EFFECTS OF SEX AND SEX-TYPING
ON JOB APPLICANT EVALUATIONS

by

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Abstract

This research examined the effects of sex differences in rater and ratee on hiring decisions for masculine and feminine sex-typed jobs. This research has implications for hiring and promotion decision making within the real world. Specifically, an examination of the possible factors and their interactions involved in the creation of stereotypes may help alleviate hiring biases.

Subjects were presented with a bogus cover letter and resume, and were required to evaluate an applicant for an entry level, as well as a managerial level position. In the managerial level condition, the applicant did not clearly possess the required job skills, as they did in the entry level position. This missing information created a condition where the rater was required to infer whether or not the applicant possessed the required job-relevant characteristics. Sex stereotyping occurs when raters allow general beliefs about a particular sex to influence their evaluation, even though no specific information to support those beliefs is present. It was expected that for the managerial level job, when a greater level of inference was required, a greater degree of sex stereotyping would be evident in the evaluative decision making. In contrast, no sex stereotyping was expected for the entry level position, as all applicants were clearly qualified.

In addition, the sex-typing of the occupation (whether a job is traditionally held by males or females) was manipulated: The application was for a job as either an engineer or a nurse. The sex-typing of the occupation combined with the job level and sex of rater was expected to influence which ratee sex would be favoured. In the feminine managerial occupation (nursing), it was expected that females would be favoured, and in the masculine managerial occupation (engineering) it was expected that males would be favoured. It was expected that males would be more stereotypical in their responses than
females. Raters had to evaluate applicants along a number of dimensions, including a hiring decision, an estimated salary, and an estimated level of competence.

Results indicated effects of rater sex, ratee sex and sex-typing of occupation. Contrary to the hypotheses, females responded more stereotypically than the males. Compared to female raters, male raters were more likely to report that they would hire women in each of the conditions. Moreover, female raters favoured males for the engineering job, and females for the nursing job. Also, females were given higher salaries as engineers, and males were given higher salaries as nurses. Finally, women ratees were viewed as more competent, by both male and female raters, regardless of job or job level.

Some explanations of these results are discussed, including the awareness of today's students of the current political climate, and the potential impact of different ethnicities. Implications of these results are also explored, including recommendations for future studies in this area.
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Introduction

Research investigating the impact of stereotyping within the work force began in earnest in the early 1970's (Dovidio, Brigham, Johnson & Gaertner, 1996). This research began to examine various factors and their interactions that influenced the stereotyping process. Some researchers argue that stereotyping has prevented women from advancing as quickly and as far as they would like within the work force (Powell, 1987). Others argue more broadly that stereotyping affects both men and women, depending on the occupation. Regardless, the process of stereotyping can result in biased evaluations, which at the very least are a disservice to an organization. The following sections summarize research in this area, briefly examining several factors, and providing a rationale for the author's study.

Stereotyping

Some researchers (Dovidio, Brigham, Johnson & Gaertner, 1996; Taylor, Fiske, Etcoff & Ruderman, 1978) credit Lippmann for the introduction of the term "stereotype" in 1922, which then referred to the particular picture created in one's mind when one thinks about a particular social group. These pictures are created in an attempt to organize the complexity of one's environment. Other researchers have emphasized the flawed nature of stereotypes, stating that stereotypes are overgeneralizations, are based on incorrect beliefs, and are very rigid (Dovidio et. al., 1996). Alternatively, from the cognitive viewpoint, stereotypes are seen as cognitive categories used to process information about people, therefore implying that they are necessary and normal. In this document, the standard viewpoint (Hilton & Von Hippel, 1996) regarding stereotypes will be adopted. That is, stereotypes are beliefs, whether accurate or not, about the characteristics, attributes and behaviours of members of certain groups.

Students' Views of Males and Females
The enormous cultural changes in the late 60's and early 70's inspired researchers to further examine the concept of stereotyping, and its impact on society. A series of studies (Broverman, Vogel, Broverman, Clarkson & Rosenkrantz, 1972; Rosenkrantz, Vogel, Bee, Broverman & Broverman, 1968) began by examining the college student's conceptualization of "typical adult males" and "typical adult females". They were interested in whether or not recent cultural changes had affected people's views of traditional sex roles. These studies revealed three interesting points. First, both men and women saw each gender the same way. Second, both men and women valued the "masculine" traits more than they valued the "feminine" traits. Finally, definitions of the typical males and females were created. Typical adult males were seen as "aggressive, independent, unemotional, objective, dominant, hides emotions, active, competitive, logical, direct, adventurous, and ambitious". Broverman et al. called this group of traits a "competency cluster". Typical adult females were seen as "talkative, tactful, gentle, aware of feelings of others, neat in habits, quiet, strong need for security, expresses tender feelings". Broverman et al. called this group of traits a "warmth/expressiveness cluster".

Even more recently, researchers have returned to examine the perception of the typical male and female. In an attempt to update Broverman et al.'s (1972) study, Street, Kimmel, and Kromrey (1995), examined university students conceptualizations of "ideal woman", "ideal man", "most women" and "most men". Ultimately their findings suggest that little had changed in the gender role perceptions of students. Women saw themselves as feminine sex-typed, preferred an androgynous ideal man and woman, and saw most men and women as sex-typed. Men saw themselves as androgynous, preferred an androgynous ideal women, but a masculine sex-typed ideal man, and saw most men and women as sex-typed. A study by Norris and Wylie (1995) also supported these results.

Managers' Views of Managers

A line of research began to develop that examined the impact that these stereotypes had on the perceptions of managers. Virginia Schein (1973) performed the
first of many studies that examined the male middle manager's conceptualization of "women in general", "men in general" and "successful middle managers". Schein had the managers rate each of the three categories on 92 descriptive terms. The mean ratings of men and managers were similar, where no similarity existed between women and managers. Schein concluded that the results showed that successful middle managers are perceived to hold characteristics, attitudes and temperaments more commonly related to men than to women. This study methodology was repeated using females as subjects, by Schein in 1975. Similar results were obtained indicating women held the same stereotypes and implications for stereotypes as men.

Rosen and Jerdee (1978) performed a similar study, in an attempt to show that the masculine stereotype no longer prevailed in the minds of managers. They had managers complete a survey covering aptitudes, knowledge and skills, interest and motivation, temperament, work habits and attitudes. It was found that for each area, men had uniformly negative perceptions of women as compared to men. In general, men were seen as possessing a greater degree of leadership and decision-making skills relevant to managerial objectives.

Researchers continued to return to the managerial stereotyping question. Many variations of the original stereotyping studies were performed. Heilman, Block, Martell and Simon (1989) replicated Schein's (1973) work, (the study using only males as subjects) and obtained the same results as the original study. Brenner, Tomkiewicz and Schein (1989) also replicated Schein's original (1973, 1975) work. They found that the predominant view, still held by men is that the successful manager was more masculine than feminine. They did find, however, that female managers no longer sex-typed managerial jobs, instead, women viewed successful middle managers as having both masculine and feminine characteristics, attitudes, and temperaments.

Students' Views of Managers
Researchers were also interested in the views held by students. In a study which replicated Schein's (1973, 1975) work, and used students as subjects, Schein, Mueller and Jacobson (1989) found that males held the same sex-typed views as the 70's, although women had shifted slightly. Burke (1994) further developed the Schein-style study, and examined students attitudes towards women as managers, as a function of their own personality types. He found that men and subjects with masculine-type personalities (by BSRI) had more negative attitudes towards women as managers than did the women students.

Powell and Butterfield (1979) conducted a study similar to Rosen and Jerdee's (1978) work with managers, but used students as raters. They found that, as in the field, the good manager was still perceived as being masculine.

Through this line of research, then, we see that over the last two decades relatively little has changed. Even recently it is still believed that both managers and men were perceived to possess the characteristics generally described as being masculine. Also, in general, women were perceived as not possessing these characteristics (Schein, 1978). These views are held by both students and people in the work force, both male and female.

Although these studies are quite intriguing, we must keep in mind that they have been concerned only with perceptions. That is, they have asked subjects directly about their beliefs and values and what they believe to be true. The more difficult question examines the potential impact that these beliefs and values might have. That is, although it has been shown that people possess these perceptions, it remains to be seen if, and under what conditions, these perceptions translate into outward impact.

Development of “Stereotyping in Management” Literature

As research emerged that supported the existence of stereotypes, some researchers began to examine the more applied and practical implications of this research. It had been shown that stereotypes, in general, existed, and that stereotypes tying managers to male
characteristics existed. But the implications of these results had yet to be explored, and developed. Researchers began to examine the impact that these stereotypes had on management related functions, such as promotion, hiring decisions and performance appraisals. This became an important and contentious topic in society as a whole, as a growing number of women emerged in the work force.

In the United States, Title VII of the Civil Rights Act was enacted in 1964. It specified protected classes, and the rights that they possessed within the work force. Mandated by Title VII was an independent commission, the Equal Employment Opportunity Commission (EEOC). Its purpose was to investigate and regulate acts of discrimination against identifiable victims (Gutman, 1993). Canada followed suit in 1986 with The Employment Equity Act, outlining the government’s position on fair employment practices. The implementation of Title VII in the United States, and the Employment Equity Act in Canada resulted in some progress towards equity for all, and most importantly, drew awareness to stereotyping and its relationship to discrimination.

One aim of Human Resources is to maximize the potential of the existing work force. This focus drew greater attention to the presence of women, and their potential worth to the organization. Competitive organizations began to realize that to underutilize women was to ignore a significant portion of the potential work force, which was an action that they could not afford to take. Some people (Fagenson, 1993; Ferrario, 1994; Jamieson, 1994; Rosener, 1990; Rosener & Powell, 1996) also argued that women brought new qualities to the work force, which at the very least deserved exploration. Thus, the practical implications of this line of research encouraged researchers to examine more closely the concept and impact of stereotyping.

Performance appraisal, and the evaluation of applicants and employees in general, is an area particularly affected by stereotyping. Evaluative and sometimes subjective components introduce an opportunity for bias to enter. Researchers began by examining the interaction between the evaluator and the performer. For these types of studies,
frequently "scenarios" were used. Using this methodology, a description of a subject's behaviour or qualifications was presented to a rater, who read the scenario, and answered a series of questions related to it. The degree of control present in a method such as this was very attractive.

Some of these studies were done using students as subjects, whereas others used managers. Olian, Schwab and Haberfeld (1988) performed a study using both professionals and students as subjects, and found no difference in responding between the two groups.

The scenarios in these studies come in two general forms. One asked the subject to evaluate a job applicant, whereas and the other had the subject evaluate some type of work sample. The first type presented subjects with a resume and other materials from a hypothetical job applicant, and generally asked the subject to make a hiring decision, and sometimes to evaluate other job relevant criteria. The second type presented subjects with information concerning the performance of a particular employee and asked the subject to evaluate the performance and other job relevant criteria. Particular behaviours can be examined in either form.

Some of the early studies done using this methodology examined the factors of sex of rater and sex of performer (ratee). Rosen and Jerdee (1974) used the scenario method with students to examine hypothetical job applicants, and found that male ratees were favoured over female ratees. In a similar study, Bartol and Butterfield (1976) indicated that sex of rater has an effect on the evaluation of managerial behaviour, with females giving higher ratings than the males. Lee and Alvares (1977) also performed a similar study, however, significant results were not obtained.

Studies using the scenario methodology with managers as subjects were also performed. Several researchers (Camden & Witt, 1983; Izraeli & Izraeli, 1985; Rosen & Jerdee, 1973) examined evaluations of hypothetical supervisors, but they found no difference between male and female raters.
Some studies were also conducted in the field. These generally examined the existing performance appraisal situation within a company. However, when field studies such as these are conducted, the control originally available in the scenario methodology is no longer present. In this case, the differences found cannot necessarily be attributed to stereotyping. It is a possibility that when differences are found, they are attributable to legitimate differences existing between the sexes. Mobley (1982) examined sex effects in performance appraisal in the field in a nonprofessional, nonmanagerial, traditionally male-oriented job. The study showed that females received higher performance appraisals over males. Peters, O'Connor, Weekley, Pooyan, Frank and Erenkrantz (1984) followed up Mobley's study, and confirmed the initial results. Tsui and Gutek (1984) examined middle level managers in the fields of computer, data services, education and finance industries and found that women managers were rated as favourable as, if not more so than, their male counterparts.

In an attempt to match the realism of the job situation, Terborg and Ilgen (1975) designed an In-Basket simulation to examine sex discrimination in the profession of engineering. In this case, subjects were as likely to hire a female as they would hire a male, although the female was offered a significantly lower starting salary, and was assigned to routine tasks more frequently than to challenging ones.

Finally, meta-analytic techniques were used to aggregate and synthesize studies that used this scenario methodology to examine sex differences in the evaluation process. Swim, Borgida, Maruyama and Myers (1989) revealed that average differences between ratings of men and women were negligible. Olian, Schwab and Haberfeld (1988), however, performed a similar meta-analysis, and concluded that males received higher performance appraisals over females.

We see from these few studies that although a variety of methodologies have been used, across a number of settings, and using different types of subjects, the outcome of
applicant and performance evaluations is far from predictable, when examining only rater sex, and performer sex.

**Exploration of Components of Stereotyping**

In the early 1980's the focus shifted from whether or not there are sex differences to the question of why the sexes sometimes differ considerably and at other times differ moderately or minimally or do not differ at all. Researchers continued to find that evaluation bias existed, but that its effects were not consistent across all situations (Nieva & Gutek, 1980). To some researchers, this finding emphasized that the components of gender stereotypes needed further exploration.

Past research had focused on personality traits as the core of gender stereotypes. However, Deaux and Lewis (1984) proposed that lay conceptions of stereotypes suggested that they might be much more diverse, with a number of separate components, including traits, role behaviours, occupations and physical appearance. In a series of studies Deaux and Lewis showed that this collection of components can influence one another. They showed that gender information alone does not lead to inference of certain sets of characteristics, and frequently can be outweighed by role behaviours and trait information. Researchers began to examine the impact of various factors on the evaluation process. Sometimes these factors were examined solely, sometimes in conjunction with other factors. This section contains a description of the various groups of factors that have been explored.

**Work and Gender: Focus on Sex Roles**

It has been shown that traditionally it was believed that it was necessary for managers to possess masculine characteristics. With the emergence of women in the workplace, the implications of women in management began to be examined, especially with regard to the masculine stereotype. Until this time, females were stereotyped as generally possessing only feminine traits and characteristics. However, within a
managerial role, masculine behaviours seemed to be required. The theory up until this point would therefore suggest that women could not be successful managers. Yet some women managed to succeed. Research began to investigate the implications of this outcome.

Also developing at this time was the study of the constructs of masculinity and femininity. Prior to 1970, masculinity and femininity were assumed to lie at opposite ends of a single dimension (Helgeson, 1994). Bem (1974) examined the masculinity/femininity construct, and reconceptualized masculinity and femininity as independent dimensions when she created the Bem Sex Role Inventory (BSRI). This examination of the masculinity/femininity constructs also brought to light the concept of androgyny.

Bem (1974) put forth the concept of sex-typing, which she described as the acquisition of sex-appropriate preferences, skills, personality attributes, behaviors and self-concepts. She acknowledged that sex-typing was viewed as not only the normal, but the desirable outcome of human development. Androgynous individuals were considered non-sex-typed. That is, they were individuals who did not rely on gender as a cognitive organizing principle. Consequently, an androgynous personality combines both masculine and feminine elements.

Three particularly relevant results emerged from this research examining masculinity and femininity. First, there was recognition that masculinity and femininity are multi-dimensional, and therefore males and females could possess degrees of each of them. This realization lead to the creation of a tool that could measure degrees of both masculinity and femininity within one person. Finally, recognition that masculinity and femininity are not directly tied to sex led to the realization that sex role and sex should be studied separately.

In particular, this last point had great implications for gender differences research in management. The consequent stream of research began to examine evaluation
differences when performers were behaving in sex role congruent or sex role incongruent manners.

The fact that the same behaviour, when performed by two people of different gender, could be interpreted differently was profoundly interesting to some researchers. In a real life setting, this differential interpretation can have devastating consequences. Consider the well-known case of Ann Hopkins, denied partnership in Price Waterhouse, because of exhibited behaviours that were considered inappropriate. The Supreme Court, and the American Psychological Association (1991) decided that gender-based stereotyping influenced this decision. The behaviours in question included assertive and forceful behaviour, which Fiske, Bersoff, Borgida, Deaux and Heilman (1993) argued were interpreted differently for Hopkins than they would have been for a man, because of gender stereotypes.

It appears that Hopkins was penalized for not behaving in a feminine manner. In this case, sex role behaviours had an enormous impact on how the ratee was perceived. Researchers disagree on the degree of impact of sex role behaviours. Some are of the opinion that sex role behaviours are more important than actual sex of the ratee. Of course, some are of the opposite opinion, that while sex role behaviours are important, sex is more so.

An interesting study by Deaux and Lewis (1984) presented students with certain amounts of information about gender of the ratee. The students were then required to indicate the degree of other gender-related characteristics that they felt the ratee possessed. The study revealed that the effects of specific trait or role behaviour information were greater than the information suggested by gender label alone.

**Behaviours must be congruent with job, regardless of sex.**

The interaction between sex role behaviours of ratee, ratee sex, and sex-type of the job began to be explored. Some researchers found that ratees were evaluated more
favourably when behaviours were congruent with the job, regardless of the sex of the applicant.

Jackson (1983a) had personnel consultants evaluate applicants for masculine and feminine occupations. The study indicated for the masculine occupation, masculine persons were perceived as more qualified, were expected to be more successful, and received stronger hiring recommendations than feminine persons. For the feminine occupation, feminine persons were expected to be more successful and received stronger hiring recommendations than masculine persons. Jackson (1983b) followed up with a field study which also supported the influence of gender role information (rather than sex) on management decisions. This study examined the possibility of promotion, and the assignment of routine versus challenging tasks. Masculine persons were preferred for promotion in the masculine occupations while feminine persons were more likely to be promoted in feminine occupations. On the other hand, regardless of occupational category, it was the masculine person, male or female, who was assigned the challenging task and the feminine person, male or female who was delegated the routine task.

Moore (1984) had students complete an In-Basket study simulating the actions of a supermarket manager. In this case, masculine modes of behaviour were favoured over feminine, and sex of ratee had no impact. The same results were obtained by Giannantonio, Olian and Carroll (1995) when they used the scenario methodology to have students evaluate a manager's actions.

This point of view would indicate that as long as one had the ability to perform within a specific capacity, one would be positively evaluated for the job. A contrasting research finding worthy of consideration indicates that behaviours used on the job must be congruent with sex, regardless of job.

**Behaviours must be congruent with sex, regardless of job.**

Nieva and Gutek (1980) introduced the concept of "gender-role spillover". This occurs when gender-based expectations for behaviour are brought into the workplace.
Naturally, this concept has different implications for men than women. Within managerial roles, this means that women must face mutually exclusive demands from leadership roles and the feminine sex role (Eagly, Makhijani & Klonsky, 1992).

Camden and Witt (1983) examined women managing in a stereotypical feminine style, and concluded that they were more productive than men conforming to stereotypic role expectations. Bartol and Butterfield (1976) found that females were rated higher in performance than males when they used a consideration style, but lower than males when they used an initiating structure style.

Hartman, Griffeth, Crino and Harris (1991) proposed that differences in ratings appear when raters are attempting to achieve a match between ratee gender, ratee personal characteristics and stereotypical ideas of job requirements, rather than just because of the direct influence of bias. In their study, the female job was represented as a word processing supervisor, and the male job as the installation supervisor. Results seemed to indicate that job type does not enter into decision-making process. Females with masculine characteristics were more positively evaluated than females with feminine characteristics by both males and females.

Eagly, Makhijani and Klonsky (1992) used meta-analytic techniques to examine the evaluation of women and men in leadership positions. It was found that women were evaluated less favourably than men, especially when the women used stereotypically masculine leadership styles.

One finding that emerges from this series of studies is that discrimination in hiring decisions is not solely mediated by stereotyped inferences about the personality traits of individuals, but also by occupational stereotypes that specify the appropriate sex as well as the appropriate personality traits required of members of that occupation. An important implication of this finding is that once an occupation becomes designated as a male or female occupation, even if stereotypes about men and women change, discrimination may continue.
This series of studies seems to indicate that the sex role behaviours of ratees should be considered in order to understand the impact of bias in the performance appraisal process. However, it is clear that examining this factor alone will not lead to complete elucidation. Further examination of other factors is also clearly required.

**Work and Sex: Focus on Occupational Sex-Typing**

Researchers began to examine the differences that occurred in evaluation when the occupation was taken into account. This led to the examination of the sex-typing of an occupation. There are two ways in which the sex-typing of a job is said to be established. The first way is simply by examining the ratio of performers of a particular sex that are currently employed within the occupation. For example, if the occupation is predominantly performed by males, then it is said to be male sex-typed (Cohn, 1985).

The second way in which sex-typing of a job is established is slightly more complicated. It has to do with the types of behaviours and personal characteristics that are said to be held by the majority of people working in that occupation, irrespective of their sex. In research examining the sex-typing of an occupation, some researchers consider both of these ways of determining sex-typing, and some only examine one. Generally, there is a high correlation between the number of performers of a particular sex, and their respective characteristics being performed on the job. However, this is not always the case (Glick, 1991).

Researchers have begun to examine the interaction of sex of applicant and sex-typing of job and its impact on the evaluation process. These results become particularly interesting when the interaction exists even though applicants of different sexes are equally qualified. By examining contrasting occupations, researchers could determine the varying effects of the sex-typing of an occupation. Frequently the "scenario" methodology was used, where a description of an employee's performance was created, and male and female names were substituted to manipulate sex effects. Using this methodology, the two versions of sex-typing mentioned previously (ratio of sex of performers and type of
behaviour of performers) can easily be manipulated. That is, researchers can use occupations that have discrepant numbers of males and females presently working in them, or they can manipulate the behaviours that are seen to be most commonly used in that particular job. The results are far from clear. Whether an applicant of a particular sex will be undervalued, overvalued or appropriately valued when applying for a particular job has not yet been clearly decided. What is clear is that both males and females suffer from the effects of occupational stereotyping (Nieva & Gutek, 1980). Unfortunately, "male" occupations tend to have greater prestige and salary than "female" occupations (Glick, 1991). Therefore, the greater price is frequently paid by women:

In sum, the research is inconsistent regarding which sex is favoured when males and females are evaluated for male and female sex-typed jobs. Research exists that supports each of the outcomes.

**Incongruence is less favourable.**

Some researchers (Glick, Zion & Nelson, 1988; Hartman, Griffeth, Crino & Harris, 1991; Sharp & Post, 1980; Yoder & Schleicher, 1996) agree that degree of congruence between gender of applicant and sex-type of the job will determine who is favoured in the evaluation situation. These researchers feel that evaluators make stereotyped inferences about applicants based on their gender, and characteristics of the job. When these stereotypes match, the applicant is most likely to be positively evaluated.

Several studies have contrasted different sex-typed occupations, using students as subjects. Muchinsky and Harris (1977) contrasted a mechanical engineer, a day-care centre director, and a copy editor. Hartman, Griffeth, Crino and Harris (1991) contrasted the position of a word processing supervisor, and an installation supervisor, and Robbins and DeNisi (1993) contrasted an administrative assistant and a carpenter. Although Hartman et al. hypothesized that sex and job incongruence would result in lower hiring scores, their research did not support that result. However, both Muchinsky and Harris,
and Robbins and DeNisi found that ratees were disadvantaged when performing in an "out-of-role" occupation.

Rosen and Jerdee (1974) also used students, but instead of varying the occupation, they examined the influence of varying job requirements. One of the positions had demanding job requirements, which required aggressive interpersonal behaviour and decisive managerial action. The other position required only routine behaviours such as clerical accuracy and dependable performance. Their results were similar to the studies just discussed, and in general, they found that not only were women selected for managerial positions significantly less than males, but the females were more likely to be rejected when being evaluated for the demanding job.

Other researchers chose to use subjects from the work force. Sharp and Post (1980) contrasted applicants for two different writing positions, a sports writer and a fashion writer. Glick, Zion and Nelson (1988) used a sales manager for heavy machinery, and a dental receptionist. Sharp and Post found that males rated males highest for the masculine job. Glick et al. similarly found this result, and also found that females were favoured for the feminine job.

In a different approach, Glick (1991) had personnel professionals rate an applicant for a list of 35 possible jobs. The jobs had been classified by the predominant sex that performed the job, and the predominant type of behaviours required for the job. It was found not only that masculine applicants were seen as more suitable for masculine jobs, and feminine applicants more suitable for feminine jobs, but also that males were more suitable for male jobs, and females more suitable for female jobs. Robbins and DeNisi (1993) found that ratees are disadvantaged when performing in an "out-of-role" occupation. Some authors propose that in a situation where sex becomes salient, socially desirable values may be triggered.

Meta-analytic techniques have also been used to examine the evaluation of men and women in different leadership positions. Eagly, Makhijani and Klonsky (1992) found
that women were evaluated less favourably than men, especially when the women
occupied male-dominated roles, and the evaluators were men. Eagly, Karau and
Makhijani (1995) examined the effectiveness of leaders in managerial roles. Generally,
male and female leaders were equally effective; however, men were more effective in
roles defined in more masculine terms, and women were more effective in roles defined in
less masculine terms.

Thus, it appears that much support is present for the first outcome, that men and
women are detrimentally affected by attempting to perform in a sex-incongruent field.
Unfortunately, much support also exists for the opposing case, that applicants are
positively affected by attempting to perform in a sex-incongruent field, as will be seen in
the next section.

Incongruence is favourable.

Some studies have established that when a ratee is performing in an occupation
that is incongruent with the individual's sex, the evaluation of the person is favourably
biased. Although this result is less frequent than the previous result (that evaluations of
incongruent performers are negatively biased), its occurrence does warrant some
examination.

Abramson, Goldberg, Greenberg and Abramson (1977) discovered that, when
examining the evaluation of performance of work done by paralegals and lawyers, both
males and females saw female lawyers as being most competent. Furthermore, the ratings
given the female attorneys by other females were the highest ratings given.

Certain special conditions were identified under which a sex-incongruent ratee is
favourably biased. Although Muchinsky and Harris (1977) found in two conditions that
females were undervalued in masculine jobs (previously discussed), when they examined
only the females with average academic standing (grades presented on the resume), they
found that females were favoured over males in the masculine jobs. Likewise, Jabes
(1980) found that females were favoured in masculine and feminine managerial jobs when evaluated by other women.

In general, considering each of the outcomes just discussed, although many different occupations have been examined, no real consensus seems to have emerged. Almost all researchers suggest that variables other than just sex-linkage of job and sex of rater and ratee need to be considered to fully explain stereotyping biases influencing the evaluation process.

**Level of Performance**

Another variable that began to be examined was that of performance level. When looking at level of performance, there are two variations to consider. The first is that subjects are examining the actual performance of ratees, and are asked to either make a hiring decision, or evaluate the performance. The second is that they are examining qualifications and must extrapolate to estimate the expected performance.

When examining actual performance, various jobs have been considered. Some researchers used very simple activities such as people stocking shelves (Bigoness, 1976), or students shelving library books (Schmitt & Lappin, 1980). With these types of jobs, it is very easy to vary the level of performance of each of the ratees. Other studies examined more complex jobs, for example, examining the performance of university professors, (Dobbins, Cardy & Truxillo, 1986) or the behaviour of managers (Butterfield & Powell, 1981; Moore, 1984). In these cases, one can still use the scenario methodology to ensure that the same behaviours are being performed by particular ratees.

When raters are asked to examine qualifications, more complex jobs are more frequently examined, such as managerial or sales jobs (Dipboye, Arvey & Terpstra, 1977). In this case, the rater must evaluate the qualifications, and then extrapolate those to anticipate future performance. A greater degree of variability may occur because of the uncertainty.
Another variable that can be included is the type of job examined. This variation examines the impact of varying types of jobs, and job activities on the subjects' ratings of applicant suitability (Gerdes & Garber, 1983; Heilman, Martel & Simon, 1988; Muchinsky & Harris, 1977).

There have been many studies that examined performance, and its evaluation. Both Bigoness (1976) and Schmitt and Lappin (1980) had students evaluate videotaped work samples of potential employees performing specific actions (stocking grocery shelves and shelving library books). In each study, the ratee performed at either a low or high level of performance, as determined by the number of items shelved. Each ratee was either male or female, and either black or white. The rater was asked to evaluate overall performance of the ratee. Bigoness found that high performing females were rated significantly higher than high performing males, but no differences occurred at low levels of performance. Contrary to Bigoness' results, Schmitt and Lappin found no gender differences for ratee.

In a study that involved a greater degree of analysis by the raters, Dobbins, Cardy and Truxillo (1986) had students evaluate the overall performance of university professors, based on written scenarios describing performance. Level of performance of ratee was manipulated, as was gender of both the rater and ratee. The study found that in general, male ratees were evaluated as more effective than female ratees, however, males gave females slightly higher ratings.

In a similar study that used managers as ratees, Butterfield and Powell (1981) examined sex of ratee, sex of rater and performance level. They examined these factors for two different managerial styles: initiating structure and consideration, but found no gender differences for ratee.

Moore (1984) examined the effect of level of performance, mode of behaviour and ratee sex in a male sex-typed occupation. Similar to Bigoness' results, she found that high
performing females were rated significantly higher than high performing males, and that no sex differences appeared at low levels of performance.

Many studies have examined qualifications, and had subjects extrapolate to predict future performance. Dipboye, Arvey, and Terpstra (1977) had students evaluate bogus resumes, as applicants for position of trainee in sales management. The resumes varied in sex, qualifications and attractiveness. Male ratees were evaluated as more effective than female ratees, however, it was found that the sex of the rater had no effect on the results.

A variation on this design examines the impact of varying types of jobs, and job activities on the subjects' ratings of applicant suitability. A study by Muchinsky and Harris (1977) had students evaluate three groups of job resumes. Sex, scholastic standing (high, average and low) and academic major were varied, so that within each group, subjects had the same major, and were applying for the same job, but each group of resumes was considered for a different job. The mechanical engineering majors were applying for a job as a management trainee in the field of mechanical engineering (masculine job), the child development majors were applying for a job as an assistant director of a child day-care centre (feminine job), and the journalism majors were applying for a job as an assistant copy editor for a city newspaper (job equal in masculinity/femininity). They found that male raters gave females higher ratings than other males. They also found that female ratees were evaluated as more effective than male ratees, although only in the middle performance range.

Gerdes and Garber (1983) also examined rater sex, level of qualifications, and type of job. However, rather than focusing on the sex-typing of the occupation, they focused on the difficulty of the job. The applicants were applying for an engineering job that entailed either technical engineering tasks or managerial tasks in addition to the technical tasks. They found that male ratees were evaluated as more effective than female ratees.

In a study by Heilman, Martel and Simon (1988), students reviewed work samples of hypothetical job candidates, in order to examine the conditions that influence the
evaluation of women relative to men in traditionally male jobs. Variables examined included sex-type of job [extremely (football) or moderately (tennis) male sex-typed], level of performance ability, ratee sex and rater sex. They found that the sex of the rater had no effect on the results, but that high performing females were rated significantly higher than high performing males.

In previous studies, when feminine traits were used, they were not necessarily relevant to the job. Traits such as emotional, gentle or kind have been used. A study by Hartman, Griffeth, Miller and Kinicki (1988) examined how working students assign traits to ratees under low and high performance in gender-linked jobs (nurse versus computer programmer). They ensured that social desirability, task difficulty and status were equal for the two jobs in pretesting. The subjects were asked to evaluate several dimensions of performance which were summed to create an overall performance measure. Subjects also evaluated the personality of the stimulus person. Raters also had to estimate the likelihood that the stimulus person would be promoted. They found that high performance was viewed as more masculine, and low performance was viewed as more feminine by both males and females.

Clearly, consensus has not been found regarding the impact of different levels of performance. Thus, researchers must search for more factors in order to understand why such varying results can be found.

Level of Inference (Evaluative Leap)

Nieva and Gutek (1980) reviewed the literature of sex effects on evaluation, and found that greater evaluator bias was found in studies involving the evaluation of qualifications than in the studies focusing on past performance. They proposed that the relevant difference between the two types of studies involved the level of inference required to perform the activities of the study. The evaluation of past performance required the lowest level of inference from the evaluator, since the assessment was confined to the behaviour or product exhibited, and no further speculation was required.
In contrast, situations that called for judgments regarding a person's qualifications for a job required the evaluator to make an assessment for the future about which little information was available. Consequently, they concluded that the greater the amount of inference required in the evaluation situation, the greater the evaluative leap required, the more likely it was that the rater would rely on his/her own personal beliefs and values (stereotypes), and therefore the greater the likelihood that evaluation bias would be found.

In the field of social psychology, a series of studies done by Anne Locksley in the early 1980's (Locksley, Borgida, Brekke & Hepburn, 1980; Locksley, Hepburn & Oritz, 1982) showed that when subjects were given directly relevant diagnostic individuating information about a ratee, the effect of sex stereotypes was eliminated. Obviously, these studies were much less complex than evaluative hiring decisions, and the presence of the trait was either directly inferred, or not inferred at all. However, the results were in line with Nieva and Gutek's proposition that the level of inference required was directly related to the amount of stereotyping likely to occur.

Tosi and Einbender (1985) performed a meta-analysis that examined and supported the proposition that when raters have limited job information, sex stereotyping influencing decision making is more likely to occur, but when more information is presented, less biased decisions are likely to be made.

The author will use the term "evaluative leap" to refer to the level of inference that is required to evaluate an applicant for a particular position. This factor has been manipulated in research studies in two general ways. In the first method, the information that was presented to a rater describing a ratee was varied. In the second commonly researched way of manipulating evaluative leap, the job materials used remained constant, but the applicant was evaluated for different jobs.

**Manipulating relevance of information.**

In this first method of manipulating the evaluative leap, raters in different conditions received different types of material. Some raters may have received only a
resume on which to base their decisions, while raters in another condition received that resume, plus additional information (perhaps a summary of employer's comments). In that case, it was the study materials that were used to manipulate the evaluative leap variable.

Heilman (1984) proposed that in order to break the perception of "lack of fit" between particular job requirements and characteristics typical of particular gender groups, situational factors must be presented. These factors must demonstrate that the subject possesses characteristics atypical of their particular gender group, and thus possess the characteristics required for the job. In employment settings, Heilman (1984) demonstrated that the necessary factor must be information which is predictive of job performance. Information about past success not related to on-the-job success did not prevent sex-stereotyping. In fact, the low relevance information condition sometimes produced responses more unfavourable to women than did the no information condition.

Oliphant and Alexander (1982) examined the impact of extraneous information. They varied sex, age, marital status and academic achievement in bogus resumes given to professionals in the field, for a management trainee position. It was found that for those with high academic achievement, married females and not-identified females were rated highest, while for single people there was no difference between males and females. So it seems that females are favoured in the high academic condition. In the low and not-given academic status conditions, little discrimination occurs.

Manipulating the amount of information presented to an evaluator is one area in which much more research could be done. A greater knowledge of the situations that increase the probability of bias in evaluations has large practical implications for the performance appraisal process.

**Manipulating type of job.**

In the second commonly researched way of manipulating evaluative leap, the job materials used remained constant, but the applicant was evaluated for different jobs. For one job, the evaluative leap required to evaluate the ratee was less, and it was relatively
clear that the ratee had the required job skills. For the second job, however, the ratee's resume did not indicate whether or not the ratee possessed the required job skills, and hence, a greater evaluative leap was required to complete the evaluative decision.

It had been hypothesized that the evaluative leap required in making decisions was related to amount of sex-stereotyping used in the decision making process. That is, when subjects were given differing amounts of information, they were more or less likely to sex-stereotype. With the development of this line of theory, researchers examined the more applied implications of this proposition.

Gerdes and Garber (1983) examined applicant evaluation within the field of engineering. They had subjects evaluate an applicant for two jobs. One was an engineering job that required only technical skills, and the other was an engineering job that involved some managerial responsibilities. Also manipulated was the sex and the level of competence of the applicant. They found that in the condition where the applicant was clearly qualified for the job (the engineering job) no sex-stereotyping occurred, and males and females were equally evaluated for the job. However, the managerial condition did result in sex-stereotyping, with the result that the male was more highly recommended for the position. In the managerial condition, the applicant's resume did not directly address the job requirements, and hence, raters assumed that males possessed the necessary job skills, and assumed that females did not possess the necessary job skills.

It appears that the evaluative leap required is perhaps one area of research where some sort of consensus has formed. The research seems to indicate that the more job relevant the additional information, the greater its ability to decrease stereotyping. This area of research has obvious implications for the field, as not every applicant has directly relevant job skills on his/her resume.

Combining Evaluative Leap and Sex-typing of Occupation

Few studies have combined both the factors of evaluative leap and sex-typing of occupation. Combining the factors allows one to examine the impact of evaluative leap,
when examined across different sex-typed jobs. Especially when combined with rater and ratee sex variables, studies involving all of these variables will indicate situations in which particular candidates will be favoured.

Heilman, Martell and Simon (1988) contrasted moderately male (tennis photographer) and extremely male (football photographer) sex-typed jobs. Jackson (1983b) contrasted masculine (computer systems analyst and operations researcher), feminine (dietitian and bank teller) and sex-neutral (vocational/educational counselor and health practitioner) occupations. Gordon and Owens (1988) contrasted feminine (nonmanagerial) and masculine (managerial) jobs.

Heilman et al.'s study revealed that when level of performance was not described (high evaluative leap required), females were rated lower on both the moderately and the extremely male sex-typed occupations. However, when it was indicated that the applicant performed at a high level (low evaluative leap required), females were rated equally in the moderately male sex-typed job, and were rated higher in the extremely male sex-typed job.

Gordon and Owens performed a similar study, but manipulated the amount of information available about the applicant by providing subjects with either a resume or a resume plus descriptive letter. In the resume-only condition (high evaluative leap required) their results supported those of Heilman et al.'s, meaning that in a male job, the males were preferred. Gordon and Owens also examined a female sex-typed job, and found that in the resume-only condition, females were preferred. Surprisingly, the additional information provided by the letter did not remove the effects of sex-stereotyping. In the resume and letter condition, males were preferred for both the masculine and feminine job.

In something of a variation, Jackson had raters evaluate applicants for male and female sex-typed occupations, and decide whether they would assign routine or challenging tasks to the applicants. It was found that males were favoured for the masculine job, and females were favoured for the feminine job, but the routine job duties
were assigned to the feminine person, regardless of sex, and the challenging job duties were assigned to the masculine person, regardless of sex.

From these few studies, it appears that under a high evaluative leap, females will be favoured for female jobs, and males will be favoured for male jobs. Interestingly, in the low evaluative leap condition, no consensus appears, although it is clear that different results appear than in the high evaluative leap condition. It is clear that this is an area of research that needs to be more extensively and methodically explored.

The Present Study

Although many variables have been explored (including sex of rater, sex of ratee, sex role of ratee, sex-typing of the occupation, level of performance, and evaluative leap required), consensus has yet to appear in the literature. Some conclusions have been drawn, but most research questions have resulted in a set of inconsistent findings.

A key problem with earlier studies is that one or two variables are typically studied in isolation. Thus inconsistent findings may result from interactions of the predictors. In the present study, the author will manipulate or control as many of the previously discussed factors as is possible. Factors that will be manipulated will include sex of rater, sex of ratee, sex-typing of occupation, and evaluative leap required.

Of particular interest is the interaction between the evaluative leap variable and the sex-typing of the occupation. Many authors have commented on the lack of women in upper management positions (Alimo-Metcalfe, 1994; Burke, 1996; Fisher, 1987; Jamieson, 1995; Morrison & Von Glinow, 1990; Parker & Fagenson, 1994). Obviously, to get to these positions, women at some point must be promoted either from within the organization, or outside. Consequently, this study examines the interaction between sex-typing of occupation and evaluative leap variables for an indication as to why women may not be advancing. Raters (both males and females) will evaluate a job applicant (either male or female) for two jobs (both being either male sex-typed or female sex-typed). The
applicant will be clearly qualified for the entry level position. For the managerial level position, a greater evaluative leap will be required to complete evaluation. The combination of both the evaluative leap and occupational sex-typed variables along with the male and female raters and ratees will allow specific situations to be identified where bias is occurring.

**Hypotheses**

Four hypotheses are offered, based upon detailed examination of previous literature. For the hiring and competence variables, three general hypotheses are put forth. First it is predicted that females will be more likely to be hired (Ia), and seen as more competent for the female sex-typed job (Ib), and that males will be more likely to be hired (Ic), and seen as more competent for the male sex-typed job (Id).

Second, it is predicted that the evaluative leap will interact with the job and the sex of the applicant. This will mean that for the entry level position, males and females will be equally likely to be hired (IIa), and will be seen as equally competent for both the engineering and the nursing jobs (IIb). However, for the managerial level jobs, females will be more likely to be hired, and will be seen as more competent, for the female sex-typed job, and males will be more likely to be hired, and will be seen as more competent for the male sex-typed job (IIc, d).

Third, it is predicted that compared to female raters, the male raters will be more likely to stereotype [hire and view females as more competent for female occupations (IIIa), and hire and view males as more competent for male occupations (IIIb)].

Finally, for the salary variable, three predictions are offered. It is predicted that females will in general be given lower salaries than males (IVa). Secondly, engineers will be given higher salaries than nurses (IVb). Finally, an interaction will occur such that females doing a managerial job will get paid a lower salary than males doing a managerial job (IVc).
Method

Participants

Two hundred and twenty three subjects were recruited in the first administration from an undergraduate psychology course. Initial testing of the assumptions of analysis revealed an imbalance in the cell sizes. Consequently, a second administration of the study was run to fill up the small cells. Seventy-two subjects were recruited in the second administration from the same undergraduate psychology course. In total, 295 subjects were recruited for the study. In the first administration, 81 males and 140 females participated, two subjects did not indicate sex. In the second administration, 37 females and 35 males participated. Following the Subject Pool guidelines, in exchange for participation in the study, the subjects received course credit.

The data of the two subjects who did not indicate sex had to be removed. The data of 11 more subjects were not used due to incompletion of the questionnaire. The data of 68 subjects were removed because they did not pass the manipulation check (see below). The data of 64 other subjects were removed (randomly) in order to equate the number of subjects in each cell of the study. The final sample used consisted of 152 subjects, 76 males and 76 females (see Table 1 for a summary of the demographic information). The average age for males in this sample was 19.90 (SD= 1.99 ; range 17-31 years). The average age for females in this sample was 19.58 (SD= 1.46 ; range 18-27 years).

Measures

Dependent Variables

Hiring.
Table 1

**Distribution of Subjects' Demographic Information**

<table>
<thead>
<tr>
<th>Demographic Details</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managerial Experience</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some</td>
<td>9</td>
<td>13</td>
<td>22</td>
</tr>
<tr>
<td>None</td>
<td>67</td>
<td>63</td>
<td>130</td>
</tr>
<tr>
<td>Ethnic Origin</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Caucasian</td>
<td>39</td>
<td>38</td>
<td>77</td>
</tr>
<tr>
<td>South Asian</td>
<td>4</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>East Asian</td>
<td>32</td>
<td>33</td>
<td>65</td>
</tr>
<tr>
<td>Class</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morning</td>
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<td>30</td>
<td>60</td>
</tr>
<tr>
<td>Afternoon</td>
<td>46</td>
<td>46</td>
<td>92</td>
</tr>
<tr>
<td>Degree</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sciences</td>
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<td>14</td>
<td>38</td>
</tr>
<tr>
<td>Applied Sciences</td>
<td>7</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td>Business</td>
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<td>4</td>
<td>7</td>
</tr>
<tr>
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<td>43</td>
<td>77</td>
</tr>
<tr>
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<td>7</td>
</tr>
<tr>
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<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Job Order</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry then managerial</td>
<td>37</td>
<td>45</td>
<td>82</td>
</tr>
<tr>
<td>Managerial then entry</td>
<td>39</td>
<td>31</td>
<td>70</td>
</tr>
</tbody>
</table>
Effects of Sex and Sex-typing

Subjects were required to evaluate a job applicant for two job positions and to make a hiring decision for each of the positions (see Appendix A11 and A12). Subjects responded to "How likely would you be to hire this candidate for this position?" on a five point Likert scale, ranging from "very unlikely" to "very likely".

**Salary.**

Subjects were asked to estimate a starting salary for each of the two jobs examined. The subjects were given a suggested salary range. For the entry level position, that range was $35,000 to $45,000. For the managerial position, that range was $45,000 to $55,000. Subjects responded to "What would your recommended starting annual salary be?".

**Competence.**

This dependent variable was composed of the sum of responses to four questions, addressing the areas of likelihood of success ("If you were to hire this applicant, what is your estimate likelihood of success for this applicant?"), potential for long service within the organization ("What is the potential of long service to the organization from this applicant?"), likelihood of the applicant fitting in within the organization ("What is the likelihood of this applicant fitting in within this organization?"), and the likelihood of the applicant receiving further promotions ("What is the likelihood of this applicant receiving further promotions within this organization?"). Each question was answered on a five point Likert scale, with responses ranging from "very unlikely" to "very likely".

**Personality measures.**

Subjects were asked to rate the applicant on a series of ten adjectives (see Appendix A6). Each response was placed on a five point Likert scale, ranging from not possessing the characteristic to possessing the characteristic. The adjectives were drawn from the Bem Sex Role Inventory (1974), and Wiggins' (1979) conceptualization of dominance and nurturance.

**Interpersonal/technical skills.**
Subjects were asked to respond to two separate questions, one addressing the applicant's interpersonal skills ("Estimate the level of this applicant's interpersonal skills"), and the other addressing the applicant's technical skills ("Estimate the level of this applicant's technical expertise"). Subjects responded on a five point Likert scale, ranging from "very low" to "very high" (see Appendix A6).

**Independent Variables**

**Rater sex.**

The sex of the study participant (rater) was requested on the first page of the questionnaire, in the demographic information section (see Appendix A1).

**Ratee sex.**

The sex of the applicant within the study materials (ratee) was manipulated. Raters received either a male or a female ratee. The sex of the ratee was indicated only on the applicant resume, in the section containing comments from previous supervisor (see Appendix A4, and A5). Sex was indicated by the use of "he" or "she" in this section.

**Level of job.**

Two job levels were examined. All subjects will be administered each of the two job levels, so that this variable is a within-subjects variable (see Appendix A1). The first is an entry level position (see Appendices A7 and A9). In the job description, this position is described strictly in terms of job skills relevant to the position. The second job level considered was a managerial position (see Appendices A8 and A10). This job is described including the same job skills as those of the entry level position, but with the additional job skills required of a manager.

The job levels were created so that the applicants would clearly be qualified for the entry level position, but lacking the clarity of qualification for the managerial position. The appearance of qualification within the entry level position was created by the applicant having already performed a similar job to the entry level position, and by indicating in his/her cover letter that s/he possessed the specific job skills required for the job. The
applicant lacked any managerial experience that would indicate qualification for the managerial job.

**Sex-typing of job.**

Stereotypically masculine and feminine occupations were chosen (based on previous research by Yoder & Schleicher, 1996). Nursing was chosen to represent the feminine occupations, and engineering was chosen to represent the masculine occupations.

**Manipulation Checks**

**Job title.**

To ensure that the raters were aware of the position for which they were evaluating the ratee, they were asked to indicate the "job applying for" after having read the job description, but before evaluating the ratee for the position (see Appendices A11, and A12). Sixty-eight questionnaires were discarded because the raters failed to indicate the appropriate job.

**Extraneous Variables**

**Managerial experience.**

Subjects were asked to indicate the number of years of managerial experience they possessed (see Appendix A1). Research has shown that years of managerial experience can affect employment hiring decisions (Izraeli & Izraeli, 1985; Fusilier & Hitt, 1983). It was not expected that university undergraduates would possess a high degree of managerial experience.

**Age.**

Subjects were asked to indicate their age in the demographic information section. Research has suggested that age may affect the evaluation process (Fusilier & Hitt, 1983; Gordon, Rozelle & Baxter, 1989; Rosen & Jerdee, 1978). However, very little variance was expected in the ages of the subjects.

**Ethnic origin.**
Subjects were asked to indicate their ethnic origin in the demographic information section. All responses were then grouped into one of four possible categories: Caucasian, south Asian, east Asian, and other (e.g. African).

Class.

Subjects came from two sections of an undergraduate psychology course. One section was taught in the morning, and one in the afternoon. Both sections were taught by the same instructor. Class was indicated by coding on the questionnaire. It was expected that no differences would appear between the classes.

Degree.

The degree that the student was pursuing was coded. Degrees were broken down into five categories: sciences, applied sciences, business, arts, and miscellaneous. No differences were expected to appear between degrees.

Ordering of job level administration.

The order in which the job level was administered was counterbalanced to avoid order effects.

Materials

Materials were specifically created for this study. Each rater received an introduction page, describing the steps that they were to take (see Appendix A1). They received a cover letter (see Appendices A2 and A3), and resume of a ratee (see Appendices A4 and A5). They also received two job descriptions (see Appendices A7, A8, A9 and A10), and an evaluation form for each of the job descriptions (see Appendices A11, A12). The development of the cover letter, resume and job descriptions will now be described.

Cover Letter

The cover letter was created to add realism to the study (see Appendices A2 and A3). The cover letter confirms that the applicant has been working in the entry level
position for three years. It explains the reasons for the applicant requesting a job transfer. Finally, it reiterates that the applicant has the actual job skills that are outlined in the entry level job description. This cover letter intentionally reveals no other personal information, including personality traits, characteristics or gender of the applicant.

**Resume**

The resume was created to indicate that the applicant has obtained some work experience in the entry level job (see Appendices A4 and A5). The "comments from last supervisor" section indicates two things. First, it refers to the sex of the applicant by using "he" or "she". Secondly, it indicates that the applicant is a very average employee. Again, no personal information was revealed other than the sex of the applicant.

**Job Description**

Job descriptions were created after consulting the National Occupational Classification Career Handbook (Engineering Managers #0211, Civil Engineers #2131, General Duty Registered Nurses #3152.1 and Head Nurses and Supervisors #3151). This resource contains a description of all job titles, and the job behaviours and requirements specific to each occupation. For the entry level position, specific job behaviours were chosen (see Appendices A7 and A9). For the managerial position, general job behaviours were chosen that were common to both the engineering and the nursing fields, and that were not already included in the entry level positions (see Appendices A8, and A10).

**Procedure**

Subjects were asked if they wished to participate in a research study. If they so desired, they were given an envelope containing the study materials, and asked to return the materials at the next class.

The study materials were composed of an introductory page, a cover letter and resume, an adjective checklist, two job descriptions, and two evaluation forms.
Results

Treatment of the Data

After the first administration of the questionnaires, it was found that the proportion of male responses received was insufficient (two conditions had such a small number of respondents that the ANOVA assumption of equal n's would have been seriously compromised), so the questionnaire was administered again. In total, 356 questionnaires were given out, and 295 questionnaires were returned, resulting in an 83% response rate. In the second administration, all questionnaires completed by women (37) were removed. This left 258 of the original 356 questionnaires. Eleven cases were removed because pertinent data were missing (either demographic information, or the questionnaire was not completed). Another 68 questionnaires were removed because the manipulation check was either wrong, or was not completed at all. In the cases that the manipulation check was not completed, it was argued that these participants were not fully concentrating on the study, and therefore elimination of their data was required. Finally, 27 cases were eliminated in order to equalize the cells within the study. In the analysis of the data, 152 questionnaires were used.

A between-within analysis of variance (ANOVA) was used to examine the dependent variables of hiring, salary, and competence. Generally, the assumptions of sphericity, homogeneity of covariance, and homogeneity of variance would have to be examined, but because only two levels were present for each of the dependent variables within the design, only the assumptions of independence, normality and homogeneity of variance needed to be examined. The data can be assumed to be robust to the assumptions of independence and normality. Homogeneity of variance does not need to be examined because the cell n's were equal.
Fully between-subjects ANOVAs were also used to examine the dependent variables of masculinity, femininity, dominance, nurturance, interpersonal ability, and technical abilities. The assumptions for this type of ANOVA include independence, normality, and homogeneity of variance. Again, the data can be assumed to be robust to the assumptions of independence and normality, and homogeneity of variance does not need to be examined because the cell n's were equal.

**Between Group Comparisons on the Demographic Variables**

In order to ensure that no general group differences existed for several extraneous variables, comparisons were conducted (see Table 2). No group differences appeared for the independent variables age, years of managerial experience, year of degree, or degree with respect to the dependent variables hiring (entry level and managerial level), salary (entry level and managerial level), competence (entry level and managerial level), masculinity, femininity, interpersonal skill or technical ability.

Differences did appear for class in the feminine variable, and for ethnicity in the managerial hiring and the entry level salary variables. However, because these were the only differences to appear, their presence was dismissed as due to chance.

**Manipulation Checks**

**Job Position**

The data of 68 subjects were removed because they did not indicate correctly the position for which they were evaluating the ratee.

**Level of Job**

A main effect for job level was expected in the analysis of the hiring, salary and competence dependent variables. The study was designed to create the impression that the applicant was clearly qualified for the entry level position, and not necessarily qualified for the managerial position.
Table 2

Results of Significance Tests (t-values) on Various Dependent Variables for Six Dichotomized Independent Variables

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Class&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Age&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Ethnicity&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Managerial Experience&lt;sup&gt;d&lt;/sup&gt;</th>
<th>Degree&lt;sup&gt;e&lt;/sup&gt;</th>
<th>Year&lt;sup&gt;f&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hiring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry Level</td>
<td>-1.14</td>
<td>1.42</td>
<td>-0.73</td>
<td>-0.61</td>
<td>0.97</td>
<td>1.01</td>
</tr>
<tr>
<td>Manager</td>
<td>-1.15</td>
<td>1.36</td>
<td>-3.37**</td>
<td>0.98</td>
<td>0.11</td>
<td>1.08</td>
</tr>
<tr>
<td>Salary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry Level</td>
<td>-1.40</td>
<td>1.71</td>
<td>-2.01*</td>
<td>1.08</td>
<td>0.07</td>
<td>1.62</td>
</tr>
<tr>
<td>Manager</td>
<td>-1.77</td>
<td>0.29</td>
<td>-1.70</td>
<td>-0.38</td>
<td>-0.60</td>
<td>1.91</td>
</tr>
<tr>
<td>Competence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry Level</td>
<td>-1.48</td>
<td>-0.15</td>
<td>-0.01</td>
<td>-0.60</td>
<td>0.55</td>
<td>-0.88</td>
</tr>
<tr>
<td>Manager</td>
<td>-0.54</td>
<td>1.18</td>
<td>-0.88</td>
<td>-0.32</td>
<td>0.44</td>
<td>0.81</td>
</tr>
<tr>
<td>Feminine</td>
<td>-2.36*</td>
<td>1.03</td>
<td>0.10</td>
<td>0.25</td>
<td>0.64</td>
<td>0.70</td>
</tr>
<tr>
<td>Masculine</td>
<td>-1.09</td>
<td>1.70</td>
<td>-0.75</td>
<td>0.61</td>
<td>0.32</td>
<td>1.09</td>
</tr>
<tr>
<td>Technical</td>
<td>-0.58</td>
<td>1.09</td>
<td>-1.01</td>
<td>1.23</td>
<td>-0.94</td>
<td>1.68</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>-1.29</td>
<td>1.78</td>
<td>-0.67</td>
<td>0.68</td>
<td>1.57</td>
<td>0.67</td>
</tr>
</tbody>
</table>

Note. The particular degrees of freedom differ from one dependent variable to another.

<sup>a</sup> morning and afternoon classes  <sup>b</sup> up to 19 years old, and 20 years old and older  <sup>c</sup> Asian and Caucasian  <sup>d</sup> no managerial experience, and some managerial experience  <sup>e</sup> Science and Arts majors  <sup>f</sup> first or second year of university, and third year or more

*p < .05  **p < .01
For hiring, a four way between-within ANOVA was used, and a main effect for job level was found ($F(1, 144)=412.04, p<.001$). This result revealed that applicants were given higher rating scores for the entry level position ($M=4.41$) than for the managerial position ($M=2.87$). For salary, a four way between-within ANOVA was used, and a main effect was found for job level ($F(1, 144)=515.45, p<.001$), indicating that, the managerial job ($M=$46,170) pays more than the entry level position ($M=$40,050). For competence, a four way between-within ANOVA was used, and a job level main effect was also found ($F(1, 144)=195.80, p<.001$). Examination of the means indicated that applicants were considered more competent in the entry level position ($M=16.45$) than in the managerial position ($M=13.91$). All of these results were in the expected direction.

**Primary Analyses**

**Hiring**

To examine the hiring dependent variable, a four way between-within ANOVA was used (see means in Table 3, and ANOVA output in Appendix B, Table B1). The between-subjects independent variables included sex of rater (rater sex), sex of ratee (ratee sex), and sex-typing of job (job). The within-subjects independent variable was job position examined (job level). A main effect for ratee sex appeared ($F(1, 144)=5.26, p<.05$), revealing that females ($M=7.54$) were given higher rating scores for hiring than men ($M=7.01$).

A job by job level interaction was found ($F(1, 144)=8.70, p<.01$). Examination of the simple main effects for job at levels of job level revealed that differences occurred in job level at the entry level job ($F(1, 144)=11.70, p<.001$), but not at the managerial level job ($F(1, 144)=0.54, p>.05$). These results indicate that in the entry level job, nurses ($M=4.59$) were significantly more likely to be hired than engineers ($M=4.22$), but in the managerial job, there was no significant difference in the hiring scores between the nurses and the engineers (respectively, $M=2.83$ and $M=2.91$).
Table 3

Mean Ratings for Hiring, Salary, and Competence in Each Experimental Condition

<table>
<thead>
<tr>
<th>Experimental Condition</th>
<th>Dependent Variables</th>
<th>Hiring</th>
<th>Salary</th>
<th>Competence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male Rater</td>
<td>Male Ratee</td>
<td>4.16</td>
<td>$39,740</td>
<td>16.05</td>
</tr>
<tr>
<td></td>
<td>Female Ratee</td>
<td>4.32</td>
<td>41,030</td>
<td>16.63</td>
</tr>
<tr>
<td>Female Rater</td>
<td>Male Ratee</td>
<td>4.00</td>
<td>39,080</td>
<td>15.63</td>
</tr>
<tr>
<td></td>
<td>Female Ratee</td>
<td>4.42</td>
<td>40,370</td>
<td>16.42</td>
</tr>
<tr>
<td>Managerial Level</td>
<td>Male Rater</td>
<td>2.63</td>
<td>45,450</td>
<td>12.84</td>
</tr>
<tr>
<td></td>
<td>Female Ratee</td>
<td>2.84</td>
<td>46,660</td>
<td>14.63</td>
</tr>
<tr>
<td>Female Rater</td>
<td>Male Ratee</td>
<td>2.68</td>
<td>45,740</td>
<td>13.68</td>
</tr>
<tr>
<td></td>
<td>Female Ratee</td>
<td>3.47</td>
<td>46,790</td>
<td>13.58</td>
</tr>
<tr>
<td>Nurse</td>
<td>Male Rater</td>
<td>4.47</td>
<td>40,160</td>
<td>16.00</td>
</tr>
<tr>
<td></td>
<td>Female Ratee</td>
<td>4.63</td>
<td>40,260</td>
<td>17.32</td>
</tr>
<tr>
<td>Female Rater</td>
<td>Male Ratee</td>
<td>4.58</td>
<td>40,090</td>
<td>16.32</td>
</tr>
<tr>
<td></td>
<td>Female Ratee</td>
<td>4.68</td>
<td>39,680</td>
<td>17.26</td>
</tr>
<tr>
<td>Managerial Level</td>
<td>Male Rater</td>
<td>2.79</td>
<td>46,790</td>
<td>12.95</td>
</tr>
<tr>
<td></td>
<td>Female Ratee</td>
<td>3.11</td>
<td>45,890</td>
<td>15.11</td>
</tr>
<tr>
<td>Female Rater</td>
<td>Male Ratee</td>
<td>2.74</td>
<td>46,580</td>
<td>14.26</td>
</tr>
<tr>
<td></td>
<td>Female Ratee</td>
<td>2.68</td>
<td>45,470</td>
<td>14.21</td>
</tr>
</tbody>
</table>
A job by rater sex by job level three-way interaction was found ($F(1,144)=5.09$, $p<.05$). Examination of the simple interaction effects for job level by job at levels of rater revealed a significant interaction for the female raters ($F(1,144)=13.45$, $p<.001$) but not for the male raters ($F(1,144)=0.25$, $p>.05$). Examination of the simple simple main effects for job at female rater for levels of job level revealed a significant effect for both the entry level position ($F(1, 144)=7.65$, $p<.01$) and the managerial position ($F(1, 144)=5.86$, $p<.05$). These results indicate that for the female raters, in the entry level job, nurses ($M=4.63$) were given higher hiring scores than engineers ($M=4.21$), but in the managerial job, engineers ($M=3.08$) were given higher hiring scores than nurses ($M=2.71$). Examination of simple main effects for job at levels of rater revealed a significant effect for males ($F(1,144)=5.11$, $p<.05$) but not for females ($F(1,144)=0.05$, $p>.05$). These results indicate that males rated the nurse ($M=7.50$) higher than they rated the engineer ($M=6.97$), but females rated the nurse ($M=7.34$) and the engineer ($M=7.29$) approximately equally.

**Salary**

To examine the salary dependent variable, a four way between-within ANOVA was used (See means in Table 3, and ANOVA output in Appendix B, Table B1). The between independent variables include sex of rater (rater sex), sex of ratee (ratee sex), and sex-typing of job (job). The within independent variable was job position examined (job level).

A significant job by ratee sex interaction was found ($F(1,144)=6.28$, $p<.05$). Examination of the simple main effects at levels of ratee sex revealed significant interactions for both male and female ratees ($F(1,144)=6.44$, $p<.05$) and ($F(1,144)=6.13$, $p<.05$). Examination of the means revealed that males were given significantly higher salaries as nurses ($M=$43,405) than as engineers ($M=$42,500), and that females were given significantly higher salaries as engineers ($M=$43,710) than as nurses ($M=$42,830).
Competence

The four variables used to create the competence variable were found to correlate significantly (see Table 4). Therefore, the competence variable for the entry level position ($\alpha=0.64$) was created by summing the scores for the likelihood of success item, the potential for long service item, the likelihood of fitting in item, and the likelihood of further promotions item. Likewise, the competence variable for the managerial position ($\alpha=0.74$) was created by summing the scores for the likelihood of success item, the potential for long service item, the likelihood of fitting in item, and the likelihood of further promotions item.

To examine the competence dependent variable, a four way between-within ANOVA was used (see means in Table 3, and Appendix B, Table B1 for ANOVA output). The between independent variables include sex of rater (rater sex), sex of ratee (ratee sex), and sex-typing of job (job). The within independent variable was job position examined (job level).

A ratee sex main effect was found ($F(1,144)=6.04, p<.05$), indicating that the female ratees ($M=31.29$) are rated more highly in the competence items than male ratees ($M=29.43$). A ratee sex by rater sex by job level interaction was found ($F(1,144)=7.35, p<.01$). Simple interaction effects were run for ratee by job level at each level of rater. A significant effect was found for the ratee by job level interaction for male raters ($F(1,144)=3.97, p<.05$) but not for the ratee by job level interaction for female raters ($F(1,144)=3.38, p>.05$). Simple simple main effects were run for ratee at male rater for each level of job level, and significant results were found for both entry level ($F(1,144)=6.77, p<.05$) and managerial level ($F(1,144)=29.37, p<.001$). Examination of the means indicated that for both the entry level and the managerial level, male raters viewed the female ratees (respectively, $M=16.97$, and $M=14.87$) as being more competent than the male ratees (respectively, $M=16.03$, and $M=12.89$). Simple main effects were examined for ratee at levels of rater, and significant results were found for the male rater.
Table 4

Intercorrelations of the Elements of Competence for Each Level of Job

<table>
<thead>
<tr>
<th>Element</th>
<th>Entry Level Job</th>
<th>Managerial Level Job</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Fits-in</td>
<td>.34*</td>
<td>.49*</td>
</tr>
<tr>
<td>Promotion</td>
<td>.45*</td>
<td>.08</td>
</tr>
<tr>
<td>Success</td>
<td></td>
<td>.21*</td>
</tr>
<tr>
<td>Longevity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .01
Effects of Sex and Sex-typing 42

(F(1,144)=14.97, p<.001) but not for the female rater (F(1,144)=1.09, p>.05).

Examination of the means revealed that the males rated the female ratees (M=31.82) significantly higher than the male ratees (M=28.92), but females rated the males and females (respectively, M=29.95, and M=31.74) approximately equally.

Personality Measures

The relevant items for each personality dimension were summed to create an aggregate score (see Table 5 to see which items were combined). The aggregate scores were then examined using a three-way fully between-subjects ANOVA procedure (see means in Table 6). No significant results were found for the BSRI Masculinity dimension or Wiggins' Dominance dimension.

A job main effect was found for BSRI Femininity dimension (F(1,144)=11.62, p<.001). Examination of the means revealed that nursing (M=10.50) was found to score higher on femininity than engineering (M=9.50). A ratee sex main effect was found for femininity (F(1,144)=7.24, p<.01). Examination of the means revealed that female ratees (M=10.39) were found to score higher on femininity than male ratees (M=9.61).

A job main effect was found for Wiggins' Nurturance dimension (F(1,144)=4.65, p<.05). Examination of the means revealed that nursing (M=18.57) was found to score higher on nurturance than engineering (M=17.62). A ratee sex main effect was found for nurturance (F(1,144)=3.90, p<.05). Examination of the means revealed that female ratees (M=18.53) were found to score higher on nurturance than male ratees (M=17.66).

Correlations between hiring and each of the personality measures were calculated (see Table 7). These correlations (for the entire sample) revealed that for the entry level engineering position, a positive relationship existed between hiring and femininity (r=0.42, p<.001), and nurturance (r=0.43, p<.001). For the managerial engineering position, a positive relationship existed between hiring and all four dimensions: femininity (r=0.32, p<.01), masculinity (r=0.34, p<.01), nurturance (r=0.28, p<.05) and dominance(r=0.35,
Table 5

Composition of Personality Measures and Their Corresponding Alphas

<table>
<thead>
<tr>
<th>Femininity (α = 0.68)</th>
<th>Nurturance (α = 0.71)</th>
<th>Masculinity (α = 0.85)</th>
<th>Dominance (α = 0.82)</th>
</tr>
</thead>
<tbody>
<tr>
<td>warm</td>
<td>warm</td>
<td>assertive</td>
<td>assertive</td>
</tr>
<tr>
<td>tender</td>
<td>tender</td>
<td>dominant</td>
<td>dominant</td>
</tr>
<tr>
<td>sympathetic</td>
<td>sympathetic</td>
<td>forceful</td>
<td>forceful</td>
</tr>
<tr>
<td>respectful</td>
<td>aggressive</td>
<td>self-confident</td>
<td></td>
</tr>
<tr>
<td>cooperative</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Table 6

**Mean Ratings for Personality Measures in Each Experimental Condition**

<table>
<thead>
<tr>
<th>Experimental Condition</th>
<th>Personality Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Femininity</td>
</tr>
<tr>
<td>Engineer</td>
<td></td>
</tr>
<tr>
<td>male rater</td>
<td></td>
</tr>
<tr>
<td>male ratee</td>
<td>8.63</td>
</tr>
<tr>
<td>female ratee</td>
<td>10.16</td>
</tr>
<tr>
<td>female rater</td>
<td></td>
</tr>
<tr>
<td>male ratee</td>
<td>9.37</td>
</tr>
<tr>
<td>female ratee</td>
<td>9.84</td>
</tr>
<tr>
<td>Nurse</td>
<td></td>
</tr>
<tr>
<td>male rater</td>
<td></td>
</tr>
<tr>
<td>male ratee</td>
<td>10.05</td>
</tr>
<tr>
<td>female ratee</td>
<td>10.26</td>
</tr>
<tr>
<td>female rater</td>
<td></td>
</tr>
<tr>
<td>male ratee</td>
<td>10.37</td>
</tr>
<tr>
<td>female ratee</td>
<td>11.32</td>
</tr>
</tbody>
</table>
Table 7

Correlations Between Hiring and Personality Measures Broken Down by Job

<table>
<thead>
<tr>
<th>Personality Measures</th>
<th>Engineer</th>
<th>Nurse</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Feminine</td>
<td>Masculine</td>
</tr>
<tr>
<td>Engineer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry Level</td>
<td>.4192 ***</td>
<td>.1845</td>
</tr>
<tr>
<td>Managerial Level</td>
<td>.3170 **</td>
<td>.3374 **</td>
</tr>
<tr>
<td>Nurse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry Level</td>
<td>.2707 *</td>
<td>.0460</td>
</tr>
<tr>
<td>Managerial Level</td>
<td>.3257 **</td>
<td>.1683</td>
</tr>
</tbody>
</table>

*p < .05  **p < .01  ***p < .001
For the entry level nursing position, a positive relationship existed between hiring and femininity and nurturance. For the managerial nursing position a positive relationship existed between hiring and femininity, nurturance and dominance. Interestingly, when these correlations were examined separately for males and for females, different patterns emerged (see Table 8). For the entry level engineering position, it was only the females that indicated significant correlations for the characteristics of femininity ($r=0.54, p<.001$) and nurturance ($r=0.55, p<.001$). For the managerial engineering position, again the females indicated significant correlations between the characteristics of femininity ($r=0.34, p<.05$) and nurturance ($r=0.32, p<.05$), but so was dominance ($r=0.34, p<.05$). For the males, on the other hand, significant correlations only appeared between masculinity ($r=0.39, p<.05$) and dominance ($r=0.37, p<0.5$).

In the nursing occupation similar patterns emerged. For the entry level nursing position, it was only the females that indicated significant correlations for the characteristics of femininity ($r=0.45, p<.01$) and nurturance ($r=0.52, p<.001$). For the managerial nursing position, again the females indicated significant correlations between the characteristics of femininity ($r=0.40, p<.05$) and nurturance ($r=0.39, p<.05$), but so was dominance ($r=0.45, p<.01$) and masculinity ($r=0.38, p<.05$). For the males, on the other hand, significant correlations only appeared between femininity ($r=0.32, p<.05$) and nurturance ($r=0.40, p<.05$).

Interpersonal and Technical Skills

The dimensions of interpersonal and technical skills were then examined using a three-way fully between-subjects ANOVA procedure (see means in Table 9). No significant results were found for the technical skills.

A ratee sex main effect was found for interpersonal skills ($F(1,144)=8.40, p<.01$). Examination of the means revealed that female ratees ($M=3.71$) scored higher on interpersonal skills than did male ratees ($M=3.33$).
### Table 8

**Correlations Between Hiring and Personality Measures Broken Down by Job and Rater Sex**

<table>
<thead>
<tr>
<th>Job and Rater</th>
<th>Personality Measures</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Feminine</td>
<td>Masculine</td>
<td>Nurturance</td>
<td>Dominance</td>
</tr>
<tr>
<td><strong>Engineer</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male Rater</td>
<td>0.25</td>
<td>0.24</td>
<td>0.30</td>
<td>0.21</td>
</tr>
<tr>
<td>Female Rater</td>
<td>0.54***</td>
<td>0.14</td>
<td>0.55***</td>
<td>0.14</td>
</tr>
<tr>
<td>Managerial Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male Rater</td>
<td>0.29</td>
<td>0.39*</td>
<td>0.21</td>
<td>0.37*</td>
</tr>
<tr>
<td>Female Rater</td>
<td>0.34*</td>
<td>0.31</td>
<td>0.32*</td>
<td>0.34*</td>
</tr>
<tr>
<td><strong>Nurse</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry Level</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male Rater</td>
<td>0.07</td>
<td>0.06</td>
<td>0.20</td>
<td>0.09</td>
</tr>
<tr>
<td>Female Rater</td>
<td>0.45**</td>
<td>0.01</td>
<td>0.52***</td>
<td>0.03</td>
</tr>
<tr>
<td>Managerial Level</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male Rater</td>
<td>0.32*</td>
<td>0.02</td>
<td>0.40*</td>
<td>0.07</td>
</tr>
<tr>
<td>Female Rater</td>
<td>0.40*</td>
<td>0.38*</td>
<td>0.39*</td>
<td>0.45**</td>
</tr>
</tbody>
</table>

*p < .05   ***p < .001   **p < .01
Table 9
Mean Ratings for Interpersonal and Technical Skills in Each Experimental Condition

<table>
<thead>
<tr>
<th>Skills</th>
<th>Experimental Condition</th>
<th>Interpersonal</th>
<th>Technical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineer</td>
<td>Male Rater</td>
<td>Male Ratee</td>
<td>3.42</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female Ratee</td>
<td>3.53</td>
</tr>
<tr>
<td></td>
<td>Female Rater</td>
<td>Male Ratee</td>
<td>3.21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female Ratee</td>
<td>3.68</td>
</tr>
<tr>
<td>Nurse</td>
<td>Male Rater</td>
<td>Male Ratee</td>
<td>3.37</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female Ratee</td>
<td>3.68</td>
</tr>
<tr>
<td></td>
<td>Female Rater</td>
<td>Male Ratee</td>
<td>3.32</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Female Ratee</td>
<td>3.58</td>
</tr>
</tbody>
</table>
Correlations between hiring and each of the dimensions were calculated (see Table 10). For the entry level nursing position, a positive correlation was found only between hiring and interpersonal skills ($r=0.34$, $p<0.01$). The correlation between hiring and technical skills was not significant ($r=0.15$, $p>0.05$). For the managerial nursing position, and both the entry level and managerial engineering job, the correlations between hiring and technical [respectively, ($r=0.34$, $p<0.01$), ($r=0.54$, $p<0.001$), and ($r=0.38$, $p<0.001$)] and interpersonal skills [respectively, ($r=0.38$, $p<0.001$), ($r=0.46$, $p<0.001$), and ($r=0.49$, $p<0.001$)] were significant.
Table 10

Correlations Between Hiring and Interpersonal and Technical Skills

<table>
<thead>
<tr>
<th>Skills</th>
<th>Interpersonal</th>
<th>Technical</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Job</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry Level</td>
<td>.46**</td>
<td>.54**</td>
</tr>
<tr>
<td>Managerial Level</td>
<td>.49**</td>
<td>.38**</td>
</tr>
<tr>
<td>Nurse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry Level</td>
<td>.34*</td>
<td>.15</td>
</tr>
<tr>
<td>Managerial Level</td>
<td>.38**</td>
<td>.34*</td>
</tr>
</tbody>
</table>

*p < .01  **p < .001
Discussion

The purpose of this study was to examine the effect of different levels of evaluative leaps on several evaluative decisions regarding masculine and feminine typed jobs. Sex of both the rater and the ratee was considered. The evaluative decisions included a hiring decision, an estimated salary, and a general estimation of ratee competence. Also examined were several ratings of personality for the ratee. Each of these factors will be discussed in turn, followed by a general discussion of the implications of the results.

The hypotheses focused on sex-stereotypic responding, including the favouring of females for female sex-typed jobs and males for male sex-typed jobs, especially under the high evaluative leap condition. Although the results are surprisingly inconsistent with these hypotheses, closer examination does reveal interesting differences in the response patterns of male and female raters. When one takes these differences into consideration, it appears that in general, males responded counterstereotypically and generally favoured women in their evaluations, whereas females responded stereotypically (and in line with the hypotheses), favouring females in the nursing and entry level jobs, and males in the engineering, and managerial level jobs. These results will be discussed in more detail in relation to existing literature in the following sections.

Hiring

The hiring dependent variable was the most crude and yet the most relevant indicator of real world hiring decisions. Analyses indicated two main findings. One was that in general, female ratees were given higher hiring scores than males. This would seem to indicate that, given the same resume with exactly the same qualifications, both males and females would be more likely to hire a female than a male for either an engineering job or a nursing job. The fact that women were favoured for the nursing job is in fact in line with hypotheses. It was hypothesized that raters would align the sex of the ratee with the
sex-typing of the occupation and indicate a preference for females over males for the female sex-typed job. This result has frequently been reported in the literature, using students as subjects (Robbins & DeNisi, 1993), and using managers as subjects (Eagly, Karau & Makhijani, 1995; Jabes 1980).

The fact that women were also favoured for the engineering job is at first glance somewhat counterintuitive, although not completely unexplainable. Previous research (Abramson et al., 1977) had found this same result, with the explanation that to have a woman performing adequately in a male occupation was surprising enough that one would then magnify her level of achievement. To explain a similar result from previous literature, Muchinsky et al. (1977) emphasized the difficulty of the engineering field and stated that to be currently working within the engineering field (a traditionally male job) a female may be perceived as having excelled in a difficult area, and most likely possesses extraordinary capabilities. While these explanations are present in the older literature, one must consider other factors of a more timely nature, as well.

An alternative explanation is related to the impact of affirmative action, and employment equity. Today's students are very aware of its presence and impact. While they may not have been aware of the purpose of the study, given the chance to evaluate a female in a male sex-typed occupation, they chose to express what is considered to be a currently socially acceptable response. The motivation behind this response would be interesting to explore in future research. Whether students elevated female scores because they actually wanted to give women an advantage, or whether they elevated female scores because they felt they should do so will have implications for generalization to the field, and should be further studied.

The second main finding for the hiring dependent variable was the significant three-way interaction, rater sex by job by job level. When one examines the level of job that the rater is evaluating the applicant for, one sees that male raters gave higher hiring scores to the nurse in both the entry and the managerial job. Women, on the other hand,
responded more stereotypically, and gave nurses higher hiring scores than engineers for the entry level position, but gave engineers higher hiring scores for the managerial position. This interaction reflects the earlier-mentioned trend—that males were counterstereotypic in their responses, whereas females were stereotypic.

It is interesting that sex-typing of the occupation was more salient than sex of the ratee. That is, raters were influenced more by the fact that the ratees were nurses or engineers than by the fact that the ratees were male or female. The importance of sex-typing of occupation is supported by some previous research, although consensus on the outcome hasn't yet emerged. A study by Hartman, Griffith, Miller and Kinicki (1988) found sex-typing effects rather than sex effects, and found that nurses were more likely to be hired than computer programmers. However, contrasting research by Hartman, Griffeth, Crino and Harris (1991) indicated that the male occupation was more likely to be hired than the female occupation. Few studies have compared occupations of different sex-types, and those that have, have generally found sex effects (Gordon & Owens, 1988; Heilman, Martel & Simon, 1988; Jackson, 1983b), rather than effects for sex-typing of occupation. This issue will be discussed further in the Summary and Conclusions.

The fact that the men gave higher hiring scores to the nursing profession over the engineering profession, across both job levels is unexpected. It was predicted that females, not nurses, would be given higher hiring scores for the entry level position, as supported by previous literature (Eagly, Karau & Makhaijani, 1995; Glick, Zion & Nelson, 1988; Jabes, 1980; Robbins & DeNisi, 1993). The fact that nurses were also given higher hiring scores for the managerial position is not in line with previous literature, either. It was expected that males would be favoured in the managerial position, as supported by previous literature (Eagly et al., 1992; Gerdes & Garber, 1983; Glick, Zion & Nelson, 1988; Muchinsky & Harris, 1977; Robbins & DeNisi, 1993; Sharp & Post, 1980).
Two unexpected outcomes resulted from this analysis. First, it is evident that the raters are treating the sex role of the occupation as they would the sex of the ratee. This will be further addressed in the Summary and Conclusions. The second point is that males are particularly aware of socially desirable responding, and are being overly socially sensitive by favouring not only females, but female sex-typed occupations.

Although the female subjects did not respond directly in line with the hypotheses (in that case they would have favoured females, rather than female sex-typed occupations, and males, rather than male sex-typed occupations), their responses could still be perceived as in line with current stereotypical thinking. They gave higher hiring scores to the female sex-typed job in the entry level position, and higher hiring scores to the male sex-typed job in the managerial position. A possible explanation for the stereotypic responding of females, has to do with the sex-typing of each of the occupations. It is possible that the female raters viewed the managerial job (whether it was in nursing or in engineering) as a male sex-typed job. In this case, the argument could be made that the females felt that the engineers, by virtue of currently being employed in the field, possessed the necessary masculine characteristics that would enable them to succeed in the managerial job. Similarly, they felt that the nurses lacked some of those feminine characteristics, and therefore, were less likely to be hired into the managerial job (Eagly et al., 1995).

The stereotypic responding of females could also simply be an artifact of the study. That is, it is possible that the nurse described in the study's scenario is somehow more attractive for hiring for the entry level position than the engineer, regardless of rater or ratee sex. And likewise, the engineer is somehow more attractive for hiring for the managerial level position. However, the fact that this result was not replicated across the male raters suggests that this might not be so.

Salary
The salary dependent variable involved having the rater suggest a salary for the ratee. The findings for this variable are contrary to the hypotheses, and inconsistent with previous literature. Analyses showed that male ratees were given higher salaries for the nursing job than were female ratees. Similarly, female ratees were given higher salaries for the engineering job than were the male ratees. Although no studies have examined salary when considering the sex-typing of the occupation, research has examined male sex-type occupations, and found that females, although they were evaluated as performing at a similar level as males, were given a significantly lower salary (Terborg & Ilgen, 1975). Salary has also been examined in combination with attractiveness, and it has been found that more attractive ratees, regardless of sex, have been given higher salaries (Heilman & Stopec, 1985; Jackson, 1983a).

This result seems to indicate that ratees are rewarded for working in a sex-typed job that is incongruent with their sex. This effect, while unexpected, is in line with other outcomes in this study, and seems to support the idea that at least some raters were answering counter-stereotypically.

Competence

The dependent variable of competence was created to measure the general perceived level of competence within the ratee, independent of the actual hiring decision. The results with this dependent variable were not in line with the hypotheses. However, the results provide more support for the socially acceptable responding found in the other dependent variables. When examining competence, females were seen as more competent, regardless of job or level of job. Interestingly, this result was found only in the male raters. Female raters saw no difference between male and female ratees.

Support can definitely be found in the literature for the result that females are seen as more competent than males in female sex-typed occupations (Jackson, 1983a, 1983b; Muchinsky & Harris, 1977; Yoder & Schleicher, 1996). Past literature provides some
support for females being evaluated as more competent in the masculine occupations (Abramson, et al., 1977; Muchinsky & Harris, 1977), although these studies are quite dated. Contrary to the results of this study, more support can generally be found in the literature for females being evaluated as less competent than males in masculine occupations (Gerdes & Garber, 1983; Gordon & Owens, 1988; Heilman, 1984; Heilman, Martel & Simon, 1988; Jackson 1983a, 1983b; Rosen & Jerdee, 1974; Sharp & Post, 1980).

**Personality Measures**

The perception of differing degrees of masculinity, femininity, nurturance and dominance in the ratee has previously been shown to greatly influence the evaluative decision making process. By administering the personality measures after all ratee information had been presented, but before the actual decision making occurred, the author hoped to gain insight into the mindset of the rater during the actual evaluation.

As hypothesized, and in line with previous research (Burke, 1994; Eagly & Steffen, 1984; Glick, 1991; Hartman, Griffeth, Miller & Kinicki, 1988) female ratees were found to be more feminine, and to score higher on communion and interpersonal skills than male ratees. Also as hypothesized, nurses were found to be more feminine, and to score higher on communion than engineering. No other hypotheses were supported. Previous literature supports the parallel finding, that is, that male ratees were found to be more masculine than female ratees (Eagly & Steffen, 1984; Hartman, Griffeth, Miller & Kinicki, 1988), although this result did not appear in this study.

An interesting finding involving the personality measures was revealed when scores on each of the scales were correlated with the hiring decision. The results for nursing, in both the entry and the managerial positions, were as expected. Here it was revealed that for the entry level position for nursing, positive correlations were found between the tendency to recommend hiring and femininity, nurturance, and interpersonal
skills. These results were as expected, demonstrating that the possession of female sex-typed characteristics are necessary for success (at least in terms of getting hired) within the field of nursing. For nursing, in the managerial position, those same correlations were found (femininity, nurturance and interpersonal skills), but the additional significant positive correlations with technical skills and dominance were found. Again, these results were expected, demonstrating that the female sex-typed characteristics are still required for success, but for the additional managerial duties, the male sex-typed characteristics are also required.

More interesting results appeared in connection with the engineering positions. For engineering, in the entry level position, positive correlations were found between a tendency to hire and femininity, nurturance, and interpersonal and technical skills. However, for engineering, in the managerial position, those same correlations were found (femininity, nurturance, and interpersonal and technical skills), but additional significant positive correlations with masculinity and dominance were found. It was expected that the male sex-typed characteristics would be required for success (in terms of getting hired), but the presence of the female sex-type characteristics was unexpected.

Examining these correlations separately for males and females provided some insight. For males, no relationship appeared between the presence of masculine or feminine traits and their hiring decision for the entry level position. However, for the managerial position, the males indicated a relationship between male characteristics and hiring for the masculine job, and female characteristics and hiring for the feminine job. This seems to indicate that males were more likely to hire people whom they perceived as being masculine for the male sex-typed job, and people whom they perceived as being feminine for the female sex-typed job.

Females, on the other hand, saw a relationship between feminine characteristics and the hiring decision in the entry level positions, for both the masculine and feminine sex-typed jobs. This means they were more likely to hire people whom they perceived as
being feminine for the entry level position, regardless of type of job. However, for the managerial jobs, females generally saw both male and female characteristics as being necessary, for both occupations. This means females were more likely to hire people whom they perceived as having both masculine and feminine traits (some would call this androgynous) for the managerial position, regardless of actual job.

Examination of these correlations reveals two patterns. First, that the raters were in fact, influenced by sex-typing rather than actual sex. Second, that a slightly more subtle methodology may be more likely to reveal sex-stereotyping.
Summary and Conclusions

Effect of Sex of the Ratee

Male and female raters appear to show different response patterns when they rate job applicants. Male raters viewed the female ratees as more competent than the male ratees, and were more likely to hire the female ratees across all occupations. Female raters, on the other hand, viewed the competence of the male and female ratees as being equal, yet were still more likely to hire female ratees than male ratees.

The finding that both males and females were more likely to hire females, regardless of occupation, is unique in the literature. True, it has frequently been reported that the performance of men and women is perceived as equal (Camden & Witt, 1983; Izraeli & Izraeli, 1985; Lee & Alvares, 1977; Rosen & Jerdee, 1973; Swim, Borgida, Maruyama & Myers, 1989). Also true is that females are favoured for a specific sex-typed occupation. (Mobley (1982) found that females received higher performance appraisals than males in a nonmanagerial, traditionally male job. Peters, O'Connor, Weekley, Pooyan, Frank and Erenkrantz (1984) confirmed Mobley's results.) Nonetheless, a uniform preference for hiring women has never been previously demonstrated.

It is a likely explanation that some form of socially acceptable responding occurred in the present study. Students today are familiar with the terms "employment equity" and "affirmative action" and may have elevated their evaluations when it was noticed that the ratee was a woman. This awareness parallels that of the workplace, where, in general, sex-based discrimination in hiring and promotion has been identified and deemed unacceptable.

If this tendency towards socially acceptable responding truly influenced the rater's responses, then this is something that must be considered in the development of future studies. It has been suggested that the use of occupations that are less clearly sex-
stereotyped would help to disguise the aim of the research. Another suggestion has been to use more subtle methods of assessing stereotyping in the evaluation process.

In the creation of the present study, these suggestions were considered. Many attempts were made in the design of the present study to attempt to circumvent socially acceptable responding. (For example, subjects were administered one occupation, so they couldn't contrast masculine and feminine occupations; subjects were administered only one sex, so they couldn't contrast sexes; an attempt was made in the cover letter to distract subjects from the purpose of the study.) The author feels that an alternative methodology, rather than attempting to further control all measures should be considered, namely, that of manipulation.

**Effects of Sex-typing of the Occupation**

Contrary to the conclusions drawn with the ratee sex variable, no agreement could be found for male raters between competence and hiring variables. That is, in both entry level, and managerial level, male raters were more likely to hire nurses, but found them to be equal in competence to engineers. It is an interesting result that males were more likely to hire nurses across all levels. It appears that not only are males favouring females (as was previously discussed), but they are also favouring female-typed occupations. It appears that the male raters are particularly likely to use socially acceptable responding. Perhaps the males have become more greatly sensitized to this issue, as in much research, whether in the field or the lab, they have frequently been accused of being the greater culprits of biased responding.

Females, on the other hand were more likely to hire nurses for entry level jobs, and engineers for managerial level jobs, although they rated the jobs at an equal level for competence. It is an interesting finding that for female raters, the sex-typing of the occupation appeared to have an influence similar to the hypothesized influence of ratee sex. The ratee sex hypothesis stated that, in a stereotypical response, females would be favoured for the entry level positions, and males for the managerial positions. This result
Effects of Sex and Sex-typing 61

clearly draws attention to the fact that the salience and consequent relative importance of both the ratee sex and the occupational sex-typing variables should be further considered.

A potential explanation is that for the female raters, rather than a female stereotype being triggered, it is possible that a "nurse" and "engineer" stereotype were triggered instead. The fact that the ratee was currently employed in the nursing/engineering field may have indicated to the rater that the ratee possessed the necessary characteristics for that occupation. The rater then may have associated the applicant's characteristics more with the occupation than with the sex. This would explain why the occupation sex-type rather than the sex of the ratees influenced the responses of the females.

Several authors have examined the process of stereotype formation, and the impact of salience of variables. Heilman (1984) suggested that as soon as a rater sees a female ratee, the female stereotype is triggered, which will consequently influence any evaluative decision. She suggested two ways to lessen the probability that sex is singled out as the critical inferential reference point: i) include decreasing the salience of sex (making sure that the rater doesn't see a women), and ii) increasing the salience of other characteristics (making sure that the rater sees something other than a woman).

In this study, the sex of the ratee was intentionally presented subtly. In fact, the only reference to ratee sex occurred in the "supervisors comments" section, when the pronouns "he" or "she" were used. Contrary to Heilman's findings, even though sex of ratees was presented with little salience, both men and women noticed the sex of the ratees (since females were rated as more feminine).

A similar series of studies was conducted by Locksley et al. (1980, 1982). Locksley proposed that any behavioural information whatsoever will act to undermine sex-stereotyping. She presented generic, non-relevant information about a man and a woman, and then asked subjects to indicate the perceived aggressiveness of that man and woman. Not surprisingly, given no information about the aggressiveness of either person, subjects drew upon their own stereotypic beliefs and rated the man as more aggressive.
than the woman. Locksley then gave subjects information describing an aggressive action performed by either a man or a woman, and asked them about the aggressiveness of that person. She found that when relevant behavioural information was presented first, the subjects abandoned their stereotypes and used the presented information to evaluate the ratee. Locksley used this study to demonstrate that the presentation of relevant information can remove the use of stereotyping.

In one way, in the present study, the fact that women differentiated between occupations, having focused on the behavioural information, supports Locksley's results. However, the author cannot conclude that the impact of sex of the ratee was overridden by the behavioural information.

Deaux and Lewis (1984) provide an explanation for the appearance of both sex and behavioural information effects. They contend that stereotypes are formed using information from different aspects, including behaviours, traits, and gender group information. These aspects can influence each other, but are generally independent. The author concludes that further exploration of the relative strengths and interactions of these components is required.

Some would argue that the limited information presented in this study is hardly representative of the reality of the work force. However, extraneous information was purposely limited in order to avoid the dilution effect. The dilution effect occurs when subjects end up underutilizing relevant information in evaluation tasks when that information is accompanied by irrelevant information (Nisbett, Zukier & Lemley, 1981; Tetlock, Lerner and Boettger, 1996; Zukier, 1982). Nisbett et al (1981) explained that raters formulate predictions by making similarity judgments, which involves comparing the ratee with the conceptualization the raters have of the outcome. Irrelevant information decreases the similarity of the ratee and the outcome, and consequently influences the prediction made.
Robbins and DeNisi (1993) also presented a convincing argument for the use of abbreviated materials. They argued that adding additional information to resumes used in studies, along with adding realism, will also increase the amount of ambiguous information with which the rater has to deal. This in turn increases the evaluative leap required in forming decisions, which means that more stereotyping is likely to occur.

Recommendations for Future Studies

An interesting result appears when one examines the differences between results of raters on the competence variable. Although both male and female raters were more likely to hire females in all occupations, only male raters found the female ratees to be more competent than male ratees. In contrast, the female raters found males and females to be equally competent. These results indicate that the competence variable itself should be further examined. The competence variable created for the present study had a number of dimensions, including fitting in, likelihood of promotion, likelihood of success, potential for long service. Each of these dimensions should be further explored in an attempt to determine why the males saw the females as more competent.

One might also further explore the relationship between the variables of perceived competence, and actual hiring decision. Incongruence between these two variables should be explored in order to fully understand the motivations influencing the decision making process.

A final factor to consider, that would be worthy of further exploration, is the ethnicity of the students used as subjects in this study. Preliminary analyses indicated no difference other than that which would be expected by chance as far as race is concerned. However, the particular university where the study was conducted has a large Asian population. In fact, half of the subjects in the present study indicated their ethnic origin as Asian. The impact of cultural differences in general stereotyping, as well as its influence on the work force has been studied (Powell, 1992; Schein & Mueller, 1992; Schein, Mueller, Lituchy & Liu, 1997; Tomkiewicz & Brenner, 1996) and has been found to have
a great impact. In order to further pursue exploration of this variable, a much larger sample size would have to be obtained, and an appropriate measure of acculturation would also have to be included.

In summary, although many hypotheses were not supported, the information gained from this study is still valuable. The literature in this field is still evolving along with the societal climate, and the impact of various factors and their relationships are still being explored. One must recall that the ultimate goal of research in this field (for some, at least) is to reduce the occurrence of sex stereotyping and its consequent impact. If by producing studies such as the current effort that examine related factors, we inadvertently create enough awareness to achieve that goal - that is, by doing these studies we draw attention to the presence of sex stereotyping - whether it favours men or women - then we must consider our research a success.
Effects of Sex and Sex-typing 65

References


Appendix A

Versions of the Questionnaire
A1

Introduction Coverpage for Study

Applying for Lateral Versus Upward Job Transfers

Investigator: Allison MacLeod, Graduate Student
Department of Psychology
phone: 822-3286

Instructions:

A.D. is moving to a new city, and has applied for a job transfer. Two positions are available. One position would involve a lateral transfer (moving to a job at a similar level within the organization), and the other would involve an upward transfer (moving to a higher position within the organization). You are requested to evaluate the applicant for both of the jobs.

This study is anonymous - so please be as honest as possible. We are interested in your true initial reactions to these candidates.

Note:

• If the questionnaire is completed, it is assumed that consent has been given.
• Ensure confidentiality by putting your student number only on the envelope.

Demographic Information About Yourself:

i) age
ii) sex
iii) ethnic group
iv) years of part-time work
v) years of full time work
vi) years of managerial experience (if at all)
Dear Sir/Madam,

I have been employed within your organization for three years now. During this time I have worked as a junior engineer.

I am now moving to a new city, and would like to formally request either a lateral transfer or an upward transfer within your organization, to the division located in the new city. I would like to apply for the position of either engineer or engineering manager. I have enclosed my resume for your perusal.

During my time with your company, I have acquired and developed the necessary skills for an engineer. Generally, during my time at your organization, I have been involved in the planning and designing of several civil engineering projects, which included the analysis of data, and the preparation of relevant reports.

Although I am willing to accept a lateral transfer, I feel that I am ready to accept the challenge of an upward transfer.

I look forward to your response,

Sincerely,

A.D.
Sample Cover Letter for Nurse

Dear Sir/Madam,

I have been employed within your organization for three years now. During this time I have worked as a nurse.

I am now moving to a new city, and would like to formally request either a lateral transfer or an upward transfer within your organization, to the division located in the new city. I would like to apply for the position of either nurse or nursing manager. I have enclosed my resume for your perusal.

During my time with your company, I have acquired and developed the necessary skills for a nurse. Generally, during my time at your organization, I have been involved in the provision of general nursing care to patients, including administering treatments and medications, and monitoring patient vital signs.

Although I am willing to accept a lateral transfer, I feel that I am ready to accept the challenge of an upward transfer.

I look forward to your response,

Sincerely,

A.D.
A.D.
2642 West 52nd Ave.
Bigcity, B.C.
V7N 4M2

Education:
- Provincial Secondary School Diploma
  Eastdale High School 1991
- Engineering Degree
  Western University 1995

Relevant Work Experience:
Junior Engineer  Sanderson Engineering Co. 1995-present

Summary of Qualifications:
After acquiring an engineering degree from a major Canadian University, worked for three years as a junior engineer for a large, reputable engineering company. Performed a variety of engineering tasks.

Comments from Last Supervisor:
- she had 3 years of experience as civil engineer
- she had positive verbal recommendation from last employer
- she received the standard promotions while at last job
- she participated actively in social activities within the organization
Sample Resume For Nurse

A.D.
2642 West 52nd Ave.
Bigcity, B.C.
V7N 4M2

**Education:**

<table>
<thead>
<tr>
<th>Degree</th>
<th>School</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provincial Secondary</td>
<td>Eastdale High</td>
<td>1991</td>
</tr>
<tr>
<td>School Diploma</td>
<td>School</td>
<td></td>
</tr>
<tr>
<td>Nursing Degree</td>
<td>Western University</td>
<td>1995</td>
</tr>
</tbody>
</table>

**Relevant Work Experience:**

<table>
<thead>
<tr>
<th>Position</th>
<th>Company</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse</td>
<td>University Hospital</td>
<td>1995-</td>
</tr>
</tbody>
</table>

**Summary of Qualifications:**

After acquiring a nursing degree from a major Canadian University, worked for three years as a nurse at a large, reputable hospital. Performed a variety of nursing tasks.

**Comments from Last Supervisor:**

- he had 3 years of experience as a nurse
- he had positive verbal recommendation from last employer
- he received the standard promotions while at last job
- he participated actively in social activities within the organization
A6

Personal Attributes Section from Questionnaire

1. Estimate the level of this applicant's interpersonal skills.
   
   
   | very low | 1 | 2 | 3 | 4 | 5 | very high |
   
   2. Estimate the level of this applicant's technical expertise.
   
   
   | very low | 1 | 2 | 3 | 4 | 5 | very high |
   
   3. Please indicate the level of each of the following qualities that you feel would be present in this applicant:

   | not dominant | 1 | 2 | 3 | 4 | 5 | dominant  |
   | not tender   | 1 | 2 | 3 | 4 | 5 | tender    |
   | not assertive| 1 | 2 | 3 | 4 | 5 | assertive |
   | unsympathetic| 1 | 2 | 3 | 4 | 5 | sympathetic|
   | not forceful | 1 | 2 | 3 | 4 | 5 | forceful  |
   | disrespectful| 1 | 2 | 3 | 4 | 5 | respectful |
   | not self-confident | 1 | 2 | 3 | 4 | 5 | self-confident |
   | cold         | 1 | 2 | 3 | 4 | 5 | warm      |
   | not aggressive| 1 | 2 | 3 | 4 | 5 | aggressive |
   | unco-operative| 1 | 2 | 3 | 4 | 5 | co-operative |
Engineer Entry Level Position Job Description

Job #1: Civil Engineer

A civil engineer in this company will be expected to perform the following engineering job functions:

**Engineering Skills:**
- plan and design civil engineering projects
- analyze data to plan and design projects.
- prepare and modify reports and designs
Engineer Managerial Level Position Job Description

Job #2: Civil Engineering Manager

A civil engineering manager within this company will be expected to perform regular engineering job functions, as well as additional managerial job functions, including:

**Engineering Skills:**
- plan and design civil engineering projects
- analyze data to plan and design projects
- prepare and modify reports and designs

**Managerial Skills:**
- ensure that employees comply with engineering standards
- fire, hire and direct personnel
A9

Nurse Entry Level Position Job Description

**Job #1: Nurse**

A nurse in this organization will be expected to perform the following nursing job functions:

**Nursing Skills:**
- provide general nursing care to patients
- administer prescribed medications and treatments
- monitor patient vital signs and general patient condition
Nurse Managerial Level Position Job Description

Job # 2: Nursing Manager

A nursing manager within this organization will be expected to perform regular nursing job functions, as well as additional managerial job functions, including:

**Nursing Skills:**
- provides general nursing care to patients
- administers prescribed medications and treatments
- monitors patient vital signs and general patient condition

**Managerial Skills:**
- ensure that employees comply with nursing standards
- fire, hire and direct personnel
Entry Level Job Evaluation Form

After reviewing the resume and first job description, circle and record your responses to the following questions.

Job Applicant's Name: ____________  Job Applying For: ____________

1. How likely would you be to very
 hire this candidate for this unlikely 1 2 3 4 5 very position? likely

2. If you were to hire this very
 applicant, what is your unlikely 1 2 3 4 5 very estimated likelihood of success likely for this applicant?

3. What is the potential of long very
 service to the organization unlikely 1 2 3 4 5 very from this applicant? likely

4. What is the likelihood of this very
 applicant fitting in within unlikely 1 2 3 4 5 very this organization? likely

5. What is the likelihood of this very
 applicant receiving further unlikely 1 2 3 4 5 very promotions within this likely organization?

6. What would your recommended starting annual salary be? very (current salaries for this position range from $35,000 to $45,000) unlikely

Managerial Level Job Evaluation Form

After reviewing the resume and first job description, circle and record your responses to the following questions.

Job Applicant's Name: ____________  Job Applying For: ________________

1. How likely would you be to hire this candidate for this position? very likely

2. If you were to hire this applicant, what is your estimated likelihood of success for this applicant? very likely

3. What is the potential of long service to the organization from this applicant? very likely

4. What is the likelihood of this applicant fitting in within this organization? very likely

5. What is the likelihood of this applicant receiving further promotions within this organization? very likely

6. What would your recommended starting annual salary be? (current salaries for this position range from $45,000 to $55,000) _____
Appendix B

ANOVA Output Not Included in the Body of the Thesis
Table B1

Four-way ANOVAs for Hiring, Salary and Competence

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Hiring</th>
<th>Salary</th>
<th>Competence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between subjects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job (J)</td>
<td>1</td>
<td>1.54</td>
<td>0.00</td>
<td>1.71</td>
</tr>
<tr>
<td>Ratee sex (E)</td>
<td>1</td>
<td>5.10 *</td>
<td>0.80</td>
<td>6.04 *</td>
</tr>
<tr>
<td>Rater sex (R)</td>
<td>1</td>
<td>0.11</td>
<td>0.58</td>
<td>0.00</td>
</tr>
<tr>
<td>J x E</td>
<td>1</td>
<td>1.27</td>
<td>6.28 *</td>
<td>0.19</td>
</tr>
<tr>
<td>J x R</td>
<td>1</td>
<td>1.03</td>
<td>0.02</td>
<td>0.26</td>
</tr>
<tr>
<td>E x R</td>
<td>1</td>
<td>0.20</td>
<td>0.10</td>
<td>1.99</td>
</tr>
<tr>
<td>J x E x R</td>
<td>1</td>
<td>1.83</td>
<td>0.04</td>
<td>0.09</td>
</tr>
<tr>
<td>Error</td>
<td>144</td>
<td>(1.03)</td>
<td>(9.64)</td>
<td>(10.83)</td>
</tr>
</tbody>
</table>

| Within Subjects   |    |         |        |            |
| Job Level (L)     | 1  | 412.04 ***| 515.45 ***| 195.80 ***|
| J x L             | 1  |  8.70 ** |  0.00  |  0.06      |
| E x L             | 1  |  0.48   |  0.87  |  0.01      |
| R x L             | 1  |  0.03   |  0.66  |  0.16      |
| J x E x L         | 1  |  0.48   |  0.41  |  0.11      |
| J x R x L         | 1  |  5.09 * |  0.64  |  0.03      |
| E x R x L         | 1  |  0.00   |  0.00  |  7.35 **   |
| J x E x R x L     | 1  |  1.08   |  0.05  |  0.03      |
| Error             | 144| (0.44)  | (5.52) | (2.52)     |

Note. Values enclosed in parentheses represent mean square errors

*p < .05  **p < .01  ***p < .001
Table B2

Three-way ANOVA for Personality Measures

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Femininity</th>
<th>Masculinity</th>
<th>Nurturance</th>
<th>Dominance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job (J)</td>
<td>1</td>
<td>11.617 ***</td>
<td>0.350</td>
<td>4.646 *</td>
<td>0.589</td>
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<tr>
<td>Rateesex (E)</td>
<td>1</td>
<td>7.240 **</td>
<td>0.570</td>
<td>3.904 *</td>
<td>0.317</td>
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<tr>
<td>Ratersex (R)</td>
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<td>2.325</td>
<td>0.350</td>
<td>3.445</td>
<td>0.670</td>
</tr>
<tr>
<td>J x E</td>
<td>1</td>
<td>0.515</td>
<td>0.453</td>
<td>0.516</td>
<td>0.589</td>
</tr>
<tr>
<td>J x R</td>
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<td>0.652</td>
<td>1.169</td>
<td>0.000</td>
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<tr>
<td>E x R</td>
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<td>0.072</td>
<td>0.400</td>
<td>0.434</td>
<td>0.377</td>
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<tr>
<td>J x E x R</td>
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<td>2.325</td>
<td>0.150</td>
<td>2.811</td>
<td>0.167</td>
</tr>
<tr>
<td>Error</td>
<td>144</td>
<td>(3.271)</td>
<td>(15.803)</td>
<td>(7.341)</td>
<td>(10.061)</td>
</tr>
</tbody>
</table>

Note. Values enclosed in parentheses represent mean square errors

*p < .05   **p < .01   ***p < .001
Table B3

Three-way ANOVA for Interpersonal and Technical Skills

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Interpersonal</th>
<th>Technical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job (J)</td>
<td>1</td>
<td>0.81</td>
<td>0.19</td>
</tr>
<tr>
<td>Rateesex (E)</td>
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<td>8.40 *</td>
<td>0.05</td>
</tr>
<tr>
<td>Ratersex (R)</td>
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<td>0.01</td>
<td>0.05</td>
</tr>
<tr>
<td>J x E</td>
<td>1</td>
<td>0.49</td>
<td>0.42</td>
</tr>
<tr>
<td>J x R</td>
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<td>0.01</td>
<td>0.05</td>
</tr>
<tr>
<td>E x R</td>
<td>1</td>
<td>0.81</td>
<td>0.75</td>
</tr>
<tr>
<td>J x E x R</td>
<td>1</td>
<td>0.25</td>
<td>0.00</td>
</tr>
<tr>
<td>Error</td>
<td>144</td>
<td>(0.66)</td>
<td>(0.56)</td>
</tr>
</tbody>
</table>

Note. Values enclosed in parentheses represent mean square errors

*p < .01