

**SOURCES OF BIAS
IN
JOB PERFORMANCE EVALUATION**

by

Marie-Thérèse (Terry A.) Fowler
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APPROVAL

Name: Marie-Therese Fowler

Degree: Master of Arts (Education)

Title of Thesis: Sources of Bias in Job Performance Evaluation

Examining Committee:

Chair: Mike Manley-Casimir

W. John C. Walsh
Senior Supervisor

E. Michael Coles
Associate Professor

Anne Corbishley
Graduate Faculty Associate
Faculty of Education
Simon Fraser University
External Examiner

Date Approved March 20, 1991

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SOURCES OF BIAS IN JOB PERFORMANCE EVALUATION

Author

(signature)

Marie-Therese Fowler

(name)

March 20, 1991

(date)

Abstract

An examination of the literature on work access to women suggests that in spite of equal rights legislation, bias is still present. What is not clearly demonstrated experimentally is the source and maintaining factors of bias. The general purpose of this thesis was to investigate several sources of bias in job related evaluation.

The hypothesis was that people tend to judge others in a similar fashion as they judge themselves. An analogue pen and paper questionnaire was administered to 120 college and university students. The design was 2x2x3 factorial design (sex of participant, sex of worker, and gender type of the job). The word list was drawn from the Bem Sex Role Inventory and used twice for each participant. First, they were asked to rate how they felt about themselves in respect to each word at that point in time on a five point Likert scale. Second, they were asked to rate a worker who was described doing a job, using the same list. Questions about how much they would pay workers, and themselves were asked, as well as their opinion on the appropriateness of the sex of the person in relationship to the job described.

There was a low correlation between how participants evaluated themselves and the workers, and a moderate correlation between how much they would pay the worker and themselves. There were sex differences in how the participants viewed themselves, and in how they assigned wages, but the majority of the significant differences were by the gendertype of the job.

When the study was replicated, changing only the job described, similar results were found on an additional sample of 120 college and university students.

In both studies, there was strong evidence for direct bias on the basis of

the gendertype of the job. There were however, no three way interactions for the sex of the participant, the sex of the worker, and the gendertype of the job (jobtype). The findings suggest as well that there may be indirect bias.

Mechanisms for a possible explanation, such as the availability heuristic are explored, and implications for counselling and education are discussed in the closing chapter of the thesis.

Dedication

In Memory of Gerald Joseph LaPlante
May 7, 1917 - September 19, 1988

Who never really understood
but encouraged me anyway

Thanks Dad

And to Otelia Marie LaPlante
who still does

Acknowledgments

A work of this size always has a long list of people who helped to make it happen. I have been more than ordinarily blessed with people who helped me though, not only this academic exercise, but the series of life changes I went through during the course of the research and writing of this thesis. I can't possibly mention everyone, but I will try.

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I also want to acknowledge the assistance that the Ministry of Rehabilitation gave me, especially Joanne in Prince George, since without that assistance I wouldn't have been able to finish my undergraduate years. Thank you Joanne for believing in my goal of counselling others.

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Chapter 1

Introduction

Following the consciousness raising of the 60s and 70s, there is the belief that women have come a long way in their search for social equality. But research suggests that there is still a long way to go before both men and women have free attitudinal and structural access to all the social roles they are capable of performing. There can be no doubt that one major determinant of both limited access and inappropriate channeling into certain social roles is an individual's attitude. Many studies have looked at the social and structural reinforcement of biased attitudes. Few however, have looked at, and succeeded, in identifying personal traits or identifiable attributes which may be responsible for the persistence of gender discrimination in the work place in the face of current legislation, education and social disapproval. Specifically, there is need to identify those attributes which may contribute to an employer or supervisor to move from bias, to stereotype, to prejudice in the evaluation of others.

There are no objective sex related characteristics necessary for performing a job well. While many jobs are associated more frequently with one sex than with the other, for example, kindergarden teaching, nursing, engineering, hairdressing, this association is based on the availability heuristic, and not through any characteristic inherent in either the individual or the job (Tversky & Kahneman, 1973). This judgemental and cognitive short cut is one in which a person evaluates the frequency of classes or the

probability of events by the ease with which relevant instances come to mind. As a result, jobs tend to acquire "sex appropriateness".

The "sex appropriateness" of any given job differs from time to time, from country to country, and even from employment situation to employment situation. Using sex as a criterion for access, or continuation, of a given job is however illegal discrimination in most modern countries. Any attempt to categorize jobs on the basis of sex is in violation of Section 15 of the Canadian Charter of Rights unless it is part of an affirmative action selection procedure.

Despite the foregoing observations, we still have a large number of gender discrimination problems. There is the "pink ghetto" of low paid jobs that are held primarily by females; and outside of the ghetto, women still, on an average, earn 63% of the males' wage for the same jobs. While there are some sectors in which women are moving into managerial ranks, there are many others which actively prevent women from acquiring any power or prestige, as well as the wages which go with the package. Conversely, although with less social and financial impact, men are also discriminated against when they cannot freely choose a job without imperiling their identity, by taking "women's work".

In the office, the factory, the sales floor or the lecture hall, evaluations of workers may logically be expected to focus on the skills and ability of an individual to do the job, regardless of sex, race, or other social characteristics. But the research is full of analyses of masculine and feminine characteristics as indicators of good or bad workers (see for example Bernard, Boyle and Jackline, 1990). This focus on sex lies in Western society's past focus on biologically determined sexual roles and reproductive fitness, not necessarily

on the ability to do the job at hand (Bose & Rossi, 1983; McHugh, Koedke & Frieze, 1986; Posner & Powell, 1983; Sayers 1979; Taynor & Deaux, 1973; Wheeler, 1981). (For a more detailed review of this history, see Appendix A). This has resulted in a confounding of sex and efficiency, whereby being female has been equated with being a bad worker, and vice versa.

The concepts of what constitutes a "Good Worker" and "Bad Worker" when evaluating a person doing a job may include inaccurate assumptions of the physical requirements of the job as well as stereotyped expectations of the ability or availability of women to do that job. In the opening paragraph to her seminal paper, "Women are not from Lilliput or Bedlam", Redgrove (1984) wrote:

To accept 'women at work' as a viable subject for discussion one implicitly assumes that men and women have different capacities for work, which result in different levels of performance. The implications of sex differences for work should depend on the numbers of men and women able to meet job requirements. If job demands fall within the capabilities of most men and women, sex differences are irrelevant. If job demands fall outside the capabilities of most men and women the design of the job should be examined. In practice, women tend to be regarded as small simple-minded men, who are too delicate for some jobs on the one hand and who are too stupid to be employed in anything but the most menial tasks on the other. These prejudices support inefficient and unfair treatment of women and men, which is especially unfair to women, and many people have denounced sex differences as nonexistent or irrelevant, in order to achieve fairer treatment for women. (p. 469).

In other words, physical differences can make a difference to *being able* to do a job, but not whether one *should* do the job; and these differences should not result in the prevention of the majority of either sex from being able to do the job, if the job is defined appropriately. If they do, bias is being manifested. The only specifically sex-linked job is biological: having babies, all others jobs are a matter of skill, strength, intelligence or agility, abilities which can be manifest by both men and women.

Sexual Bias in Job Evaluation

A major way in which society can perpetuate gender injustice is in the selection and evaluation of individuals in employment situations. Szasz (1966) and others have demonstrated that evaluation is not the objective, pure science some would have us believe; rather personal observations are put through personal filters. One of the factors in the recognition of bias in job performance evaluation therefore is to evaluate the categorizer as well as the categorized. This recognition impacts on both the scientific analysis of the phenomenon as well as those workers in the field who are required to evaluate the work of others.

Bias

As defined by McHugh, Koeske and Frieze (1986), bias represents the accumulated common experience of a particular group. A representative of that group, because of characteristic ways of viewing the world that are taken for granted, cannot see the bias because of the assumption that one's personal experiences or limited understanding are shared by everyone else.

Bias can be controlled, however. Yanico (1978) found that bias can be fluid and easily influenced. Subjects who were exposed to sex biased information showed evidence of more biased attitudes after reading the information than were the subjects who read similar but unbiased information.

The word "bias" can also be used to define a non-judgemental perspective, as when Coles (1982) wrote in the preface to his textbook that the text's bias is toward conceptualization and understanding of basic principles. Following the general use of the word in the literature however, the word bias will be defined as a judgemental perspective leading to systematic prejudice.

Forms of Bias

There are two specific patterns of sex bias in psychological experimentation according to Hare-Mustin and Marecek (1988). These are Alpha Bias and Beta Bias. A third form of bias can also be found through the use of a stereotype regardless of disconfirming evidence.

Alpha Bias is the exaggeration of sexual differences. This view holds that male and female are different and opposite, and thus have mutually exclusive qualities. Moreover, men are viewed as individuals, but women are viewed as groups of women, denied the individuality granted to men by the often male researchers. As Peterson and Wittig (1979) point out, in our society we tend to interpret behaviors thought to differentiate the sexes as inevitable ones. Many people (in experimental as well as natural settings) observe *what is* regarding sex differences, and assume that these differences *ought to be*, thus committing the naturalistic fallacy (Engel, 1976). See also Gilligan (1982) for further discussion of experimental sex bias.

Beta bias is the minimization of differences, where the male is the norm and the default sex; women are measured against this norm and are often found to be poor males. Beta bias can be seen for example in the fact that prior to the last decade, most generalizations that psychologists made about human behavior were based on the studies of men (Wallston, 1981).

Another example is seen in the systems and structural theories which disregard gender, and view age as the central organizing principle, ignoring lack of comparable power and resources in the members of the family (Hare-Mustin and Marecek 1988). Most research has been done on males, and generalizations about human development (eg. Kohlberg, 1973), career life patterns (eg. Super, 1957, 1980) and so on, are based largely, or in some cases, entirely on the male life.

Stereotyping is one form of bias which is generally accepted as either good or bad depending on the context. A stereotype is defined as a cognitive heuristic, a useful short cut in classification which allows situations or people to be classified by a prototypical model which does exist, though perhaps not as a good representation for the person or situation being so classified. Mayer and Drass (1984) suggest that entire classes of individuals can be thus typified.

However, while these definitions are important in the overall understanding of bias, they do not specifically apply to the workplace. For that, we turn to Mount and Ellis (1989) who examined three potential sources of bias.

The first one is direct bias. This is defined by the authors as jobs held predominantly by females which are judgmentally under-evaluated relative to predominantly male jobs with the same content. That is to say, the job title makes the difference, not the actual tasks of the job.

The second is indirect bias. This is defined as job evaluation judgements which are influenced by knowledge of possibly discriminatory current wages. The third factor is sex of rater bias. This is the differential evaluation given by male and female raters on the same job.

The structure of the analysis of bias in the literature section will follow the definitions as offered by Mount and Ellis (1989).

Consequences of Stereotyping

Ashmore and DelBoca (1979) found that there is a difference between stereotype and stereotyping. A stereotype is a mental representation comprising three classes of personal attributes: defining, identifying and ascribing. Stereotyping is the inferential system a person uses in the perception of people and interpersonal events. As Ruble, Cohen and Ruble (1984) point out,

Stereotyping is a way to simplify our interactions with a complex environment. Yet stereotypes are not just oversimplified views of the way things are. Stereotypes also seem to define the way things should be. Thus, sex stereotypes are closely related to views of the personal characteristics and occupations deemed appropriate for men and women (p. 351).

Sexual stereotypes, though over-simplifications derived from a childhood heuristic of establishing gender identity (Eaton, 1983), usually prevent a true assessment of an individual's capabilities, attributes, and potential (*A study of Sexism*, 1977). Terborg (1977) recognized two types of sexual stereotypes. He defined *sex-role* stereotype as the belief that it is appropriate for a person to be in certain occupations or activities, because of

their sex and irrespective of their interests or abilities. *Sex-characteristic* stereotypes include the belief that abilities are dichotomized on the basis of sex, as for example, women are emotional and men are independent.

Sexual stereotypes can result in the conception that certain jobs are more appropriate for members of one sex or another. This is referred to as occupational gendertyping, and results in gender-typed roles.

Occupational gendertyping reflects, according to Ruble, Cohen and Ruble (1984), a set of probabilistic judgements about whether a given job will be held by a man or a woman. These judgements also tend to be correlated with normative expectations about the sex, appropriate personal characteristics, and pay associated with the job. "Thus occupational sex typing and sex stereotypes operate in concert to serve as barriers for women aspiring to positions with high pay and prestige" (p. 342).

Following the convention of what is "normal", therefore, any person who violates these unspoken normative expectations, strikes a discordant note. But how a person responds to these changes and differences is different from person to person, depending on some basic predispositions.

There is a vast misunderstanding of the difference between a naturally evolving sexual or gender role which forms part of one's identity, and may comprise many of the elements incorporated in a stereotype, and the restrictive elements which occur when stereotypes are imposed and acted on by another. It is one thing to be female, and do things that, on the average, other women do; it is quite another to force a woman to do those things to the exclusion of other options.

The Problem

Following Szasz's contention that we see others through our own personal filter, the present research hypothesis is that the source or sources of bias may be internally derived and unrecognized characteristics of the rater. Specifically, it is hypothesised that a rater's low self-ratings on work characteristics will lower the rating of the evaluated person on one or more dimensions. In addition, controls will be set for the sex of the rater, sex of the worker, and the typical gendertype of the jobs.

In laying the groundwork for an experimental test of this hypothesis, Chapter two examines the literature which has previously attempted to isolate the sources of bias; and Chapter three describes the development of the instrument used in the current study. Chapters four and five describe an experiment and its replication. Chapter six reviews the results, and presents the conclusions.

Chapter 2

Literature Review

Bias is a perspective, and as such is not necessarily good or bad. As with most things, it is what one does with it that can be destructive. It is necessary to identify one's bias in order to broaden one's perspective, to ensure, for example, that the evaluation that one is giving is as fair and just as possible. Each person's bias is built with the history and the culture with which one is surrounded, and like the air we breathe, is often unremarked or unrecognized.

The history behind sexual bias is remarkable for the bias it displays of the male writers of history. There has been a lot of work lately in trying to uncover the systematic re-writing of history. Following Hobsbawm's (1983a) notion of invented tradition I have examined the historical record for many of those instances which could unconsciously colour the bias of evaluators and researchers alike as it would pertain to the workplace. Put together, and examined by academic discipline, the record of the systematic purveying of inaccurate information is appalling, but because it provides the historical context to which we are all subject it is included. However, since it does not directly pertain to the experimental review of the current study, it is placed in Appendix A. Following now is the examination of the experimental literature.

Sexual bias, sexual stereotyping and bias in job evaluation have been examined in a number of situations. A very brief glance at the literature shows for example that there have been studies on gender and power (Winsor, 1984); sextyping and the media (Perloff, Brown & Miller, 1982;

Mackey & Hess, 1982); cognitive bases of stereotyping where stimulus persons were rated on competence (Taylor & Falcone, 1982); sex differences in job orientation, (Brenner & Tomkiewicz, 1979); sex differences and work environment (Redgrove, 1979); effects of sex, career orientation and occupational type on vocational integration, differentiation, and conflict; (Neimeyer, Metzler & Bowman, 1988); sex and organizational effects, (Young, 1978); sex effects on managerial hiring decisions (Rose & Andiappan, 1978); sex effects on selection decisions, (Renwick & Tosi, 1978); effects of gender of applicant, type of information and type of job (Glick, Zion & Nelson, 1988); gender and prestige, (Beyard-Tyler & Haring, 1984); and gender and occupational stress (Crabbes, Black & Morton, 1986); experiments testing the interaction between the sex of subject and sex type of a job in a variety of pen and paper tests (e.g. Arvey, Passino & Lounsbury, 1977; Francesco and Hakel, 1981; Garland and Smith, 1981; Knight and Sedlacek, 1983).

In an annual review of vocational research Greenhaus & Parasuraman (1986) reviewed over 40 articles on gender-related issues, but none asked the research question: what attribute or attributes in the observer or rater are important in understanding bias in job evaluation? Nor were there any such studies cited in the 1986 review (Slaney & Russell, 1987). There were many observational studies and surveys examining the specific area of vocational research, especially studies which focused on gender differences in workers' and managers' attributes (for example, Bruning & Snyder, 1985; Kovach, 1985; Pocock, 1987; Sadker & Sadker, 1985; Vogel, 1985;) but there were no experimental studies in which variables were systematically manipulated.

In a review of the research on job evaluation, Mount and Ellis (1989) examined three potential sources of bias. The first one is direct bias. This is defined by the authors as jobs held predominantly by females which are judgmentally under-evaluated relative to predominantly male jobs with the same content. That is to say, the job title makes the difference, not the actual tasks of the job.

The second is indirect bias. This is defined as job evaluation judgements which are influenced by knowledge of possibly discriminatory current wages. The third factor is sex of rater bias. This is the differential evaluations given by male and female raters to male and female hypothetical workers doing the same job. In addition to these three categories, I shall examine some research on self report inventories as they pertain to the world of work.

This chapter will focus on previous research on sources of bias in job evaluation. In particular, the research pertaining to the independent variables used in this study that is, the sex of the rater, the sex of the hypothetical worker, and the sex type of the job, are discussed.

Direct Bias

This section examines the literature which centres around the type of bias defined by Mount and Ellis (1989) as jobs held predominantly by females which are judgmentally under-evaluated relative to predominantly male jobs with the same content, which is the "sexttype" or the "gendertype" of a job. The first task is to examine the actual definitions of occupational gendertyping

and the second is to attempt to find previous research which would identify suitable jobs for the experiment at hand.

A meta-analysis by Martinko and Gardner (1983) found that the major variables in sex-related discrimination studies are the gender type of the job, the amount of job-related information regarding the applicants, and the characteristics of the evaluators. Most of the experiments were based on bogus resumé. In none of the studies were the evaluators asked to evaluate themselves on the same criteria as the applicant.

Cooper, Doverspike, and Barrett (1985) noted that the 'sex type' of an occupation is frequently used as an independent variable in vocational, organizational, and sex-role research and has been found to interact with the sex of subjects and applicants and affects a host of dependent variables, including choice of and interest in an occupation. But the authors also note that very little attention has been paid to the question of how a 'sextyped' occupation is defined or operationalized. Since this is the basis of the "direct bias" category, a closer examination will now be made.

In practice two techniques have been used. One is to take the rates of actual participation of men and women within a specific occupation to some arbitrary cut-off rates such as 70/30. A second technique uses subjective ratings of occupational sex typing. For example, subjects can be asked to rate occupation along a scale of masculinity-femininity or be asked to estimate the percentage of men and women in an occupation.

Cooper et al (1985) conducted a study that compared subjective estimates to labor market data. Results showed that subjects were "accurate" in their labeling of male sex-typed occupation but underestimated the actual numbers

of women in six occupations. The authors concluded that more attention needs to be paid to the determination of the sex-type of an occupation and that additional research is also needed on the development and maintenance of perceptions of sex-types of occupations.

Bielby and Baron (1986) found that there appears to be no compelling technical rationale for attaching a specific sex label to each particular job, yet employers did so. Accounting for these gender distinctions among work roles requires going beyond efficiency perspectives on organizations and inequality. As Bielby and Baron (1986) point out, once established, sex labels of job titles acquire tremendous inertia, even when similar work is done by the opposite sex elsewhere in the same establishment or in other settings. As Shinar (1975) had concluded eleven years earlier, the sex labeling of occupations seems to be a self-perpetuating system in that the proportion of men and women in occupations parallels the traditional beliefs about the sex-related attributes required to perform those jobs.

Bielby and Baron (1986) found that there is considerable sex segregation within and across organizations, even within detailed occupational categories. Once an occupation becomes designated as a male or female occupation, even if stereotypes about men and women change, discrimination may continue according to the evidence gathered by Glick, Zion, and Nelson (1988). They attempted to discover if information related to sex stereotypes, but not directly related to job qualifications would be associated with job interview decisions. An experiment was conducted with 467 male and 13 female upper level managers and business professionals who made initial screening recommendations about male and female applicants for jobs based on

information provided in a resume. The resumes were varied by (1) gender of applicant (2) type of gender-stereotypically individuating information (the kind of hobbies they enjoyed) (3) and three different jobs defined as stereotypically masculine, feminine and sex-neutral. Gender was manipulated by having "Ken Norris" or "Kate Norris" at the top of the page. The individuating information was varied with the masculine/ feminine/ neutral expressions of summer job, campus workstudy job, and extracurricular activity experiences. The jobs were: masculine - sales manager for a heavy machinery company; neutral: administrative assistant in a bank; and feminine: dental receptionist/ secretary.

There was no main effect for gender of applicant, and no gender by individuating information interaction. There was however, a main effect for individuating information, indicating that applicants who had engaged in "masculine" activities were perceived as possessing significantly more stereotypically masculine and fewer feminine personality traits than the applicants who had listed "feminine" activities, regardless of the actual sex of the person.

For the masculine job, there was found a significant gender of applicant main effect, indicating that male applicants were more likely to be interviewed than were female applicants for the stereotypically male job. For the feminine job, there was a main effect for the gender of applicant, and there was a gender by individuating information interaction. There were no significant differences for the neutral job.

Glick et al (1988) were surprised to find a Gender of Applicant by Type of Job interaction in the overall analysis. Male applicants were still preferred

over female applicants for the masculine job, and female applicants were preferred over male applicants for the feminine job.

Greenfeld, Greiner, and Wood (1980) found that jobs which were male dominated tended to be higher in the organization and were more likely to be professional, technical, and managerial in nature. The relatively balanced jobs tended to be found in the computing systems areas and personnel. Female dominated jobs tended to fall into the traditional service areas: office manager, personnel assistant, videotypist, executive secretary, payroll clerk, and librarian.

The effects of gender and sex of applicants for gender-typed jobs were investigated using a post-interview decision-making process by Francesco and Hakel (1981). Subjects rated 8 applicants in one of the three job conditions: male, female and neutral gendertyped jobs. Resumes were created. Some of the information used to create the impression of gender was taken from the Bem Sex Role Inventory, but what these were was not stipulated. Traditionally masculine and feminine interest were also used, but again, not stated in the article. Results indicated that applicants of both sexes who had masculine interests were preferred over applicants with androgynous interests who were preferred over applicants with feminine interests. For the neutral job, androgynous applicants were preferred over masculine applicants who were preferred over feminine applicants.

Taynor and Deaux (1973) had male and female subjects read descriptions of either a male or a female person performing well in an emergency situation that had been previously rated as more masculine than feminine. The subjects then allocated rewards and evaluated performance, effort, and ability

of the performer. It was predicted that the female would be rated as more deserving of reward than the male for an equivalent performance predetermined to be a "clearly a male-associated task". The hypothesis was supported.

Among the tasks required, subjects were asked to rate the stimulus person on a series of 7-point bipolar scales, including adjectives that related male-female dimensions, such as dominant-submissive, strong-weak, and masculine-feminine. The use of these terms however, places gender in the forefront of the subject's mind, making gender judgements more salient. In addition, other research (Bem 1974, and others) suggests that masculine-feminine is not a bi-polar construct and cannot be isolated in that fashion.

Summary This section examined the literature which centres around direct bias as defined by Mount and Ellis (1989). The first task was to examine the actual definitions of occupational gendertyping and it was found that there are a number of definitions. In practice, the gendertype of the job is whatever the dominant portion of the workforce wants it to be.

The second task was to attempt to find previous research which would identify suitable jobs for both the experiments at hand. Since male jobs were found in professional, technical, and managerial, the specific jobs of drilling rig welder and restaurant manager were chosen. Female jobs were in the service sector, so nursing researcher and social secretary were chosen. Neutral jobs were defined in the computing field, and so computer programmer and desk-top publisher were chosen to represent this jobtype.

Indirect Bias

Indirect bias is defined as job evaluation judgements which are influenced by knowledge of possibly discriminatory current wages by Mount and Ellis (1989). The purpose of this section is to examine previous research and the results when manipulating this variable.

Although "women's liberation" had been around for a decade, Ferber and Lowry (1977) noted that women still earned only three-fifths as much as men. One reason given for discrimination has been the different attitudes of women as compared to men toward work which make them less desirable as employees, such as less award needs, and lacking a desire for prestige. But Wheeler's (1981) research suggests that there are in fact very few sex differences in perceptions of desired rewards, availability of rewards, and abilities in relation to occupational selection, when choice of occupation is held constant.

Ferber and Lowry (1977) comment that difference in income is not surprising since "Many laymen and social scientists alike assure us that this is not only the way it is, but the way it has been and presumably will be. In other words, biology is destiny." As a result, they undertook a cross cultural survey to test the following hypotheses:

1. Labor force participation of women is uniformly lower than labor force participation of men;
2. Women's occupational distribution differs significantly from that of men within countries but tends to be similar to the distribution of women of other countries; and

3. The earnings of women are lower than those of men, and the ratio of women's to men's earnings is reasonably stable as between countries and over time.

All three hypotheses were strongly rejected. The authors conclude that the evidence weakens the case that the economic status of women is primarily determined by inherent, immutable biological differences between the sexes, and points to the importance of cultural beliefs. But recent research demonstrates that there is still a significant difference in salaries: controlling for training and work experience, women earn lower wages and are offered lower starting salaries (Frieze, Olson & Good, 1990).

Financial responsibility emerged as a bias in favor of male sex-typed jobs in an analysis of internal bias in job evaluation instruments in a study conducted by Doverspike and Barrett (1984). To continue the study of bias, Cooper, Doverspike, Barrett and Alexander (1987) examined 244 male and 407 female undergraduates who were given a short biodata sheet and job evaluation task. There were 10 job evaluation factors that are in frequent use in actual job evaluation systems. Participants read each factor description and rank ordered each according to its importance in determining salaries. Second, they rated each factor on a scale of 0 to 100 according the relative importance of the factor. With these ratings, a female-based scale and a male-based scale was derived, and applied as a weighting factor in evaluating jobs.

The results indicate that education was significantly more valued by the females, and financial responsibility was significantly more valued by the males. However, it is not clear how differences in these values would cause discriminatory hiring practices or differential payment of workers.

In a study conducted by Rynes and Rosen (1983), 42 male and 42 female managerial, professional and technical employees enrolled in an evening MBA course were given a questionnaire to test their reactions to advancement opportunities. Part 1 tapped strategies for advancing one's career. In Part 2 participants were requested to indicate the amount of salary increase required to accept each hypothetical opportunity for advancement. Results indicated that there were no sex differences with respect to strategies for career advancement, nor to the salaries expected.

Summary The purpose of this section was to examine previous research and the results when manipulating this variable. It was found that there is generally no sex differences in wage expectations. Any differences in allocating wages to a hypothetical worker could be labeled bias, or differences in self assigned wages could be the job itself.

Sex of Rater

Neimeyer, Metzler and Bowman (1988) examined the effects of sex, career orientation and occupational type on vocational integration, differentiation and conflict. The design featured traditional vs. nontraditional career orientation, male vs. female dominated occupations, and sex of subjects. Participants were 114 male and 151 female psychology undergraduates. The dependent measures were responses to 10 occupations along a common set of 10 bipolar constructs using a 7-point Likert scale (e.g. -3= dull work, +3=interesting work) which were used to derive scores called

integration, differentiation and conflict. Integration was operationalized as the overall degree of correlation among all construct ratings in the matrix. The conflict score reflects the proportion of variance in the system that is negative or conflictual. The differentiation score was calculated on how differently each of the 10 occupations on the grid is rated and how differently each of the 10 constructs is used in making those ratings.

Males were found to have higher levels of vocational differentiation and females showed higher levels of integration. The authors suggest that the occupations may be biased toward men, and men are more differentiated because the constructs are more personally meaningful to them. They report that their results support the operation of sex differences, but they also note that the research leaves unanswered questions regarding the meaning of the sex differences. There was no attempt to uncover sources of bias, but the authors suggest that future work may be directed at uncovering the determinants of these differences.

Beutell and Brenner (1986) and O'Hare and Beutell (1987) found that sex differences did not contribute to the variance when examining for the ability to cope with career decision making or in work values. Yanico and Hardin (1986) conducted a study in which male and female students rated how much they thought they knew about 18 male-dominated and 18 female-dominated occupations. They also rated the entire 36 occupations for appropriateness for men vs women and completed an instrument that measured their actual knowledge of the tasks and duties of these jobs. Women overestimated their scores on traditional and underestimated on nontraditional, men made errors in random in relation to gender type of the occupations being predicted. There

was no overall difference in accuracy; both male and female were not very good at predicting what they knew about the occupations, suggesting the need for greater career preparation and career information for college students.

In summary, there is equivocal evidence that the sex of the rater plays a part in bias. It would seem to depend on the measures being used. Since the current study uses self-evaluations, there may be sex differences, but it may not be the case that sex of the rater would be a factor in differential assignment of wages for the worker.

Sex of the Hypothetical Worker

Sometimes what you find is not what you were looking for. Austad and Aronson (1987) reported on two studies, the one they planned, and the one that emerged from the data. The intent was to test 111 mental health professionals to learn if sexist attitudes persist, and if they do, how they influence clinical practice. The authors were concerned about the sophistication of this population, and set out to control for the inhibition of inappropriate sex biased responses.

The treatment variables were sex of patient, sex of practitioner and the gendertype of instructions: male/female sex role stereotype instructions vs absence of sex role stereotype instructions. Participants were asked to rate each of 27 items on a 7 point Likert scale. These ratings formed 4 scaled categories. There were two versions of a pseudohistory of a patient complaining of depression. They were exactly alike except for names, modifiers and pronouns. Two alternative sets of directions were given. The nonsalient instructions said the goal of the experiment was to relate demographic variables to clinical

ratings, and the salient instructions indicated that the goal was to study the relationship between sex role stereotyping and clinical judgements. There were no main effects for this study. The data failed to support the notion that awareness about the gender-related intent of the study would result in differential responding.

In re-analysing the data however, the authors found that if the participants came to the study with the preconceived notion that the object of experimental study is female, then the topic of study is likely to be related to the topic of gender. This indicates a potential experimental bias. The authors suggest that

By virtue of their gender alone, males may inspire more associations to the topic of research than do females. The female gender may be more frequently associated with the topic of sex bias. There may be a "female role" within psychology experimentation. ... The findings support the notion that it can be very difficult to detect the presence of sexist beliefs in people's cognitive sets let alone the way in which they influence decision making. It also supports the idea that the kind of awareness that produces sexist responding may be subtle, subliminal, and difficult to measure (p. 331).

Ratzlaff and Kahn (1983) suggest that the methodology used by Schroeder (1979) in an unpublished Master's thesis following an earlier study by Donahue (1976) is appropriate for research where gender is a stimulus variable. It was also described in Kahn and Schroeder (1981). The purpose of the study was to determine if high school counsellors in British Columbia

would select a more restricted range of occupational choices for females than for males, as they did in Michigan.

The 200 participants who were sent questionnaires were chosen randomly from the entire pool of 490 high school counsellors in the province. There were 114 usable completed questionnaires. The stimulus was 6 case studies which included the subject's name, measure of ability, socio-economic background, values, personality traits, measures of achievement and interest, as well as social pressures that might influence career choice.

The response selections were made from a list of 28 occupations which reflected the working environment in British Columbia. Coefficients were assigned to annual salary, education and supervision requirements. Donahue had used parametric tests and Schroeder used non-parametric tests, and the results are similar. Counsellors tended to choose occupations that were lower paying and required more supervision for females than for identical male case study subjects.

In summary, the sex of the worker may well be a cause for bias, but not if it is ascertained that the experimental measure is linked to gender studies. As a result, an attempt will be made to keep the tone of the study within a neutral workplace mode, and avoid words which connote sexual stereotypes.

Self Attributes

In a critical meta-analytic review Whitley (1983) referred to the "Masculinity model" which he defined as one "in which one's psychological well-being is seen to be a function of the extent to which one has a masculine sex-role orientation, irrespective of one's gender." The results of the review

were interpreted as providing strong support for the masculinity hypothesis. Self-esteem was positively related to the desirable characteristics and negatively related to undesirable characteristics which fits a common sense interpretation of self-esteem. Whitley pointed out that self-esteem is as much related to the valence of the traits used in sex-role inventories as to their sex-role orientation.

Moore (1984) reported that the masculine mode of behaviour represents the "male managerial model" and the feminine mode represents characteristics commonly associated with female behaviour in the sex-role-stereotype as portrayed in the Bem Sex Role Inventory (Bem 1974). The sex effect tends to be greater for the low performer than for the high performer. This suggests that in rating high performers the performer's sex makes little difference, but in the low performance group there is a reinforcing mode effect; the female performing in the masculine mode who is also out of role is rated higher than the male performer.

Blier, Atkinson, and Geer (1987) conducted an experiment in which male and female university students rated a number of counsellor descriptions. Some of the descriptions were portrayed in a stereotyped feminine way, others in a stereotyped masculine way, and others were neutral. The students rated the feminine sex role higher for matters of personal concerns, the masculine sex role higher for assertiveness concerns, and both the masculine and androgynous sex roles rated higher than the feminine sex roles for academic concerns, regardless of the actual sex of the counselor. In other words, the sex of the person was not a factor, but the role that one played was.

Mellon, Crano and Schmitt (1982) ran a complicated repeated measures analysis of variance design to assess agreement patterns of 66 male and 132 female students to three types of sentences. For example, a trait statement: "In general, women are more independent than men"; a role statement: "In general, men make better janitors than women"; or a job requisites statement: "good musicians should be independent".

The three conditions were job requirement (traits necessary for a variety of occupations); the relative possession of these traits by men and women (traits) and the relative suitability of women or men for these occupations (roles). The trait words used were: independent, competitive, masculine, attractive, sensitive, feminine, dishonest, talkative and loyal. The list of occupations used in their study was: janitor, taxi-driver, hairdresser, practical nurse, textile weaver, shoe-factory worker, insurance agent, chiropractor, elementary school teacher, social worker, store manager and musician.

There was a sentence type by sex interaction, indicating that the manner in which males and females respond to job roles and trait statements varied with sex and type of sentence. The main effect for sex depended on the level of sentence type. Role statements reflected the greatest sex differences. When the sentences were too general, or abstract, there were no differences, but when traits were linked to a specific job, that is, more concrete an example, the greater the differences. Mellon et al. suggest that "exploring sex bias from a cognitive perspective, rather than merely documenting differential behaviors toward men and women ... should increase the understanding of the phenomenon as well as suggest steps that may be taken to correct these difficulties" (p. 540).

Many studies use gender-embedded words to test work attitudes, attributes, and abilities. (e.g. Blier, Atkinson, & Geer, 1987; Carlsson & Jaderquist, 1983; Lips & Cowill, 1988). As Hare-Mustin and Marecek (1988) point out, the conventional meanings of gender are embedded in our language, and we are held by it, unless we take it apart and expose the hidden meanings. It is their contention that focussing on gender differences marginalizes and obscures the interrelatedness of women and men, as well as reinforcing the restricted opportunities of both.

Summary Relating self-attributes to one physical sex will not expose bias although one's stereotyped role has contributed to bias in some studies.

A Brief Examination of Several Existing Inventories

Gerber (1984) found that both male and female stimulus persons were rated more masculine when they were successful than when they were unsuccessful. Much of the literature looked at a manager, a variation of worker, but I wanted to keep a broader based definition of worker than manager would afford. Following now is a very brief review of existing inventories used in the workplace which may be of use for the current investigation.

Superior Leaders Some research had been done in looking at the characteristics of superior leaders (Kouzes and Posner, 1987). Twenty characteristics were rank ordered by participants of a study, but the percentage of managers who endorsed these characteristics dropped below 50% after the first four words: honest, competent, forward-looking and inspiring. After the

11th word, the percentage dropped to 30, and the last four words were endorsed by less than 20 percent of the managers surveyed.

Good and Bad Manager Powell and Butterfield (1984) examined perceived characteristics of good managers and bad managers, using the full Bem's Sex Role Inventory (Bem 1974) to measure the sexual stereotype of both the subjects and the projected manager. Results are listed as masculine, feminine, androgynous and undifferentiated, in the standard BSRI manner. The Good Manager was described as "masculine" by 75% of the subjects, and individuals rated the manager as more masculine and less feminine than themselves. The Bad Manager was described as undifferentiated, that is, low in both feminine and masculine traits.

Moore (1984) likewise found that evaluators placed higher value on masculine over feminine modes of behaviour. Powell (1982) had found 60% of subjects described a good manager as masculine. Gerber (1984) found that both male and female stimulus persons were rated more masculine when they were successful than when they were unsuccessful.

Powell and Butterfield (1989) replicated their own earlier work with a revised Bem Sex Role Inventory, and while the Good Manager showed up more androgynous and less masculine, and despite an increase in the proportion of women managers in the decade, the good manager continues to be described as masculine rather than androgynous. Kottke (1988) found that subjects' perceptions of their sextyping did not compare with their self-reports on the BSRI adjectives, and considered inclusion of opposite sex-characteristics within the perception of their own sex-role somewhat appropriate.

Bem's Sex Role Inventory Much of the research involving job performance evaluation used Bem's Sex Role Inventory (BSRI) (Bem, 1974) as a dependent variable (for example, Autor, Suyemotro & Harder, 1988; Feather & Said, 1983; Faulkender, 1985; Keys, 1985; Kottke, 1988; Powell, 1982; Thompson, 1989; and many others).

However, the Inventory follows a theory of sex role identity put forward by Bem (1974) which does not assist in the current research. What was needed was a list of words which could be used by the participants in a study to rate both themselves, and another person in a hypothetical situation, with some degree of assurance that these words would measure both positive and negative characteristics in the context of the work world. This context may or may not be the same as any other context. The complete list of words used in the Bem Sex Role Inventory is found in Table 1.

Table 1

Complete List of Words in Bem's Sex Role Inventory

MASCULINE	FEMININE	NEUTRAL
acts as a leader	affectionate	solemn
aggressive	cheerful	friendly
ambitious	childlike	inefficient
analytical	compassionate	adaptable
assertive	does not use harsh language	unsystematic
athletic	eager to sooth hurt feelings	conventional
competitive	feminine	reliable
defends own beliefs	flatterable	jealous
dominant	gentle	truthful
forceful	gullible	secretive
has leadership qualities	loves children	sincere
independent	loyal	conceited
individualistic	sensitive to needs of others	likeable
makes decisions easily	shy	helpful
masculine	soft-spoken	theatrical
self-reliant	sympathetic	moody
self-sufficient	tender	conscientious
strong personality	understanding	happy
willing to take a stand	warm	loyal
willing to take risks	yielding	unpredictable

The Masculine and the Feminine scales are not equivalent. For example, there is no comparable negative concept for "gullible" or "flatterable" in the masculine section, and the concepts are not even appropriate for the world of work, which may itself be a form of bias, a construct totally at variance with the theory of androgyny worked out by Bem. Androgyny is a state of balance between positive masculine and positive feminine traits. Sayers (1979) found after an extensive examination of the literature that the use of "masculine/feminine" in terms of roles and traits is unwarranted, and reinforces existing inequalities in the social lot of both men and women.

Wolff and Watson (1983) found that not only were the groups of words not balanced for social desirability, but were not matched for personal adjustment. Some of the feminine items suggest neurotic traits and or limited intelligence. Wolff and Watson suggest that

masculinity and androgyny represent better adjustment than femininity or undifferentiatedness which may reflect a difference in the scales rather than one associated with the personality traits they were developed to measure (p. 544).

In a recent examination of sex-role identity and mental ability, Bernard, Boyle and Jackline (1990) found, contrary to previous findings, that highly androgynous (high masculine-high feminine) females did not perform as well as high masculine-low feminine females. They also found that lower masculinity among males was associated with higher performance, suggesting to the authors that males who have not embraced the traditional sex-type stereotype regarding role behavior, demonstrated higher levels of intelligence relative to sex-stereotyped males.

Carlsson and Jaderquist (1983) in their "note on sex role opinions as conceptual schemata" suggest that the children's behaviour listed in the study "illustrated six feminine and six masculine traits ... feminine: affectionate, dreamy, nurturant, sensitive, touchy and worrying; masculine: clear-thinking, dominant, forceful, strong, tough, and unexcitable." (p. 65) Not surprisingly, they suggest that

The results showed that the sex-role schema were more rigid for the male than for the female role. One possible explanation for these results is that the masculine role is more highly valued than the feminine role, and that the highly valued male role is more easily accepted, regardless of whether it is shown by girls or boys" (p. 67).

If it is the case that these roles are valued independent of the sex of the person exhibiting them, then they are not traits, and the attributes which are used in measuring these roles could be used for other purposes.

Lips and Cowill (1988) succinctly wrapped up their study with the comment that "there is some evidence that social prejudice in favour of men may not be as powerful as a general prejudice in favour of the things that men do" (p.58). This is similar in nature to the Carlsson and Jaderquist (1983) research which concluded that the value is placed on the valued male role, rather than the sex of the incumbent of the role. This suggests a confound in research which only looks at masculine and feminine as a sexual attribute, that is, associated with the biological sexuality of the person, rather than a social creation of a gendertyped role which may be associated with the wishes of a dominant group.

It is acknowledged that Bem was studying stereotypes – the picture of the moment of social desirability – as well as exploring the notion of androgyny, that both men and women overlap with the attributes. But at the same time, the scales are used time and again in work-related gender research as descriptors of work values, and more importantly, used as a scale, with pre-defined values. Because of this, there is a bias against women, no matter how non-sexist the writing. For example, Benz, Pfeiffer & Newman (1981) found that traits that are the stereotypical ones were not those perceived in the high achieving students being studied, and in fact were negatively correlated with high achievement. The BSRI clearly differentiated between high achievers and low achievers but not between males and females.

Bem (1979) characterized the BSRI as more a measure of sextyping than androgyny, her original premise. Now referring to the inventory as a cognitive mind set, a gender schema, she suggests that it is "not measuring personality or disposition but the extent to which an individual spontaneously sorts into culturally masculine and feminine linked prescriptions" (p. 299).

Summary As a result, it was decided that while the BSRI could not be used as it was, it did provide a list of words that may be useful in the further development of a research instrument, as is described in Chapter three.

Chapter Summary

There is an extensive literature on the general topic of gender bias, and to a much lesser extent, on bias in job performance evaluation. Most studies used the sex of the participant, the sex of a hypothetical worker, or both as

variables. Many studies used sex role orientation, derived by the administration of the Bem Sex Role Inventory (Bem 1974) as a variable as well. The sextype of a job has also been used extensively, as has wages, or the perceived value of a job.

The specific relationship between how one evaluates oneself, and how one evaluates another has not been explored in the context of work. There did not appear to be any studies which specifically looked for differences between the participants' self-rated attributes and the values given on the same attributes given to a hypothetical worker by the participant. Yet this measurement may demonstrate bias, if the differences, if any, can be associated with the sex of the rater, or the sex of the person being evaluated, or even with the sexual stereotype of the job that the person is doing, and being evaluated doing. The whole issue of sex differences does not necessarily include the issue of bias. The current investigation sets out to do exactly this.

It is necessary to dig deeper, below the objective references which are socially coded and easily changed according to the prevailing winds. It is necessary to touch the emotional life of a person, without touching the emotional barriers that are part of our civilized armour. To do this, we need to be able to see how a person feels about him or herself, and compare that evaluation with how that person sees another on the same dimensions.

The Research Questions

The purpose of this study is to address the following questions:

(1) To what extent are differences in the overall ratings of vocational attributes of men and women, a function of the sex of the observer, the sex of

the observed, or the job gendertype (defined as being typically male, typically female or gender neutral)? What is the relationship between a rater's self-ratings on work characteristics and the ratings the same rater gives on a worker's evaluation?

(2) To what extent are differences in overall ratings of wages paid to workers in the context of masculine, feminine and gender neutral jobs, a function of the sex of the observer, the sex of the observed, or the job gendertype (defined as being typically male, typically female or gender neutral). What is the relationship between the wages that a person would pay him or herself, and the wages paid to another worker doing the same job?

(3) To what extent is the opinion of the appropriateness of workers in the context of masculine, feminine and gender neutral jobs, a function of the sex of the observer, the sex of the observed, or the job gendertype (defined as being typically male, typically female or typically gender neutral).

Preliminary to answering these questions, a usable word list was drawn up, by first administering a pretest described in Chapter Three. Representative jobs were selected and scenarios were constructed as described in Chapter Four, which also describes the administration procedures for the experiment.

CHAPTER 3

Development of the Checklist of Good Worker/Bad Worker Attributes

Introduction

The development of a pre-test instrument is now described. The results of this pretest were incorporated into the questionnaire used in both studies described in chapters four and five.

In order to eliminate words that some of the prior research has indicated elicit strong gender bias, I took out the obvious gender-referenced words such as "masculine" and "feminine" prior to formulating the pre-test list. Since Eccles (1987) pointed out that "Women are expected to be interested in occupations that allow the expressions of their 'need to nurture' " (p. 153) the word "nurturance" was eliminated.

In addition, the rest of the words were examined by a graduate student colleague for ambiguity and hazy concepts or phrases which could not be easily defined by the process of attempting to translate each concept into a one word equivalent in a thesaurus. Those words which could not be translated in this manner were eliminated. The resulting list had 36 words out of the 60 words which had been obtained from Sinnott, Block, Grambs, Gaddy and Davidson (1980) as representative of the current state of words used in research using the Bem Sex Role Inventory.

Method

Participants

A one-page questionnaire (found at the end of this section) was administered to 39 upper level Business Administration undergraduates taking two upper level personnel courses, taught by the same professor. There were 22 males and 17 females, with an average age of 24. 7 years.

Procedure

After introduction by the professor, the researcher said:

"Thank you, N. for the chance to do research in your classroom. Ladies and gentlemen, you are free to participate in this study or not. This is a questionnaire that forms a preliminary part of a longer study. Your task is to look at each word in the list, and decide if this is a characteristic that describes a good worker, or if it describes a bad worker, or if you can't fit it into a worker context, or can't identify it. There are no right or wrong answers, just answer with the response that makes most sense to you. Please check the box next to the word, in the column that agrees with your assessment. Please hand them in to me when you are finished, and thank you for participating in this study."

Good Worker, Bad Worker

This is a survey to see what the following adjectives mean to you in the context of good worker, bad worker. You are free to volunteer, and you are free to quit at any time. It is part of research being conducted for a master's thesis by Terry Fowler. There is no right or wrong answer; please indicate what the word means to you by ticking the box in the appropriate column.

	Good	Bad	can't say		Good	Bad	can't say
conscientious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	cheerful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
loyal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	secretive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
independent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	assertive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
reliable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	conceited	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
aggressive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	forceful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
adaptable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	analytical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
inefficient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	unsystematic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
gullible	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	self-reliant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
truthful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	flatterable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
unpredictable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	leader	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
athletic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	helpful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
moody	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	theatrical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sympathetic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	jealous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sensitive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	risk-taker	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
understanding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	sincere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
competitive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	tactful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
individualistic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	soft-spoken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ambitious	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	dominant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Would you please supply some personal information. Please *do not* indicate your name.

Age at last birthday: _____

major area of study: _____

gender: _____

Thank you for your cooperation. Please hand this form back to Terry when you have completed it.

Table 2

Results of Good Worker, Bad Worker Survey Pretestin Percentages, Rounded Off (selected words indicated by an asterisk)

word	good	bad	can't say
*conscientious	97%	0%	3%
*loyal	82	0	18
independent	53	2	44
*reliable	100	0	0
aggressive	13	5	82
*adaptable	100	0	0
*inefficient	0	95	5
*gullible	2	74	23
*truthful	85	0	15
unpredictable	0	61	36
athletic	26	2	64
*moody	0	85	15
sympathetic	50	0	50
sensitive	51	0	49
*understanding	85	0	15
competitive	44	5	51
individualistic	33	18	49
ambitious	61	0	36

Table 2 continued

word	good	bad	can't say
*cheerful	85	0	15
secretive	0	56	41
*assertive	72	0	28
*conceited	0	74	26
forceful	5	36	59
*analytical	74	0	26
unsystematic	0	49	51
*self-reliant	66	8	26
flatterable	2	26	72
*leader	74	0	26
*helpful	97	0	5
theatrical	8	18	74
*jealous	0	85	15
risk-taker	26	13	61
*sincere	92	0	8
*tactful	90	0	10
soft-spoken	8	5	87
dominant	0	8	92

Analysis

Percentages of each category of each word were calculated, and those attributes with a clear consensus of at least 66% were used in the major study, indicated by an asterisk. A figure of 66% is two standard errors above the scale midpoint value of 50%.

Discussion of Results

The results were somewhat surprising. For example, "independent", "competitive", "ambitious" which are generally considered covert "masculine" words descriptions, were split in half for value as a good worker, or couldn't say, as were "sensitive" and "sympathetic", which are considered covert "feminine" words. Other words which the literature had suggested were highly valued as masculine/good worker characteristics, such as "dominant" and "aggressive" were uniformly rejected as marks of a good worker within this context.

The 19 words which met the criterion of 66% agreement did not have equal numbers for positive and negative valences. It was however considered more important to use the results as they appeared than to artificially balance them, since time precluded as thorough a test of new words as had been performed on the current list. It was hoped that the words, while being drawn from a well-used and researched list of attributes in a sex-stereotype context, could now be used in a gender-free worker evaluation.

The negative terms and the positive terms were varied randomly in a new list, and used for both the self-evaluation and the evaluation of a stimulus worker, found in Appendix C. Details of this procedure are discussed in the next two chapters.

CHAPTER 4

Study One: Method and Results

Method

Participants

One hundred and twenty student volunteers, 60 males and 60 females, from two lower-level education classes at Simon Fraser University, and two lower-level geography classes, at Langara Community College participated in the study. Their mean age was 21.7 years, with a range of 17.5 years and a standard deviation of 5.3.

Research participants were enrolled in lower-level survey courses and represented a variety of undergraduate majors. The stated career aspirations of subjects showed a strong preference for teaching, with over half of the respondents naming teacher as their career choice, even in the geography classes. The breakdown of respondents by class, major, and career choice is found in Tables 3, 4, and 5, respectively.

Table 3
Class Distribution by Sex of Participants

	Education	Geography	Total
Female	56	4	60
Male	19	41	60
Total	75	45	120

Table 4

Students' Majors by Sex of Participants

Group	Arts	Business	Educ.	Science.	Undec	Other	Total
Female	33	1	15	2	7	2	60
Male	26	12	11	3	6	2	60
Total	59	13	26	5	13	4	120

Table 5
Career Aspiration by Sex of Participants

	Business	Other	Psychology	Teacher	Undecided	Totals
Female	2	3	7	41	7	60
Male	15	2	6	25	12	60
Total	17	5	13	66	19	120

Operational Definition

For the purposes of this study, I will define bias as the use of criteria which is not pertinent to the performance of a job at hand. The sex of the participants, the sex of the workers, and the stereotyped gendertype of the job are not pertinent to the performance of the jobs as described in this study.

Experimental Design

The independent variables in this study were the sex of the subject, the sex of the hypothetical worker, and the gendertype of the job, which I have defined as typically female, typically male, and typically gender-neutral. One job was assigned for each job gendertype. One scenario was created for each job. The scenarios were duplicated, and names and pronouns changed so that both a male and a female working in that job were described. The design was therefore a 3 x 2 x 2 complete factorial design, with the 3 different job gender-types, each being associated with 2 gender-different scenarios, and evaluated by a member for each sex. Thus there were 12 cells, and questionnaires were administered to ten people in each cell.

Instruments

Chapter three described the selection of words used for both self and worker evaluations. A questionnaire was designed, incorporating a list of these words for use in both self evaluation and for the evaluation of a hypothetical worker. The questionnaire and the various job scenarios are found in Appendix C.

For this study, the jobs depicted in the scenarios were: Male Job-type: Manager Trainee; Female job-type: Social Secretary; and Gender Neutral job-type: Desk Top Publisher. Each job was first described on the questionnaire

according to the characteristics for these jobs given in the *Canadian Classification and Dictionary of Occupations* (CCDO). Following each job description, a scenario was presented describing a person doing that job with a small measure of success.

All the scenarios were written by the researcher, with controls for inherent sex bias by randomly switching which of the pairs were written with the male image in mind first. The jobs had been chosen in part because of the familiarity the researcher had with the jobs, so that there would be ecological validity in the work that was being described.

One version of the scenario used a female name with corresponding pronouns, the second version used a male name with corresponding pronouns. Otherwise, all sets of scenarios for each jobtype were identical.

The questionnaire was comprised of two parts. (Appendix B) Part one was a short biodata section which was the same for every participant. It contained the pretested list of words on which participants were asked to describe how they felt about themselves at this point in time with respect to each of the words in the description list, on the 5 point Likert scale provided. The self-described positive scale (Self-Good, coded SG), and the self-described negative scale (self-bad, coded SB) were derived from the results of this section. The words comprising the scales are listed in Appendix C.

The second part was the experimental section (Appendix B) It was one of the 6 forms describing one of the individuals in one of the scenarios doing one of the jobs. This part contained the CCDO job description, the scenario describing a person at work doing the job described, and the same list of pretested words on which they were asked to evaluate the worker doing the job described. The participants were asked to rate, on a 5 point Likert scale,

how they felt about the performance of the worker described with reference to each of the words in the description list. The worker evaluation positive scale (worker good, coded WG), and the worker evaluation negative scale (worker bad, coded WB) were derived from the results of this section.

Also in part 2, participants were asked to give their opinion on the appropriate wage level for the worker described in the scenario. In addition, they were asked to indicate how much they would pay themselves for the same job. These questions were the same for all participants.

The last section of the questionnaire asked for participants' judgements of whether the job in the scenario was appropriate for the person in the scenario, and secondly, subjects were asked to evaluate the appropriateness of the job to the sex of the person doing the job.

There were twenty copies printed of each scenario performed by a male, and twenty copies printed of each scenario performed by a female. Each group of twenty copies were then divided in half for the women participants, and half for the men participants. All the questionnaires were printed up, counted and collated ahead of time to ensure equal cell distribution. Since the sampling would be stratified by the sex of the participants, there were two piles created: all of the possible scenarios for the female participants and all of the possible scenarios for the male participants.

Procedures

Having obtained permission of the instructor to distribute the questionnaires in the classrooms, the researcher went into the classes and said, after introduction by the instructor:

"I am Terry Fowler, and I am working on my Master of Arts in the Faculty of Education, Instructional Psychology, Counselling emphasis. I am especially interested in vocational and career concerns. I would like your help in filling out a brief questionnaire. This study is attempting to understand the factors that operate in the way that university students rate different qualities of workers. Your participation is completely voluntary and you are free to withdraw from the survey at any time. All your answers to the questions will be held in confidence, and your responses will not be identified as yours at any time or under any circumstance. In order to balance numbers of men and women in the study, would the men please come up on the left hand aisle to get their questionnaires, and the women please come up on the right hand aisle. If the numbers in the class are uneven, you may find that we have run out of questionnaires before we run out of people. I would appreciate it if you were to fill it out quickly — there are no right or wrong answers — and return it to me. Thank you to N., for permitting me to use this class time for my research".

Results

Preliminary Analysis

Before proceeding to statistical analysis of the data, two of the questionnaires were found to have missing values (1.6 %). Averages for the particular variables replaced the missing values. One questionnaire did not have any worker ratings marked, and this was replaced by administering the

same scenario to another person of the same group after determining that the person had not previously participated.

After these corrections to the raw data, totals were computed for the self-rated positive scale, the self-rated negative scale, the worker-rated positive scale and the worker-rated negative scale. These figures are listed in Table 6.

Table 6

Means and Standard Deviations for the Self-Rated Positive Scale, (SGOOD) ¹

The Self-Rated Negative Scale, (SBAD) ² The Positive Rating of the Worker Scale, (WGOOD) ¹

And the Negative Rating of the Worker Scale (WBAD) ²

Group			SCALES			
			SGOOD	SBAD	WGOOD	WBAD
SUBSEX						
MALE	MEAN		53.23	13.81	53.56	10.90
	S.D.		5.40	2.67	7.47	3.35
FEMALE	MEAN		56.13	11.98	55.10	9.53
	S.D.		5.51	2.88	7.36	3.26
WORKSEX						
MALE	MEAN		55.31	13.23	54.46	10.66
	S.D.		5.48	3.04	7.09	3.63
FEMALE	MEAN		54.05	12.56	54.20	9.77
	S.D.		5.74	2.77	7.80	3.03
JOBTYPE						
MALE	MEAN		54.70	13.10	52.60	11.60
	S.D.		5.40	2.99	7.58	3.52
FEMALE	MEAN		53.22	12.90	54.72	9.57
	S.D.		6.01	2.65	7.88	3.23
NEUTRAL	MEAN		56.12	12.70	55.67	9.47
	S.D.		5.20	3.15	6.61	2.95

Notes:

¹ Based on a total of 14 words, with a possible total of 70

²Based on a total of 5 words, with a possible total of 25

Cronbach's alpha internal consistency coefficients were computed for each scale. The results of these calculations were: the self-rating positive scale (SG), (.728); the self-rating negative scale (SB), (.399); the rating of the worker on the positive scale (WG) (.852); and the rating of the worker on the negative scales (WB) (.672). As a result of the low reliability on the self-rating negative scale, statistical analyses were conducted on scale items, rather than on the scale total for the five negative items. The positive items were treated as a scale.

Results Related to Research Question One

The first question addressed was: To what extent are the overall ratings of worker characteristics, a function of the sex of the observer, the sex of the observed, or the job gendertype?

It had been hypothesised that a rater's low self-ratings on work characteristics would lower the rating of the evaluated person on one or more dimensions. A Pearson Product Moment Correlation was computed for the self-rating and worker rating on the positive scale. A low correlation was found ($r=.43$, $p<.001$). The negative self-ratings were likewise compared to the negative worker ratings, and a correlation of .334 ($p<.001$) was found.

Because of the low internal reliability of the negative scale, individual items of the negative self-ratings were compared to all the negative worker ratings, (Table 7) and it was found that the self-rated word inefficient correlated with the worker rated words gullible, jealous, inefficient, and moody ($p<.05$). The self rated word conceited correlated with the worker rated words gullible, jealous and moody ($p<.05$). Thus it could be said that the self evaluations on the dimensions of inefficiency and conceit correlate to how the raters evaluated the workers on gullibility, jealousy and moodiness, and to some extent, on inefficiency.

Table 7

Pearson Correlations for Self Rated Negative Words
and Worker Rated Negative Words

Worker Rated Words	Self Rated Words				
	Gullible	Jealous	Inefficient	Moody	Conceited
Gullible	0.131	0.199*	0.202 *	0.017	0.216*
Jealous	0.020	0.122	0.318*	-0.090	0.322*
Inefficient	-0.012	0.158	0.173	-0.058	0.053
Moody	0.111	0.151	0.263*	0.114	0.219 *
Conceited	-0.034	0.073	0.104	0.079	0.276*

* p < .05

Sex of the Observer.

Three-way Anovas for both the positive and the negative self-ratings scales were computed. The main effect of the sex of participant was significant on the positive self-ratings $F(1,108) = 8.412, p < .005$ (Table 8). There were no interactions. Figures 1 and 2 graph the average responses. The females in this study were more positive about themselves than the males, and less harsh on themselves than the males.

There were no significant effects for the sex of the observer variable on the positive worker rating scales $F(1,108) = 1.76, p > .05$. Three-way Anovas were computed for each of the negative words in the self-rating list, and each of the negative words in the worker rating list since the Cronbach Alpha Reliability Coefficient was so low.

On the negative self-rating word list, inefficient $F(1,110) = 12.301, p < .001$ (Table 9) and conceited $F(1,110) = 17.079, p < .001$ (Table 10) were significant for the main effect of the sex of participant. See Figure 3 for these average responses. The Tukey-Kramer post hoc multiple comparison test was conducted and for the word inefficient, the differences were significant $p < .05$ with the men evaluating themselves more inefficient than the women evaluated themselves. For the word conceited, the differences were significant $p < .01$ as well on the Tukey-Kramer post hoc multiple comparison test with the men evaluating themselves as more conceited than the women.

In addition, there was a three-way interaction for sex of the subject, sex of the worker, and jobtype, on the word conceited $F(2,108) = 3.135, p < .05$. The Tukey-Kramer post hoc multiple comparison test was conducted, but it was found that none of the comparisons were statistically significant for the interaction $F(1,115) = 1.168, p > .05$.

For the negative worker-rating word list, the words jealous $F(1,110) = 7.221, p < .008$ (Table 11) and moody $F(1,110) = 4.046, p < .047$ (Table 12) were significant for sex of observer. See Figure 4 for representation of group means.

The Tukey-Kramer post hoc multiple comparison test was conducted and for the word jealous, the differences were significant $p < .007$ with the men evaluating themselves more jealous than the women evaluated themselves. The word moody was likewise significantly different $p < .05$ with the men rating themselves more moody than the women.

Table 8

Three-Way Analysis of Variance on the Positive Self-Rating Scale

SOURCE	SUM-OF-SQUARES	DF	MEAN-SQUARE	F-RATIO	P
SUBSEX	252.300	1	252.300	8.412	0.005
WORKSEX	48.133	1	48.133	1.605	0.208
JOBTYPE	168.217	2	84.108	2.804	0.065
SUBSEX*					
WORKSEX	34.133	1	34.133	1.138	0.288
SUBSEX*					
JOBTYPE	1.350	2	0.675	0.023	0.978
WORKSEX*					
JOBTYPE	19.717	2	9.858	0.329	0.721
SUBSEX*					
WORKSEX*					
JOBTYPE	6.717	2	3.358	0.112	0.894
ERROR	3239.400	108	29.994		

Table 9

Three-Way Analysis of Variance on the
Negative Self Rated Word Inefficient

SOURCE	SUM-OF-SQUARES	DF	MEAN-SQUARE	F -RATIO	P
SUBSEX	12.033	1	12.033	11.836	0.001
WORKSEX	0.133	1	0.133	0.131	0.718
JOBTYPE	2.067	2	1.033	1.016	0.365
SUBSEX*					
WORKSEX	0.033	1	0.033	0.033	0.857
SUBSEX*					
JOBTYPE	2.467	2	1.233	1.213	0.301
WORKSEX*					
JOBTYPE	0.467	2	0.233	0.230	0.795
SUBSEX*					
WORKSEX*					
JOBTYPE	0.467	2	0.233	0.230	0.795
ERROR	109.800	108	1.017		

Table 10
Three-Way Analysis of Variance on the
Negative Self Rated Word Conceited

SOURCE	SUM-OF-SQUARES	DF	MEAN-SQUARE	F -RATIO	P
SUBSEX	17.633	1	17.633	17.095	0.000
WORKSEX	0.833	1	0.833	0.808	0.371
JOBTYPE	0.267	2	0.133	0.129	0.879
SUBSEX*					
WORKSEX	0.533	1	0.533	0.517	0.474
SUBSEX*					
JOBTYPE	1.067	2	0.533	0.517	0.598
WORKSEX*					
JOBTYPE	1.267	2	0.633	0.614	0.543
SUBSEX*					
WORKSEX*					
JOBTYPE	6.467	2	3.233	3.135	0.047
ERROR	111.400	108	1.031		

Table 11
Three-Way Analysis of Variance on the
Negative Worker Rated Word Jealous

SOURCE	SUM-OF-SQUARES	DF	MEAN-SQUARE	F -RATIO	P
SUBSEX	5.208	1	5.208	7.221	0.008
WORKSEX	0.208	1	0.208	0.289	0.592
JOBTYPE	0.867	2	0.433	0.601	0.550
SUBSEX*					
WORKSEX	0.208	1	0.208	0.289	0.592
SUBSEX*					
JOBTYPE	0.267	2	0.133	0.185	0.831
WORKSEX*					
JOBTYPE	0.267	2	0.133	0.185	0.831
SUBSEX*					
WORKSEX*					
JOBTYPE	1.667	2	0.833	1.155	0.319
ERROR	77.900	108	0.721		

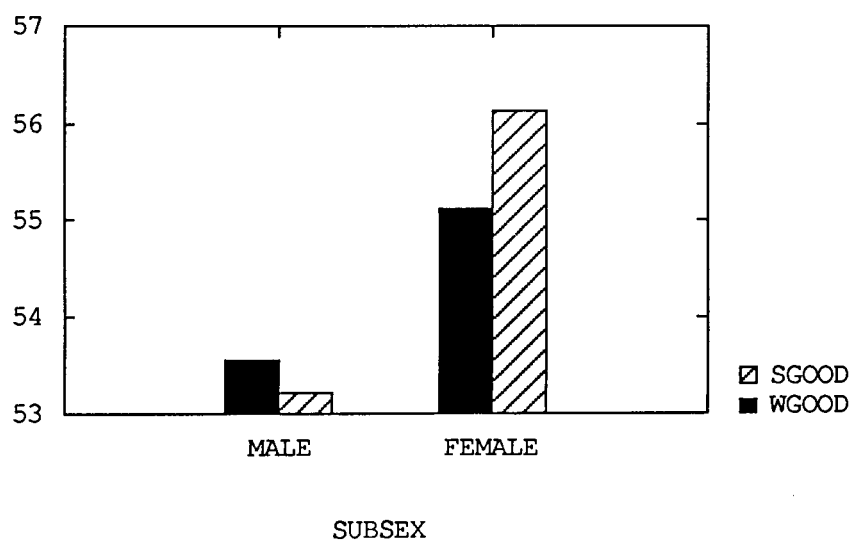
Table 12

Three-Way Analysis of Variance on the
Negative Worker Rated Word Moody

SOURCE	SUM-OF-SQUARES	DF	MEAN-SQUARE	F -RATIO	P
SUBSEX	3.675	1	3.675	4.046	0.047
WORKSEX	2.408	1	2.408	2.651	0.106
JOBTYPE	0.817	2	0.408	0.450	0.639
SUBSEX*					
WORKSEX	1.008	1	1.008	1.110	0.294
SUBSEX*					
JOBTYPE	2.450	2	1.225	1.349	0.264
WORKSEX*					
JOBTYPE	1.517	2	0.758	0.835	0.437
SUBSEX*					
WORKSEX*					
JOBTYPE	1.017	2	0.508	0.560	0.573
ERROR	98.100	108	0.908		

Figure 1

Average Responses to the Positive Rating Scales¹
by the Sex of Participants

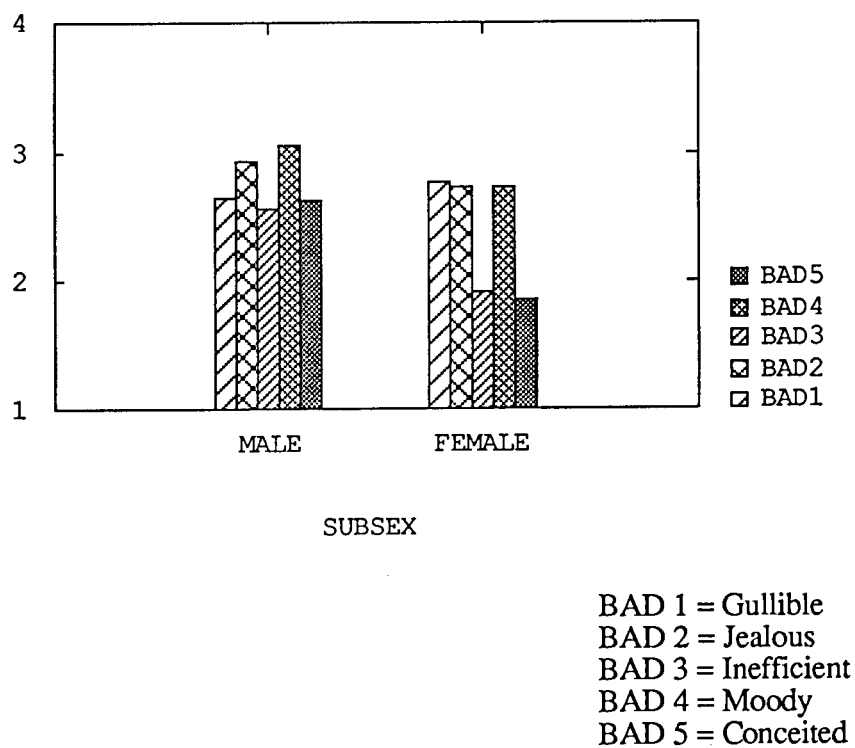


Notes:

¹ Based on a total of 14 words, with a possible total of 70

Figure 2

Average Responses to Individual Words ¹ on the
Negative Self-Rating Words by Sex of Participants



Notes:

¹ Based on a possible total of 5, with 1 being "not very much" , and 5 being "a lot"

Sex of the observed.

Three-way Anovas for the positive ratings scales were computed. Sex of the worker was not significant $F(1,108)=1.605, p>.05$.

Three-way Anovas for each of the items on the negative ratings scale was computed. Sex of the worker was significant on the worker rated word conceited $F(1,110) = 6.782, p<.010$. The Tukey-Kramer post hoc multiple comparison test was conducted but the differences were not significant $p >.05$.

Job gendertype

Three-way Anovas for the positive rating scales, both self rated and worker rated were conducted, but there were no significant effects. Three-way Anovas were computed for each of the negative words in the self-rating list, and each of the negative words in the worker evaluation list. Jobtype was significant on the negative worker rated word conceited $F(1,110) = 6.782, p<.010$ (Table 13) and the word inefficient $F(2,108) = 5.957, p < .004$. Figure 3 represents the average responses for the negative worker evaluation words by jobtype. These are the same words which are significant on the self-ratings.

The Tukey-Kramer post hoc multiple comparison test was conducted and for the word inefficient, but the differences were not significant $p >.05$. However, the same analysis for the word conceited showed a highly significant difference $F(2,117)=16.202, p <.0001$, with the male job being judged the most conceited, the female second, and the neutral job the least. Table 14 gives the details. Figure 3 graphs all the negative words by jobtype.

Further analysis was undertaken to determine if there were differences which could be attributed to a match between the sex of the worker, and jobtype. That is to say, would the male worker in the male job be rated

differently than the female worker in the male job, and so on. As a result, a post hoc analysis was undertaken for the matching variable, which was significant $F(5, 114) = 8.384, p < .0001$ as charted in Table 15. The averages of this variable is found in Table 16. The males in each category were rated more conceited than the females in each category, and the male jobtype rated more conceited than the female jobtype, which was rated more conceited than the neutral jobtype. This is represented in Figure 4.

Table 13

Three-Way Analysis of Variance on the
Negative Worker Rated Word Conceited

SOURCE	SUM-OF-SQUARES	DF	MEAN-SQUARE	F -RATIO	P
SUBSEX	0.133	1	0.133	0.120	0.730
WORKSEX	7.500	1	7.500	6.728	0.011
JOBTYPE	36.517	2	18.258	16.378	0.000
SUBSEX*					
WORKSEX	0.000	1	0.000	0.000	1.000
SUBSEX*					
JOBTYPE	0.417	2	0.208	0.187	0.830
WORKSEX*					
JOBTYPE	1.250	2	0.625	0.561	0.573
SUBSEX*					
WORKSEX*					
JOBTYPE	2.150	2	1.075	0.964	0.385
ERROR	120.400	108	1.115		

Table 14

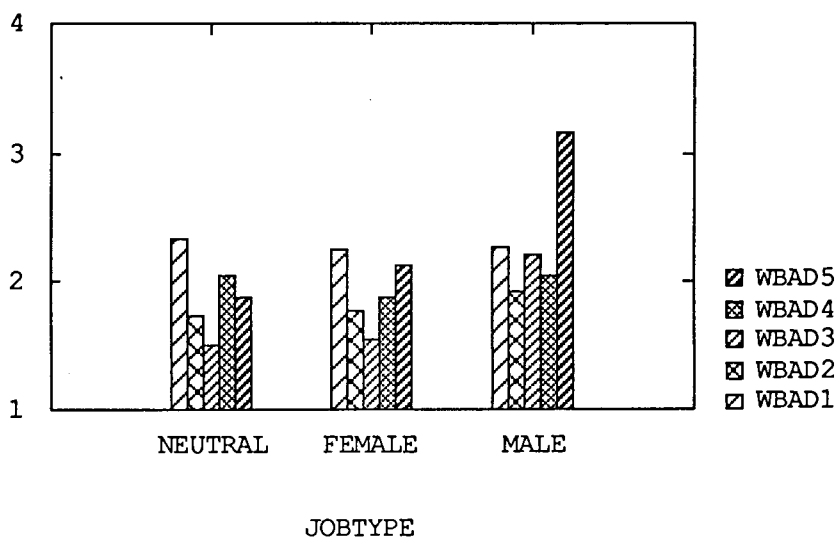
Matrix of Pairwise Absolute Mean Differences on the
Worker Rated Word "Conceited" by Jobtype

	MALE JOB TYPE	FEMALE JOB TYPE	NEUTRAL JOBTYP
	Manager Trainee	Social Secretary	Desktop Publisher
MALE JOB TYPE	0.000		
FEMALE	1.025 ¹	0.000	
NEUTRAL	1.275 ¹	0.9250	0.000

¹ $p < .001$

Figure 3

Average Responses to Individual Words¹ on the
The Negative Worker Ratings by Jobtype



- BAD 1 = Gullible
- BAD 2 = Jealous
- BAD 3 = Inefficient
- BAD 4 = Moody
- BAD 5 = Conceited

Notes:

¹ Based on a total of 5 words, with a possible total of 25

Table 15

Matrix of Pairwise Absolute Mean Differences for
Sex of Worker Matched with Jobtype
by the Worker Rated Word Conceited

	male job male worker	male job, female worker	female job male worker	female job female worker	neutral job male worker	neutral job female worker
1	0.000					
2	0.500	0.000				
3	0.900	0.400	0.000			
4	1.650*	1.150*	0.750	0.000		
5	1.400*	0.900	0.500	0.250	0.000	
6	1.650*	1.150*	0.750	0.000	0.250	0.000

* $p < .001$

Table 16

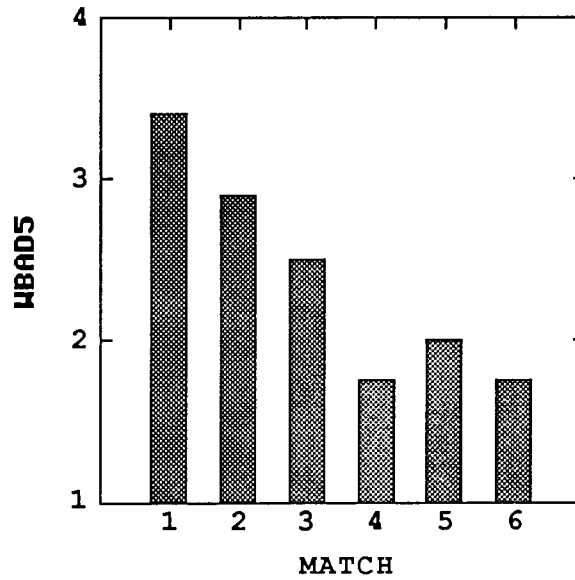
Averages of the Worker Rating Word Conceited
by Sex and Jobtype Matching¹

	male job male worker	male job, female worker	female job male worker	female job female worker	neutral job male worker	neutral job female worker
Mean	3.4	2.9	2.5	1.75	2.0	1.75
S.D.	1.18	1.11	1.10	.97	1.07	.71

¹ Each cell has 20 participants

Figure 4

Averages of the Worker Rating Word Conceited
by Sex and Jobtype Matching



- 1 = male job, male worker
- 2 = male job, female worker
- 3 = female job, male worker
- 4 = female job, female worker
- 5 = neutral job, male worker
- 6 = neutral job, female worker

Career patterns

One-way analysis of variance by career on the self-rated positive ratings was significant: $F(4,115) = 2.69$ $p < .034$. The Tukey-Kramer post hoc multiple comparison test was conducted, but it was found that the comparisons were not statistically significant. The differences were not statistically significant in examining the positive worker ratings by career, $F(4,115) = 0.364$ $p > .05$.

Because of the low internal consistency of the negative scales, one-way analysis of variance on each item in the scale was performed for both the self ratings and the negative ratings. Only the word conceited was significant: $F(4,115) = 2.649$, $p < .037$ by career on the self ratings (Table 17) and post hoc analysis verified the statistical significance. Averages of the self rating of conceited by by career are in Table 18 and Table 19 shows the matrix of differences.

There were no significant effects found for any of the words on the negative worker ratings.

Declared Major

Analysis of the positive self-rating scale by major using one-way analysis of variance indicated that there were no significant differences $F(5,114) = 0.197$ $p > .05$; and the positive worker rating scale was also not significantly different. $F(5,114) = 0.462$ $p > .05$.

Because of the low internal consistency of the negative scales, one-way analysis of variance on each item in the scale was performed for both the self ratings and the negative ratings. Of all the items on both the negative self ratings, and the negative worker self ratings, only the negative self-rated word conceited was statistically significant $F(5,114) = 3.618$ $p < .004$ (Table 20).

The Tukey-Kramer post hoc multiple comparison test was conducted and it

was found that business majors were rated themselves significantly higher on the conceited variable than all the other groups except Arts.

Table 17

One Way Analysis of Variance on the
Negative Self Rated Word Conceited by Career

SOURCE	SUM OF SQUARES	DF	MEAN SQUARE	F	P
CAREER	11.766	4	2.941	2.649	0.037
ERROR	127.701	115	1.110		

Table 18

Cell Means and Standard Deviations Negative
Self Rated Word Conceited by Career

	Undecided	Teacher	Psychology	Business	Other
N	19	66	13	17	5
Mean	2.1	2.1	2.1	3.0	2.2
S.D.	.78	1.0	1.2	1.0	1.6

Table 19

Matrix of Pairwise Absolute Mean Differences on the
Self Rated Word Conceited by Major

	Undecided	Teacher	Psychology	Business	Other
Undecided	0.000				
Teacher	0.069	0.000			
Psychology	0.024	0.044	0.000		
Business	0.947*	0.879*	0.923*	0.000	
Other	0.147	0.079	0.123	0.800	0.000

* p < .05

Table 20

One Way Analysis of Variance on the Negative
Self Rated Word Conceited by Major

SOURCE	SUM OF SQUARES	DF	MEAN SQUARE	F	P
MAJOR	19.307	5	3.861	3.663	0.004
ERROR	120.160	114	1.054		

Table 21

Cell Means and Standard Deviations
of the Negative Self Rated Word Conceited by Major

	Undecided	Arts	Education	Science	Business	Other
N	13	59	26	5	13	4
mean	2	2.3	1.6	2.0	3.0	2.7
S.D.	0.9	1.06	.7	1.2	1.0	2.0

Table 22

Matrix of Pairwise Absolute Mean Differences on the
Self Rated Word Conceited by Major

	Undecided	Arts	Education	Science	Business	Other
Undecided	0.000					
Arts	0.356	0.000				
Education	0.346	0.702	0.000			
Science	0.000	0.356	0.346	0.000		
Business	1.000*	0.644	1.346*	1.000*	0.000	
Other	0.750	0.394	1.096	1.750*	0.250	0.000

* p < .05

Research Question Two

The second question investigated concerned the extent to which differences in overall ratings of wages paid to workers in the context of masculine, feminine and gender neutral jobs, are a function of the sex of the observer, the sex of the observed, or the job gendertype (defined as being typically male, typically female or typically gender neutral). In other words, what is the relationship between the wages that a person would pay him or herself, and the wages paid to another worker doing the same job?

Participants were asked to rate the anticipated wages for the worker described in the scenario. In addition, they were asked to indicate how much they would pay themselves, if they were the workers in the description. Each of the questions offered 8 forced choice possibilities. A Pearson Product Moment Correlation was calculated between the self-assigned wages and the worker assigned wages, $r=.732$ ($p<.05$), suggesting a moderate relationship between what participants paid themselves, and what they paid the worker in the scenario for the same job.

A three-way Anova was performed on the self-assigned wages. Jobtype was significant $F(2,108)=14.925$ $p<0.012$ (Table 23). Another three-way Anova was computed on the worker-assigned wages. No significant main effects or interactions were detected.

The average responses for both assignments of money are shown in Figure 5 and tabulated in Table 24. The Tukey-Kramer post hoc multiple comparison test was conducted and indicates that the major source of variance in the self-assigned wages is between the desktop publisher, and the manager trainee, the desktop publisher and the social secretary (Table 25).

The desk top publisher was paid less overall than the social secretary, who was paid less than the manager trainee.

Since research has demonstrated that students tend to not have a realistic evaluation of the worth of a job or accurate career information, (Yanico & Hardin, 1986) wage ratings were more a means of determining if the participants would pay the worker the same as themselves, less than themselves, or more than themselves. As a result, the 2 sets of the 8 forced choice categories were collapsed into a new scale of ranked differences by subtracting the worker paid wages from the self paid wages.

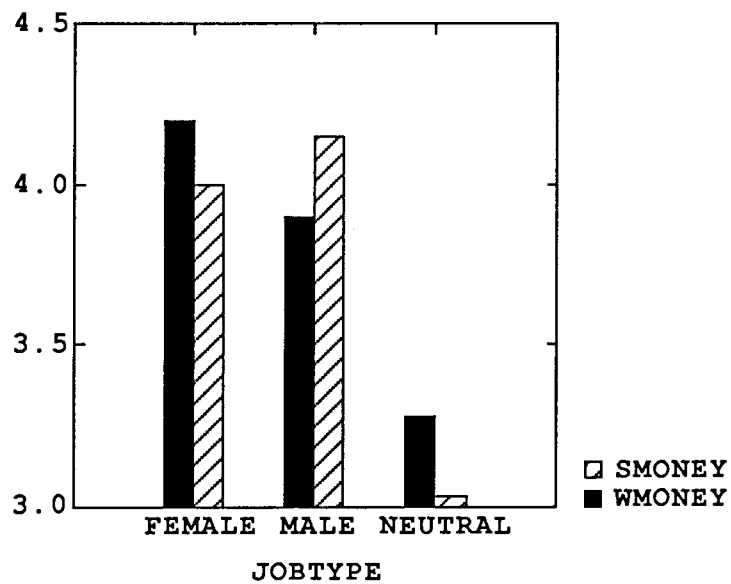
A sign test was conducted on this rank ordered scale. There was no statistical significance at the .05 level.

Table 23

Three Way Analysis of Variance for the Self Assigned Wages

SOURCE	SUM OF SQUARES	DF	MEAN SQUARE	F	PROBABILITY
SUBSEX	8.008	1	8.008	2.495	0.117
WORKSEX	0.008	1	0.008	0.003	0.959
JOBTYPE	29.850	2	14.925	4.649	0.012
SUBSEX*					
WORKSEX	1.008	1	1.008	0.314	0.576
SUBSEX*					
JOBTYPE	10.117	2	5.058	1.576	0.212
WORKSEX*					
JOBTYPE	5.117	2	2.558	0.797	0.453
SUBSEX*					
WORKSEX*					
JOBTYPE	1.117	2	0.558	0.174	0.841
ERROR	346.700	108	3.210		

Figure 5
Average Responses to Self Assigned Wages¹
and Worker Assigned Wages¹ by Jobtype



Smoney: Self assigned wages

Wmoney: Worker- assigned wages

Male: Manager Trainee

Female: Social Secretary

Neutral: Desktop Publisher

Notes:

¹ Responses were forced choices from 1 to 8, with 1 being the lowest wage and 8 the highest

Table 24

Cell Means and Standard Deviations
of The Self Assigned Wages by Jobtype

	MALE JOB TYPE	FEMALE JOB TYPE	NEUTRAL JOBTYP
	Manager Trainee	Social Secretary	Desktop Publisher
N	40	40	40
M	4.150	4.000	3.025
SD	1.626	1.895	1.819

Notes:

Responses were forced choices from 1 to 8, with 1 being the lowest wage and 8 the highest

Table 25

Matrix of Pairwise Absolute Mean Differences on
Self Assigned Wages by Jobtype

	MALE JOB TYPE	FEMALE JOB TYPE	NEUTRAL JOBTYP
	Manager Trainee	Social Secretary	Desktop Publisher
MALE JOB TYPE	0.000		
FEMALE	0.150	0.000	
NEUTRAL	1.125 ¹	0.975 ¹	0.000

¹ p < .05

Research Question Three

The third question investigated was the extent to which judgements of the appropriateness of workers in the context of masculine, feminine and gender neutral jobs is a function of the sex of the observer, the sex of the observed, or the job gendertype.

The last section of each subject's questionnaire asked participants to judge whether the job in the scenario was appropriate for the person doing the work. In addition, subjects were asked to evaluate the appropriateness of the sex of the person doing the job.

A three-way analysis of variance was performed on each of the variables. The first question was more general and asked if the person described was appropriate to the work. No main effects or interactions were found $F(1,108) = 0.212, p > .05$.

The second question asked was whether the job was more appropriate to a male, a female, or it didn't matter. A three-way analysis of variance (Table 26) was significant by jobtype $F(2,108) = 4.590, p < .01$ as well as by the sex of the worker $F(1,108) = 4.373, p < .039$. There was in addition, an interaction between jobtype and the sex of the worker $F(2,108) = 5.892, p < .004$.

The Tukey-Kramer post hoc multiple comparison test was computed, (averages, Table 27 and comparisons Table 28). It was found that the major source of variance was between desk top publisher and social secretary.

To evaluate further the issue of bias, a new scale was drawn by comparing the response to the question on the appropriateness of the sex of the person, with the jobtype being described. All occasions where the opinion of the appropriateness of the sex of the worker (yes, no, it doesn't

matter) agreed with the jobtype of the job (male, female, neutral) was coded one, all else were coded zero. A three - way analysis of variance was conducted and it was found that neither the sex of the worker nor the sex of the observer were significant, but the jobtype was overwhelmingly so: $F(2,108)=178.200, p<.0001$ (Table 29). Females were considered more appropriate to most jobs than were the males, and the males were considered more likely to be inappropriate in the female job, as well as in the neutral job.

Table 26

Three Way Analysis of Variance

For the Appropriate Sex Opinion of Participants

SOURCE	SUM-OF-SQUARES	DF	MEAN-SQUARE	F-RATIO	P
SUBSEX	0.675	1	0.675	2.928	0.090
WORKSEX	1.008	1	1.008	4.373	0.039
JOBTYPE	2.117	2	1.058	4.590	0.012
SUBSEX*					
JOBTYPE	0.450	2	0.225	0.976	0.380
SUBSEX*					
WORKSEX	0.075	1	0.075	0.325	0.570
JOBTYPE*					
WORKSEX	2.717	2	1.358	5.892	0.004
SUBSEX*					
JOBTYPE*					
WORKSEX	0.050	2	0.025	0.108	0.897
ERROR	24.900	108	0.231		

Table 27

Cell Means and Standard Deviations on the
Appropriate Sex Opinion of Participants by Jobtype

	MALE JOB TYPE	FEMALE JOB TYPE	NEUTRAL JOBTYP
	Manager Trainee	Social Secretary	Desktop Publisher
N	40	40	40
Mean	2.750	2.600	2.925
SD	0.588	0.591	0.267

Table 28

Matrix of Pairwise Absolute Mean Differences on the Appropriate Sex
Opinion of the Participants by Jobtype

	MALE JOB TYPE	FEMALE JOB TYPE	NEUTRAL
	Manager Trainee	Social Secretary	Desktop Publisher
Manager Trainee	0.000		
Social Secretary	0.150	0.000	
Desktop Publisher	0.175	0.325 ¹	0.000

¹ p < .01

Table 29
Three Way Analysis Of Variance For the
Agreement between Sex of Worker and Jobtype

SOURCE	SUM-OF-SQUARES	DF	MEAN-SQUARE	F-RATIO	P
SUBSEX	0.008	1	0.008	0.164	0.687
WORKSEX	0.008	1	0.008	0.164	0.687
JOBTYPE	18.150	2	9.075	178.200	0.000
SUBSEX*					
WORKSEX	0.075	1	0.075	1.473	0.228
SUBSEX*					
JOBTYPE	0.017	2	0.008	0.164	0.849
WORKSEX*					
JOBTYPE	0.017	2	0.008	0.164	0.849
SUBSEX*					
WORKSEX*					
JOBTYPE	0.150	2	0.075	1.473	0.234
ERROR	5.500	108	0.051		

Summary

There were gender differences in how the participants evaluated themselves, both positively and negatively. Females in the study were more positive and less harsh on themselves than were the males. Overall the women saw themselves as much less inefficient and much less conceited than the men did. These particular words were also correlated with most of the worker rated words, and to a limited degree, the hypothesis that lower self-evaluations on the part of the evaluator would be followed by more negative evaluations of a worker was supported.

The participants did not evaluate workers differently on the positive scale by any of the factors investigated in the study. There was a low correlation between positive self and worker evaluations.

The word inefficient was significant for jobtype, and the word jealous as applied to the worker was significant for the sex of the subject. In other words, how the participants evaluated the workers on the dimension of inefficiency was dependent on the gendertype of the job that the workers were doing, regardless of the sex of the worker, or their own sex. But how the workers were rated on the dimension of jealousy was solely a function of the sex of the participant, with the men rating the workers more harshly than the women.

The word conceited bears further analysis for future studies. When used to rate the worker, it was significant on the factors of sex of the worker, as well as jobtype, and when used to rate the self, pointed to differences for the sex of the subjects, their career plans and declared major. Even though this word was strongly different by sex of the subject in the self evaluations,

sex of the subject was not a factor in the evaluation of the worker, but sex of the worker was a factor. Women were judged to be less conceited than the men, and it was the male job, the manager trainee, which accounted for most of the negative evaluation on this dimension when examined by the jobtype. In addition, the males in each jobtype were judged more conceited than the females in the same jobtype, for all three of the jobs studied in this study.

When the subjects assigned themselves wages on the jobs presented to them, their choices were colored by the jobtype. This same bias was not evident with the worker assigned wage which were not significant on any variable, even though there was a moderate correlation between the two assigned wages.

The question soliciting the information on the appropriateness of the job for the person was not significant, suggesting that there would be no sex bias in matching the sex of workers with the jobtypes. However, the next question was more explicit, and asked if the sex of the person was appropriate to the job. This answer was significant for the sex of the worker and the jobtype, with a worker sex/jobtype interaction. There was strong stereotype agreement matching the sex of the person with the jobtype, but surprisingly did not include an interaction for the sex of the subject, or for the sex of the worker.

Chapter 5

Study Two: Method and Results

In order to compare the experiment with another where only the job was a different factor, a replication was undertaken. The sole difference between the two studies was the job for each jobtype, and its corresponding description.

Method

Participants

One hundred and twenty students from two lower-level education classes at Simon Fraser University, and two lower-level geography classes, at Langara Community College participated in the study. Participants' mean age was 23.2, with a range of 18-44 years and a standard deviation of 5.7.

Research participants were enrolled in lower-level survey courses and represented a variety of undergraduate majors. The stated career aspirations of subjects showed a strong preference for teaching, with over half of the respondents, naming teacher as their career choice, even in the geography classes. The breakdown of respondents by class, major, and career choice is found in Tables 30, 31 and 32 respectively.

Instruments

Chapter three described the development of the list of words used for the self and the worker evaluations, and chapter four describes the method and procedure which was completely duplicated. The only exception was that for this study, the jobs used were: Male: welder drilling rig; Female: nursing researcher; and Gender Neutral: computer programmer.

Table 30

Class Distribution by Sex of Participants

	EDUCATION	GEOGRAPHY	TOTAL
FEMALE	47	13	60
MALE	17	43	60
TOTAL	64	56	120

Table 31

Students' Majors by Sex of Participant

Group	Arts	Business	Education	Science	Undecided	Other	Total
Female	27	2	25	1	3	2	60
Male	34	6	9	3	5	3	60
Total	61	8	34	4	8	5	120

Table 32

Participants' Career Aspirations by Sex

	Business	Other	Psych.	Teacher	Undecided	Total
FEMALE	3	2	6	46	3	60
MALE	14	4	6	27	9	60
TOTAL	17	6	12	73	12	120

Results

Preliminary Analysis

There were no missing data in this study. Cronbach's internal consistency coefficients were calculated for the self-rating positive scale (SG), (.647); the self-rating negative scale (SB), (.424); the rating of the worker on the positive scale (WG) (.858); and the rating of the worker on the negative scales (WB) (.698). As a result of the low reliability on the self-rating negative scale, statistical analyses were conducted of these scale items, rather than on the scale total.

Results Related to Research Question One

The first question posed for investigation concerned the extent are the overall ratings of worker characteristics, a function of the sex of the observer, the sex of the observed, or the job gendertype.

Totals were computed for the self-rated positive scale, the self-rated negative scale, the worker-rated positive scale and the worker-rated negative scale. These figures are listed in Table 33.

A Pearson Product Moment Correlation was calculated for the relationship between the self ratings and the worker ratings. There was a low correlation between the self-rating and the worker rating on the positive scale ($r=.24, p<.008$) and a similar correlation on the negative scale ($r=.22, p<.016$). Because of the low internal consistency for the negative scale, the individual items for the self ratings were compared to the worker ratings (Table 34). The self-rated word jealous correlated with the worker evaluations on jealous, inefficient and moody ($p<.05$)

Table 33

Means and Standard Deviations For the Self-Rated Positive Scale, (SGOOD) ¹

The Self-Rated Negative Scale, (SBAD) ² The Positive Rating of the Worker Scale, (WGOOD) ¹

And the Negative Rating of the Worker Scale (WBAD) ²

			SGOOD	SBAD	WGOOD	WBAD
SUBSEX						
MALE	MEAN		54.80	12.65	49.61	12.27
	S.D.		5.75	3.17	7.64	3.99
FEMALE	MEAN		55.85	13.00	49.55	11.20
	S.D.		4.25	2.65	9.73	3.34
WORKSEX						
MALE	MEAN		54.53	12.58	47.65	12.12
	S.D.		4.53	3.04	9.01	3.57
FEMALE	MEAN		56.117	13.07	51.52	11.45
	S.D.		5.48	2.79	8.01	3.85
JOBTYPE						
MALE	MEAN		56.52	11.92	52.47	10.72
	S.D.		5.62	2.96	7.57	3.91
FEMALE	MEAN		54.57	12.40	44.05	12.67
	S.D.		5.27	2.90	9.52	3.03
NEUTRAL	MEAN		54.87	14.15	52.22	11.80
	S.D.		4.10	2.43	6.03	3.92

Notes:

¹ Based on a total of 14 words, with a possible total of 70

²Based on a total of 5 words, with a possible total of 25

Table 34

Pearson Correlations for Self Rated Negative Words and
Worker Rated Negative Words

	Self Rated Words				
	Gullible	Jealous	Inefficient	Moody	Conceited
Worker Rated Words					
Gullible	0.044	0.006	0.031	0.144	0.066
Jealous	-0.103	0.184 ¹	0.008	-0.128	0.055
Inefficient	0.217 ²	0.274 ³	0.134	-0.100	0.045
Moody	0.117	0.298 ³	0.151	0.063	0.149
Conceited	0.006	0.127	0.154	0.065	0.067

¹ p. <.05

² p. <.01

³ p. <.001

Sex of the Observer

Three-way Anovas for the positive self-ratings scales were computed. The main effect of the sex of participant was not significant on the positive self-ratings $F(1,108) = 1.333, p > .05$. There were no interactions. The positive worker scale was not significant for the sex of the observer $F(1,108) = 0.002, p > .05$.

Three-way Anovas were computed for each of the negative words in the self-rating list, and each of the negative words in the worker evaluation list. On the negative self rating word list, no words were significant for the main effect of the sex of participant. For the negative worker rating word list, the word moody was significant for sex of observer $F(1,108) = 7.424, p < .008$ (Table 35).

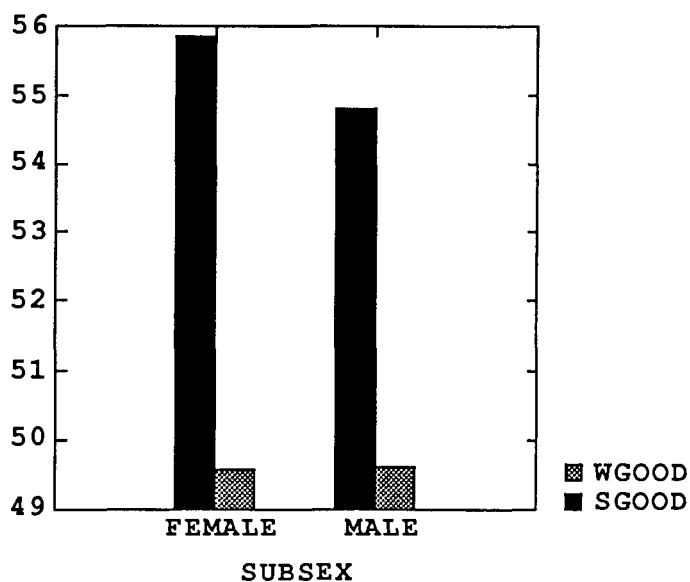
The average responses to the positive ratings are found in Figure 6, the average responses to individual words of the negative self ratings in Figure 7, and the individual words of the negative worker ratings in Figure 8.

Table 35
Three-Way Analysis of Variance on the
Negative Rating for Worker: Moody

SOURCE	SUM-OF-SQUARES	DF	MEAN-SQUARE	F -RATIO	P
SUBSEX	8.008	1	8.008	7.424	0.008
JOBTYPE	5.600	2	2.800	2.596	0.079
WORKSEX	3.008	1	3.008	2.789	0.098
SUBSEX*					
JOBTYPE	3.267	2	1.633	1.514	0.225
SUBSEX*					
WORKSEX	1.008	1	1.008	0.935	0.336
JOBTYPE*					
WORKSEX	0.467	2	0.233	0.216	0.806
SUBSEX*					
JOBTYPE*					
WORKSEX	0.467	2	0.233	0.216	0.806
ERROR	116.500	108	1.079		

Figure 6

Average Responses to The Positive Rating Scales¹
by the Sex of the Participants



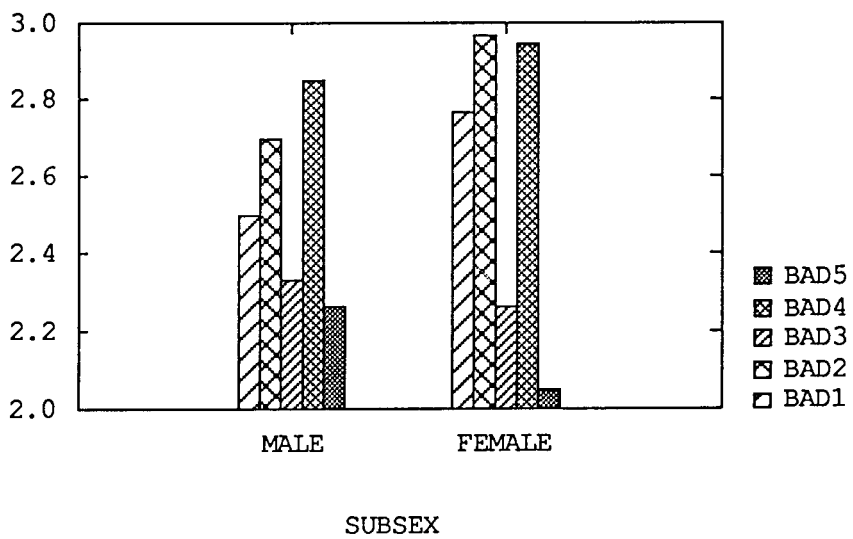
wgood: worker ratings on the positive scale
sgood: self ratings on the positive scale

Notes:

¹ Based on a total of 14 words, with a possible total of 70

Figure 7

Average Responses to Individual Words ¹ on the
Negative Self-Rating Words by Sex of the Participants



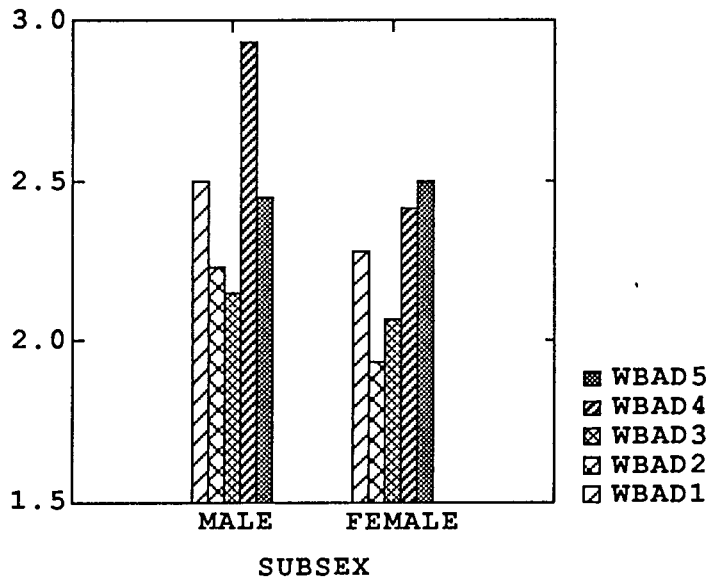
BAD 1 = Gullible
 BAD 2 = Jealous
 BAD 3 = Inefficient
 BAD 4 = Moody
 BAD 5 = Conceited

Notes:

¹Based on a possible top value of 5, with 1 being "not very much", and 5 being "a lot"

Figure 8

Average Responses to Individual Words ¹ on the
Negative Worker-Rating Words by Sex of Participants



BAD 1 = Gullible
 BAD 2 = Jealous
 BAD 3 = Inefficient
 BAD 4 = Moody
 BAD 5 = Conceited

Notes:

¹Based on a possible top value of 5, with 1 being "not very much", and 5 being "a lot"

Sex of the observed

Three-way Anovas for the positive ratings scales were computed. Sex of the worker was significant for the positive worker rating scales $F(1,108)=7.585, p>.007$. (Table 36). Three-way Anovas were computed for each of the negative words in the self-rating list, and each of the negative words in the worker rating list since the Cronbach Alpha Reliability Coefficients were so low for these scales. None of these items were significantly different on the sex of the worker variable ($p >.05$).

Job gendertype

Jobtype was significant on the positive worker rated scale $F(2,108) = 15.543, p<.001$ (Table 36) The Tukey - Kramer post hoc multiple comparison test was performed and it was found that the major source of variance was between the male and female job, and between the female and neutral job ($p<.001$) (Tables 37 and 38).

On the negative worker evaluation words, only inefficient was significant when examined by three-way analysis of variance: $F(1,110) = 6.052, p<.003$ (Table 39) for jobtype. The Tukey - Kramer post hoc multiple comparison test was performed and it was found that the nursing researcher was considered more inefficient than either of the other two jobs. (Tables 40 and 41). The average responses to the individual words on the negative worker ratings are shown by jobtype in Figure 9.

Career Patterns

One way analysis of variance for the self-rated positive words by career was not significant $F(4,115)=0.345, p>.05$. One-way analysis of variance was

computed for each of the negative words in both the self-rating list, and the worker rating list but there were no items of significance.

Declared Major

One-way analysis of variance for the self-rated positive words by major was not significant $F(5,114)=0.395, p>05$ or on the positive worker ratings: $F(5,114)=0.701, p>05$. One-way analysis of variance was computed for each of the self describing negative words. The self-rating word conceited was significant $F(5,114)=2.420, p<.05$ (Table 42). The Tukey - Kramer post hoc multiple comparison test was performed and it was found that the difference lay between the science majors and the undecided people with the science majors evaluating themselves as the most conceited and the undecided people evaluating themselves as the least conceited. (Tables 43 and 44).

None of the individual negative worker ratings were significantly different.

Table 36

Three-Way Analysis of Variance on the Positive Worker Scale

SOURCE	SUM-OF-SQUARES	DF	MEAN-SQUARE	F -RATIO	P
SUBSEX	0.133	1	0.133	0.002	0.962
WORKSEX	448.533	1	448.533	7.585	0.007
JOBTYPE	1838.317	2	919.158	15.543	0.000
SUBSEX*					
JOBTYPE	122.617	2	61.308	1.037	0.358
SUBSEX*					
WORKSEX	177.633	1	177.633	3.004	0.086
JOBTYPE*					
WORKSEX	28.817	2	14.408	0.244	0.784
SUBSEX*					
JOBTYPE*					
WORKSEX	26.517	2	13.258	0.224	0.800
ERROR	6386.600	108	59.135		

Table 37
Means and Standard Deviations for
Positive Worker Ratings by Jobtype

	Welder	Nursing Researcher	Programmer
N	40	40	40
Means	52.47	44.05	52.22
S.D.	7.57	9.52	6.02

Table 38

Matrix of Pairwise Absolute Mean Differences for
Positive Worker Ratings by Jobtype

	Welder	Nursing Researcher	Programmer
Welder	0.000		
Nursing Res	8.425 ¹	0.000	
Programmer	0.250	8.175 ¹	0.000

¹p < .001

Table 39

Three-Way Analysis of Variance on the
Negative Worker-Rating: Inefficient

SOURCE	SUM-OF-SQUARES	DF	MEAN-SQUARE	F -RATIO	P
SUBSEX	0.208	1	0.208	0.182	0.671
WORKSEX	0.408	1	0.408	0.357	0.552
JOBTYPE	13.867	2	6.933	6.053	0.003
SUBSEX*					
WORKSEX	1.875	1	1.875	1.637	0.203
SUBSEX*					
JOBTYPE	2.467	2	1.233	1.077	0.344
WORKSEX*					
JOBTYPE	2.467	2	1.233	1.077	0.344
SUBSEX*					
WORKSEX*					
JOBTYPE	0.600	2	0.300	0.262	0.770
ERROR	123.700	108	1.145		

Table 40

Means and Standard Deviations for
Negative Worker Rating Inefficient by Jobtype

	Welder	Nursing Researcher	Programmer
N	40	40	40
Mean	1.77	2.57	1.97
S.D.	1.07	1.152	0.94

Table 41

Matrix of Pairwise Absolute Mean Differences for
Negative Worker Rating Inefficient by Jobtype

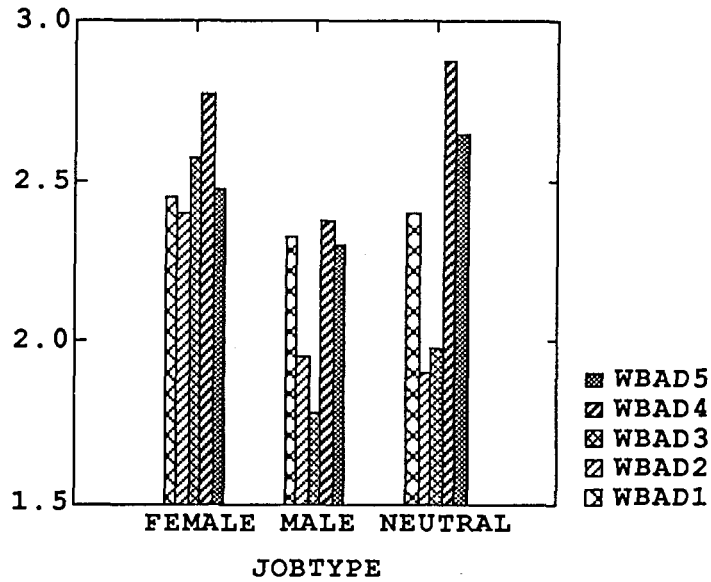
	Welder	Nursing Researcher	Programmer
Welder	0.000		
Nursing Res	0.800 ¹	0.000	
Programmer	0.200	0.600 ²	0.000

¹p <.001

²p <.05

Figure 9

Average Responses to Individual Words¹
on the The Negative Worker Ratings by Jobtype



- BAD 1 = Gullible
- BAD 2 = Jealous
- BAD 3 = Inefficient
- BAD 4 = Moody
- BAD 5 = Conceited

Notes:

¹Based on a scale from 1 (not at all) to 5 (a lot)

Table 42

One-Way Analysis of Variance on the

Negative Worker-Rating Word: Conceited by Major

SOURCE	SUM-OF-SQUARES	DF	MEAN-SQUARE	F -RATIO	P
MAJOR	11.514	5	2.303	2.420	0.040
ERROR	108.478	114			

Table 43

Means and Standard Deviations for
Negative Self Rated Word: Conceited by Major

	Undecided	Arts	Education	Science	Business	Other
N	8	61	34	4	8	5
mean	1.5	2.3	1.9	3.2	1.9	2.2
S.D.	0.5	1.0	8	1.2	.8	1.1

Table 44

Matrix of Pairwise Absolute Mean Differences for
Negative Self Rated Word: Conceited by Major

	Undecided	Arts	Education	Science	Business	Other
Undecided	0.000					
Arts	0.811	0.000				
Education	0.471	0.341	0.000			
Science	1.750*	0.939	1.279	0.000		
Business	0.375	0.436	0.096	1.375	0.000	
Other	0.700	0.111	0.229	1.050	0.325	0.000

* p < .05

Results Related to Research Question Two

The second question posed for investigation was: to what extent are differences in overall ratings of wages paid to workers in the context of masculine, feminine and gender neutral jobs, a function of the sex of the observer, the sex of the observed, or the job gendertype. What is the relationship between the wages that a person would pay him or herself, and the wages paid to another worker doing the same job?

Participants were asked to rate the anticipated wages for the worker described in the scenario. In addition, they were asked to indicate how much they would pay themselves, if they were the workers in the description. Each of the questions offered 8 forced choice possibilities. A Pearson Product Moment Correlation was calculated between the self-assigned wages and the worker assigned wages, $r=.442$ ($p<.05$), suggesting a low relationship between what participants paid themselves, and what they paid the worker in the scenario for the same job.

Three-way analysis of variance was computed for the self assigned wages and was significant for the sex of the subject $F(1,108)=3.899$, $p<0.050$. However, the Tukey - Kramer post hoc multiple comparison test was performed and there were no statistically significant comparisons found.

Three-way analysis of variance was computed for the worker assigned wages which was significant for jobtype $F(2,108)=8.783$, $p<0001$ (Table 45). The Tukey - Kramer post hoc multiple comparison test was performed and it was found that the female job was paid substantially less than both the male job and the neutral job (Tables 46 and 47). Averages of both assignments of wages by jobtype is diagrammed in Figure 10.

A ranked scale was created by subtracting the worker paid wage from the self paid wages. A sign test was conducted. Results were not statistically significant at the .05 probability level.

Table 45

Three-Way Analysis of Variance on the Worker Assigned Wages

SOURCE	SUM-OF-SQUARES	DF	MEAN-SQUARE	F -RATIO	P
SUBSEX	0.408	1	0.408	0.107	0.745
WORKSEX	0.075	1	0.075	0.020	0.889
JOBTYPE	67.317	2	33.658	8.783	0.000
SUBSEX*					
JOBTYPE	5.717	2	2.858	0.746	0.477
SUBSEX*					
WORKSEX	0.408	1	0.408	0.107	0.745
JOBTYPE*					
WORKSEX	14.550	2	7.275	1.898	0.155
SUBSEX*					
JOBTYPE*					
WORKSEX	2.217	2	1.108	0.289	0.749
ERROR	413.900	108	3.832		

Table 46

Means and Standard Deviations for
Worker Assigned Wages by Jobtype

	Welder	Nursing Researcher	Programmer
N	40	40	40
Mean	5.10	3.55	5.18
S.D.	2.27	1.68	1.80

Table 47

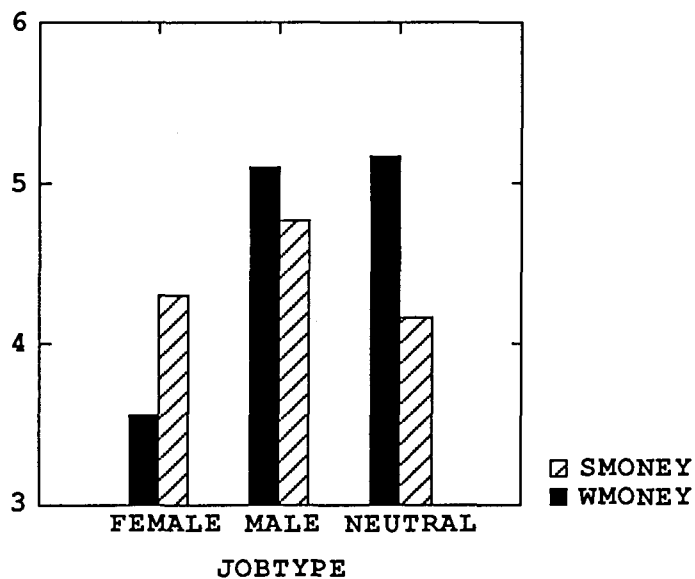
Matrix of Pairwise Absolute Mean Differences for
Worker Assigned Wages by Jobtype

	Welder	Nursing Researcher	Programmer
Welder	0.000		
Nursing Res	1.550 ¹	0.000	
Programmer	0.075	1.625 ¹	0.000

¹p <.0001

Figure 10

Self Assigned Wages¹ and Worker Assigned Wages¹ by Jobtype



Notes:

¹ Responses were forced choices from 1 to 8, with 1 being the lowest wage and 8 the highest

Results Related to Research Question Three

The third question asked: to what extent are ratings of the appropriateness of workers in masculine, feminine and gender neutral jobs, a function of the sex of the observer, the sex of the observed, or the job gendertype.

The last section asked for participants' judgements of whether the job in the scenario was appropriate for the person doing the work. In addition, subjects were asked to evaluate the appropriateness of the sex of the person doing the job .

A three-way analysis of variance was performed on each. The first question was more general and asked "Is the person described appropriate to the work?" The response was not statistically significant $F(1,108) = 0.212$ $p > .05$.

The second question asked: Is this job more appropriate to a male, a female, or it doesn't matter. A three-way analysis of variance (Table 48) was significant by jobtype $F(2,108) = 5.346$ $p < .006$. The Tukey - Kramer post hoc multiple comparison test was performed and it was found that the male job was significantly different from both the female job and the neutral job. (Tables 49 and 50).

To further evaluate the issue of bias, a new scale was drawn by comparing the response to the question on the appropriateness of the sex of the person, with the jobtype being described. All occasions where the sex of the worker agreed with the jobtype of the job was coded one, all else were coded zero. A three-way analysis of variance was conducted and it was found that neither the sex of the worker nor the sex of the observer was significant, but the jobtype was: $F(2,108) = 30.600$, $p < .001$ (Table 51).

Table 48

Three-Way Analysis of Variance On the Appropriateness of Sex Opinion

SOURCE	SUM-OF-SQUARES	DF	MEAN-SQUARE	F -RATIO	P
SUBSEX	0.033	1	0.033	0.068	0.795
WORKSEX	0.833	1	0.833	1.692	0.196
JOBTYPE	5.267	2	2.633	5.346	0.006
SUBSEX*					
JOBTYPE	0.067	2	0.033	0.068	0.935
SUBSEX*					
WORKSEX	0.033	1	0.033	0.068	0.795
OBTYPE*					
WORKSEX	0.467	2	0.233	0.474	0.624
SUBSEX*					
JOBTYPE*					
WORKSEX	0.067	2	0.033	0.068	0.935
ERROR	53.200	108	0.493		

Table 49

Means and Standard Deviations for
Appropriateness of Sex Opinion by Jobtype

	Welder	Nursing Researcher	Programmer
N	40	40	40
Mean	2.40	2.75	2.90
S.D.	20.93	0.59	0.44

Table 50

Matrix of Pairwise Absolute Mean Differences for
Appropriateness of Sex Opinion by Jobtype

	Welder	Nursing Researcher	Programmer
Welder	0.000		
Nursing Res	0.35 ¹	0.000	
Programmer	0.50 ²	0.15	0.000

¹p <.05

²p <.004

Table 51

Three Way Analysis Of Variance

For the Agreement between Sex of Worker and Jobtype

SOURCE	SUM-OF-SQUARES	DF	MEAN-SQUARE	F -RATIO	P
SUBSEX	0.008	1	0.008	0.106	0.746
WORKSEX	0.208	1	0.208	2.647	0.107
JOBTYPE	4.817	2	2.408	30.600	0.000
SUBSEX*					
WORKSEX	0.208	1	0.208	2.647	0.107
SUBSEX*					
JOBTYPE	0.017	2	0.008	0.106	0.900
WORKSEX*					
JOBTYPE	0.417	2	0.208	2.647	0.075
SUBSEX*					
WORKSEX*					
JOBTYPE	0.417	2	0.208	2.647	0.075
ERROR	8.500	108	0.079		

Summary

In this study, there were no sexual differences in self evaluation, since neither the positive self rating scale nor any of the negative self-ratings was significant at least at the .05 probability level.

The participants did evaluate the workers differently, by the sex of the worker and by jobtype. Females were rated less positively than the males, and the female jobtype, nursing researcher, was rated more harshly. This did not however, interact with rater sex.

Participants evaluated the workers variously on the negative words. For example, the sex of the participants themselves predicted how moody was used to evaluate the workers, with the males identifying workers as more moody than the female participants did. On the other hand, the nursing researchers (female jobtype) were evaluated as being more inefficient and the welders (male jobtype) were the most efficient.

The only differences on the negative words which were identified for the participants themselves, was conceited for major.

The opinion of whether the sex of the person was appropriate to the job was significant only for the jobtype, and there was strong stereotype agreement matching the sex of the person with the jobtype.

Comparative analysis of both studies

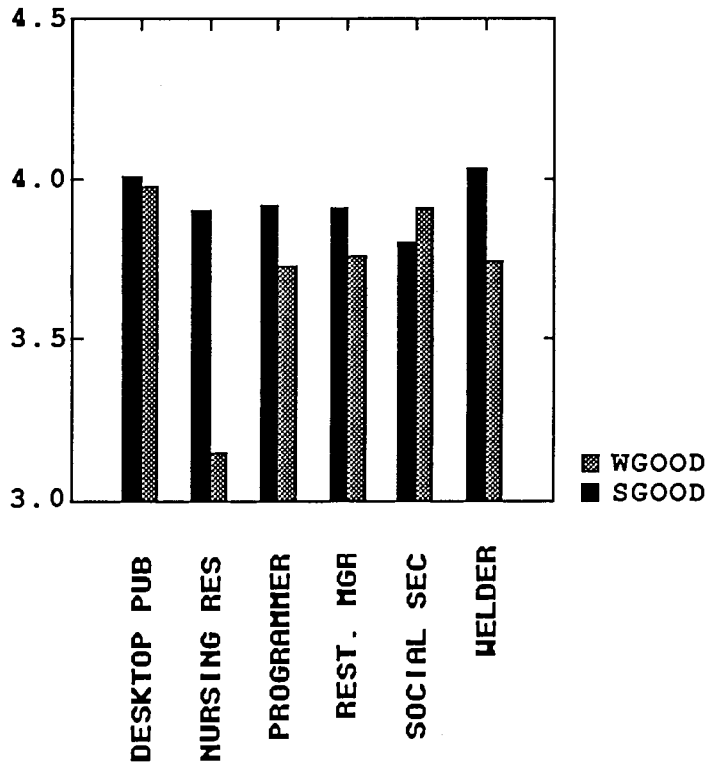
As the demographic information and graphs in chapters four and five indicate, there is substantially no difference between the demographic characteristics of the participants of the first study, compared with the participants in the replicated study. There is also very little difference in how the participants of the first study evaluated themselves compared to the second. In both studies, the males judged themselves more negatively on the negative variables and less positively on the positive variables than the females judged themselves. There were however some strong divergences on both the positive and the negative worker evaluations between the first study, and its replication.

Positive Worker Ratings

In the first study, the female job-type, that of social secretary, was rated more positively than that of the male job-type of manager trainee, but less than the neutral job-type of desktop publisher which was the highest of all three jobs. There were no sex differences either by the participant, nor by the worker.

However, in the second study, there was a difference in the positive worker ratings by the sex of the subject, with males giving less positive ratings to the female job-type of nursing researcher, with both men and women giving the researcher lower values than any other other jobs in that study which were welder (male job-type) and computer programmer (neutral job-type). (See Figure 11 for a summary overview of the positive ratings over all the jobs).

Figure 11
Average of the Positive Items Across all Jobs
for both Male and Female Participants



wgood: worker ratings on the positive scale
sgood: self ratings on the positive scale

Study One: Desktop Publisher
Restaurant Manager
Social Secretary

Replication: Programmer
Welder
Nursing Researcher

Notes:

¹ Based on a total of 14 words, with a possible total of 70

The results are not very consistent for the positive evaluations, since the finding in the first study that the sex of the participant is a factor was not supported by the second study. Study one did not have any significant effect on the positive scales but Study two was very strong on this dimension, with the female job-type being less positively evaluated than the other jobs.

Negative Worker Ratings

The first study found that conceited was significant for the sex of the worker, but respondents in the replicated study did not evaluate the workers differently on the basis of their sex on any of the negative words. In the first study, the male job-type (manager trainee) was evaluated more negatively than either the female job-type (social secretary) or the neutral job-type (desktop publisher). But in the replicated study, the male job-type (welder) was not as negatively evaluated as either the female job-type (nursing researcher) or the neutral job-type, (computer programmer).

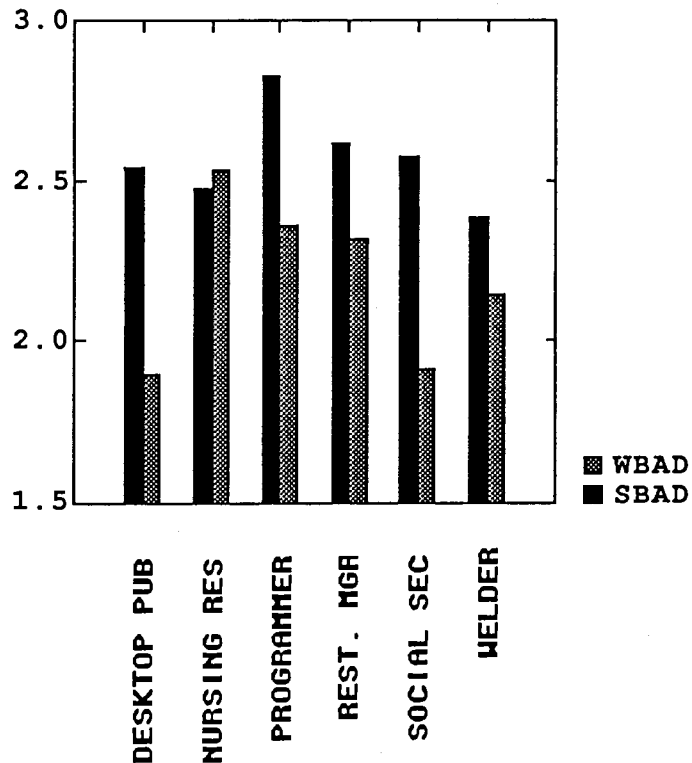
The neutral job-type was also rated very differently in the two studies. The second study rated the computer programmer far more negatively than the desktop publisher, especially on the words moody and conceited and gave the programmer more money than any of the other jobs. (See Figure 12 for an overview of the average negative ratings over all the jobs)

In both the first study and the replicated study the males gave harsher evaluations than the females, especially on the moody and conceited words. This parallels the harsher evaluations that the males generally gave themselves. The replicated study found that the males gave harsher evaluations than the females on the words jealous and moody . Figure 13 shows the difference between men and women over all jobs.

Figure 12

Average of the Negative Words

Across all Jobs for both Male and Female Participants



wbad: average worker ratings on the negative words

sbad: average self ratings on the negative words

Study One: Desktop Publisher
Restaurant Manager
Social Secretary

Replication: Programmer
Welder
Nursing Researcher

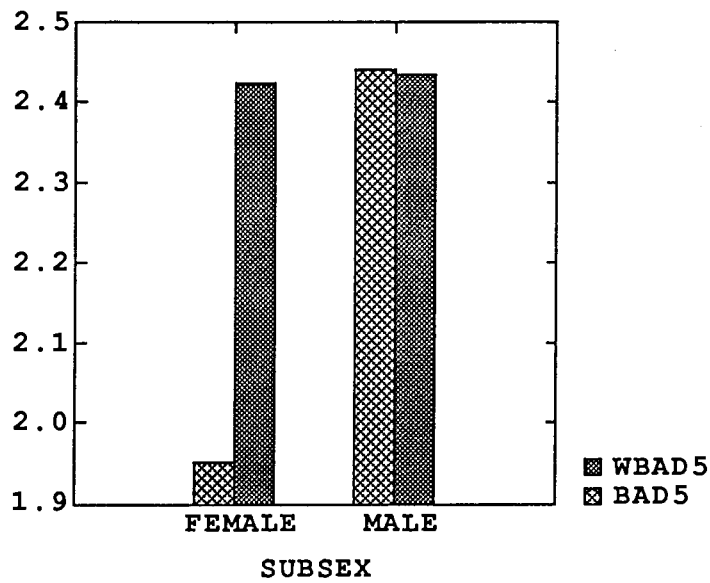
Notes:

¹Based on a possible top value of 5, with 1 being "not very much" , and 5 being "a lot"

Figure 13

Averages of both the Self rated and the Worker Rated

Negative Word Conceited Across all Jobs by Sex of Participants



Notes:

¹Based on a possible top value of 5, with 1 being "not very much" , and 5 being "a lot"

Wages

As far as the self assigned wages are concerned, there is mixed evidence. In Study one it was the jobtype which was significant, and in Study two, it was the sex of the subjects. For the worker assigned wages, it was not significant in Study one, and strongly significant for jobtype in Study 2.

The participants of the first study gave themselves less money than they gave to the worker on the female-type job (social secretary) and the neutral-type job (desktop publishing) and gave themselves more money than the worker on the male-type job (restaurant manager trainee). In terms of amount, both the male and female-type jobs were given the same range of money, even if the patterns were reversed, but the desktop publisher was given far less in comparison.

In the replicated study, however, the male-type job (the drilling rig welder) was valued more highly for the worker than for themselves as well as the programmer (neutral jobtype). The pattern was the same, however, as for Study one where the nursing researcher (female jobtype) was paid less the participants paid themselves.

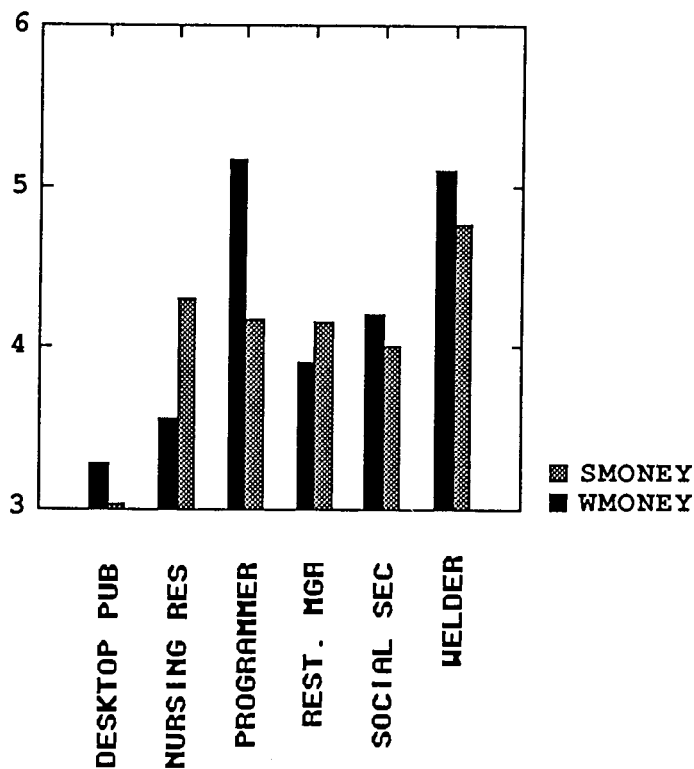
The biggest differences between the two studies in the worker assigned wages was between the desktop publisher and the computer programmer. These neutral-type jobs were valued very differently. The pattern here indicates that although both the neutral-type jobs are in the computer field, they are regarded very differently, and valued very differently. The desktop publisher is evaluated harshly and not paid very much; the computer programmer is judged positively (but also highly negatively which is an interesting contradiction) and is paid as highly as the male-type job (even

though the participants did not give themselves as high a wage). The same pattern exists for the welder, suggesting that perhaps the programmer job is more like a male-type job than a neutral job. Overall, the publisher is valued the least, even less than both of the female-type jobs, and the programmer the most, as much as the welder. The manager trainee (male-type job) is also somewhat ambiguous, being given the same range of wages as the two female-type jobs. Figure 14 shows the differences among the different jobs.

The differences are supported by the fact that there was a moderate correlational relationship between the participants' wages and the workers' wages for Study one, but a weak correlation for the replicate study .

Figure 14

Average of the Wages across all jobs



Study One: Desktop Publisher
 Restaurant Manager
 Social Secretary

Replication: Programmer
 Welder
 Nursing Researcher

Notes:

¹ Responses were forced choices from 1 to 8, with 1 being the lowest wage and 8 the highest

Appropriateness of Person and Sex

In terms of the appropriateness of the match between worker and job, there were two questions. The first question asked if the job in the scenario was appropriate for the person doing the job, and was not significant in either of the studies on any of the independent variables.

The second question asked if the sex of the person was appropriate to the job. In Study one, there were found to be significant differences by both the sex of the worker and the jobtype, with an interaction between the sex of the worker and the jobtype. This finding follows the extensive literature suggesting the same effect. In Study two it was the jobtype by itself which was statistically significant. There was actually more bias against men in the female-type jobs than there was against females in male-type jobs.

Overall, there were no differences between the two studies on this question. Both sets of respondents maintained stereotypical agreement between the jobtype and the sex of the worker. Most people did not see it was appropriate for a woman to be a welder, nor to be a programmer, and it was not appropriate for a male to be in desktop publishing.

Chapter 6

Limitations, Summary and Conclusions

The process of research includes learning after the fact what should have been done before the research began. An attempt had been made in the research design to cover as many confounds as possible, but of course there were some aspects of the research which when viewed retrospectively, were less than ideal. The items so identified are now examined: the research instrument, the identification of jobtypes, the awareness of the nature of the study, and the fact that this was an analogue study.

The Research Instrument

The word list While it seemed theoretically a good idea to modify the Bem Sex Role Inventory for the word list, it did not provide sufficient non-sexual negative words for an adequate scale, as shown by the low internal consistency values. This is likely a function of the small number of items. Other negative words should have been included in the pretest in order to have a larger pool of words from which the participants could choose work related concepts. But even given these limitations, it is clear that there are differences in how men and women evaluate themselves.

Using some of the words which were found to be statistically different, such as inefficient or conceited, further research should build a new scale which just as rigorously avoids sexually-loaded words, but would have more ecological validity. This could be achieved by asking a number of managers,

personnel officers and others who evaluate workers, what in fact are the parameters that a worker would be rated on, whether directly involved with the job (such as efficiency in getting the job done) to the more indirect forms of evaluation, (such as, "does this worker appear conceited to you?").

It may also be the case that the salient worker characteristics might be competence, collegiality and commitment, and words should be used to evoke these responses. A short definition for each term might also control for different understandings of the words, which would serve to diffuse any effect.

The Wage Scale The wage choices were not built on an interval scale. This did not allow computations of the magnitude of differences and thus was an insensitive measure. This lack of sensitivity in magnitude may be a reason for failure to find possible differences for the other two main factors (other than jobtype) or any possible interactions.

Applied research in the real world should also contain sensitive wage scales for the sake of ecological validity, and updated to fit the current wage levels.

Social Desirability There was no control for possible bias from a social desirability effect. Further research should include a social desirability scale with the instrument used. In particular, future research should include very sensitive measures for wages, especially in the ubiquitous university population on whom most of this sort of research is conducted in order to overcome any social desirability effects which might cloak differences.

Rater Competence There was no control for the competence of the rater, which could range from "I know what I like when I see it" to trained evaluators in business or education.

The Jobtypes

The jobtypes were largely drawn from the previous research, but pre-testing of the choices should have been conducted to avoid the problem of the neutral jobs. The reason for including neutral-type jobs in a gender study is for baseline comparisons. However, the different evaluations given to the two neutral jobs (desk top publisher and programmer) point to the possibility that the field of computers is not a homogeneous field, containing stereotypes of "male work" and "female work" within the field itself. This speculation is supported partly by the older work of Becker (1983) who found at that time that more boys than girls elected to learn programming; it is possible that the much higher wages given to the programmer reflect a perception that it is a typically male-type job, since those jobs are given the higher status, and the wages which go with status. It also may be the case that desktop publishing is seen as being akin to word processing, a female-typed job, and traditionally paid very little, with concurrent low status.

Awareness of the Purpose of the Study

A possible confound not controlled for was awareness of the purpose of the study. Austand and Aronson (1987) had found with retrospective analysis that "people had come to the study with the preconceived notion that if the object of the experimental study is female, then the topic of the study is likely related to the topic of gender" (p. 330).

There were several ways in which this could have been achieved. Interviews could have been conducted with each participant, with the

researcher using soliciting questions to deepen the understanding of both the participant and the researcher, examining in depth those subtle and indirect attitudes and biases which are impervious to pen and paper tests.

There was no attempt to interview or debrief participants due to time and administration restraints; however, a write-in portion of the questionnaire at the end could have helped to explain the background for some of results. One female voluntarily wrote on her questionnaire that she was giving herself what she knew she would likely get as a wage for that job, not what she would like for it, indicating a recognition of the status quo. The maintenance of the status quo is a whole other area of study but there may be need for some form of control for the variance due to real-world expectations, and the variance due to discrimination on the basis of variables not germane to the job (as for example, race or sex or age).

Glick, Zion and Nelson (1988) suggested that sex discrimination is mediated by occupation stereotypes that specify both the personality traits and the gender appropriateness for each occupation. An interview with each participant could have determined if there were any personality traits in the worker as described which led them to their opinion.

It is clear that in both studies there was consensus as to what was a male-type job and a female-type job, with a strong agreement between the sex of the worker to the "appropriate" jobtype as demonstrated by the strong statistical differences in the responses to the question asking about the appropriateness of the sex of the person to the job performed. However, we still do not understand why the participants held that opinion in the face of the lack of bias in the first question which did not focus on gender.

One avenue to explore in the setting up of future studies of this nature are the concepts of competency, productivity and collegiality which may play a stronger part in the subconscious evaluation of other people than could be tested in both of these studies.

Analogue Studies

The greatest weakness in both of these studies is the fact that they are analogue studies, conducted on a special population. Ideally, there would be more congruence between the conditions of the study and the world of personnel situations. It is most certainly the case that most job evaluations and hiring practices are not conducted by university students.

Avery et al. (1987) used videotapes which comes closer to the "real world", but still falls short of ideal. Videotapes were not used in the current investigation because of funding restrictions. In addition, there was an attempt to find valid criteria which could be used for both the evaluator and the evaluated for future pen and paper tests, since pen and paper are a fact of life in the world of work.

Staying within the design used, an improved form would be to use an expanded list of word identifiers, administer them to a large group of people who evaluate people on a regular basis, and then several weeks later, when memory of the words is weak, have the evaluator use the same list on a number of people who are in fact being evaluated on the job.

In addition, the definition of the words being used to evaluate both others and the self should be included, so that there would be less variance

due to differing interpretations of the words themselves and more to their applications. This would increase the sensitivity of the measure.

The Research Questions Answered

Differences in job performance evaluation can be laid at the feet of occupational gender-typing. If one holds to the definition of bias as using criteria that are not pertinent to the performance of the job at hand, then there is bias on the basis of the job itself by the evaluator, but not on the jobholder which Mount and Ellis (1989) called direct bias. While the form of indirect bias that Mount and Ellis defined as wage awareness was observed when examined by jobtype, there may be another more indirect form of bias, as formulated.

For example, in the first study, both men and women were evaluated as more conceited and more inefficient, depending on the jobtype, and the self-assigned wages were also different by the jobtype. In the replicate study, workers were again judged more inefficient depending on the jobtype, in addition to the positive scale, and the wages were assigned differently by jobtype.

It may be suggested that indirect bias in this case has a tertiary structure. On the surface, the men and women of the study hold to liberal views which permit men and women equality in the marketplace, both in terms of access and of wages. The second level is the reality of the historical disparity of both status and wages for those jobs which are defined as "women's work" explored at length in Appendix A. Level three is the pragmatic knowledge or perhaps unconscious acceptance of the status quo, based on the prototypes that the

participants were exposed to as they were growing up, and currently find in the world. They are a non-judgemental model of reality. These prototypes are the basis of the short-cut cognitive processes known as the availability heuristic.

Using this heuristic, one examines what is known about a novel event based on experiences of the past. If at this point there is no further evaluation of the model or compensations made to accommodate changes in time or place, then the prototype becomes a restrictive stereotype, and any evaluations made are biased to some degree.

In their review of sources of bias in job evaluation, Mount and Ellis (1989) found no support for sex of rater bias, or for sex of worker bias, and suggests that this area is a research dead end. However, the current findings suggest a new direction in sex of rater studies, hinted at when Mount and Ellis suggest that the bias in job evaluation is likely to be found in indirect forms, such as the cognitive processes themselves, but did not identify what these processes may be.

This study also found that men and women evaluate themselves differently, and to some extent, evaluate other men and women similarly. The men in the study admitted to more conceit; they also attributed it to the worker, especially when the sex of the person did not match the jobtype.

Robison-Awana, Kehle and Jenson (1986) found that above average academically competent girls viewed themselves more positively than boys, and more positively than other girls. Controls for academic competence could tease out more differences than is apparent here.

The fact that the word conceited has strong sex difference in the self ratings (with men rating themselves as more conceited), as well as by career or major, suggests that more research on self evaluation compared to worker evaluation would be needed before the hypothesis that the sex of the worker is a factor could be dismissed, as Mount and Ellis (1989) have suggested. The relationship between how we evaluate ourselves and how we evaluate others shows promise. There is need of research among different populations and with different instruments.

It may be the case that new and more sensitive measures must be found to explore this aspect, rather than defining a person by the simple biological reality of labeling them male or female. It is also the case that labeling a person by the sex-role stereotypes does not adequately deal with the complexity of evaluation, as has been found in the review of the literature.

In the current study, it would appear that the job itself was a major criterion for evaluation, not its implicit or apparent gendertyping since the neutral jobs were evaluated very differently. This could have arisen from several different possibilities. One, the gendertypes of the jobs are not stable with reference to time or to place, and so these jobs were not seen in the same light as they had been in other studies; or two, the scenario as it was written tapped criteria than sex or gendertype.

Mount and Ellis (1989) found that female dominated jobs would be under-evaluated since it is well documented that the average wage in these jobs is less than in male-dominated jobs. In general, this was confirmed in the current study.

The hypothesis that there was a relationship between how one rated oneself and how one rated a worker on the same factors was only weakly supported. More sensitive measures would have to be found to explore this relationship further.

Overview and Closing Comments

Generalizations from an analogue experiment with university students to the general population is always a problem. Nevertheless, there are some findings which can suggest vocational counselling interventions and self-image evaluations, for college and university students since this population is in fact a heavy consumer of career counselling services.

In both studies, the females evaluated themselves less harshly on the negative dimensions and more positively on the positive scale than the males. This confirms the findings of Lewin and Tragos (1987) who compared attitudes on sex role stereotyping of senior secondary students in 1982 to students of 1956. Sex-role stereotyping was not significantly less, and the basic power relationships of gender hadn't changed, but they found that the self image of girls had improved, but wage expectation has not followed through. This disparity needs to be addressed so that one day there may be a fair and equitable wage for women in the marketplace.

While this study did not find sexual bias, as much as it found jobtype bias, we are left then with the question of what is the mechanism which continues to restrict women since while women have come a long way, equality and equity have not in fact been achieved. Even more importantly,

what are the implications for counselling people who are seeking to improve their lives and achieving their full potential?

Hornsby, Benson and Smith (1987) found cause to believe that there is a problem with using gender manipulations to investigate sex bias and suggests that until there is less of an artificial means of assessing sex bias, one should refrain from the conclusion that there is no sex bias in job evaluation.

There is still an obvious discrimination on the basis of the job as demonstrated by the differential wages given by the participants to the different jobholders, but not on the basis of the sex of the person doing the job. It is not just a matter of comparing a nurse with a welder which had different job requirements, but as Bielby and Baron (1986) wrote "even within mixed occupations, we found that women were almost invariably segregated from men by job title or organizational context" (p. 791). This can be seen with the different results of the two computer jobs.

There is need to help men cope with and understand the new order of things (Kahn 1984). Wharton and Baron (1987) found that men in mixed work settings report significantly lower job-related satisfaction and self-esteem and more depression than males in other settings. This suggests the need for intervention at the primary level of education, to build up a balanced self-perception in mixed settings. Left alone, children tend to segregate themselves and this tendency needs to be gently overcome.

There is clearly a lot of bias toward jobtype, and it may be that the way that we see ourselves, especially on negative dimensions, may be part of the source of that bias. White, Kruczed, Brown and White (1989) found that there was a decrease from the 1975 rate of stereotyping occupations among college

students when faced with a labeling task, unlike the current study where it was imbedded in the design. As a result it may be suggested that the awareness of job stereotyping is not a conscious one, and thus it may be the reason that it is so resistant to change. The segregation that is self-imposed by pre-adolescents becomes imposed through failure to change out-moded and childish responses to novel situations.

Imposed segregation needs to be dealt with at the policy level, in the boardrooms and in the legislature, but education and instruction in schools and in the marketplace would go a long way to continue the work toward equity that has been underway for the last twenty years. Women need to re-evaluate what they do and how much they do it for rather than accept the socially restricted range of jobs available, with the concurrent restriction of wages, and then pass that information on to their children.

Honesty about how much a job is worth would help, since if wages are posted, there is no possibility to paying one element of the population differently than the other. For the lowest paying job this is often the case, but professional salaries are jealously guarded, to the detriment of women and other minority groups (Haberfeld and Shenhav, 1990, Vollmer, 1986).

Consciousness raising of the last generation since the 1960's has been successful in having women seen as individuals, exemplifying a non-sexist position i.e., not being evaluated on a sexual characteristic in a non-sexual situation. Evaluation has almost achieved a humanist perspective, at least among university students. In part, this female emancipation has helped to overcome the 19th century ethic of biological determinism, which classified

women as intellectual and physical inferiors, which was covered extensively in Appendix A.

However, consciousness raising has not been successful in combating the age old division of labor (also analysed in Appendix A) within a given social group which allocates certain jobs or tasks as suitable to males, and other jobs and tasks to females. In this study, it was found that there was an upholding of the concept of male-typed jobs and female-typed jobs by the fact that there was such a strong stereotyped agreement in both studies. The stereotypes were shared equally by both the male and the female participants.

While it would appear from this study that women would be rewarded for their individual abilities and characteristics to somewhat the same level and degree as men when they are in job, they would still be expected to occupy stereotypically female-typed jobs which are paid on an average 63% of any comparable male job. This social expectation could also restrict a woman's freedom of choice. The lack of experimental support for sexual bias, but the concurrent experimental support for jobtype stereotyping as found in the "appropriate sex" variable, suggests a double set of standards which could sound like this: "If you get into cross sex jobs, you will be paid what the job is worth, but we will do all we can to keep you out of those jobs."

One interpretation for the persistence of jobtype stereotyping in the face of weak experimental support both here and in other studies for sexual bias could be the phenomenon known as the availability heuristic (Tversky & Kahneman, 1973). This is a judgmental heuristic, a cognitive shortcut, in which a person evaluates the frequency or probability of an event or situation by the ease with which relevant instances come to mind. As the authors

suggest, the images of the future are shaped by the past, and as a result, reliance on this heuristic leads to systematic bias. I would go further and suggest that this cognitive shortcut is the foundation to the status quo and ultimate resistance to change, regardless of how many overt signs of gender egalitarianism one may consciously express.

As Cracker and Wilson (1984) point out, cognitive barriers operating without any awareness on the part of the individual include the nature of stereotyping, which moves past the availability heuristic. As Ruble et al. (1984) wrote, stereotypes are not just oversimplified views of the way things are, but also define the way things ought to be, thus allowing the naturalistic fallacy to be committed. This is often a sign of emotional immaturity, and can be approached from any number of counselling and educational interventions. However, if one does not acknowledge a problem, it will not be addressed, and the unrecognized and unchallenged stereotypes one carries around as part of one's cultural baggage are not often listed as problems requiring intervention.

From the standpoint of counselling and education, future attention needs to be focused on strategies for re-defining the division of labor in contemporary society towards a more genuinely neutral division. This requires grade school intervention, reinforced every year of the child's development. It is critically important to expose children and students of all ages to a balanced representation of the sexes in all possible jobs as advocated by Mellon, Crano and Schmitt (1982) and many others.

It is currently the practice in high school counselling to permit and even encourage the student to drift into gender-typed jobs because of the lack

of adequate intervention, or the use of interest inventories which reify job gendertyping (eg. Kahn 1984, Prediger & Lamb, 1979). If the availability heuristic is as pervasive as I suggest it is, then models must be provided indicating balanced numbers of the sexes in the job, even though the sexes may not be balanced for numbers in the real world at this time. This will provide the transition to free choice of an occupation based on interest and ability, not on restrictive stereotyping to both sexes.

According to Eaton (1983), once children understand that gender is a stable characteristic, they avoid cross-sex activities in order to maintain self-identity. However, this supposes that there are activities which are "sexually appropriate". As part of the civilizing process of education, children and older students need to be guided to the ideal of work being accessible to all those who are capable of doing the work, regardless of primordial imperatives to slice the world of work in half. The inflexibility should become less as the child grows and develops, but will only occur if there is adequate and reaffirmed direction. It takes energy to overcome inertia.

In order to accomplish this, teachers and text book writers both have to set the consistent and appropriate tone, contrary to what is often presented to students today. There is in fact many articles, monographs and instruction pamphlets in the educational literature on methods, procedures and curricula. There is just as much literature suggesting that the information is not filtering down into the classroom (e.g. Sadker & Sadker 1988)

As Jack and Fitzsimmons said in 1979, and many others have said since then, the de-emphasis in stereotyped gender related roles must be approached by parent education, revision of educational curriculum, mass media and

vocational counselling. In other words, it must be a multi-modal attack. That it could work has support from Koblinsky and Sugawara (1984) who found experimentally that exposure to non-sexist curricula produced significantly greater reductions in sex stereotyping on all measures, and Palmer and Cochran (1988) found parental education effective in non-stereotyped vocational choices.

Bielby and Baron (1986) point out, however, that discrimination might not vanish in a market economy since "individuals are more likely to attend to and retain information that confirms their stereotypes and ignore information that does not fit expectation" (p. 791). As a result, further research into the concept formation of jobtypes, and the use of the availability heuristic in the work place is required before the cycle of stereotyping and reification of stereotypes is broken.

On a positive note, one may refer to the Physicist Max Planck (1949) who wrote

...a new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die and a new generation grows up that is familiar with it (p. 33).

As a result, it is clear that the interventions must be at all levels of a child's growth, and television, as a child's first teacher, must be included as much as the child's parents and teachers.

In conclusion, I have found evidence of direct bias in this study, though not specific sexual bias. It is in the gendertyping of the job which needs to be carefully examined. At the same time, there may be evidence of an

indirect bias which leads to the access discrimination and wage disparity experienced by women in the real world. This indirect bias could have its roots deep within a child's concept formation of career and gender identity, as well as an adult's habitual use of the availability heuristic. Change at that level is required before real change in our society can be evidenced.

Appendix A
History of Sex Bias in the Work Place:
The Story of Invented Tradition

History of Sex Bias in the Workplace:
The Story of Invented Tradition

Ehrenreich and English (1978) document the incredible hegemony that doctors and scientists had on the thinking of men about women of the last century and point out that it is in this period that the tradition of the 'weak' women was invented, along with the economic isolation that placed women outside of any position of power. But there is a deep philosophical, educational, psychological, sociological and biological history to sexual segregation and inequalities, leading to the current state of injustice in the marketplace, and bias in job evaluation.

History as Invention

Hobsbawm (1983a) used the phrase "invented tradition' to mean a set of practices, normally governed by overtly or tacitly accepted rules which seek to inculcate certain values and norms of behavior by repetition, which automatically implies continuity with the past (p.1) although it may be that the continuity may or may not itself exist. The object and characteristic of 'traditions,' including invented ones, is invariance. The past, real or invented, to which they refer imposed repetition of fixed practices, and gives any desired change (or resistance to innovation) the sanction of precedent, social continuity and natural law as expressed in history.

Ranger (1983) noted that the invented traditions of nineteenth-century Britain were a way of running an immensely complex industrial society, a way of managing and accommodating change. As an example, Hobsbawm (1983b) cites that in the 1870's in Britain the 'old boy dinners' began, at the same time

as 'old boy associations' and networks, and the invention of a suitable 'old school tie'. Not only by word but by practice were women (and poor men) excluded from these groups.

Symptoms of Bias

Without calling into play the term 'tradition', Andreas (1971) commented that "What is striking about most Americans is how far they go in declaring their behavior as men and women to be inalterably 'correct' or even instinctive" (p.17). They often do this by appealing to a tradition that under scrutiny did not ever exist. An examination of sex bias in the marketplace must take this into account.

Sex bias is defined as the overt or covert restriction of one sex to access a job or career to which the other sex has open access. It also refers to the differential payment for a job on the basis of the worker's sex. Women are still being paid significantly less than what men earn, even controlling for work experience and training (Frieze, Olson, Good, 1990; Fuchs, 1986). Access in many areas are no better than they were in the early 1960's, as for example the number of women full-time faculty members in Universities stands at 14% (Pierre, 1989).

Women in the Market Place

It is a common, but incorrect assumption that women working outside of the home is a 20th century phenomenon. It is not. In 1871, Montreal women and children made up 42% of the total work force and in Toronto women represented over 50% of the workers in light manufacturing such as clothing, shoes, printing tobacco, and furniture, comprising 34 % of the total

industrial work force. In 1908, women were 50% of the work force in the cotton industry. Wages paid to women in 1908 were 50% or less that of a man's wages for the same work. In addition they worked longer hours, were more subject to fines, and subject to sexual abuse by their supervisors. Women tolerated such low wages and conditions because the alternatives, that of starving, going blind sewing for even less money, or going into domestic service, were worse (Phillips and Phillips, 1983).

The legislation that has existed to protect women has been primarily concerned with the protection of the female reproductive system, beginning in Britain in 1802 (Mackay & Bishop, 1984). Although this can be seen to be a positive step for women in their child-bearing years, it has not been followed with improved working conditions, adequate wages, health care, child care, or freedom of choice; women are still clustered in unrewarding and unattractive jobs (Muller, 1986). In the classic double bind situation, women have been blamed for not doing an adequate job when they are given men's protective devices that don't fit, provided with work clothing manufactured not in their sizes, and required to use machinery that is built to male standards to accommodate the larger male body (Mackey & Bishop, 1984), in spite of the fact that over half of the factory workers since the beginning of the industrial revolution have been women.

During the first phase of the Industrial Revolution, the major reason for discrimination was economic. (Phillips and Phillips, 1983) Women represented a large pool of cheap labor. This cheapness was justified by the belief that since women are married (ignoring the large numbers of singles) the husbands were the major wage earner, and thus the wife could earn "pin money". The catch for both the woman and the man was the fact that the

man was not given high enough wages to support his family, and therefore the woman *had* to work to make ends meet (Phillips and Phillips, 1983).

We have a very clear statement of the economic position women played in the Industrial Revolution. One of the original factory owners in England wrote:

Even in the present day [1835] when the [factory] system is perfectly organized, and its labour lightened to the utmost, it is found nearly impossible to convert persons past the age puberty, whether drawn from rural or from handicraft occupations, into useful factory hands. (p.243) ... It is the constant aim and tendency of every improvement to diminish its cost, by substituting the industry of women and children for that of men (Ure, A. 1835, p. 248).

Trofimenkoff (1982) states that the McDonald Royal Commission on Factory Workers in 1891, which interviewed 102 out of the 57,283 women who worked in manufacturing and mechanical industries, ignored the financial inequalities, wretched working conditions and clear cases of abuse, and instead inquired into the moral state of Canadian women. In the process they managed to muffle not only the women but also the crucial economic and social questions raised by the factory system and by women's place in it. It must also be noted that most of the men on the commission directly or indirectly benefited from the factory system as it stood, since they were themselves factory owners (Trofimenkoff 1982).

In spite of the Section 9 Dominion Lands Act in Canada which permitted three categories of women to qualify for homestead lands (widows, divorcees, and deserted wives if they had children under 18 dependent on them for support), and in spite of the fact that women worked on the land as

hard as any male, no woman was deemed eligible to qualify as a homesteader. When challenged in 1910, Minister of the Interior Frank Oliver said that he did not think it would be in the best interest of the west to give women homesteads, for the object in giving homesteads is to make the land productive and this would not be the case if held by women. (Binnie-Clark, 1979, first published 1914) This was in direct contradiction to the facts since the wives of men who had been given homesteads worked every bit as hard as the men, but the Minister was unmovable. There was no court of appeal. (Binnie-Clark, 1979)

Blossfeld (1987) examined the Labor-Market entry and the sexual segregation of careers in the Federal Republic of Germany, and reported on an extensive survey. Blossfeld argued that sex differences in the field of vocational training are a major component in the process of sex segregation over the life course of the people surveyed. Overall, in spite of greater educational opportunities, there is now greater discrimination and exclusion for females as well as greater, not less, sexual segregation of jobs, causing economic hardship for female workers.

The "Invented" Tradition of Sexual Segregation in the Marketplace

One of the phrases that come up time and again in the research literature is "traditional" vs. "non traditional jobs for women." The position is that the non-traditional job, by virtue of being previously closed to women, has characteristics in its own nature which makes it very difficult for women to enter the field. However, there is no inherent characteristic of the job

which creates the label, and in fact, there is a fluidity in the concept not immediately discernable from the words used.

Boyd (1976) defined non-traditional occupations for women as any occupation which fewer than one-third of the labor force was female. This figure was adopted from the research of Almquist and Angrist (1970) who employed it on the basis that women constitute one-third of the total labor force. Pray and Thomas (1982) defined nontraditional jobs for women as: those jobs that require apprenticeship eg. carpentry, plumbing, heavy equipment operator, etc. and on the other hand, Lunneborg (1982) defined "non-traditional" as "entering a heretofore male-dominated occupation".

The U. S. Women's Bureau defines non-traditional careers for women as "those in which there is 30% or less of the work force their own gender" (which means sex in this context) but Haring-Hidore and Beyard-Tyler (1984) who reported the definition, point out that a lot of people understand 'traditional' and 'non-traditional' in different ways, largely as a result of each their own experiences, regardless of past or current numbers of people doing the job. "In such cases, little can be achieved by categorizing occupations as non-traditional" (p.114). The question must be asked: why use the term at all?

Auster and Auster (1981) defined the phrase "non-traditional career choice" as the selection of an occupation for which one's sex is a contradiction because that occupation has been traditionally stereotyped as the proper and exclusive domain of only one sex. Orcutt and Walsh (1979) defined female traditional occupation as wife and mother, and non-traditional roles as career person.

Trying to sort out the definitional mess on job gender and traditional assignment, Hayes (1986) noted that although the phrases might have the

same intended meaning, some of the names describe the condition more accurately than others. For example, "gender dominant" (often referred to in the literature as "female-dominated" and "male-dominated") leaves room for misinterpretation.

The U.S. Department of Labor (1980) defined a traditional career for women as one in which the majority of those employed are women; a nontraditional career for women as one in which the majority of those employed are men. But what is the time cutoff? At what point do you create the "tradition" that women do "this sort of thing"? Bank tellers and secretaries were all men not so long ago (Phillips and Phillips 1983) and are now mostly women.

The "Traditional" Philosophy about Women and Sexual Segregation

Kant, who never married, wrote extensively on marriage and on the attitudes needed for good marriage. In 1772, he wrote for example, "A man must never tell his wife if he risks a part of his fortune on behalf of a friend... a man must never weep other than magnanimous tears. Those he sheds in pain or over circumstances of fortune make him contemptible" (p. 133) and "The principle object is that the man should become more perfect as a man, and the woman as a wife" (p. 143). He set up a new model for appropriate sex-roles, and placed them into the new consciousness. The prevailing ethos rapidly adopted it.

Douglas Hume was somewhat more open and honest about the reason that women must be kept 'restrained'. He followed the old Romans, for in Rome, men called themselves patricians: *qui patres scire possunt* - those who know their fathers. Hume wrote in 1739 that

Men are induced to labour for the maintenance and education of their children, by the persuasion that they are really their own; and therefore 'tis reasonable, and even necessary, to give them some security in this particular. ... In order therefore to impose a due restraint on the female sex, we must attach a peculiar degree of shame to their infidelity, above what arises merely from its injustice, and must bestow proportionable praises on their chastity (p. 124).

At that point in time, however, the dictum of restraint did not include the notion that women couldn't work, but that their work must be segregated in order to not be tempted into infidelity.

Other professionals were very quick to concur with the "restraint of women" philosophy. Dr. Gregory wrote in 1774 that women are expected to be physically weak, easily startled and even devoid of the most normal appetites. "The luxury of eating is in women beyond expression indelicate and disgusting.... She must resign herself to marrying without love. That is, she is to resign herself to a marriage in which passion will be difficult or impossible. If you do love your husband, do not ever say so" (p. 120). Again, the only people really being addressed here were the middle and upper class ladies, because doctors did not concern themselves with the poor (Ehrenreich and English, 1978). It is impossible to sever these dictates of behavior from the marketplace, since it became a bootstrap operation. That is to say, once these dictates were in place, women were restricted from engaging in a number of activities in the marketplace previously allowed, such as buying and selling, then the prohibition was reinforced on the basis that women didn't "do that sort of thing" (Ehrenreich and English, 1978).

Since World War II, members of the working class have identified with upper and middle class values. For example, the 1950's push to take women out of the factories and back into a restrained situation reflect the transition of this philosophy.

Schopenhauer, who had much influence on the 20th century thought wrote in 1893 that women

... are incapable of taking a purely objective interest in anything; and the reason seems to be as follows: A man tries to acquire *direct* mastery over things, either by understanding them, or by forcing them to do his will. But a woman is always and everywhere reduced to obtaining this mastery *indirectly*, namely, through a man; and whatever direct mastery she may have is entirely confined to him. And so it lies in woman's nature to look upon everything only as a means for conquering man (1893, p. 199) (italics in the original)

The logical fallacy of reasoning seems to have been ignored. Women are 'reduced', that is, forced, to use indirect means, then suddenly this forced posture becomes part of a woman's nature. In other words, a vulgar functionalism attributed to biology a characteristic imposed by society, then used that as the reason for maintaining the characteristic.

Functionalism is a sociological theory developed in the last decades of the nineteenth century, and still followed today. Functionalism assumes that both the origin and the persistence of differential sex roles can be explained by examining the contribution these differences make to the maintenance of social stability. In early hunting and gathering societies, functionalists argue, sex role differentiation was a consequence of two basic survival requisites: reproduction and subsistence. Since the female was restricted in mobility due

to lengthy childbirth and childcare requirements, it followed that she would take care of the gathering and the harvesting since hunting required long periods of absence and had a higher mortality rate.

In keeping with Functionalism, sociologist Talcott Parsons defined non-traditional sex roles as dysfunctional and threatening to the total social system. A major assumption of Functionalism places women's primary role in the family unit and defines her position through that unit, and tends to ignore the role that women play in the work force.

But at the same time, sex role segregation was seen by Parsons as increasingly *dysfunctional* given changes in the occupational system which would result in a demand for increased female participation. Persisting sex inequality would be then seen as a consequence of the individual failure of particular women to seize educational, economic, legal, and political opportunities (Saunders, 1988). Saunders does not comment on the sudden shift of the locus of control in this view, which places women as both the victims and the perpetrators of inequality.

United States President Theodore Roosevelt did not use circuitous means to make an argument, he made direct public statements time and again, and through sheer repetition, caused his philosophy to be adopted into the national "tradition". In a speech made in 1899 as well as at other times, Roosevelt thundered that

the man must be glad to do a man's work, to dare and endure and to labor; to keep himself, and to keep those dependent upon him. The woman must be the housewife, the helpmeet of the homemaker, the wise and fearless mother of many healthy children (p. 1129).

Commenting on the philosophy of sex divisions and roles, which had been wrapped up in a package called "criterion of abstract universality" by the philosophers, Gould (1976) noted that

... the criterion of abstract universality... turns out to choose those properties as essentially and universally human which the philosophers themselves have either explicitly identified as male properties, or which were accredited with roles and functions in which males predominated.... In the historical cases of ideological distortion which we have examined, we find the projection of a specific and historically contingent social form – male domination and the subordination of women – as a universal and unchanging one; and as a result, the projection of those characteristics which have priority in such a social form as the essential and dominant features of human nature itself. The criterion of abstract universality is open to such ideological distortion precisely because it assigns historical and social difference to the realm of the accidental. As a consequence, it cannot see the historical contingency of its own time and its own society, and therefore it may uncritically adopt the dominant social relations as eternal and unchanging ones" (p. 17, p. 24)

At best, the philosophers fell into the naturalistic fallacy themselves, arguing that what seemed to be, ought to be; and at worst, they created the world as they wanted, then wrote as though the world they created was ever thus. Either way, they used the categorical imperative and they invented sex-role "tradition".

"Traditional" Psychological Factors
in Sexual Segregation

Broverman, Broverman, Clarkson Rosenkrantz and Vogel (1970) found that "For a woman to be healthy, from an adjustment viewpoint, she must adjust to and accept the behavioral norms for her sex, even though these behaviors are generally less socially desirable, and considered to be less healthy for the generalized competent, mature adult. "(p. 6) What are the roots of these "behavioral norms" for her sex?

In 1857, Acton, physician and surgeon, echoing Gregory, wrote that one appetite which women are especially not to feel is that of sexual desire. "It is a vile aspersion to suggest that women are even capable of such a thing. " As Taylor notes, however, sexual desire is only one of the appetites women are not to feel; neither are they to be ambitious or desirous of anything. They were to be as angels (Taylor, 1958). It follows therefore that with a woman's lack of ambition, it was not appropriate to confront a woman with the ambitions of the marketplace; one must protect her from it.

Von Krafft-Ebbing was a teacher and mentor of Sigmund Freud. He wrote *Psychopathia Sexualis* in 1886 for fellow professionals, but it soon became a popular classic and a foundation philosophy in psychiatry and applied psychology. Echoing Hume, he wrote:

Women, however, if physically and mentally normal, and properly educated, have but little sensual desire. If it were otherwise marriage and family life would be empty works... Woman is wooed for her favour. She remains passive. Her sexual organization demands it, and the dictates of good breeding come to her aid... the unfaithful wife not only dishonors herself, but also her husband and her family, not to speak of the possible uncertainty of paternity (1965, p. 43).

Krafft-Ebbing, like his predecessors Hume, Kant and Acton, is guilty of the fallacy of circular reasoning. It is in the phrase "and properly educated" that we may see an enforced role which then appeals to biology (seen in the phrase "sexual organization) on the basis of the enforced role.

Given this background, it is not surprising to find that three most distinguishing traits of female personality were, in Freud's view, passivity, masochism, and narcissism, concepts which then become part of the required repertoire for the "well adjusted woman" Just in case a woman is tempted to try to do some of the interesting things that men do, she is punished, and the theory of 'penis envy' shifts the blame of her suffering to the female for daring to aspire to a biologically impossible state. Further, as sociologist Kate Millet (1970) wrote, any woman who resists "femininity" (ie. feminine temperament, status and role) is thought to court neurosis, for femininity is her fate, since 'anatomy is destiny'.

However, in reply to the Freudian history of which she was a part, Horney (1977) said that 'feelings of inadequacy have nothing to do with femininity, but use cultural implications of femininity as a disguise for other sources of inferiority feelings which in essence are identical in men and women" (p. 337).

Women were not very pliant in fitting into theories of psychological development. Freud is reputed to have thrown up his hands and asked: What do women *want*? Lee and Stewart (1976) suggests that the reason for this female recalcitrance in fitting into theoretical molds may be that the major developmental theories, from Freud on through to today, are inventions of men, which tend to have a phallicentric bias. "That is, although the theories often use females as the reference point for raising questions about sex role

development, they seem to look to males as the reference point for finding answers" (p. 22).

G. Stanley Hall had been student of Wundt who is considered by many to be the founder of modern psychology. Hall was the founding president of the American Psychological Association and founding president of Clark University where he reigned for 36 years. He founded a number of psychology journals, some of which are still published. He was a formidable force in the direction of American Psychology and cultural identity of Americans. One third of his doctoral students became educational administrators, passing on his philosophy and orientation. Schultz and Schultz (1987) record that he made notable contributions to educational psychology, applying a basic belief in evolution to problems in human development.

One of Hall's theories was that ontogeny recapitulates phylogeny which suggested that the human fetus developmentally goes through the entire process of evolution from protoplasm to reptile etc. Included in the perceived sequence of events was the evolutionary progression from child, to woman, to man, who was the ultimate creation. As a result, Hall saw women primarily as mothers, and the educational limits of women were to study children, since they were evolutionarily closer to children than men were. The only women permitted to study at Clark were those in child development and who accepted his theories. (Diehl, 1986)

Hall was a prolific writer and wrote extensively on women and children. In 1904, he wrote that women's reproductive organs could be damaged by too much mental activity, especially in competition to men. The net result of overexposure in the classroom would be loss of mammary function, followed by lack of interest in motherhood, decreased fertility, and

the production of few and sickly children. Hall warned that a bachelor woman was really neither male nor female, neither masculine nor feminine, but "agamic" a third sex produced by the removal of sex from the female, and a sterile accident of evolution, doomed not to reproduce more of her kind. (Diehl, 1986) This notion became imbedded in the fabric of pedagogical techniques and remained long after the reasons for this position have been discredited. It is not only the theoretical work and research which is biased, but the teaching we give to our students who then perpetuate the system.

An extensive review on the status of women in Canadian Psychology was reported in the January, 1977 issue of *Canadian Psychological Review*. The report itself is fifteen pages of densely written recommendations backed by a number of review articles. Many of the recommendations have not been followed. For example, the male bias in undergraduate textbooks, as documented by Gray (1977) is still found to be the case, and it is still the men who are portrayed in the interesting vocational roles but the women are shown as secretaries, clerks and waitresses.

One recent History of Psychology book (Schultz and Schultz, 1987) devotes two pages to the position of women in the history of psychology, and in spite of historical evidence of the many and varied contributions to the discipline women have made, these contributions are dismissed with the caveat that with all the discrimination that went on against women at the turn of the century, women could not have done anything!

As Szasz (1969) pointed out, mental health professionals are required by society to help an individual accept and maintain the status quo; in other words, be socialized into the accepted pattern put in place by the dominant force and *zeitgeist* of the time. Of course, this pattern is changed from time to

time, but at each change, history is re-written to indicate that the current pattern is the one which has always been the rule. Career counsellors are no less pressured by this dictum than are other counsellors and therapists and neither are researchers. Many of the studies on gender bias begin from a functionalist point of view; ie. what 'exists' exists because the people involved wanted it to be that way. There is also an implicit and sometimes explicit suggestion that biological factors will always determine the social one.

McHugh, Koedke, and Frieze (1986) identified and explored three major types of barriers to sex-fair research in psychology: excessive confidence in traditional methods of research, bias in explanatory systems, and inappropriate conceptualization and operationalization. Bias routinely occurs because it represents the accumulated common experience of a member of a particular group. In practice, it is generally men who conduct or supervise research.

Weak or methodologically questionable findings may be published and cited repeatedly as evidence for a generalization when they are consistent with prevailing paradigms about human behavior, whereas important counter-evidence may go unpublished and uncited. In addition, the researcher should consider historical factors and gender-relevant role changes that may make established findings irrelevant to the prediction or explanation of behavior in current settings. Multiple uses for words such as sex, sex roles, masculine, feminine, male, female etc can lead to equivocation and we need to separate biology from social factors. (McHugh, Koedke, and Frieze, 1986)

Sayers (1979) found after an extensive examination of the literature, that the

... description by some psychologists of psychological sex differences in terms of 'masculinity-femininity' in terms of sex roles or traits, is

controversial and often unwarranted, and that current research into the content of sex-role stereotypes tends to be impervious to many of the important and contradictory features of people's ideas about the differences between the sexes. Since these ideas serve an ideological function in a sexist society, in that they are often used to justify and explain existing inequalities in the social lot of men and women, research into them can have the effect of bolstering sexist ideology (p. 54).

Regretfully, a glance at the current state of research suggests that this is still very much the case.

"Traditional" Biological Factors in Sexual Segregation

Andreas (1971) found that "the sexual division of labour is accentuated by tying it, through analogy, to certain supposedly biological and immutable characteristics" (p. 17). But far as biological determinism goes, famed anthropologist Margaret Mead is very clear:

When I make any sort of statement about the universal presence of differentiation between the sexes, I want to make it very clear that although it has been universal, and therefore probably congruent with biological facts, the whole strength of human culture is to work both with and against biology: to work with it so as to give social life a firm base, and against it so as to transcend its limitation. (1952, p. 19)

While it is true that biologically there are two sexes, male and female, it may not be the case that there are only two gender roles, as the contemporary Western perspective would suggest, according to Williams (1987). "Though

we attack the notion that 'biology is destiny' we remain imprisoned by the idea that one's morphology - specifically that one's genitalia- determines one's gender role" (p.135). He suggests that cross cultural examination of gender roles, once stripped of ethnocentric Western norm bias, can point the way out of a false dichotomy which imprisons both men and women.

Petersen and Wittig (1979) found that hormone levels may affect behavior, but behavior may also affect hormone levels, calling into question the cause and effect progression of gender behavior which is generally assumed to be linear and immutable. The authors also found a number of misconceptions which they attribute to the questionable validity of previous research that has been limited by the nature of the questions asked, faulty theorizing, or inappropriate methodology. For example, in the classic studies of achievement motivation (which impacted very strongly on career and vocational research), most of the research was done on male subjects because it has been commonly believed that women show less need for achievement than men.

This mistaken belief may be traced back to a footnote in one lengthy book, in which women's scores on projective measures of need for achievement under 'relaxed' conditions were reported to be as high as men's or women's scores obtained when the instructions were designed to arouse achievement motivation. ... Unfortunately, in subsequent reviews of this research, the finding was often reported as a failure of the women to increase their need for achievement under conditions of 'arousal'. This correct, but incomplete reporting, led to the erroneous conclusion that women showed less need for achievement than men when in fact, women showed such need even when it was not

externally aroused. It is clear from this example that the relative neglect of the study of the conditions is more a function of the limitation of the theory about what arouses achievement motivation than it is a limitation of women themselves. (p. 2)

Petersen and Wittig conclude that in our society we tend to interpret behaviors thought to differentiate the sexes as inevitable ones. Many observe *what is* regarding sex differences and assume that these differences *should be*. This is yet another example of the naturalistic fallacy, an invalid way of reasoning based on future imperative not contained in the premise. This fallacy is often found in the reasoning of children, who also over generalize.

Primatology does not currently explain why women should be subordinate and men dominant in many human societies according to Anderson and Zinsser (1988). Nor does biology. Increasingly sophisticated studies of human anatomy and physiology reveal no clear reason for either sex dominating the other. Biological evidence does explain differentiation of function, but many of the character traits associated with one sex or other have been shown to be the product of culture rather than biology.

One of the most constant reasons given for not permitting women into any particular job is the question of physical strength. If conditions of diet, health and exercise are equal, women will be, on the average, 10 % shorter, lighter and weaker than men, but some women will be stronger than most men; and some men will be weaker than most women. However, over time the differences were exaggerated by underfeeding the females, requiring restrictive clothing, and the forbidding of rigorous exercise which does not permit muscle growth. (Anderson and Zinsser 1988) In addition, there occurred selective breeding which sociobiology suggests happens by the males

choosing only those women who are sufficiently submissive, who then genetically and socially carry on the pattern of female submissiveness and physical weakness.

Wardle (1976) studied women's physiological reactions to physically demanding work. It was found that the energy expended by the women in her study exceeded that required for most physically demanding occupations.

Wardle and Gloss (1977) concluded that a woman of average stature and weight can perform many jobs requiring hard physical work. Women should not be compared with men in selection for positions requiring light, moderate, heavy or very heavy work. Rather they should be compared with the occupational demands of the position. In other words, the criterion should be can this person do the job, not who else *could* do it?

In the world of sport, which echos the world of work, Dyer (1986) catalogued performance times for male and female athletes for the years 1936 to 1984 and found that women's performance relative to men's have substantially improved and are continuing to improve. He computed regression analyses which allowed him to suggest that eventual equality in performance may be attained in the foreseeable future. His research led him to some strong conclusions regarding some of the assumptions and lies in place.

The advance which women are now making in all areas of sport also says something about the practice and assumptions of science. The standards of performance which women now achieve were for a long time dismissed as impossible, then largely ignored and now are often claimed to be the results of participation by very unusual women or women largely dependent on drug taking for their

successes. Each of these responses has now been shown to be demonstrably in error (p. 176).

Ironically, Redgrove (1979) found that it was usual to employ women in the heaviest and dirtiest jobs in the period after the First World War, and women continue to act as beasts of burden in many societies. The myth of the weakness of women can be found in the ideals of the upper and middle classes of Western society, where the weakness can be traced to moral, economic and physical restraint in the nineteenth century. If this weakness only afflicts a certain segment of the female population, defined by social status, it cannot be defined as a biological condition.

Redgrove (1979) found that although women are generally 'less strong' than men, they have substantial strength, which is beyond the requirements of the majority of jobs in modern industry. Those jobs which exceed women's capacities are likely to be too demanding for all but the strongest men as well. Under these circumstances, one has to consider whether the job should be redesigned.

Since the literature and research for job design and performance assessment are based on male standards, sizes, and strength utilization, there can only be a conflict between assumptions and reality. One assumption that "everybody knows" is that females can be expected to exert about two-thirds of the force which can be exerted by a male, but this "fact" was not in fact determined by observation, and there is no reason to suppose they will be very much different for a woman, given the appropriate training. (Redgrove, 1979)

With an explicit assumption that women cannot do certain tasks, research has not looked for the physical differences which would put women at a disadvantage. For example, chair height or chair seat length made for a

large man doesn't permit many women and some men to comfortably perform a task. This interferes with performance but not because of the intrinsic nature of the person doing the task. Rather than make an adjustable seat, smaller people are penalized, and as a group, women would be more penalized than the few men who would also be affected.

Anderson and Zinsser (1988) also found that the division of labor leads to female subordination only when societies are subjected to specific kinds of social stress such as competition for natural resources since men do not like to have to compete against women. In cultures where there that competition is not required for survival, women are different but equal.

The "Tradition" in Developmental Psychology in Sexual Segregation

Cahill (1983) found that young children quickly learn that sex labeling is an important mechanism of social control, that they can effectively exclude others from certain activities by merely sex-labeling these activities. In addition, adults' construction of the child's physical environment also influence children's gender related practices.

Wittig (1983) found that the actual sex differences in personality and cognitive skills in childhood and early adolescence are much smaller in size and more limited in scope than the later adolescent and adult social roles that they are purported to explain. She concluded that while the American social structure does not provide equal opportunities across sex, race, and social class, teachers can enhance or diminish their student's perceived and actual opinions.

Lee and Stewart (1976) found that young girls don't follow an unequivocally feminine developmental course but incorporate decidedly masculine elements which, however many times they may be observed, are viewed as an anomaly or abnormality. The authors suggest that major theories betray a blind spot which fails to see that a developmental outcome which is so pervasive, cannot, by definition be viewed as anomalous.

Rather than biological factors, a number of social factors are found to explain some of the developmental sequences found among adolescents. In a study of the sexes in a changing world, Mead (1967) found that boys and girls are paced too closely together with a school system that closes its eyes to the speed with which the girls are outdistancing the boys. As a result, Mead suggests that the boy is given a fear of the superiority of the girl, the girl given a fear of being superior to the boy in later years. Because of the social sensitivity of the children, the situation makes the boy angry and grudging about achievement in women, making the girl frightened and deprecatory about her own gifts.

Auster and Auster (1981) found a substantial narrowing of occupational options which occurs during adolescence, at a time when stereotyped images of masculinity for men and femininity for women are quite pronounced. The authors suggest that this narrowing of options probably reflect the adolescent need for clear cut lines and rejection of ambiguity, rather than tendencies that should be seen as patterns for the rest of their lives.

Teachers provide messages regarding sex-role stereotyping through the classroom environment they establish, through reinforcement of messages the child brings from home about sex-typing, and through modeling and

communication. Children are reinforced for conforming to stereotypes: boys for academic work, girls for being quiet. (Borman and O'Reilly 1987)

Results of a study conducted by Koblinsky and Sugawara (1984) indicate that exposure to non-sexist curricula in male and female directed programs may significantly reduce sex-stereotypic knowledge and preference for sex-typed activities. Moreover, male teachers who make deliberate attempts to challenge sex stereotypes may be especially effective in increasing children's awareness of role options and interest in activities popular with children of the opposite sex. Efforts to combat sexism and develop children's individual abilities will necessitate future research on the interaction of numerous variables that contribute to the process of sex-role learning.

In *A study of sexism* (1977) a statistical analysis of 38 books in all nine series in place at that time reinforced cultural myths concerning males and females. Grade one readers were strongly considered to contribute a socialization process which channels girls and boys into restricted roles.

Feingold (1988) has found that gender differences on a number of school tests from 1947 to the present is disappearing except in high school algebra, but not in arithmetic. Feingold wrote that it is not clear if some the variance over time is improvement in the girls or in the sexist content of the tests, which would no longer penalize the girls.

Churgin (1978) advocated not only the correction of past errors, but with an eye to the future, wrote

To psychologists a healthy adult was defined in terms of a healthy man and in history, those institutions that included women through the ages, such as the primary and secondary schools, were virtually ignored by the male historian as unimportant. The

function of the new curriculum therefore must not only explain things as they really are but to analyze why there were transmitted incorrectly in the first place. " (p. 162)

The "Tradition" of Financial Inequality

In the book, *Against Equality – Readings on Economic and Social Policy*, edited by William Letwin (1983), all 17 essays take the functionalist approach of laisez-faire capitalism, saying again and again that structured inequality has always been with us, it is stable, and so therefore it should be maintained. The true inequality, it is maintained, is that of treating unequals in an equal fashion. But at the same time, the notion of appropriate individual differences does not come into it, since there are the deserving groups, and there are the nondeserving groups. Among the latter are designated non-whites and women. The essays say in varied ways that the lower classes must remember who they are; and the blacks' and women's fight for equality will pass soon, when the obvious irrationality of the exercise is shown for what it is... power cannot be given to the ignorant. I understand that this book is a text book in many universities.

Fox and Fox (1986) conducted an extensive survey from census data from 1931 to 1981. The authors constructed a structural-equation model which said what was common knowledge among women already, but validated women's complaints: a significant difference in gender composition suggesting a selection effect, ie. women are excluded systematically from occupations where men's earnings are high.

The Report of the BC Human Rights Commission on Extensions to the Code (1983), *I'm Ok, We're not so sure about you*, noted that current equal pay

legislation simply doesn't work. Between 1972 and 1977, the gap between men's and women's earnings *increased* by 55.6% in dollar terms and a primary reason given is male/female job segregation. Arguments placed before the Commission suggest that a move to the concept of equal pay for work of equal value (equity, rather than equality) would counter historical inequalities and undermine classificatory subterfuges. As well, it would ensure that both men and women were paid in accordance with the actual job responsibilities.

In a study examining sex differences in employment experiences of 1976 Canadian graduates in psychology Kalin and Grant (1981) found that there are consistent sex differences in favour of men in salary and in full-time employment rate, even after controlling for working experience, age, marital status and full/part time employment,

Touhey (1974a, 1974b) found a bias among American college students that an increased number of women in currently male-dominated professions decreased the prestige and desirability of that profession, while an influx of males into female-dominated professions increased the prestige and desirability of those professions.

Extensive surveys of the Canadian labour force showed that regardless of status, education, responsibility etc, women had less income than men. As a group they were systematically refused promotions and raises, even when the work belonging to the higher rank was being required of them. (Marchak, 1977)

The ratio of men to women in an occupation currently held to be male-dominated (and often high status) is explained by the suggestion that women do not have an interest in, or ability to do, the job at hand. As Heilman (1979)

said, it would seem that women *choose* to pursue lower status careers, even when there is opportunity to do otherwise. To test that assumption, in a 2x3 design she manipulated the projected proportion of women in two male dominated occupations as 10% (token), 30% (minority) and 50% (equal) in a pen and paper test. The results indicated that projections of more-balanced sex ratios encouraged greater occupational interest among women, but a balanced sex ratio *reduced* the occupational interest expressed by men.

However, Hawkins and Pingree (1978), Suchner (1979), and Johnson (1986) failed to replicate the findings. Johnson suggests the reason might be a change with regard to the attitudes held by college students over time.

There are some very interesting justifications for the financial inequity. While it could be said that these justifications are just "opinion" and thus beyond scientific consideration, it contextualizes the fabric of our daily lives, outside of which no one lives, not even scientists.

One of the most original of these notions, which unfortunately is part of the social tradition of our time, was that put forward by Gilder (1973). He wrote that beside the socially indispensable and psychologically crucial experience of motherhood, men are irredeemably subordinate, and made the argument that women are the civilizers, who are needed at home to tame and control the men. Some of the arguments are sophistries, as for example, when Gilder writes:

The feminist contention that women do not generally receive equal pay for equal work, correct in statistical terms, may reflect a preference for male need and aggressiveness over female credentials.... The man is paid more, not because of his special virtue, but because of the key importance of taming his naturally disruptive energies. The male job

advantage, therefore, is based on the overall costs of female careerism to raising children and socializing men. The society will have to pay these costs one way or another (p. 119).

The general idea is also found in academic writings. For example in writing on middle class juvenile delinquents, Snider (1988) wrote that the majority of these young males "will not be long term problems - they will be tamed by wives, debts, jobs and children" (p. 314).

Other men see the apparent biological superiority of women in a different light and do not place economic restrictions on women as a result. Montagu (1977) wrote

The natural superiority of women is a biological fact, and a socially unacknowledged reality. The facts have been available for more than half a century, but in a male-dominated world, in which the inflation of the male ego has been dependent upon the preservation of the myth of male superiority, the significance of these facts has simply been denied attention. When the history of the subject comes to be written, this particular omission will no doubt serve as yet another forcible illustration that men see only what and how they want to see (p. 374).

From yet another viewpoint, the economic restraint can be seen to be a result of the men's perception of their self-identity as defined by work.

Another fear [about egalitarian sex roles] expressed is that changes in sex roles will destroy the male ego. This depends on one's definition of that mystical entity. ... Why should a person's sex organs be any more relevant to his holding power than his skin color, his ethnic origin, or his religious affiliation? On the other hand, both men's and women's

egos will be supported and nourished by a society that encourages all people to achieve full potential. (Scanzoni and Hardesty 1975, p. 84.)

The "Traditional" of Politics in Sexual Segregation

In reporting on the forces working against women's suffrage in Britain in the 1870's, Longford (1981) quotes many prominent men among whom is Lord Brougham: "Harriet Martineau! I hate her! I hate a woman who has opinions. To give women the vote would mean actually asking for their opinions!" It is not currently socially acceptable to voice this kind of sentiment, yet this attitude informs the behavior of both politicians and political parties, who for example sideline women into making the coffee for electoral campaigners. There is need to research in this area.

The Minister of State for Multiculturalism, the Honorable Jim Fleming, in an address in 1983, said that non-whites and women relate to the economic society in much the same way as conquered colonies did to their rulers in Europe. He quite clearly said that most of the economic, social, and political power is held by white males who shaped our social structure, with its clear divisions of labor, its hierarchy of control and its value system of laws and norms. Flemming defined the existing norms as the rules of society, rules that are set and enforced by those in power. These unspoken rules tell people how they should feel and act: who should be hired, promoted, or housed, who should be educated and groomed for leadership.

This position has very old roots, for the Roman general Cato said, "Remember the laws through which our ancestors limited the liberties of

women, through which they bent them to the will of men. As soon as they become equal to us, they will be our superiors" (Diner, 1965, p. 249)

In her extensive evaluation of sexual politics, Millet, (1970) found that sexual politic reality maintains its own life through the socializations of both sexes to basic patriarchal politics with regard to temperament, role, and status. She also found that stereotypes are based on the need and values of the dominant group.

Meissner (1977) examined sexual division of labour in Canada and found that social classes are for men. The maintenance of the class structure is in their interest. This structure also creates sexually specialized functions which are then ranked according to men's preferences and allocated according to their own interests.

The "Tradition" of "Double Bind" Situations in Sexual Segregation

In 1895, the Toronto school board passed a motion prohibiting the hiring of married women or women over thirty on the assumption that they should be at home tending their families. Yet to justify the payment of one third of the man's wage to the woman teacher the Board said that the women would leave after just a few years of experience anyway and therefore not worth the investment of a large salary - a condition created by the same school board. (Phillips and Phillips, 1983)

Kolstad (1977) found that "pink collar" jobs are more highly valued by women than their earnings and ability requirements appear to justify. The conclusion reached by the author is that the proportion of women in a position elevates its prestige standing compared to its earnings, reasoning that

such jobs are better than their main alternative, housework. This is the same argument used by the industrialists in the 1880's who wanted a cheap pool of labor. Bose and Rossi (1983) point out that the more likely explanation is that women are systematically discriminated against, and are being paid less than is ordinarily warranted by the prestige of their jobs simply because they are women. But because women go into available niches, they are considered to prefer them and so as a result do not *deserve* more money.

Fabian (1972) explored the double bind most women, especially professional, are placed in daily. For example, if she smiles, then she is manifesting approval-seeking behavior, but if she does not smile, she is aloof, withdrawn, lacking in femininity. If a skirt is short, then she is trying to arouse every male within close proximity; if it is long, she is afraid of men and has obviously donned the professional role as a defence, the reason, of course, for her perceived hostility, and so on.

Another form of social double bind is the contradictory positions held by male co-workers which then results in two different messages being given to the women. Geoffrey and Staine-Marie (1971) found that trade unionists cling to the concept of women as someone whom the man must provide for, protect, and defend if necessary in exchange for good service as wife and mother of his children. But in contradiction, they also blame the women for the discriminatory position that they are in when they enter the workforce, saying that if women really wanted equality, they would fight harder for it.

The career woman has the paradoxical flavor of a 'Catch 22'. Given the many barriers to women's achievement, she must work very hard in order to succeed, harder than her male counterpart. But if she does work hard, two things may happen. First she may label herself an 'overachiever' and lose

confidence in her own abilities, setting up a self-fulfilling prophecy that leads ultimately to a lower level of success than might have occurred with a different attributional pattern. Second, she may not succeed because others may label her as an 'overachiever', a person who exerts a great deal of effort but really does not have the underlying ability for more difficult positions (Israel, Raskin, Libow, and Bravder, 1978).

Byrd and Touliatos (1982) found that when college women are in conflict over their femininity, they do indeed avoid success, since that would further threaten their sex-role identity. Conversely, when conflict over sex-role is reduced, a woman may actively pursue success with less fear of losing her femininity. The authors suggest that this study offers one explanation for the contradictory state of the literature. Women do not automatically avoid any success. In every day life, women are often given feedback that undermines and threatens an important aspect of personal identity, namely their femininity. The authors demonstrated that it is the threatening feedback that motivates women to fear success. It can also be explained in the structure of the double bind, where it is darned if you do and darned if you don't.

Summary

This brief look at the historical roots and the invented traditions of sexual segregation and resulting differential evaluation of people at work has only touched the surface of daily reality. Sexual segregation, and the injustice which fuels it, has been found in all sectors of life. Many of the reasons have been found to be illogical or unfounded by facts, yet are to be found enshrined in many of the current mythologies and in popular culture. They can also be found in the assumptions driving much of psychological and vocational

research today, particularly as it relates to gender roles and the work toward equity in the workplace. It is to be hoped that the research undertaken here has not fallen prey to these errors.

Appendix B
The Questionnaire for
Study One

Appendix B

The Questionnaire for Study One

The general rubric for all the scenarios was to focus specifically on the job description as provided by the CCDO, create a situation in which a worker might be found in that job, and have the worker triumph in some small victory pertinent to the job.

As the researcher wrote all of the scenarios, each scenario was written by alternating male and female as a prototype to counterbalance for experimenter bias. To do this, I visualized for example, first a man doing the job, for the masculine job, then changed name and pronouns to a woman, so the job then had exactly the same description, changed only by name of the worker and the appropriate pronouns. Then for the second masculine job, for the replicate study, I visualized a woman doing the job, and then changed name and pronouns to that of a man, and so on. Order of choice was by random selection.

Following is a copy of all the job descriptions that were used in this study. Pages 1, 2, and 4 were given to each and every participant; page 3 was distributed according to the research design and the procedures described in the method section, chapter 4.

Factors in the Ways that University Students Rate Different Qualities of Workers Questionnaire

This research forms part of a Master's Thesis being conducted in the Faculty of Education, by Terry Fowler, supervised by Dr. Ron Marx. You are free to withdraw from the survey at any time. There are two sections to the survey. In the first section, you will be asked a small number of personal questions. The second section asks your opinion on the performance of a worker. Please answer as honestly as you can, and don't spend too much time on the answers. They will be held in confidence, and will not be identified as yours at any time or under any circumstance. You are free to be honest. The questionnaires will be destroyed as soon as the data are analyzed.

Please check here when you have read and understood the above, and agree to partake in the survey

Thank you for your cooperation.

Qualities of Workers Questionnaire Page 2

Your age last birthday: _____

Your sex: Male Female

Current marital status:

Married or committed single divorced widowed

What is your number of credit hours (include college) to date? ____

What is your intended or declared major? _____

What is your career goal? _____

Would you please mark how strongly you would describe yourself at the current moment, on the following characteristics. Mark it by drawing a circle around the number which comes closest to what you feel. One means you don't agree with that word as a description of yourself, and 5 means that you agree with it most of the time. There is no right or wrong answer, just answer honestly how you feel today about yourself.

	Not very much				a lot
self-reliant	1	2	3	4	5
conscientious	1	2	3	4	5
tactful	1	2	3	4	5
leader	1	2	3	4	5
loyal	1	2	3	4	5
gullible	1	2	3	4	5
reliable	1	2	3	4	5
jealous	1	2	3	4	5
helpful	1	2	3	4	5
adaptable	1	2	3	4	5
sincere	1	2	3	4	5
inefficient	1	2	3	4	5
truthful	1	2	3	4	5
moody	1	2	3	4	5
cheerful	1	2	3	4	5
assertive	1	2	3	4	5
conceited	1	2	3	4	5
understanding	1	2	3	4	5
analytical	1	2	3	4	5

Part 2: World of Work

In this section, you will be given a job description from The Canadian Classification and Dictionary of Occupations. Then you will be given a description of a person doing that job. Your task will be to identify factors which describe how well, or not, the person doing the job has followed the job description, based on some attributes. Please read this description, and then answer the questions that will be asked of you. Please don't spend too much time thinking about the questions; please give the answer that most seems to fit.

4143-116 Desktop Publishing Specialist (Clerical)

Operates electronic publishing and word processing equipment to design and develop product manuals and bulletins, brochures, newsletters and other in-house publications:

Confers with editorial and graphic arts staff and with originator of manuscript to clarify format and page layout requirements. Selects line lengths to ensure typed material fits within layout requirements. Measures space areas for illustrations and headings. Operates equipment keyboard to produce sample layouts for approval. Keys in approved material according to specifications for type face and point size, column width, justification, depth of copy on page, headings and location of columns and pagination. Scans video screen to monitor input and ensure accuracy, and corrects inputting errors. Produces camera-ready master copies of publication according to document design specifications using page-layout software. Creates and edits illustrations using object oriented graphics software. Stores paper and diskette draft and master copies containing text and illustration.

Norman studied the layout very carefully. There were so many ways that the same thing could be placed, but some were better than others, and he didn't have enough time to experiment. Normally, the Boss would have given him the specifications, but being snowed under, had told Norman that he could do it himself, his first solo. It was a wonderful warm feeling of trust, but scary at the same time. The sense of the time deadlines started to edge their way into his mind, until he felt edgy. Realizing what was happening, he took a deep breath, and focused on the elementary rules of design he had learned not so long ago. The mental exercise was calming, and gradually, a picture of how to put all the elements together in a pleasing and unique manner became clearer. Soon, he was able to run a printout. He evaluated it very critically, then made some adjustments by creating more white space around the illustration, and changing the headline font. Still critical, but basically satisfied, he took it to the Boss who examined it, then broke into a big smile, and said: "I like it. Print it." Norman went back to the computer with a grin all over his face.

 Qualities of Workers Questionnaire Page 4

Please describe how the worker appeared to you by circling the number that most closely describes what you felt that the worker portrayed:

	not very much				a lot
self-reliant	1	2	3	4	5
conscientious	1	2	3	4	5
tactful	1	2	3	4	5
leader	1	2	3	4	5
loyal	1	2	3	4	5
gullible	1	2	3	4	5
reliable	1	2	3	4	5
jealous	1	2	3	4	5
helpful	1	2	3	4	5
adaptable	1	2	3	4	5
sincere	1	2	3	4	5
inefficient	1	2	3	4	5
truthful	1	2	3	4	5
moody	1	2	3	4	5
cheerful	1	2	3	4	5
assertive	1	2	3	4	5
conceited	1	2	3	4	5
understanding	1	2	3	4	5
analytical	1	2	3	4	5

How much money do you think the worker described above should earn?

less than \$25,000___ \$25,000 ___ \$30,000___
 \$32,000___ \$34,000 ___ \$36,000___
 \$38,000___ more than \$38,000___

How much money do you think you would earn for this job?

less than \$25,000___ \$25,000 ___ \$30,000 ___
 \$32,000___ \$34,000 ___ \$36,000 ___
 \$38,000___ more than \$38,000 ___

In your opinion, is this an appropriate job for the person described?

yes no

In your opinion, would you consider that this job is more appropriate
 to a man or to a woman or it doesn't matter

Thank you for participating in this study.

Part 2: World of Work

In this section, you will be given a job description from The Canadian Classification and Dictionary of Occupations. Then you will be given a description of a person doing that job. Your task will be to identify factors which describe how well, or not, the person doing the job has followed the job description, based on some attributes. Please read this description, and then answer the questions that will be asked of you. Please don't spend too much time thinking about the questions; please give the answer that most seems to fit.

4143-116 Desktop Publishing Specialist (Clerical)

Operates electronic publishing and word processing equipment to design and develop product manuals and bulletins, brochures, newsletters and other in- house publications:

Confers with editorial and graphic arts staff and with originator of manuscript to clarify format and page layout requirements. Selects line lengths to ensure typed material fits within layout requirements. Measures space areas for illustrations and headings. Operates equipment keyboard to produce sample layouts for approval. Keys in approved material according to specifications for type face and point size, column width, justification, depth of copy on page, headings and location of columns and pagination. Scans video screen to monitor input and ensure accuracy, and corrects inputting errors. Produces camera-ready master copies of publication according to document design specifications using page-layout software. Creates and edits illustrations using object oriented graphics software. Stores paper and diskette draft and master copies containing text and illustration.

Nanette studied the layout very carefully. There were so many ways that the same thing could be placed, but some were better than others, and she didn't have enough time to experiment. Normally, the Boss would have given her the specifications, but being snowed under, had told Nanette that she could do it herself, her first solo. It was a wonderful warm feeling of trust, but scary at the same time. The sense of the time deadlines started to edge their way into her mind, until she felt edgy. Realizing what was happening, she took a deep breath, and focused on the elementary rules of design she had learned not so long ago. The mental exercise was calming, and gradually, a picture of how to put all the elements together in a pleasing and unique manner became clearer. Soon, she was able to run a printout. She evaluated it very critically, then made some adjustments by creating more white space around the illustration, and changing the headline font. Still critical, but basically satisfied, she took it to the Boss who examined it, then broke into a big smile, and said: "I like it. Print it." Nanette went back to the computer with a grin all over her face.

Qualities of Workers Questionnaire Page 3

Part 2: World of Work

In this section, you will be given a job description from The Canadian Classification and Dictionary of Occupations. Then you will be given a description of a person doing that job. Your task will be to identify factors which describe how well, or not, the person doing the job has followed the job description, based on some attributes. Please read this description, and then answer the questions that will be asked of you. Please don't spend too much time thinking about the questions; please give the answer that most seems to fit.

6120-198 Manager Trainee, Restaurant (cater. and lodg.)

Assumes management responsibilities in food service establishment on progressive basis, according to established training schedule:

Receives training to learn policies and practices of establishment and to gain knowledge required for promotion to management positions. Performs duties in personnel supervision, accounting, inventory and quality control, public relations and marketing to become familiar with management functions. This is a developmental occupation.

The long apprenticeship was almost over. All the long hours learning every aspect of the restaurant trade was worth it when Norman looked around him. This wonderful old mansion, converted to elegant dining, was to be where he took on the position of assistant manager, no longer trainee. The next step was to manage his own establishment. Before that could happen, he had to consolidate and synthesize all the bits and pieces that he picked up working in all the different areas. Suddenly his reverie was shattered - chef came out of the kitchen, yelling in three languages. Norman moved quietly in to diffuse the situation, confident of his abilities to be able to do so. Later, he smiled to his reflection in the mirror. That worked well, here's hoping it continues.

Qualities of Workers Questionnaire Page 3

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4171-111 Social Secretary (clerical)

Coordinates social, business and personal affairs of employer:

Confers with employer to obtain specific details on social functions. Plans or assists in planning seating arrangements, menus, decorations, entertainment and other details of social functions. Prepares and sends hand-written or typed invitations. Schedules social, business and personal appointments and keeps employer informed of each appointment. May perform other duties including answering personal and business correspondence and travelling with employer.

When he had applied for the job as social secretary, Norman secretly thought that it was just another name for plain secretary. But he needed a job very badly, and he could at least pick up the differences quickly. He hoped. He was hired and what a different world he found himself in. The Boss conducted business at every social gathering in town to which the movers and shakers had been invited. One of the first tasks he had been given was to know where the people "who counted" were attending, and if there was no major event, to schedule one of his own in. In time he was juggling the multitude of lists and events as though he had been doing it all his life. But now here was a crisis. Boss was invited at the last minute to a gathering which was necessary to attend, but at the same time was the event of the year Norman had spent months planning. He calculated the distances and the times between the two functions, and made the decision. A phone call to a helicopter company, and the photo department got things in motion. As he later stood greeting the guests he smiled at the full size photograph of the Boss standing beside him with a cartoon bubble saying: "I will join you when the soup is served - it's my favorite!"

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Appendix C
The Word List Used in the Questionnaire

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The Word List Used in the Questionnaire

POSTTITIVE SCALE

NEGATIVE SCALE

self-reliant
conscientious
tactful
leader
loyal

reliable

helpful
adaptable
sincere

truthful

cheerful
assertive

understanding
analytical

gullible

jealous

inefficient

moody

conceited

Appendix D

The Questionnaire for the Replicate Study

The method of preparing the scenarios and distribution is described in Appendix A.

Factors in the Ways that University Students Rate Different Qualities of Workers Questionnaire

This research forms part of a Master's Thesis being conducted in the Faculty of Education, by Terry Fowler, supervised by Dr. Ron Marx. You are free to withdraw from the survey at any time. There are two sections to the survey. In the first section, you will be asked a small number of personal questions. The second section asks your opinion on the performance of a worker. Please answer as honestly as you can, and don't spend too much time on the answers. They will be held in confidence, and will not be identified as yours at any time or under any circumstance. You are free to be honest. The questionnaires will be destroyed as soon as the data are analyzed.

Please check here when you have read and understood the above, and agree to partake in the survey

Thank you for your cooperation.

Qualities of Workers Questionnaire Page 2

Your age last birthday: -----

Your sex: Male Female

Current marital status:

Married or committed single divorced widowed

What is your number of credit hours (include college) to date? ____

What is your intended or declared major? _____

What is your career goal? _____

Would you please mark how strongly you would describe yourself at the current moment, on the following characteristics. Mark it by drawing a circle around the number which comes closest to what you feel. One means you don't agree with that word as a description of yourself, and 5 means that you agree with it most of the time. There is no right or wrong answer, just answer honestly how you feel today about yourself.

	Not very much				a lot
self-reliant	1	2	3	4	5
conscientious	1	2	3	4	5
tactful	1	2	3	4	5
leader	1	2	3	4	5
loyal	1	2	3	4	5
gullible	1	2	3	4	5
reliable	1	2	3	4	5
jealous	1	2	3	4	5
helpful	1	2	3	4	5
adaptable	1	2	3	4	5
sincere	1	2	3	4	5
inefficient	1	2	3	4	5
truthful	1	2	3	4	5
moody	1	2	3	4	5
cheerful	1	2	3	4	5
assertive	1	2	3	4	5
conceited	1	2	3	4	5
understanding	1	2	3	4	5
analytical	1	2	3	4	5

Qualities of Workers Questionnaire Page 3

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8335-112 Welder, Drilling Rig (Mach, weld, and forg.)

Fits and welds metal parts to assemble, modify or repair structures, machinery, tanks, pressure vessels, piping or other components on board drilling platform or vessel at sea:

Examines workpiece or drawings, plans operations and decides type of welding to use, applying knowledge of geometry, physical properties of metals, effects of heat, welding techniques and safety procedures for welding on board drilling vessel. Lays out, aligns and fits pieces or assembles together, using scale, square, straightedge, scribe and chalk. Cuts out and shapes or trims parts with cutting torch, saws, files and grinders. Clamps, bolts or tack-welds parts into position for welding. Selects and sets up welding equipment and completes welds, using electric arc, gas shielded arc, submerged arc or gas torch, as best suited to job. Brushes, chips or grinds off excessive weld, slag or splatter. Welds broken tools or machinery parts and adds welding metal to worn or damaged areas to make repairs. Maintains inventory of welding supplies and equipment. May heat and anneal workpieces after welding to relieve internal stresses.

What a fine time to have to climb 40 feet above the deck and weld the broken strut, thought Nanette, as the wind gusted and she could smell snow in the air. It was going to be just a bit rough. An hour later it was very rough. The portable arc welder no longer weighted 45 pounds, it was several tons, all of it hanging on to the end of her arm. The welding mask kept lifting in the wind, and in spite of the cold, sweat kept threatening to block her vision. She didn't notice that her two-way radio was dead. It was tempting to leave the work for tomorrow. But at last it was done. It would be really necessary to have done this repair, if they had a real blow, since one break threatens the stability of the whole rig. Coming down from the scaffolding, Nanette was nearly swept off the deck by the first blizzard of the winter. She hadn't heard the warnings, but she had done what she had to.

Qualities of Workers Questionnaire Page 4

Please describe how the worker appeared to you by circling the number that most closely describes what you felt that the worker portrayed:

	not very much				a lot
self-reliant	1	2	3	4	5
conscientious	1	2	3	4	5
tactful	1	2	3	4	5
leader	1	2	3	4	5
loyal	1	2	3	4	5
gullible	1	2	3	4	5
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moody	1	2	3	4	5
cheerful	1	2	3	4	5
assertive	1	2	3	4	5
conceited	1	2	3	4	5
understanding	1	2	3	4	5
analytical	1	2	3	4	5

How much money do you think the worker described above should earn?

less than \$25,000___ \$25,000 ___ \$30,000___
 \$32,000___ \$34,000 ___ \$36,000___
 \$38,000___ more than \$38,000___

How much money do you think you would earn for this job?

less than \$25,000___ \$25,000 ___ \$30,000 ___
 \$32,000___ \$34,000 ___ \$36,000 ___
 \$38,000___ more than \$38,000 ___

In your opinion, is this an appropriate job for the person described?

yes no

In your opinion, would you consider that this job is more appropriate
 to a man or to a woman or it doesn't matter

Thank you for participating in this study.

Qualities of Workers Questionnaire Page 3

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8335-112 Welder, Drilling Rig (Mach, weld, and forg.)

Fits and welds metal parts to assemble, modify or repair structures, machinery, tanks, pressure vessels, piping or other components on board drilling platform or vessel at sea:

Examines workpiece or drawings, plans operations and decides type of welding to use, applying knowledge of geometry, physical properties of metals, effects of heat, welding techniques and safety procedures for welding on board drilling vessel. Lays out, aligns and fits pieces or assembles together, using scale, square, straightedge, scribe and chalk. Cuts out and shapes or trims parts with cutting torch, saws, files and grinders. Clamps, bolts or tack-welds parts into position for welding. Selects and sets up welding equipment and completes welds, using electric arc, gas shielded arc, submerged arc or gas torch, as best suited to job. Brushes, chips or grinds off excessive weld, slag or splatter. Welds broken tools or machinery parts and adds welding metal to worn or damaged areas to make repairs. Maintains inventory of welding supplies and equipment. May heat and anneal workpieces after welding to relieve internal stresses.

What a fine time to have to climb 40 feet above the deck and weld the broken strut, thought Norman, as the wind gusted and he could smell snow in the air. It was going to be just a bit rough. An hour later it was very rough. The portable arc welder no longer weighed 45 pounds, it was several tons, all of it hanging on to the end of his arm. The welding mask kept lifting in the wind, and in spite of the cold, sweat kept threatening to block his vision. He didn't notice that his two-way radio was dead. It was tempting to leave the work for tomorrow. But at last it was done. It would be really necessary to have done this repair, if they had a real blow, since one break threatens the stability of the whole rig. Coming down from the scaffolding, Norman was nearly swept off the deck by the first blizzard of the winter. He hadn't heard the warnings, but he had done what he had to.

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2183-124 Application Programmer (prof and tech)

Develops, implements, evaluates and maintains computer application systems or software programs specific to client's requirements:

Develops logical specifications from predetermined functional specifications for development of or changes to application programs. Codes, tests and evaluates application programs. Develops applications software documentation. Implements internally developed or externally supplied application programs. Informs operations, applications, software and/or user personnel regarding documentation and advises them on solving technical problems. Analyses problems in application programs and develops and implements changes in programs to correct problems. Participates in post implementation audit of installed systems and performs measurement tasks. Plans and evaluates externally supplied application programs. Participates in application standards and security reviews. Prepares time, cost and resource estimates for work to be performed and reviews reports and work progress against estimates. Recommends revisions to performance or methods standards to improve estimating, control process and or performance.

"Computer Gremlins are certainly alive and well," thought Nanette. "I wonder if I should pour out some wine to them." The thought of acting like an ancient Roman struck her funny and lightened her mood. The problem was a subprogram which ran well by itself, but when placed into the main program, created two major errors. She checked over the syntax yet one more time. Nothing. Maybe she was losing her perspective. She needed to get the job done quickly, but going blind was not going to help matters. A cup of coffee away from her desk was the thing to do. Twenty minutes later, she was finishing a joke with a friend when suddenly she said, "That's it!" and left the friend with half a joke, but Nanette had the solution to the problem. The error was in the bridging code, and once adjusted, the entire program ran correctly. She ruefully grinned and muttered, "No gremlins, just a spelling mistake."

Qualities of Workers Questionnaire Page 3

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3131-109 Nursing Researcher (medical)

Plans, directs, co-ordinates and conducts nursing research in hospitals, to further the delivery of health care:

Develops theme for nursing research, and identifies researchable nursing problems by surveying and questioning all levels of nursing staff to determine current problems that require study. Develops research guidelines and prioritizes suitable topics for research by analyzing areas of relevance and suitability for study. Conducts research by employing statistical and evaluative research methods and computer programming to develop findings on standards for the nursing practice, concerning areas such as, patient care and service, nursing accreditation and education needs, and program design. Interprets statistical findings, writes articles and reports, and organizes meetings and seminars to communicate research findings. Confers with nursing, medical and administrative staff to facilitate the application of research findings for clinical, educational, and administrative decision making in nursing. Applies to funding agencies to secure research grants, to support and carry out nursing research. Supervises and directs research assistants.

Norman stood up and stretched, arching his back and reaching out as far as he could. A couple of deep knee bends, and he felt the stiffness of immobility ease. It sure was hard to take proper care of the body when the mind was totally absorbed in a perplexing problem. The current problem was to find the ratio of patients' individual differences one could reasonably expect given a certain distribution of nursing sweeps. For this he was examining the records for the last six months. In the course of the research, he found a number of interesting patterns that he should write up and present at the next conference, which had nothing to do with what he was looking for. Works that way sometimes. It was a good way to get ahead in the world, to use what one finds, to good advantage. Norman picked up his pencil again and once more got lost in the world of research.

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Nanette stood up and stretched, arching her back and reaching out as far as she could. A couple of deep knee bends, and she felt the stiffness of immobility ease. It sure was hard to take proper care of the body when the mind was totally absorbed in a perplexing problem. The current problem was to find the ratio of patients' individual differences one could reasonably expect given a certain distribution of nursing sweeps. For this she was examining the records for the last six months. In the course of the research, she found a number of interesting patterns that she should write up and present at the next conference, which had nothing to do with what she was looking for. Works that way sometimes. It was a good way to get ahead in the world, to use what one finds, to good advantage. Nanette picked up her pencil again and once more got lost in the world of research.

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