominated occupation will increase as they are exposed to an increasing number of female role models in the occupation. No support was found for this hypothesis. The second hypothesis states that females who are categorized as masculine- and androgynous-typed females on the Bem Sex-Role Inventory (BSRI) will experience an increase in their self-efficacy levels with exposure to fewer female role models in a male-dominated occupation than will feminine-typed females so categorized on the BSRI. No support was found for this hypothesis. Limitations of this research and suggestions for future research are discussed.
ACKNOWLEDGEMENTS

This thesis is dedicated to my husband and daughter, Alan and Cassandra. To Alan, for his love and unwavering support and encouragement, even when he had to pick up an unfair share of familial responsibilities. And to Cassie, who was born during this project and who consequently accompanied me during many of my adventures.

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INTRODUCTION

An increasing number of females in the United States are employed in occupations which have traditionally been dominated by males. For example, in 1983, 39% of accountants and auditors were female, whereas in 1989, 49% of accountants and auditors were female. In 1983, 44% of personnel and labor relations managers were female. In 1989, that number increased to 53%. Only 31% of computer operations and systems researchers and analysts were female in 1983. In 1989 that number rose to 41% (U. S. Department of Commerce, 1991). Yet, despite females' progress, there remain occupations (e.g., architect) and levels within occupations (administrative/executive levels) in which females are inexplicably uncommon.¹

A male-dominated occupation is defined as an occupation in which 75% or more of the work force is male (U. S. Department of Commerce, 1991). Some occupations are understandably male-dominated in that they require a stronger physique than that of the average female (e.g.,

¹For ease of reference, male-dominated occupation will refer to administrative/executive positions within occupations which may not be male-dominated as a whole, but in which particular positions are male-dominated, in addition to occupations which are male-dominated at all levels.
heavy machinery operation in construction). Male domination in other occupations, however, is not so easily explained. One explanation for the unequal representation of females could be that these male-dominated jobs are in slow growth fields with little turnover—thus creating a low job opportunity level for everyone. However, according to the U. S. Department of Labor (1987), male-dominated jobs (management, executive, professional, and technical jobs) have been, and will continue to be, among the occupations with the fastest growing job opportunities. It is striking that these positions are still male-dominated when powerful incentives—more compensation and more prestige than the majority of female-dominated jobs—exist to motivate females to aspire to, and to obtain training and education for these positions (Coser, 1981).

There are few, if any, female-dominated occupations which parallel the compensation and prestige levels of most male-dominated occupations. In fact, the majority of working females are in low-paying clerical and sales jobs (Saltzman, 1991) with few females in upper management. The 1982 Korn/Ferry International survey reported that out of 1,362 senior executives, only 2% were female. A study of the Fortune 500 found that females held only 3.6% of the board directorships and 1.7% of the corporate officerships. Females did not fare better in the Fortune Service 500 study, or in a study of the 190 largest health care
organizations in the United States. Females made up only 3.8% and 8.5% of corporate officers, in these surveys respectively. Both studies revealed that only 4.4% of board members were females (Korn/Ferry International, 1982 cited in Morrison & Von Glinow, 1990). Saltzman (1991) reports that in 1991 only 3 out of every 100 top executive jobs at the largest United States companies were held by females.

These data are consistent with other institutions' male-female ratios such as in government and education (Blau & Ferber, 1987). The U.S. Office of Personnel Management reports that in 1989 females occupied only 8.6% of the Senior Executive Service levels in the U.S. government. Furthermore, according to the 1986 U.S. Department of Labor report, most females in government were clustered in low-paying, non-prestigious GS 5-10 levels.

In the education occupations, a study of colleges and universities nationwide conducted in 1986 found that, on average, only 1.1% of senior positions (dean and above) were occupied by females (Morrison & Von Glinow, 1990).

Many hypotheses have been offered to explain why men continue to dominate a number of selected occupations and most of the top-level positions in nearly all occupational categories. The focus of the research falls into two categories: Personal attributes of females, and environmental factors.
Personal Attributes of Females

A variety of personal attributes have been investigated in an attempt to explain the job segregation of females into lower paying occupations. Two attributes investigated include cognitive abilities and personality traits.

Cognitive abilities. Traditionally, females have scored higher on verbal skills tests while males have scored higher on math and analytical skills tests. Is it possible that this difference explains the lack of movement by females into male-dominated professions? In 1988, Feingold analyzed the results of standardized aptitude tests given between 1947 and 1980. He found that cognitive differences between males and females have greatly declined and that there are few gender differences in cognitive ability between males and females (cited in Freedman & Phillips, 1988). Hyde, 1981, reanalyzed the large body of literature analyzed by Maccoby and Jacklin (1974 cited in Hyde, 1981) and found that there were minor gender differences in verbal ability, quantitative ability, and visual-spatial ability. The differences accounted for only one fourth to one half of a standard deviation. Even in the case of the larger gender differences in spatial ability, the gender differences accounted for less than 5% of the population variance. Hyde concludes with "...the known differences in abilities are still too small to explain the observed occupational differences" (p. 899).
Personality traits. Differences in personality traits between genders have been traditionally proposed as a major factor hindering females' movement into male-dominated occupations. This contention was not supported by Dobbins and Platz (1986), who explored whether or not males and females have different personality characteristics which could lead to different leadership styles and/or different levels of effectiveness. Using a meta-analysis, they found that when studies were done in a field setting there were no significant differences for leader behavior or subordinate satisfaction between males and females.

The possibility that females have different work values and work satisfaction levels than males has been explored by a variety of researchers (Brief & Oliver, 1976; Freedman & Phillips, 1988; Mottaz, 1986; Powell & Butterfield, 1982; Powell, Posner, & Schmidt, 1984). They found that there was no significant difference between female and male work values and work satisfaction levels; where differences existed, they disappeared when occupation and organization level were controlled.

The need for power and the ability to use power, have been described as important traits for successful managers. Molm (1985) defines power as "...a structural potential, determined by the amount of control that a person exercises over another's valued outcomes. These outcomes may be material, benefits, social rewards, or psychological
satisfactions" (pp. 288). If person A (e.g., employer) has a structural power advantage in relationship to person B (e.g., employee), then person A should be able to use their power to make person B provide valued outcomes for person A more frequently than person A does the same for person B. The more that person A makes person B provide valued outcomes without reciprocal action, the greater the power use of person A.

Females are traditionally described as having a low need for power and as not being able to effectively utilize power. Could it be that females' supposed lower need for power and their ineffective use of power hinders them from qualifying for occupations with high power levels? Research does not support this idea. In contrast to the notion that it is the male who has a greater need for power, Chusmir and other researchers found that females have a need for power that equals males. In addition, research has found that females are able to utilize power as effectively as males (Chusmir, 1985, 1986; Chusmir & Parker, 1984; Molm, 1985).

Moreover, researchers have found that, on average, females are no different than males in aspirations, values, personality traits, or job-related skills and behaviors relevant to job performance (Dipboye, 1987; Drazin & Auster, 1987; Harlan & Weiss, 1981 cited in Morrison & Von Glinow, 1990; Liden, 1985; Morrison, White, Van Velsor, & the Center for Creative Leadership, 1987; Noe, 1988; Powell, 1988;
The reason for the lack of females in male-dominated jobs does not appear to be a function of any inherent individual characteristics specific to females.

Environmental Factors

In addition to personal attributes of females, researchers have focused on environmental factors which may hinder females in their acquisition of male-dominated jobs. Some of these include: child-rearing responsibilities, gender-stereotypes of females, socialized expectations in females, and the paucity of female role models in male-dominated jobs.

Child-rearing responsibilities. Card, Steel, and Abeles (1980) found that although females had higher high school grades and scored higher on academic ability tests taken in Grade 9 than males, females acquired less education after high school and made significantly less money than males when followed-up eleven years after high school. The variables most strongly related to the decreasing female realization of potential was the onset, duration, and extent of family-related commitments. In fact, the gender differences in achievement grew larger in the interval between the five and eleven year follow-up as more female subjects became wives and mothers. As would be expected from this pattern, Finkelstein (1981) states that a
disproportionate number of female executives do not have children.

**Gender stereotypes of females.** Research exploring Weiner's Attribution Theory (Weiner, et al., 1971) has found that females' successes and failures are attributed by others in a stereotypical negative manner, whereas males' successes and failures are attributed in a stereotypical positive manner. Females' successes tend to be attributed by others to unstable factors (good luck, ease of task, or hard work) and females' failures tend to be attributed by others to stable factors (lack of ability). In contrast, males' successes tend to be attributed by others to stable factors (ability) and males' failures tend to be attributed by others to unstable factors (bad luck, a difficult task, or lack of effort) (Dobbins, Pence, Orban, & Sgro, 1983; Sousa & Leyens, 1987).

We may speculate that if a person believes a female employee's success is due to luck or an easy task, and a male employee's success is believed to be due to ability, then the male will be seen as the more desirable employee. The male will be expected to reliably perform well in the future because he is believed to have the stable factor of ability; whereas the female's future performance level is perceived to be unknown because her success was credited to unstable factors (luck, and ease of task).
Socialized expectations in females. Unfortunately, although females are similar in abilities to males, they do not attribute their success and failures in the same manner as males. Research has demonstrated that females attribute their own successes and failures in the same negative manner as others. Research based on Weiner's Attribution Theory (Weiner et al., 1971) consistently demonstrate that females attribute their success on tasks to unstable factors such as luck or ease of task, whereas their failure on tasks are attributed by females to stable factors such as lack of ability (Andrews, 1987; Basow & Metcalf, 1988; Erkut, 1983; Frey & Ruble, 1987; Gannon, Heiser, & Knight, 1985; Hackett & Campbell, 1987). "This pattern of attributions minimizes the positive effects of success and maximizes the negative effects of failure" (p. 219, Jackaway, 1983—cited in Erkut, 1983).

For example, given this attributional pattern, a female who is ambivalent about her ability to succeed on a math test will minimally increase her self-efficacy for another math test if she does well on this one. However, if she fails on this math test, she will experience a dramatic decrease in self-efficacy for the next math test.

Role models. Successful female role models in male-dominated occupations are scarce (Douvan, 1976; Hackett & Betz, 1981; Marshall, 1982 cited in Garrison, Stronge, & Smith, 1986; Matsui, Ikeda, & Ohnishi, 1989). This is
significant because female role models in male-dominated careers have been shown to mitigate against negative female stereotypes held by others and by themselves, especially when there are multiple examples of successful females represented in the occupation (Greene, Sullivan, & Beyard-Tyler, 1982; Savenye, 1990). For instance, female role models in mathematical and scientific careers have been found to be the most effective means of getting females to enroll in math and science classes (Fox, Tobin, & Brody, 1981 cited in Smith & Erb, 1986; Smith & Erb, 1986).

**Relationship of Attributions to Self-Efficacy**

Bandura's social learning theory (1977, 1982) proposes that an individual's subjective sense of their potential for success on a task will determine how much motivation they have to complete the task. According to Bandura's theory, the self-defeating pattern created by females' negative attributions of themselves will lower females' self-efficacy for many tasks.

This self-defeating pattern appears to be exaggerated when females are asked to do stereotypical male tasks. The more nontraditional a task is for females, the less a female expects to succeed at the task and thus the female's self-efficacy is lower for the task. In contrast, males report equivalent levels of self-efficacy for both traditionally male- and female-dominated occupations (Basow & Medcalf,
There does not appear to be a biological basis for the self-defeating pattern of females. Rather, it seems to be related to the socialization process. Research demonstrates that early in the educational process (elementary grades) females have equal, if not greater, self-efficacy for a variety of tasks—even male sex-typed tasks (e.g., science and math) (Cooper, Burger, & Good, 1981; Entwisle & Hayduk, 1978; Lee & Austin, 1986). However, a decrease in female self-efficacy occurs in adolescence (Lee & Austin, 1986; Post-Kammer & Smith, 1985). A cross-sectional survey of 3,000 adolescents (2400 girls and 600 boys) revealed that adolescent girls experienced a significantly larger drop in self-esteem in adolescence, than boys. This drop in self-esteem for females occurred gradually between the ages of 8 and 16. One possible cause for the decrease in self-esteem of females may be found in the female subjects' responses. The females reported that they have received feedback from adult family members and teachers who expressed the belief that females cannot succeed on tasks which the females thought they could succeed on when they were in elementary school. Apparently, as a consequence of this feedback, the adolescent females were more likely than boys to state that
they are "not smart enough" or "not good enough" to succeed in the career they desire (Freiberg, 1991).

Card et al.'s (1980) results illustrate the tragic effects on females' futures related to their decrease in self-efficacy. Card et al. performed a longitudinal study of gifted boys and girls with ages ranging from 14 to 29. At age 14 both groups had equal potential as measured by grades and academic aptitude composites. However, by age 29 the males had more education, higher income, higher job prestige, and higher job satisfaction than the females. Gottfredson (1981) proposes a model which explains this phenomenon. She proposes that "...as children develop a cognitive awareness of gender roles, they limit their image of possible occupations to fit their newly acquired gender norms" (p. 162).

However, self-efficacy levels are not static. Bandura (1977) cites four sources which influence self-efficacy: Performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal. Of interest to this investigation is the vicarious experience source, which includes live modeling.\(^2\) Bandura found that seeing others perform an activity with a clear successful outcome can generate expectations in the observer that they too can succeed at the activity.

\(^2\)The reader is referred to Bandura's (1977) work for further information on the other sources.
In summary, research supports the finding that female role models do increase a female's self-efficacy for male-dominated occupations. However, past research designs have not systematically varied the number of female role models to which subjects were exposed. The current investigation will explore the effect of different numbers of female role models in male-dominated occupations, on female subjects' self-efficacy.

**Hypothesis one.** The first hypothesis is that female self-efficacy for a male-dominated occupation will increase as they are exposed to an increasing number of female role models in the occupation.

**Gender Valence**

This paper suggests a new term--gender-valence--to describe the degree to which an occupation is perceived to typically be performed by males and or females. For instance, an occupation with a strong male gender-valence means the occupation is perceived to be performed predominantly by males (e.g., architect). An occupation with a strong female gender-valence means the occupation is perceived to be performed predominantly by females (e.g., nurse). A neutral gender-valence means the occupation is perceived to be performed by males and females equally (e.g., sales manager). These examples demonstrate the extreme poles of a continuum, whereas in truth the gender-
valence of a task may fall anywhere on the continuum. The purpose for this new term, rather than using the traditional concepts of male-dominated and female-dominated, is that gender-valence allows the description of occupations on the normal continuum on which they fall, rather than working with only the extreme ends of the continuum.

Sex-Role and Self-Efficacy Levels

Bem (1974) was a pioneer in the area of gender orientation. She created the Bem Sex-Role Inventory (BSRI) which measures the degree to which a person is sex-typed or how closely an individual identifies with a group of characteristics widely deemed desirable for his/her gender. The BSRI includes four main dimensions: masculinity, femininity, androgyny, and undifferentiated. Masculinity and femininity are believed to be present, to varying degrees, in both genders.

The masculine dimension on the BSRI contains characteristics which relate to instrumental abilities considered to be more desirable in American society for a male than for a female (e.g., assertiveness, dominance, independence, competitiveness). The feminine dimension contains characteristics which relate to expressiveness and which are considered to be more desirable in American society for a female than for a male (e.g., affection, compassion, tenderness, warmth).
An individual who endorses a high number of characteristics from the masculine dimension, while endorsing a low number of characteristics from the feminine dimension is considered to be masculine typed. An individual who endorses a high number of characteristics from the feminine dimension, while endorsing a low number of characteristics from the masculine dimension is considered to be feminine typed. Androgynous individuals identify with a high number of masculine and feminine desirable traits, while undifferentiated individuals endorse a low number of characteristics from the masculine and feminine dimensions. Sex-reversed people endorse a high number of traits from the opposite gender dimension while endorsing a low number of traits from their own gender dimension.

Baker, 1987, and others (Baker, 1984 cited in Baker, 1987; Lyson & Brown, 1982) have found that the more a female perceives herself to have feminine characteristics, the more likely she is to choose a traditionally female career. In contrast, the more a female perceives herself to have masculine characteristics, the more likely she is to choose nontraditionally female careers.

In view of Baker's (1987) results it is not surprising that researchers have also found a relationship between a female's sex-role orientation and her self-efficacy levels for male-dominated occupations (Rotberg, Brown, & Ware, 1987). Matsui et al. (1989) found that the more feminine a
female perceives herself to be, the larger the difference in self-efficacy between female-dominated and male-dominated occupations. In addition, Bem (1974) found a relationship between female role models and the sex-typing of occupations by feminine females. Her research suggests that when a lack of female role models exist for an occupation, the feminine female assumes that to be successful at the occupation one must possess masculine traits such as aggressiveness and analytical ability. "Thus, females would feel themselves less efficacious in male-dominated occupations to the extent that they perceive themselves as feminine" (p. 13). In explanation, Kapalka and Lachenmeyer (1988) suggest that because a sex-typed person is motivated to keep his/her behavior within the norms of their sex-role standard, they suppress behavior that might be considered inappropriate for their gender.

In summary, there appear to be differences in self-efficacy levels for masculine tasks between females with different sex-role orientations. Bem's (1974) research suggests that sex-typed females are less self-efficacious than masculine females when presented with a male-dominated occupation. It seems plausible then that female role model effects may be different for females with different sex-role orientations. It may be that the number of female role models in a male-dominated job which is necessary to
instigate an increase in self-efficacy for sex-typed females versus masculine- or androgynous-typed females is different.

Hypothesis two. Masculine- and androgynous-typed females will experience an increase in their self-efficacy levels with exposure to fewer female role models in a male-dominated occupation than will feminine-typed females.
METHOD

Subjects

The subjects were recruited from California State University, San Bernardino, and University of California, Riverside. Surveys were distributed to 304 female subjects enrolled in courses which met general education requirements and/or lower division requirements for sociology or psychology majors. Some professors granted course credit toward subjects' class grade for participation. Other professors did not offer course credit.

The subjects ranged in age from 18 to 55 years; however, the subjects were predominantly on the younger end of the continuum with 82% being between the ages of 18 and 26. The mean age was 23.73 and the median age was 21. Almost two-thirds (n = 190) were college juniors or seniors. The subjects had a variety of declared majors, but more than one-third (n = 118) were in psychology or sociology oriented majors. A majority of the subjects planned on taking graduate work at either the masters level (n = 123) or the doctorate level (n = 102). Please see Appendix A for sample demographic information.

Subjects were classified into the four BSRI dimensions. The procedure for this classification process will be
presented later. Please see Appendix B for the distribution of subjects in BSRI categories by female incumbent ratios and occupation.

Design and Procedure

Researchers have found that subject exposure to "paper" role models are powerful enough to elicit a role model effect if one exists (Greene et al., 1982; Haas & Sullivan, 1991; Savenye, 1990). For instance, Savenye investigated the changes in attitudes in ninth grade students elicited by career information and role models in two media forms, slide/tape and print. Both the slide/tape and print treatments had a significant positive effect on subjects' attitudes toward the suitability of nontraditional careers for females. Thus, vignettes were chosen as the medium for the manipulation in this current investigation.

Concern has been expressed by Campbell and Fiske (1959, cited in Spector, 1987) regarding the use of an instrument which is dependent on self report, as is the self-efficacy scale in this current investigation. They cite method variance and its effect on research outcome as being a potential hazard with instruments utilizing self-report. Campbell and Fiske describe method variance as the variance created by the particular instrument used to measure a construct, as compared with the variance in the construct itself. Spector (1987) investigated the concern of Campbell
and Fiske and concludes that instruments, such as is used in this current investigation, which are well-validated and which have reasonably sound psychometric properties, are resistant to the method variance problem.

The surveys consisted of a shortened version of Bem's Sex-Role Inventory (BSRI), three occupational vignettes which included a job description and a depiction of a typical female incumbent, and an occupational self-efficacy scale for each vignette. One vignette described the accountant occupation, another the architect occupation, and the third described the newspaper reporter occupation.

There were three versions of each occupational vignette. The first difference between each version was the percentage of female incumbents stated in the vignette currently employed in the occupation (10%, 30%, and 60%). The second difference was the number of females listed as incumbents in the depiction of a typical female incumbent. The number of females in the depiction paragraph matched the percentage of females stated to be incumbents in the first manipulation. Order of presentation of the vignettes was counterbalanced. No vignette presentation effect was expected.

In addition to varying the presentation order of the three vignettes, all combinations of female incumbent ratios in each occupation were evenly distributed across subjects. Thus, there were 18 different survey variations.
This female author and a female assistant distributed the surveys to subjects during regularly scheduled classes. Participation was voluntary. Most of the surveys were completed immediately during class. Upon completion of the survey the researcher collected them and handed out a debriefing statement. In some classes the surveys were distributed at the beginning of class and picked up at the end of class by the researcher. If a subject was unable to complete the survey by the end of class, the subject turned in their completed survey to the psychology department secretary who then gave them a debriefing statement. The debriefing form explained the hypothesis of the study and informed students about the manipulation of female incumbents in the vignettes. The students were debriefed as to the actual ratios of females in the occupations, based on 1991 U. S. Labor statistics.

The subjects were asked to first read and sign an informed consent. Next, the subjects were provided with instructions as to the proper completion of the surveys and demographic questions which they were asked to complete. Subjects were then asked to complete the BSRI. They were told that it was necessary for the researchers to have a list of characteristics from the subject population to assess the generalizability of the results.

The subjects were then presented with the three vignettes. After reading each vignette the subjects were
asked to answer eight questions. The first seven questions measured their self-efficacy for the occupation described in the vignette. The last question measured the subject's interest in the occupation.

Participants were informed that a summary of the results would be available upon request. A section for the subject's name and address was included on the informed consent for those students interested in results. This information was handed to the investigator separate from the survey.

Instruments

Bem Sex-Role Inventory (BSRI). The short version of the BSRI (Bem, 1981—cited in Basow & Medcalf, 1988) was administered. See Appendix C for the short version of the BSRI. As all the subjects were females, the subjects were distributed in similar proportions across all BSRI categories. The subject pool was divided into four groups using the median-split procedure (masculine scale median = 49; feminine scale median = 58). The four groups are: Masculine, feminine, androgynous, and undifferentiated. See Table 1 for the frequency and percentage of subjects in each BSRI category.
Table 1

Frequency and Percentage of Subjects in each BSRI Category

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Androgynous</td>
<td>74</td>
<td>24.3</td>
</tr>
<tr>
<td>Masculine</td>
<td>76</td>
<td>25.0</td>
</tr>
<tr>
<td>Feminine</td>
<td>75</td>
<td>24.7</td>
</tr>
<tr>
<td>Undifferentiated</td>
<td>76</td>
<td>25.0</td>
</tr>
<tr>
<td>Missing</td>
<td>3</td>
<td>1.0</td>
</tr>
<tr>
<td>Total</td>
<td>304</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The Masculinity scale included 10 instrumental/active traits; the Femininity scale included 10 expressive/nurturant traits. Ten neutral items measuring the tendency to endorse socially desirable traits were included (these neutral items were not scored).

Vignette. The three occupations selected for the vignettes were chosen from a list of occupations included in this investigator's pilot study. The pilot's results indicate that females' perceptions of the male-female ratios in a variety of occupations are different from the actual, current ratios of males and females based on 1988 and 1989 U. S. Department of Labor statistics. One example of the
discrepancy found between actual and perceived male-female ratios is for the claim representative occupation in which 72% of the incumbents were female in 1991. The pilot results found that females believe this occupation to have only 30% female incumbents on average. A second example is that females currently (1991) constitute 49% of accountants but the pilot subjects perceive only 34% of accountants to be female.³

The occupations for this investigation were chosen to represent gender valences on the continuum from neutral to strongly male-dominated in order to control for gender-valence perceptions of each occupation outside the manipulation. The standard deviations were reviewed to assist in the selection of occupations. Newspaper Reporter was perceived to have 43% females in its ranks (actual percent = 49%). Of the three occupations chosen, this occupation is perceived to be the most gender neutral. Accountant, as mentioned earlier, is perceived to have a 30% female incumbent rate (actual percent = 49%). Architect is the occupation perceived as the most male-dominated with the perception that only 18% of the occupants in this occupation are females (actual percent = 21%).

³Refer to Appendix D for the pilot study results regarding occupations' 1989 actual means and subject perceived means and standard deviations.
The incumbent ratios manipulated in the vignettes were 10%, 30% and 60%. Research (Greene et al., 1982; Savenye, 1990) supports the notion that female role models do increase female self-efficacy for tasks when compared to no female role models. Thus it was deemed unnecessary to include a vignette with no female role models.

Previous research has found that a single, or very few, female role models do not increase female self-efficacy for a task. These female role models are perceived to be "token" incumbents, and are viewed as unusual. Some researchers have even found that these few females in a male-dominated occupations are perceived to be so out of the ordinary as to be viewed as "deviants" (Laws, 1975 cited in Zimmer, 1986). Kazdin (1974b cited in Bandura, 1977) states that "Similarity to the model in other characteristics...can...enhance the effectiveness of...modeling" (p. 197). To avoid eliciting a "token" effect in the smallest female incumbent ratio manipulation in the vignettes, and thus decreasing the effectiveness of the role model manipulation, ten percent was chosen instead of two or three percent.

The job descriptions for each vignette are approximately the same in length. The information in the vignettes were accurate except for the information in the Hiring Practices section. The 1975-1985 U. S. Department of Labor report is as presented in this survey is bogus. This
deception was necessary to give a source, and hopefully credibility, for the information that the vignette occupations have recently been male-dominated. The information regarding the accountant job was taken from the Chronicle of Occupational Briefs (1991). The Newspaper Reporter and Architect job descriptions were taken from VGM's Career Encyclopedia (1991). Samples of the vignettes are in Appendix E.

Self-efficacy scale. There are currently three basic types of self-efficacy scales: Global, task-specific, and intermediate. The global self-efficacy scale created by Sherer et al. (1982) was not used as it is not created to measure self-efficacy for specific situations or behavior. Sherer et al. recommends using a more specifically worded question to assess self-efficacy for specific target behaviors.

A more task-specific self-efficacy scale was not used since this scale is reported to be most valid when the task is clearly defined and somewhat familiar to individuals (Wang & Richarde, 1988). General task descriptions were included in the vignette job descriptions but there is no research demonstrating how to extrapolate self-efficacy on specific tasks to an overall self-efficacy level for an occupation. Self-efficacy for an occupation may be more, or less than, the sum of individual task self-efficacy.
Riggs and Knight (unpublished manuscript) used a self-efficacy scale in their research which was created by Riggs (1989). Riggs's self-efficacy scale seems to take the best from the general self-efficacy scale and the task-specific self-efficacy scale. The scale is an intermediate self-efficacy scale. This scale focuses on abilities specific to work performance in a job rather than global self-efficacy or efficacy for each task performed in a job.

Seven items from Riggs' (1989) intermediate self-efficacy scale were revised to assess self-reported self-efficacy for each of the three occupations. An eighth item was created by this author to briefly assess subject interest in each occupation. The interest item was included in order to monitor the effect occupational interest has on the self-efficacy scale scores. More extensive monitoring was not deemed necessary since research suggests that self-efficacy for an occupation is a major predictor for interest in the occupation (Post-Kammer & Smith, 1985; Rotberg et al., 1987). Thus, the interest scale is expected to be highly correlated with the self-efficacy scale for each occupation. See Appendix F for the revised intermediate self-efficacy scale and interest item.
RESULTS

Univariate homogeneity of variance tests were run and the data met assumptions. A listwise deletion of missing data was implemented.

Reliability of Measures

To assess the consistency of the self-efficacy scales, a factor analysis was performed on the three vignettes' self-efficacy scales. Cronbach Alphas were computed for each scale. The alpha for the accounting self-efficacy scale was .89, the alpha for the architect occupation was .89, and the alpha for the newspaper reporter occupation was .88. Since the inter-relationships of the items in this study were unknown, an exploratory principal axes factor with varimax rotation was performed. One factor emerged which suggests that the scale measured self-efficacy for each occupation. A summary of the scale's reliability statistics are included in Appendix G.

The BSRI had a continuous scale alpha of .87 for the masculine dimension, and a continuous scale alpha of .87 for the feminine scale.
Tests of Hypotheses

Hypothesis one. Hypothesis one states that female self-efficacy for a perceived male-dominated occupation will increase as females are exposed to an increasing number of female role models in the occupations.

SPSS Analysis of Variance (ANOVA) was used to analyze this hypothesis. The null hypothesis was not rejected. No interaction effect was found between the female ratios and the three occupations ($F(4, 895) = 1.41, p.=.227$). No increase in self-efficacy for perceived male-dominated occupations occurred as subjects were exposed to an increasing number of female role models in the three occupations. No occupational order effect was found.

Hypothesis two. The second hypothesis stated that masculine- and androgynous-typed females will experience an increase in their self-efficacy levels with exposure to fewer female role models in a male-dominated occupation than will feminine-typed females.

SPSS ANOVA was used to analyze this hypothesis. The null hypothesis was not rejected. No interaction effect was found between the BSRI categories and female incumbent ratios ($F(4, 440) = .29, p.=.887$). See Table 2 for the self-efficacy means by female incumbent ratio by BSRI category.
Table 2
Self-Efficacy Means by Female Incumbent Ratios by BSRI Category

<table>
<thead>
<tr>
<th>Category</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td></td>
</tr>
<tr>
<td>Androgynous</td>
<td>22.12</td>
</tr>
<tr>
<td>Masculine</td>
<td>22.43</td>
</tr>
<tr>
<td>Feminine</td>
<td>24.63</td>
</tr>
<tr>
<td>30%</td>
<td></td>
</tr>
<tr>
<td>Androgynous</td>
<td>21.29</td>
</tr>
<tr>
<td>Masculine</td>
<td>20.93</td>
</tr>
<tr>
<td>Feminine</td>
<td>24.35</td>
</tr>
<tr>
<td>60%</td>
<td></td>
</tr>
<tr>
<td>Androgynous</td>
<td>21.75</td>
</tr>
<tr>
<td>Masculine</td>
<td>22.56</td>
</tr>
<tr>
<td>Feminine</td>
<td>25.57</td>
</tr>
</tbody>
</table>

No difference was found in the changes of self-efficacy levels between the masculine- and androgynous- and feminine-typed females after exposure to different levels of female incumbent ratios across all occupations.

Supplementary analyses. SPSS ANOVA was used to explore whether female incumbent ratios within each occupation had
an effect on female self-efficacy within each occupation which may have become masked in the overall $F$ test. No significant effect was found ($F(2, 440) = 1.51, p = .222$).

An ANOVA was run to investigate whether there were significant differences in self-efficacy levels between occupations when BSRI category and female ratios are ignored. See Table 3 for the self-efficacy means and standard deviations for the three occupations when the female incumbent ratio cells are collapsed.

Table 3
Self-Efficacy Means and Standard Deviations by Occupation

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountant Self-Efficacy</td>
<td>22.28</td>
<td>8.08</td>
<td>300</td>
</tr>
<tr>
<td>Architect Self-Efficacy</td>
<td>25.82</td>
<td>8.24</td>
<td>300</td>
</tr>
<tr>
<td>Newspaper Reporter</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>21.05</td>
<td>7.24</td>
<td>300</td>
</tr>
</tbody>
</table>

The self-efficacy scores between occupations were found to be significant ($F(2, 598) = 44.41, p < .005$). The subjects were responding to an inherent characteristic or perception of the occupations beyond any experimental manipulation.
Although no significance was found for BSRI scores by occupation ($F(4, 440) = .71, p = .585$), there was a significant difference between the scores of the different BSRI groups in general ($F(2, 220) = 6.25, p = .002$). Feminine-typed females reported significantly lower self-efficacy levels ($M = 24.85$) for all three occupations than did masculine- ($M = 21.97$) or androgynous-typed ($M = 21.72$) females. The masculine- and androgynous-typed females' self-efficacy scores did not differ significantly from each other.

An SPSS Analysis of Covariance between interest scores and occupational self-efficacy means found a significant positive relationship between interest and self-efficacy for occupation ($F(1, 597) = 387.91, p < .005$). The occupational interest means are located in Table 4.

Table 4

<table>
<thead>
<tr>
<th>Interest Means by Occupation</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountant Interest</td>
<td>4.07</td>
<td>1.69</td>
<td>300</td>
</tr>
<tr>
<td>Architect Interest</td>
<td>4.14</td>
<td>1.54</td>
<td>300</td>
</tr>
<tr>
<td>Newspaper Reporter Interest</td>
<td>3.67</td>
<td>1.59</td>
<td>300</td>
</tr>
</tbody>
</table>
However, interest alone was not responsible for occupational self-efficacy scores. When the overlap of interest and self-efficacy is removed there still remains a significant occupation effect ($F(2, 597) = 46.32, p.<.005$). Females' self-efficacy scores for these occupations are affected by more than just their interest levels in the occupations.
DISCUSSION

Hypothesis One

No support was found for the first hypothesis, which states that female self-efficacy for a male-dominated occupation will increase as females are exposed to an increasing number of female role models in the occupation. In contrast to the findings of Greene et al. (1982) and Savenye (1990), female role models did not have an effect on female self-efficacy for the three different occupations.

Hypothesis Two

No support was found for the second hypothesis, which states that masculine- and androgynous-typed females would experience an increase in their self-efficacy levels with exposure to fewer female role models in a male-dominated occupation than would feminine-typed females.

Other Results

In accordance with findings by Post-Kammer and Smith (1985) and Rotberg et al. (1987), interest in an occupation was highly correlated with self-efficacy for the occupation. However, high interest in an occupation did not explain the corresponding high self-efficacy levels. The occupation
still had a significant effect on self-efficacy levels after
the interest effect was removed.

The current investigation's results concurred with
Rotberg et al.'s (1987) and Matsui et al.'s (1989) results—
BSRI categories did have an effect on self-efficacy levels
regardless of the occupation. In all of the occupations,
feminine subjects had the lowest occupational self-efficacy
levels, while masculine and androgynous subjects had the
highest occupational self-efficacy levels.

An attempt was made in the current investigation to
modify the perception of the occupation's gender valence by
manipulating female incumbent ratios. However, it appears
that the perceptions of occupational gender valences held
prior to this investigation's experimental manipulation were
more powerful than the manipulation. The self-efficacy
levels reported by subjects followed the pattern of gender
valence levels of each occupation found in this
investigator's pilot study. The highest self-efficacy
levels were reported for newspaper reporter occupation, the
next highest levels were for the accountant occupation, and
the lowest self-efficacy levels were for the architect
occupation. This suggests that the perceived gender valence
of an occupation has a powerful effect on female self-
efficacy for the occupation.
Limitations

The major limitation of these results is inherent in the educational level of the subject pool. Not all females in the United States go to college. Of those who do graduate from college, only a portion continue on to graduate school. The subjects in this sample had high educational aspirations. More than two-thirds were planning to attain a post-graduate degree. It seems likely that the female population used in this experiment may have already had high self-efficacy levels for the occupations presented as compared to the general population. What the results may have revealed is a 'ceiling' effect.

One explanation for failure to find significance for the second hypothesis may pertain to the manner in which the subjects were categorized into the four BSRI dimensions. Twenty-five percent of the subject pool was forced into each category. It is probable that some females were categorized as masculine, androgynous, and feminine when, in fact, if males had been included in the subject pool the females would have been classified in a different category.

There are problematic theoretical implications for assuming that the four BSRI dimensions lie on a normal curve. This assumption occurred when the current investigation forced categorization of subjects into the four Bem dimensions. More research needs to confirm that the four BSRI dimensions meet homogeneity of variance
assumptions before this categorization procedure is appropriate.

Vignette design weaknesses may have contributed to the absence of a role model effect. It may be that the role model ratios were not salient enough. The vignettes required a lot of reading by the subject. A large proportion of the vignette information related to the occupation description. If the subject focused on this information and perceived it to be the important thrust of the vignette, then they may have paid little attention to the female incumbent ratios. In addition, if the subject skimmed sections of the vignette it is possible they may have missed some or all of the female ratio manipulations.

Several subjects commented on their self-efficacy scale that the low self-efficacy score they were recording reflects their lack of training in the occupation, not their belief that they lack the ability to do the job if trained. It appears that the self-efficacy scale used in this investigation was not specific enough to measure the level of self-efficacy necessary to find an effect. The self-efficacy scale adapted for this research had been designed to be used by employees regarding the occupation they currently held. The current research design necessitated that the subject "project" to a hypothetical scenario. This may have been an ineffective approach. A different self-efficacy scale with questions such as, "How easy would it be
for you to learn the tasks for this job, given your current abilities", may mitigate this problem. Another suggestion would be to use a version of a task-specific self-efficacy scale which has the subjects rate each individual tasks in the occupation. Some such questions could be, "I currently can do (the task) well", "I would find it difficult to be trained to do (the task)".

Another limitation is the lack of a gender valence manipulation check. This could be done by asking the subjects "If you were asked to guess the percentage of incumbents who are females in this occupation, what would you guess?" This would give the investigator feedback on the gender valence of the occupation as perceived by the subjects. This manipulation check was not done in the current study as there was concern that asking a question about a person's perceived gender valence for an occupation may have made clear the experiment's intent and thus elicit a Hawthorne effect.

Direction for Future Research

The most obvious suggestion for future research is to use a broad cross-section of the female population as compared to a college sample. Another suggestion is to make the role models more salient. This may be as simple as bold printing the percentages of female incumbents in the vignette to draw attention to them; or more complex such as
including videos of the female role models, or having female role models interact with the subject in some fashion.

Summary of Conclusions

No support was found for the two hypotheses. However, self-efficacy levels for occupations in general was related to the BSRI categories. The gender valence of the occupation as reported in the pilot study had a powerful effect on self-efficacy levels for the occupation. Furthermore, the gender valence of an occupation had an effect on self-efficacy even after the variance attributed to interest was removed.
## APPENDIX A

### Sample Demographics

<table>
<thead>
<tr>
<th>Sex</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>100</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age:</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-22</td>
<td>208</td>
<td>68.4</td>
</tr>
<tr>
<td>23-27</td>
<td>43</td>
<td>14.1</td>
</tr>
<tr>
<td>28-32</td>
<td>10</td>
<td>3.4</td>
</tr>
<tr>
<td>33-37</td>
<td>18</td>
<td>5.9</td>
</tr>
<tr>
<td>38-42</td>
<td>9</td>
<td>3.0</td>
</tr>
<tr>
<td>43-47</td>
<td>11</td>
<td>3.6</td>
</tr>
<tr>
<td>48-52</td>
<td>3</td>
<td>1.3</td>
</tr>
<tr>
<td>53-57</td>
<td>1</td>
<td>0.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshmen</td>
<td>52</td>
<td>17.1</td>
</tr>
<tr>
<td>Sophomore</td>
<td>57</td>
<td>18.8</td>
</tr>
<tr>
<td>Junior</td>
<td>100</td>
<td>32.9</td>
</tr>
<tr>
<td>Senior</td>
<td>90</td>
<td>29.6</td>
</tr>
<tr>
<td>Graduate</td>
<td>3</td>
<td>1.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Major:</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art/Music/Theater</td>
<td>3</td>
<td>1.0</td>
</tr>
<tr>
<td>Bio/Biochem/Chem</td>
<td>46</td>
<td>15.1</td>
</tr>
<tr>
<td>Business</td>
<td>33</td>
<td>10.9</td>
</tr>
<tr>
<td>Education</td>
<td>2</td>
<td>0.7</td>
</tr>
<tr>
<td>English/Communication</td>
<td>9</td>
<td>3.0</td>
</tr>
<tr>
<td>Liberal Studies</td>
<td>54</td>
<td>17.8</td>
</tr>
<tr>
<td>Nursing</td>
<td>12</td>
<td>3.9</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>Political Sci/History</td>
<td>7</td>
<td>2.3</td>
</tr>
<tr>
<td>Psychology</td>
<td>95</td>
<td>31.3</td>
</tr>
<tr>
<td>Sociology/Social Work</td>
<td>23</td>
<td>7.6</td>
</tr>
<tr>
<td>Undeclared</td>
<td>15</td>
<td>4.9</td>
</tr>
</tbody>
</table>
**Highest Intended Level of Education:**

<table>
<thead>
<tr>
<th>Degree</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>1</td>
<td>0.3</td>
</tr>
<tr>
<td>BA/BS</td>
<td>71</td>
<td>23.4</td>
</tr>
<tr>
<td>MA/MS</td>
<td>123</td>
<td>40.5</td>
</tr>
<tr>
<td>PhD/JD/MD</td>
<td>102</td>
<td>34.3</td>
</tr>
</tbody>
</table>

**Race*:  

<table>
<thead>
<tr>
<th>Race</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>92</td>
<td>54.8</td>
</tr>
<tr>
<td>Hispanic</td>
<td>27</td>
<td>16.0</td>
</tr>
<tr>
<td>Asian</td>
<td>29</td>
<td>17.3</td>
</tr>
<tr>
<td>Black</td>
<td>16</td>
<td>9.5</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>2.4</td>
</tr>
</tbody>
</table>

* Due to an error in the surveys this information was only requested from 168 subjects. The percentages listed were extrapolated from the 168 subjects as representative of the 304 subjects.
**APPENDIX B**

**Distribution of Subjects in BSRI Categories by Female Incumbent Ratios and Occupation**

<table>
<thead>
<tr>
<th>Female Incumbent Ratios</th>
<th>10%</th>
<th>30%</th>
<th>60%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accounting</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Androgynous</td>
<td>20</td>
<td>29</td>
<td>25</td>
</tr>
<tr>
<td>Masculine</td>
<td>20</td>
<td>31</td>
<td>25</td>
</tr>
<tr>
<td>Feminine</td>
<td>21</td>
<td>24</td>
<td>30</td>
</tr>
<tr>
<td>Undifferentiated</td>
<td>35</td>
<td>17</td>
<td>24</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>96</td>
<td>101</td>
<td>104</td>
</tr>
<tr>
<td><strong>Architect</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Androgynous</td>
<td>24</td>
<td>24</td>
<td>26</td>
</tr>
<tr>
<td>Masculine</td>
<td>24</td>
<td>23</td>
<td>29</td>
</tr>
<tr>
<td>Feminine</td>
<td>28</td>
<td>26</td>
<td>21</td>
</tr>
<tr>
<td>Undifferentiated</td>
<td>25</td>
<td>29</td>
<td>22</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>101</td>
<td>102</td>
<td>98</td>
</tr>
<tr>
<td><strong>Newspaper Reporter</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Androgynous</td>
<td>30</td>
<td>21</td>
<td>23</td>
</tr>
<tr>
<td>Masculine</td>
<td>32</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Feminine</td>
<td>26</td>
<td>25</td>
<td>24</td>
</tr>
<tr>
<td>Undifferentiated</td>
<td>16</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>104</td>
<td>98</td>
<td>99</td>
</tr>
</tbody>
</table>
It is necessary for us to have a list of the characteristics of the subject population in order to assess how generalizable will be the results of this research. Listed below are a number of personality characteristics. We would like you to use those characteristics to describe yourself, that is, we would like you to indicate, on a scale from 1 to 7, how true of you each of these characteristics is. One (1) indicates "never or almost never", two (2) indicates "usually not true", three (3) indicates "sometimes but infrequently true", four (4) indicates "occasionally true", five (5) indicates "often true", six (6) indicates "usually true", and 7 indicates "always or almost always" true. Please do not leave any characteristics unmarked.

1. 16. ___Defends own ___Understanding
    beliefs

2. 17. ___ Moody
3. ___Independent
4. ___Conscientious
5. ___Affectionate
6. ___Assertive
7. ___Strong personality
8. ___Forceful
9. ___Reliable
10. ___Sympathetic
11. ___Jealous
12. ___Has leadership
    abilities
13. ___Sensitive to the
    needs of others
14. ___Truthful
15. ___Willing to take
    risks
16. ___Understanding
17. ___Secretive
18. ___Compassionate
19. ___Eager to soothe
20. ___Conceited
21. ___Dominant
22. ___Warm
23. ___Willing to take
    a stand
24. ___Tender
25. ___Aggressive
26. ___Adaptable
27. ___Loves children
28. ___Tactful
29. ___Gentle
30. ___Conventional
## APPENDIX D

### Pilot Study Occupation Actual Means and Subject Perceived Means and Standard Deviations

<table>
<thead>
<tr>
<th>Occupation</th>
<th>1989* Female Incumbent Percentage</th>
<th>Subject Perceived Female Incumbent Percentage</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountant</td>
<td>49</td>
<td>35</td>
<td>20</td>
</tr>
<tr>
<td>Advertising Agency Worker</td>
<td>54</td>
<td>33</td>
<td>22</td>
</tr>
<tr>
<td>Architect</td>
<td>21</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>Auditor</td>
<td>49</td>
<td>29</td>
<td>19</td>
</tr>
<tr>
<td>Claim Representative</td>
<td>72</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Dental Hygienist</td>
<td>99</td>
<td>61</td>
<td>29</td>
</tr>
<tr>
<td>Dietician</td>
<td>91</td>
<td>59</td>
<td>28</td>
</tr>
<tr>
<td>Editor</td>
<td>49</td>
<td>37</td>
<td>21</td>
</tr>
<tr>
<td>Human Resources Manager</td>
<td>53</td>
<td>37</td>
<td>19</td>
</tr>
<tr>
<td>Insurance Underwriter</td>
<td>72</td>
<td>29</td>
<td>22</td>
</tr>
<tr>
<td>Loan Officer</td>
<td>51**</td>
<td>40</td>
<td>24</td>
</tr>
<tr>
<td>Management Consultant</td>
<td>51**</td>
<td>29</td>
<td>19</td>
</tr>
<tr>
<td>Manufacturer's Sales Rep.</td>
<td>19**</td>
<td>32</td>
<td>23</td>
</tr>
<tr>
<td>Marketing Manager</td>
<td>31</td>
<td>28</td>
<td>19</td>
</tr>
<tr>
<td>Medical Laboratory Tech.</td>
<td>74</td>
<td>47</td>
<td>25</td>
</tr>
<tr>
<td>Newspaper Reporter</td>
<td>49</td>
<td>42</td>
<td>20</td>
</tr>
<tr>
<td>Nurse (Registered)</td>
<td>94</td>
<td>74</td>
<td>19</td>
</tr>
<tr>
<td>Paralegal</td>
<td>76</td>
<td>54</td>
<td>28</td>
</tr>
<tr>
<td>Parole Officer</td>
<td>13</td>
<td>32</td>
<td>24</td>
</tr>
<tr>
<td>Physical Therapist</td>
<td>77</td>
<td>49</td>
<td>25</td>
</tr>
<tr>
<td>Public Relations Specialist</td>
<td>57</td>
<td>45</td>
<td>25</td>
</tr>
<tr>
<td>Purchasing Manager</td>
<td>26</td>
<td>29</td>
<td>21</td>
</tr>
<tr>
<td>Respiratory Therapist</td>
<td>53</td>
<td>43</td>
<td>24</td>
</tr>
<tr>
<td>Sales Manager</td>
<td>20</td>
<td>42</td>
<td>21</td>
</tr>
<tr>
<td>Stockbroker</td>
<td>29</td>
<td>23</td>
<td>19</td>
</tr>
<tr>
<td>Teacher (Elementary School)</td>
<td>85</td>
<td>79</td>
<td>15</td>
</tr>
</tbody>
</table>


**Note.** N = 41 All subjects are female.
APPENDIX E

Vignettes

Occupation: Accountant

General Job Description:

Monitors and reports on incoming and outgoing monies. Offers guidance for the use of monies.

General Task Description:

* Keep financial records for businesses or individuals
* Compile business and financial records
* Analyze business and financial records
* Check business and financial records
* Prepare business and financial records such as income statements, balance sheets, cost studies, and tax reports
* Write reports on the financial and business record findings

Employment Opportunities:

Accountants typically work in private practice, in an accounting firm, in a firm which makes a product or offers a service, or in a government review agency.

Educational Requirements:

The B.A. is usually required.

Hiring Practices:

From 1975 to 1985 the U. S. Department of Labor reported that the number of female accountants were significantly less than the percentage of females in the general population who worked.
In the last 8 years, there has been an increase in the number of entry level accountants. Females currently make up ten (thirty, sixty) percent (10%, 30%, 60%) of accountants. The future outlook on job availability for females in this occupation is good.

Please read the following vignette which depicts a typical female accountant, then answer the questions which follow the vignette:

Jan is a successful female accountant who works for a local accounting firm which employs 80 accountants. She is one of 8 (24, 48) female accountants who work for the firm. She is representative of the other females in the firm. In Jan's tenure with the accounting firm, she and many of her female cohorts have received letters from satisfied clients praising them for the counsel given them which saved them a substantial amount of money. Jan states that the aspect of the job typically enjoyed most by its incumbents is the challenge of finding ways to save their client's money. The least enjoyed aspect is the extended working hours during tax season.
Occupation: Newspaper Reporter

General Job Description:
Gathers the latest news through research, interviews, and attendance at public events, then organizes information into articles.

General Task Description:
- Research news stories
- Write news stories
- Edit news stories
- Photograph events for newspaper
- Organize layout
- Solicit subscriptions and advertising
- Perform general office work

Employment Opportunities:
Newspaper reporters typically work for small-town, suburban daily, suburban weekly, or national news services.

Educational Requirements:
The B.A. is usually required.

Hiring Practices:
From 1975 to 1985 the U. S. Department of Labor reported that the number of female newspaper reporters were significantly less than the percentage of females in the general population who worked.

In the last 8 years, there has been an increase in the number of entry level newspaper reporters. Females currently make up ten (thirty, sixty) percent (10%, 30%, 60%) of newspaper reporters. The future outlook on job availability for females in this occupation is good.
Please read the following vignette which depicts a typical female newspaper reporter, then answer the questions which follow the vignette:

Jill is a successful female newspaper reporter who works for a paper which employees 100 newspaper reporters. She is one of 10 (30, 60) female reporters who work for the paper. She is representative of the other females in the organization. In Jill's tenure with the newspaper, she and her female peers have written award-winning stories. Jill states that the aspect of the job typically enjoyed most by its incumbents is the variety of people met in the course of doing a story. The least enjoyed aspect is the occasional extended or irregular working hours, and the constant deadline pressures.
Occupation: Architect

General Job Description:
Designs buildings and other structures. Oversees all phases of a project from initial idea to completed structure.

General Task Description:

* Discusses with the client the ideas and needs the client has for a project
* Creates detailed blueprints for buildings and other structures
* Draws plans for the plumbing, electrical, and heating systems for the structures
* Selects building materials which meet building regulations
* Solves complex technical problems while retaining artistic design
* Aids in the selection of contractors for projects
* Oversees the project in progress to ensure that all design specifications are being carried out

Employment Opportunities:
Architects are typically employed by architectural firms, building contractors, community planning authorities, or are in private practice.

Educational Requirements:
The B.A. is usually required.

Hiring Practices:
From 1975 to 1985 the U. S. Department of Labor reported that the number of female architects were significantly less than the percentage of females in the general population who worked.

In the last 8 years, there has been an increase in the number of entry level architects. Females currently make up ten (thirty, sixty) percent (10%, 30%, 60%) of architects.
The future outlook on job availability for females in this occupation is good.

Please read the following vignette which depicts a typical female architect, then answer the questions which follow the vignette:

Joyce is a successful female architect who works for a local architecture firm which employs 50 architects. She is one of 5 (15, 30) female architects who work for the firm. She is representative of the other females in the firm. In Joyce's tenure with the architecture firm, she and a number of other women have received commendations for the projects they have designed. Joyce states that the aspect of the job typically enjoyed most by its incumbents is that work can be done at home. The least enjoyed aspect is the extended working hours often needed as a project's completion deadline nears.
APPENDIX F

Intermediate Self-Efficacy Scale

Think about your ability to do the tasks required by accountants (architects, newspaper reporters). When answering the following questions, answer in reference to your own personal work skills and ability to perform the accountant (architect, newspaper reporter) job. Put the number on the line next to the question which corresponds to your response. For instance, if you strongly agree with the statement put a 1 on the line next to the statement, if you agree with the statement put a 2 on the line, and so on.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Somewhat Agree</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

1. ___ I have confidence in my ability to do this job.

2. ___ There are some tasks required of accountants (architects, newspaper reporters) that I cannot do well.

3. ___ If my performance is poor, it would be due to my lack of ability.

4. ___ I doubt by ability to do the accountant (architect, newspaper reporter) job.

5. ___ I have all the skills needed to perform the accountant (architect, newspaper reporter) job very well.

6. ___ I could be an expert at the accountant (architect, newspaper reporter) job.

7. ___ My future in accounting (architecture, newspaper reporting) would be limited because of my lack of skills.

8. ___ I would be interested in being an accountant (architect, newspaper reporter).
## APPENDIX G

### Self-Efficacy Scale Reliability Analysis

<table>
<thead>
<tr>
<th>Self-Efficacy Scale:</th>
<th>Corrected Item-Total Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accounting Occupation</strong></td>
<td></td>
</tr>
<tr>
<td>Item 1</td>
<td>.76</td>
</tr>
<tr>
<td>Item 2R</td>
<td>.64</td>
</tr>
<tr>
<td>Item 3R</td>
<td>.62</td>
</tr>
<tr>
<td>Item 4R</td>
<td>.81</td>
</tr>
<tr>
<td>Item 5</td>
<td>.69</td>
</tr>
<tr>
<td>Item 6</td>
<td>.67</td>
</tr>
<tr>
<td>Item 7R</td>
<td>.66</td>
</tr>
<tr>
<td><strong>Alpha</strong></td>
<td>.89</td>
</tr>
</tbody>
</table>

| **Architect Occupation** |                                 |
| Item 1                 | .76                              |
| Item 2R                | .72                              |
| Item 3R                | .58                              |
| Item 4R                | .76                              |
| Item 5                 | .71                              |
| Item 6                 | .74                              |
| Item 7R                | .68                              |
| **Alpha**              | .89                              |

| **Newspaper Reporter Occupation** |                                 |
| Item 1                     | .68                              |
| Item 2R                    | .65                              |
| Item 3R                    | .48                              |
| Item 4R                    | .70                              |
| Item 5                     | .76                              |
| Item 6                     | .75                              |
| Item 7R                    | .70                              |
| **Alpha**                 | .88                              |

**Note.** R = item was reversed scored
REFERENCES


