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Vocational bias: Students entering nontraditional careers.

Brenda A. Tomini
University of Windsor

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VOCATIONAL BIAS:
STUDENTS ENTERING NONTRADITIONAL CAREERS

by
Brenda A. Tomini
B. A. York University, 1987

A Thesis
Submitted to the Faculty of Graduate Studies
and Research
through the Department of Psychology
in Partial Fulfillment of the
Requirements for the Degree
of Master of Arts at the
University of Windsor
Windsor, Ontario, Canada
1990
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ABSTRACT

Two studies were conducted to examine the issue of vocational bias. Vocational bias can be defined as an implicit assumption that certain careers are more appropriate for one gender than another. Study 1 examined vocational bias from a student's perspective. More specifically, this study addressed the careers to which Canadian undergraduates currently aspire, individuals who influence these choices, students' career confidence, and principally, recent experiences with high school counsellors. In particular, the occupational choices of female students were focused on, especially in the context of previous experience with counsellors. As well, the types of extracurricular activities students participate in were examined. Two hundred first year undergraduate psychology students (64 males and 136 females) at the University of Windsor responded to a questionnaire. The results indicated that both males and females continue to aspire to traditionally-oriented occupations. Some of the individuals students cited as having influenced their career choice included mothers, fathers, teachers and, counsellors. With respect to students' experiences with high school counsellors, the results indicated that females, regardless of career choice, had experiences similar to or more favourable than those of males. Finally, there was a
tendency for males to manifest higher levels of career confidence than females.

Study 2 examined vocational bias from the perspective of teachers. A total of 197 teachers (61 males and 136 females) enrolled in the 1989/90 In-Service Program at the Faculty of Education, University of Windsor read a vignette which discussed a student who was currently making a career decision. The student's gender, occupational choice and extracurricular activities differed in each vignette; hence, each teacher read only one of eight possible vignettes. The teachers subsequently responded to a number of written questions which were designed to measure the extent of bias teachers showed regarding males and females entering nontraditional careers. Teachers were more likely to agree with and encourage the nontraditional female as compared to the nontraditional male aspirant. The traditionality of the student did not appear to greatly influence any biases teachers may have had regarding the careers of males and females. Further, teachers' gender did not yield a significant main effect or any significant interaction effects on any of the dependent variables. Some comments and interpretations are offered, as well as summaries of relevant literature concerning gender bias in the counselling of young students during their "formative" years.
ACKNOWLEDGMENTS

A number of individuals were of great assistance to me during the composition of this paper. First and foremost, Stewart Page provided assistance, guidance, support and understanding—not to mention endless "scribblings" and reassurances that there was an end in sight. In addition, Shelagh Towson was also available whenever needed, despite being on maternity leave, to clear the fog when it settled. Special thanks to Patricia Taylor for taking the time during her sabbatical to be a member of my committee.

In addition to those mentioned above, I would like to acknowledge the assistance of Louise R. Alexitch (Wheezie) and Michael P. Toal who read and commented on an endless number of drafts. Louise was fortunate to have benefitted with Chocolate Chip Cookie Therapy, whereas Mike had the opportunity to put up with my abrasive mood swings and endless discussions on the topic.

Finally, I would like to acknowledge my mother and my sister who not only provided support and encouragement, but were also very understanding when the visits home became less frequent.
DEDICATION

This thesis is dedicated to all women who are currently in or currently aspiring toward nontraditional careers. Of special interest to me is my sister, Nicole, who some day wants to become an architect. This thesis is also dedicated in memory of Sonia Pelletier, Hélène Colgan, Nathalie Croteau, Barbara Daigneault, Anne-Marie Edward, Michele Richard, Maryse Laganiere, Maryse LeClair, Anne-Marie Lemay, Génevieve Bergeron, Barbara Maria Klueznick, Annie Turcotte, Annie St-Arneault and Maud Haviernick. On December 6, 1989, these women, who were engineering students at the University of Montreal, were the victims of a man's rage against women entering nontraditional careers.
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CHAPTER I

INTRODUCTION

A well-known study conducted by Broverman, Broverman, Clarkson, Rosenkrantz and Vogel (1970) found that mental health practitioners perceived the well-adjusted man as possessing characteristics similar to those of the well-adjusted adult. However, descriptions for the well-adjusted woman differed. The well-adjusted woman was characterized as being more submissive, less independent, more easily influenced, more emotional, and less interested in science and mathematics.

Of relevance to this discussion is Broverman et al.'s (1970) reference to females' supposed lack of interest in science and mathematics. It may be true that some women are not interested in science and mathematics. In fact, in 1973, only 3.7% of Canadian students enrolled in engineering and applied sciences and only 22.6% of the students enrolled in mathematics and physical sciences were women (Women's Bureau, Labour Canada, 1973, 1987). Many mathematically talented female adolescents, who possess the ability to pursue careers in mathematics and science, often choose traditionally feminine careers which require little
mathematics or science ability (Fleming & Hollinger, 1979; Hollinger, 1985). However, the number of degrees obtained by women in mathematics and physical science has more than doubled from 3770 in 1973 to 8730 in 1985 (Women's Bureau, Labour Canada, 1973, 1987). Although these figures may indicate that women are becoming more interested in these disciplines, women continue to be underrepresented with only 12.5% enrolled in engineering and applied sciences, and 27.2% enrolled in mathematics and physical sciences during the 1985-86 academic year (Women's Bureau, Labour Canada, 1987).

Despite the fact that the number of women in the work force has increased over the years (Gothard, 1985; Women's Bureau, Labour Canada, 1987), women continue to be overrepresented in low-paying, low-level and dead-end positions (Hansen, 1974; Miller, 1981; Women's Bureau, Labour Canada, 1987). Such occupations, commonly referred to as "traditional" occupations, include being a nurse, social worker, secretary/office worker (Santamaria, 1985), bank teller or librarian (Chusmir, 1983; Haring, Beyard-Tyler & Gray, 1983). A "nontraditional" occupation, on the other hand, has been defined as one in which women have historically made up less than 25% (Metha, Rader & Rogers, 1983) to 30% (cited in Chusmir, 1983; Haring et al., 1983) of persons working within the occupation. Some examples of nontraditional careers include the fields of medicine
(Abramowitz, Weitz, Schwartz, Amira, Gomes & Abramowitz, 1975), engineering (Haring et al., 1983; Pietrofesa & Schlossberg, 1970), dentistry, carpentry, automechanics (Haring et al., 1983), science, law and technology (Chusmir, 1983; Santamaria, 1985). Many questions arise when one tries to determine the reasons for this discrepancy in occupational choice. What factors and which individuals influence these choices? What can be done to alter them?

Evidence has accumulated indicating that counsellors and teachers, among others, can exert considerable influence upon adolescents' career choices. In addition, the literature indicates that counsellors also tend to be biased in the occupations they choose, suggest and encourage for students. Before discussing factors influencing career choice, and the individuals who influence it, an operational definition of vocational bias is presented here.

Counsellor bias has been defined as a favourable or unfavourable opinion formed by the counsellor without adequate (i.e., objective) reasons about what may be appropriate or inappropriate for a particular group of individuals (Schlossberg & Pietrofesa, 1973). For example, a decision may be based on gender and not on ability. Within the context of this discussion, the term vocational bias will be used to describe the biases of both teachers and counsellors. Vocational bias is evident whenever it is
assumed that a male or female should not pursue a particular vocation because of his or her gender.

Vocational counsellors and teachers have a responsibility to be aware that females may underestimate their abilities and thus aspire to traditional careers, not because of lack of interest or ability, but because of other factors. Cook (1985), for example, remarked that: "Counsellors committed to helping clients make the best choices for themselves should recognize the power of sex roles in shaping behaviour" (p. 218). They should not assume that one's gender "predisposes" an individual toward certain occupations. At a minimum, counsellors and teachers must be aware of their own values and biases against women entering nontraditional careers. From this perspective, they also should not restrict students' career exploration and entry, nor should they impose their attitudes on females (American Psychological Association, 1975; Haring-Hidore & Beyard-Tyler, 1984).

**Factors Which Influence Female Career Choice**

The factors that influence female career choice are numerous. Gender-role conditioning and socialization of women are factors which have been found to influence career choice (Hansen, 1974; Santamaria, 1985). For example, children have been found to link occupations with gender and, consequently, rule out certain occupations early in
life (O'Keefe & Hyde, 1983; Papalia & Tennent, 1975; Schlossberg & Goodman, 1973). Brizzi (1986) concluded that gender-related messages received during socialization may play an influential role in the types and levels of occupations that females consider when making career choices. Perceived occupational barriers among students from third grade to college were examined in a study using imaginary occupations. Males felt they were restricted from entering female-labelled jobs and females felt they were restricted from entering male-labelled jobs (Shepelak, Odgen & Tobin-Bennett, 1984).

Women may also experience conflicts about fulfilling their roles in marriage and work. This factor, which may also influence female career choice, has been called the home-career conflict. Women may focus on marriage, and consequently, lack a "work" orientation (Hansen, 1974). In addition, a woman's age of entry into the occupation (i.e., 25 years versus 40 years of age) and the length or span of her participation (i.e., 5 years versus 20 years) can also influence her choice (Zytowski, 1969). A woman who plans to work for only five years prior to having children may thus choose a different occupation than a woman who does not plan to have children.

Career choice may also be affected by advertising (Fox & Renas, 1977). Women are portrayed primarily in traditional occupations on television and in magazines
whereas men are represented in a variety of occupations. This representation may, according to the National Advertising Review Board, "be accepted as true to life by many men, women, and children, especially when they reinforce stereotypes of time gone by" (cited in Fox & Renas, 1977, p. 30).

Research conducted on fear of success may also help to explain female career choice (Horner, 1972a, 1972b). Perhaps women are not pursuing nontraditional occupations because they do not feel they will be successful. Although women entrepreneurs are more successful than men (i.e., their businesses are less likely to fail), these women are often less confident about their chances of success than male entrepreneurs (Ranii, 1989).

One additional factor which may also influence career choice is students' participation in extracurricular activities. Tyler (1964) examined the stability of children's gender-typed interests and the relationship between these activities and career orientation in high school. Results suggested that a six or seven year old girl's interest in boy's activities may eventually lead her to consider more diversified careers than a girl who is not interested in boy's activities. In a more recent study (Metzler-Brennan, Lewis & Gerrard, 1985) subjects responded to a questionnaire which was designed to find out the types of activities, interests, aspirations and academic pursuits
women were interested in from childhood to college. The findings indicated that participation in masculine nonacademic activities during childhood significantly discriminated between career women and homemakers—the former group having participated more in masculine nonacademic activities than the latter.

Since participation in sports has traditionally been thought of as a masculine activity (Harris, 1979), one might consider examining how participation in sports affects males and females. A number of researchers (Colker & Widom, 1980; Del Rey & Sheppard, 1981; Gregson & Colley, 1986; Marsh & Jackson, 1986; Myers & Lips, 1978; Uguccioni & Ballantyne, 1980) have found evidence that female athletes are more androgynous, more masculine, less gender-typed, less feminine and have more positive self-concept scores (De Man & Blais, 1982; Jackson & Marsh, 1986; Marsh & Jackson, 1986; Schumaker, Small & Wood, 1986; Vincent, 1976) than their less athletic counterparts.

However, the effects of sport participation on women vary depending on the type of sport they participate in (i.e., individual versus team sports) (Wrisberg, Draper & Everett, 1988) and the level of competitiveness of the sport (Gill, 1988). Females participating in the team sports have been found to be as masculine and androgynous as males participating in the same sports, whereas females participating in individual sports have been found to be
more feminine and less masculine than their male counterparts.

Additional research has examined the traditionality or acceptability of sport participation for women. It appears that the social acceptance of athletic participation for females depends on the type of sport they participate in (Sage & Loudermilk, 1979). For example, sports which involve strength, bodily contact, and endurance are less socially acceptable while those involving skill, grace and beauty are more socially acceptable (Malumphy, 1968; Snyder & Kilvin, 1975). Eder and Parker (1987) assert that while achievement orientation and competitiveness are encouraged among male athletes, appearance and emotion management (i.e., smiling, bubbly personality, covering up feelings) are reinforced for females involved in cheerleading. Do women typically participate in traditionally-oriented as compared to nontraditionally-oriented extracurricular activities? The evidence tends to indicate that this may be the case.

A gender-specific or traditional extracurricular activity is defined here as one in which one gender is more likely to participate than the other. Females who wish to maintain their femininity should avoid sports involving face-to-face competition, body contact, handling a heavy object, and propelling one's body through space over long distances (Metheny, 1972; Rohrbaugh, 1979). Based on this
definition, it has been suggested (Metheny, 1972; Rohrbaugh, 1979) that tennis, badminton, racquetball, swimming, diving, gymnastics, dancing and figure skating are traditionally feminine extracurricular activities. Some nontraditional extracurricular activities for women include wrestling, boxing, weight lifting and most team sports (e.g., soccer, hockey, baseball, football and basketball). A more recent study (Firebaugh, 1989) actually examined the participation rates of males and females in various types of sports. Males between the ages of 20 to 29 were more likely than their female counterparts to jog, lift weights, do yardwork, swim, hike, ski, bowl and to play golf, basketball, softball, football, soccer, volleyball, tennis and handball (e.g., handball, racquetball and squash). Women were more likely to participate in activities such as walking, aerobics and aerobic dancing. Extracurricular activities that were classified as neither traditional nor nontraditional (hereafter referred to as NTNN extracurricular activities) in this age category included calisthenics, bicycling and skating. As is evident, there are some discrepancies between Rohrbaugh's (1979) and Firebaugh's (1989) classification of traditional and nontraditional extracurricular activities. Firebaugh's (1989) classification seems more accurate for three reasons: 1) the findings are based on a very large sample size (n=33,360); 2) the findings are based on actual participation
rates rather than on speculation (as in Rohrbaugh's study); 3) the information is more current, and thus of greater relevance to this study.

Although no evidence exists linking the traditionality of one's career choice with the traditionality of the extracurricular sporting activities in which one participates, the research tends to indicate that such a relationship may exist. Rohrbaugh (1977) suggested that since sport participation may enhance one's independence, assertiveness, need for achievement and one's sense of control over oneself and the environment, it may also enable women to defy gender-role norms in occupations. This conclusion does not seem unrealistic because those characteristics developed through sport participation are also useful qualities for females wishing to pursue nontraditional vocational avenues.

**Individuals Who Influence Female Career Choice**

Before discussing the research regarding teachers' and counsellors' influence on career choice, it is worth noting other individuals who can also play an influential role, such as the peer group (Auster & Auster, 1981). In addition, an individual's parents or family may also influence this choice (Auster & Auster, 1981; Otto & Call, 1985; Sandberg, Ehrhardt, Mellins, Ince, & Meyer-Bahlburg,
1987; Sauter, Seidl & Karbon, 1980). Further, Kutner and Brogan (1979) found that mothers of females in nontraditional occupations usually hold some type of job outside the home. Husbands have also been found to influence nontraditional career aspirations by encouraging their wives to enter law school, begin a business, seek promotions to administrative levels and run for public office (Wilson, Weikel & Rose, 1982).

Upon considering the role teachers and vocational counsellors play in influencing student career choice, a number of questions arise. Do students want career guidance from teachers and counsellors? If help is provided, do students feel such assistance is useful? Can teachers and counsellors alter students' career choices?

In response to the first question, Prediger, Roth and Noeth (1974) found that eighth grade and eleventh grade female students wanted help with career planning. However, 54% of female eighth grade students and 47% of female eleventh grade students felt they received little or no help with career planning from high school vocational counsellors. The results for male students were similar. This study indicates that although students want help, they tend to feel that counsellors are not providing it.

Counsellors and teachers who do reach students when they need guidance appear to make some difference or, at least, are mentioned by students as having influenced their
career choice. For example, teachers were one group of individuals rated, by "career-salient" college women, as important sources of personal influence on their occupational choice (Almquist & Angrist, 1971). These findings were consistent with those of an earlier study (Simpson & Simpson, 1963). Further, 70% of high school students rated teachers as somewhat helpful or very helpful in the assistance they provided regarding occupations while only 48% rated counsellors as somewhat helpful or very helpful (Noeth, Engen & Noeth, 1984).

A more recent study examining this influence found that urban high school seniors rated work experience, family and counsellors as most helpful in providing knowledge relevant to their future career plans (Miller & McDougle, 1986). Upon examining gender differences, however, work experience and grades were thought to be most helpful by girls, and extracurricular activities and counsellors were thought to be most helpful by boys.

Lopate (1968) found that female medical school students ranked college level pre-med counsellors next to last in a list of 20 factors they considered important influences on their career choice. A more recent study reported that women choosing traditional careers tended to feel that vocational counsellors influenced their career choice, whereas women choosing nontraditional careers tended to feel counsellors did not influence their career choice (Sauter et
al., 1980). Traditional aspirants also reported having discussed job opportunities and salaries with counsellors more often than did nontraditional aspirants. Neither group, however, felt that vocational counsellors or teachers were a major influence on their career choices. This latter finding should not be interpreted as meaning that all teachers are viewed by students as not having been a major influence on their career choice. High school science teachers are frequently cited by female college science students as having strongly influenced their career decisions (Gardner, Mason & Matyas, 1989).

Past research indicates that counsellors and teachers are not consistently viewed by nontraditional aspirants as helpful. Rohfeld (1977) found that 13% of women who assessed vocational counsellors and teachers said both groups discouraged them from a nontraditional career while 30% said counsellors and teachers encouraged them toward a goal on the basis of gender (Rohfeld, 1977). Of that 30%, a total of 77% reported encouragement toward a traditional career and 23% reported encouragement toward a nontraditional career. Rohfeld concluded:

The tenacity with which high school women hold to the myth of a woman's role as solely that of wife and mother can only be loosened by teachers and counsellors who are intellectually and emotionally prepared to present the other roles of women (Rohfeld, 1977, p. 83).
Allison and Allen (1978) suggested that perhaps women enter traditional occupations, such as education and nursing, because high school programs slight math, and their counsellors steer them away from science, so the number of women who enter college prepared to consider a career in chemistry, for example, may be small (Allison & Allen, 1978, p. 337).

Other researchers (Auster, 1978; Auster & Auster, 1981) argue that with appropriate vocational guidance (i.e., encouragement in the nontraditional direction), at least some of the females who selected nursing would have chosen to be doctors instead.

O'Neil (1980) provided evidence that appropriate vocational guidance can be influential. College women who participated in a four-week training session identified several nontraditional occupations as being more appropriate career options, compared to females who did not participate (O'Neil, 1980). In addition, Kerr (1983) found counsellors were able to raise gifted female students' career aspirations when the students had chosen careers that were a) below their academic abilities; b) gender-role stereotyped for females based on a lack of awareness of options; and c) low-paying and low status.

Another study examined the effectiveness of a teacher intervention program that was designed to encourage high school students, in particular high school girls, into pursuing science and science-related careers. Teachers were
trained, through workshops and personal communications, on how to provide a gender-neutral learning environment. Students who were taught by teachers who had attended the workshop were more likely than the control group to have "significantly higher mean scores on measures for attitudes and perceptions of science and scientists, experiences in extracurricular science activities, and interest in a science-related career" (Mason & Kahle, 1988, p. 36).

These programs and workshops for counsellors and teachers appear to be effective in helping them learn how to assist or encourage students, especially female students, in regard to nontraditional career choices. Unfortunately, vocational counsellors who have not been exposed to such programs do not appear to use systematic strategies or intervention techniques to encourage females to pursue nontraditional occupations. For example, Pelle (1982) conducted a telephone interview of 28 career guidance counsellors currently working in educational institutions. All vocational counsellors were somewhat sensitive to and aware of the necessity to diversify females' career options. However, their actions were not congruent with their beliefs. Eight counsellors admitted to total inaction while another eight described minimal interventions. An additional eight counsellors said they used unstructured, sporadic interventions without serious evaluation. Only four of the 28 career guidance counsellors said they had
taken systematic action to inform, advise and refer women to appropriate academic and professional training for nontraditional occupations.

Thus, although students do want help from teachers regarding career alternatives, teachers and counsellors do not always provide the information students need to help them make these decisions. As a result, some students, especially females, do not feel that counsellors and teachers have much influence on their career choice. Current research indicates that teachers and counsellors who actively attempt to encourage nontraditional occupations for females are successful in changing traditional career aspirations into nontraditional career aspirations. In order to examine what happens to students when teachers and counsellors do not provide a gender-neutral environment, some further research on teacher bias and counsellor bias is examined below.

**Teacher Bias--An Overview**

Teacher biases affecting interactions with students have now been documented extensively. A number of studies have indicated that males in mixed-gender classrooms receive more attention from teachers and partake in classroom discussions to a greater degree than females (Brophy & Good, 1970; Driscoll & Croll, 1980; French & French, 1984; Galton, Simon & Croll, 1980; Good, Sykes & Brophy, 1972; Spender,
1982; Stanworth, 1981). Croll (1985) suggested that this difference might have something to do with boys being more likely than girls to have learning and behavioural difficulties. Another possible explanation is that teachers believe males will benefit more from this attention than females. Or, perhaps teachers feel males have more to contribute to classroom discussions than females. If either of these latter two interpretations is correct, the resulting learning environment for females may reinforce a lack of confidence in their abilities. Taken one step further, females may lower their expectations of what they can do and therefore aspire to traditional occupations.

Another form of teacher bias was illustrated in a study by Gold, Crombie and Noble (1987). Girls who were thought to be less compliant by teachers were also perceived as less competent intellectually. On the other hand, compliance was not a significant predictor of males' intellectual competence.

Smith, Greenlaw and Scott (1987) found that teachers' choice of reading material may be gender-role stereotyped. For example, they found teachers to be more than twice as likely to read books aloud to children featuring a male protagonist. In addition, they found that very few of the teachers' favourite books included a female protagonist. Further, while the images of these female characters are narrowly defined (e.g., mothers and homemakers) and often
negative (e.g., neurotic), the images of boys are positive and stereotypically masculine. It is possible, therefore, that teachers, through their choice of reading materials, bias or limit children's views of what is appropriate for males and what is appropriate for females. Through exposure to such material, children may begin, perhaps unconsciously, to eliminate or rule out certain occupations based simply on a lack of exposure to gender-discrepant occupational role models.

Archer and McCarthy (1988), in their review of the research, concluded that there is evidence for gender bias in teachers' evaluation of students' written work. For example, Bernard (1979) found that teachers expect students with masculine attributes to exhibit higher levels of intelligence, independence and logic. Masculine-type students who answered physics questions were thought to have a better understanding of the question and were judged to have an answer higher in logic and overall quality than feminine-type students. This study thus examined what may be an important factor influencing teachers' perceptions of students--that is, the traditionality of the student. Do teachers perceive masculine-typed females as more capable or knowledgeable than feminine-typed females? Further, do they see masculine qualities as being a prerequisite for nontraditional career choices? Studies by Shapiro (1977)
and Towson, Zanna and MacDonald (1985), cited later, address this issue.

**Vocational Counsellor Bias with Respect to Student Gender**

There is evidence, further to that already discussed, that suggests that counsellors have definite biases against women working outside the home. For example, Bingham and House (1973a) administered a questionnaire on the occupational status of women to 126 counsellors. They found that male counsellors appeared to be less accurately informed than female counsellors as to the occupational alternatives needed by women, women's ability to be both worker and homemaker, the general ability of women, and the number of jobs that cannot be performed equally well by women and men. A follow-up study found a significant number of male counsellors had negative attitudes toward women pursuing careers (Bingham & House, 1973b). They agreed with such statements as:

- Training women for high-level jobs is wasteful.
- Married men should receive more pay than single women doing the same work.
- Boys should be better educated than girls.
- Motherhood is the primary function of women.

A similar, but longitudinal study conducted over the course of six years (1968, 1971 and 1974) examined counsellor attitudes and perceptions toward a) women
occupying the dual role of mother and worker, b) women's
gender-role definition, and c) the contributions of women to
society (Englehard, Jones & Stiggins, 1976). Of the three
areas examined, counsellors had the most conservative
attitudes toward the dual role of mother and worker. Their
conservative attitudes did not change between 1968 and 1971.
Attitude change was present, in a positive direction,
between 1971 and 1974. Ahrons (1976) also found that
counsellors perceived career roles for women to be
incompatible with homemaking and parenting roles.

Another method with which to assess counsellors' attitudes
towards women pursuing careers is to ask clients with
vocational concerns what they discussed with
counsellors during the counselling session. In a study of
male and female clients with male and female counsellors,
Rice (1977) thus found that male clients were significantly
more likely than female clients to report having discussed
choosing a career, getting a job, and receiving advice
concerning job opportunities when with male counsellors. In
addition, clients with female counsellors were significantly
more likely than clients with male counsellors to report
having received information about a variety of careers and
having discussed issues of job status, position, and
opportunities for advancement. Finally, all females with
vocational concerns who were seen by women counsellors
reported having a discussion of jobs. None of the females
with vocational concerns who were seen by male counsellors reported a discussion of jobs.

While some counsellors disagree altogether with women having careers, other counsellors disagree with or discourage females from pursuing nontraditional careers. For example, when a confederate client told a counsellor that she was undecided as to whether she should enter the field of engineering (masculine occupation) or the field of education (feminine occupation), both male and female counsellors were found to be significantly more biased against women aspiring to be engineers (Pietrofesa & Schlossberg, 1970). A content analysis of the 79 biased statements indicated that counsellors did not approve of the woman's choice because of the traditionally masculine definition of the field.

A more recent study assessed the attitudes of male and female counsellors and counsellors-in-training toward nontraditional careers for both women and men (Haring et al., 1983). They found male counsellors to be more negative about both male and female nontraditional career choices than were female counsellors. Although one might expect counselling students to have more liberal views towards gender role deviation, they were more negative about nontraditional career choices than experienced counsellors. Interestingly, counsellors as a whole were much more negative toward men choosing nontraditional careers than
they were toward women choosing nontraditional careers. Their research supports an earlier study by Arnold (1981) who found male counsellors-in-training, as opposed to female counsellors-in-training, to be more variable in their opinions of males opting for a career in nursing.

Other research has indicated that counsellors not only disagree with or discourage nontraditional vocational choices among women, they also think that nontraditional aspirants are more in need of counselling and are in some way maladjusted. Thomas and Stewart (1971) found that male and female high school counsellors responded more positively to female clients with traditional (feminine) goals than to female clients with deviant (masculine) goals, judging the latter group to be more in need of counselling than those with conforming career goals. In contrast to Pietrofesa and Schlossberg (1970), however, female counsellors in this study were more accepting of both conforming and deviant clients than were their male counterparts.

Abramowitz et al. (1975) had counsellors and counsellors-in-training rate the degree of maladjustment suggested by psychovocational profiles of male and female medical school aspirants. Counsellors scoring high on the traditional moralism factor of the New Left Scale (Gold, Friedman & Christie, 1971) imputed greater maladjustment to female medical school aspirants than did less traditional (more liberal) counsellors. However, morally traditional
counsellors did not have a more critical evaluation of male medical school aspirants. The authors concluded that counsellor bias existed against women entering masculine occupations such as medicine. This finding, although somewhat outdated, is particularly distressing in view of a recent study which found females to be more committed to a career in medicine, to have a greater readiness to explore specialty alternatives and to have better defined vocational identities than male medical school aspirants (Savickas, 1985).

Another group of studies indicates a similar type of vocational bias against women. Schwartz (1974) found that guidance counsellors recommended occupations to intellectually superior female students that required less ability than those occupations recommended for men. In addition, traditional female occupations were recommended more often for female students than for male students. Finally, male counsellors recommended lower-ability-level occupations for females more often than did female counsellors. Donahue and Costar (1977) reported results similar to Schwartz (1974) when they presented senior high school counsellors with identical case studies describing a female and a male client. Counsellors chose occupations for female clients which paid less, required less education, and were more highly supervised.
Packer (1983) examined vocational suggestions and salary predictions made by vocational rehabilitation counsellors for visually impaired males and females. Although gender-typed occupations were suggested for both males and females, jobs selected for females were more gender-typed than those selected for males. In addition, the vocational objective of homemaker was chosen for females much more often than it was for men.

Finally, one study examined the effect of students' gender on counsellors' agreement with post-secondary career goals (Hopkins-Best, 1987). A total of 450 secondary school guidance counsellors participated in the study. A significant number of counsellors agreed that semi-skilled jobs (e.g., receptionist, library assistant, beautician, teacher's aide, special education teacher, occupational therapist and secretary) were more appropriate for female than male students. Occupations rated as more appropriate for the male than the female students were: apprentice, military service, farm labourer, robotics engineer, maintenance worker, electrician and mail carrier. There were five occupations (e.g., food service, registered nurse, physician, lawyer and sales clerk) that were not gender-typed as being more appropriate for either gender. Finally, Hopkins-Best found that male counsellors were more accepting of both male and female students pursuing postsecondary
goals in military or technical occupations than were female counsellors.

This study is noteworthy in two respects. First, it focused on the appropriateness of the occupation, not whether the occupation was traditional or nontraditional. This would account for the occupations of nurse, physician and lawyer not being gender-typed. Second, this is one study that has found male counsellors to be more liberal than female counsellors.

Two recent studies examining counsellor bias claim that a change in attitudes has occurred among counsellors—in other words, a lack or lessening of vocational stereotyping. Buczek (1981) had interning clinical psychology students (Ph.D. level) listen to one of two audiotapes—one with a male client and one with a female client. Both clients verbalized 24 facts and concerns about social issues (e.g., family, relationships), 24 vocational facts (e.g., job dissatisfaction, job inadequacy, academic and vocational achievement, general competency and independence), and 72 general facts (e.g., physical health, somatic symptoms).

Buczek's methodology was unique in that she asked counsellors to later recall information previously stated by the clients. This strategy was designed to address the issue of social desirability of counsellors' responses (Abramowitz & Abramowitz, 1978; Abramowitz & Dokecki, 1977; Tanney & Birk, 1976). It is necessary to use measures that
do not elicit socially desirable responses from counsellors because they are probably aware of the research illustrating sexism in counselling and they may try, because of social pressure, to "prove" that they do not hold sexist attitudes towards their clients (Tanney & Birk, 1976). In addition to the recall that was required, counsellors were also permitted to write down any questions they might want to ask the client if they were given the opportunity to speak with him/her.

Buczek found counsellors to be equally attentive to the vocational concerns of female and male clients. Male counsellors, however, asked significantly more questions related to the social concerns of the female client than the male client even though they verbalized the same number of concerns from each category. Buczek interpreted this finding as illustrating the absence of vocational stereotyping. However, although Buczek's counsellors paid equal attention to the vocational concerns of females and males, the traditionality of the occupation was not manipulated or examined. Had this manipulation been included, counsellors might well have been found to pay less attention to females' nontraditional vocational concerns. Counsellors may acknowledge a female client's discussion of her job dissatisfaction, job inadequacy, academic or vocational achievement or general competence and independence. Buczek did not address the question of
whether counsellors encourage, discourage or ignore nontraditional career options and aspirations.

Interestingly, while female counsellors remembered more client information overall than did male counsellors, Buzcek also found that both male and female counsellors had fewer recollections regarding female clients' concerns in all areas. Buzcek suggested that perhaps counsellors are more interested in the concerns of male clients. In addition, it was suggested that counsellors may devalue female clients' concerns in the counselling session. If either or both of these interpretations is correct, women may encounter further difficulties when trying to pursue nontraditional careers.

In a study by Bernard and Gilliland (1981), the same female pseudoclient was counselled by 66 counsellors-in-training. The female stated that she was undecided as to whether she should pursue a traditional occupation (nursing or being a librarian) or a nontraditional occupation (dentistry or law). Bernard and Gilliland found that counsellors-in-training did not make significantly more traditional than nontraditional career recommendations. This study, therefore, appeared to indicate an absence of vocational stereotyping by counsellors.

Aside from the problem of social desirability, there was also a methodological problem with this study. Prior to the counselling part of the experiment, the same
counsellors-in-training were asked to label 18 occupations as traditionally masculine or feminine. There was 100% agreement that being a nurse or librarian was a traditionally feminine occupation and being a dentist or lawyer was a traditionally masculine occupation. Although the counsellors-in-training, when asked, did not indicate that they knew what the researchers were examining, this may not have been the case. There is still the possibility, therefore, that counsellors-in-training were attempting not to be biased against the female's nontraditional career choice. The 18 occupations could have or should have been classified as traditionally masculine or feminine by a different group of subjects. This would have enabled Bernard and Gilliland (1981) to obtain attitudes toward traditionally masculine and feminine occupations, while at the same time lessening the demand characteristics of the study.

There are two pivotal studies in this area that may have touched on a very crucial element in counsellors' bias against women pursuing nontraditional careers--that is, the traditionality of the female. Shapiro (1977) examined counsellor behavioural and attitudinal responses to typical and atypical female gender-roles. Two female confederate clients, who were counselled by male and female counsellors, presented themselves in a typical or atypical manner. The typical client was traditional in dress, speech and
occupational choice (nurse). The atypical client dressed in more masculine attire, chose a masculine occupation (engineer) and used speech deviating from the female gender-role stereotype. All counselling sessions were videotaped and viewed by independent raters to ensure that the confederates portrayed their respective roles consistently and accurately.

Shapiro found counsellors' behaviour (i.e., verbal and nonverbal responses) to be significantly more biased with the typical client than with the atypical client. Overall, female counsellors also tended to be less behaviourally biased than male counsellors. More specifically, female counsellors gave significantly more verbal and nonverbal reinforcement and less verbal and nonverbal extinction to both female clients than did male counsellors. Finally, female counsellors evaluated the atypical client more positively and the typical client less positively than did their male counterparts.

In showing that counsellors viewed the female entering the typical occupation more negatively, this study appeared to contradict previous research. However, Shapiro's findings should not be misconstrued. Anecdotal data indicated that the atypical client seemed to be liked for her 'masculine' qualities while the typical client was both liked and disliked for her 'feminine' qualities. Perhaps counsellors approved of the female entering a nontraditional
career because she was not dressed traditionally and because she did not speak in a traditionally feminine manner. Thus, counsellors may still be biased against women entering nontraditional careers who are more feminine in dress and speech. This study, therefore, showed only that counsellors did not disapprove of masculine-type females entering masculine-type occupations, and added little about how counsellors feel about feminine-type females entering masculine-type occupations. Shapiro's findings do, however, raise the question of whether a client's appearance should be an influencing factor on the counsellor's decision as to whether or not the client is appropriate for a particular occupation.

Towson et al. (1985) conducted a study in which undergraduate males were used as subjects instead of counsellors. The subjects watched one of two videotapes of a simulated interview session in which a female job applicant presented herself in a traditional or nontraditional manner. The traditional applicant, in comparison to the nontraditional applicant, conformed to the gender-stereotype in appearance (e.g., she wore jewellery, a scarf around her neck, eye makeup and lipstick) and behaviour (e.g., she looked at the interviewer when he was asking her questions but did not maintain eye contact when responding). She also stated that she would interrupt her career when she had children. Subjects were then given
eight occupations—four traditionally male (personnel manager, department store manager, insurance agent and high school principal) and four traditionally female (social worker, dietician, librarian and preschool teacher), and asked to determine how satisfied and successful they felt the applicant would be in each position.

Subjects believed the nontraditional female applicant would be more successful than the traditional applicant in the four nontraditional occupations and more satisfied in three of these four positions. In addition, subjects expected the traditional female applicant to be more satisfied in three of the four traditional careers than her nontraditional counterpart. Finally, subjects tended to expect the traditional applicant to be more successful at the traditional occupations than the nontraditional applicant.

The implications of these two studies combined appear to support Broverman et al.'s (1970) findings that feminine qualities are less desirable generally than masculine qualities. Earlier, in summarizing Shapiro's (1977) study, it was stated that counsellors may still be biased against traditional females entering nontraditional occupations. Towson et al.'s (1985) study further reinforces this proposition.

According to the literature, counsellors appear to show bias against women entering nontraditional occupations. In
addition, the evidence seems to indicate that counsellors tend to be biased against males entering nontraditional careers. However, it is understandable why counsellors would not encourage and possibly discourage males from pursuing female dominated occupations. They would be entering positions that pay poorly, are low in status and have little room for advancement. Finally, the literature also indicates that male counsellors tend to be less accepting of gender-discrepant occupational choice than are female counsellors.

Examining the Problem: The Present Studies

Vocational bias can be examined using different subject populations; however, the present study used students and teachers. In the first study, university students were asked about their high school experiences with vocational counsellors (e.g., whether they felt counsellors encouraged or discouraged them from pursuing particular vocations).

In the second study, teachers were used as subjects. It is noteworthy that some studies (e.g., Noeth et al., 1984) have found that students mentioned teachers more often than counsellors as having influenced their career aspirations. In addition, the majority of studies examining counsellor bias have used counsellors or counsellors-in-training as subjects. Since teachers likely influence students' career aspirations, then it seems pertinent to examine any biases
teachers may hold regarding gender-discrepant occupational choice. Further, counsellors must be teachers before they become counsellors in high schools. Finally, teachers' influence may be even greater than counsellors since students spend much more time with the former. Thus, they can be thus asked how they would counsel a student with certain characteristics and what their perceptions are of students aspiring to nontraditional careers.

Objectives and Hypotheses of Study 1

The first study had five objectives with an emphasis on the first two.

1. To determine the career aspirations of male and female first year undergraduate students.

2. To evaluate students' experiences with their high school counsellors. The types of experiences to be examined include:

   (a) the helpfulness of counsellors;

   (b) counsellors' influence on career choice;

   (c) students' satisfaction with the discussion of job opportunities;

   (d) the degree to which counsellors really listened;

   (e) the degree to which counsellors encouraged or discouraged nontraditional careers.

3. To examine whether the type of extracurricular activities one participates in is related to career choice.

4. To identify which individuals students considered to have influenced their career choice.
5. To determine the degree of confidence students had in their career choice.

1. **Career Aspirations**

**Hypothesis #1.** Both males and females will be more likely to choose traditional careers for their gender than nontraditional careers.

**Hypothesis #2.** Females will be more likely than males to choose a nontraditional career. This hypothesis is based on the notion that nontraditional or male-dominated careers will raise females' income level, job status and advancement possibilities. For males, on the other hand, nontraditional or female-dominated careers will lower their income level, job status and advancement possibilities.

2. **Students' Experiences with Counsellors**

(a) **Helpfulness of counsellors.**

**Hypothesis #3.** Males will rate counsellors as being more helpful than will females. This hypothesis was based on research by Miller and McDougle (1986) which found that only males rated counsellors as most helpful in providing information relevant to their future career plans.

**Hypothesis #4.** Female counsellors will be rated as more helpful than male counsellors by both male and female students. Similar findings to support this expected result
have been obtained by Bingham and House (1973a), Rice (1977) and Buczek (1981).

**Hypothesis #5.** Females with nontraditional career aspirations will rate counsellors as less helpful than females with traditional career aspirations. This hypothesis was based on research by Sauter et al. (1980) which found that women choosing nontraditional careers tended to feel counsellors did not influence their career choice.

(b) **Counsellors' influence on career choice.**

**Hypothesis #6.** Males will feel counsellors influenced their career choice more than females. This hypothesis was based on research by Miller and McDougle (1986) who found that males, but not females, rated counsellors as 'most helpful' in giving them information about career possibilities.

**Hypothesis #7.** Students who had same-gender counsellors will rate counsellors as having influenced their career choice more than students who had opposite-gender counsellors. Research by Hill (1975) suggested that counsellors and clients share their feelings more with same-gender than with opposite-gender pairings.

**Hypothesis #8.** Females with nontraditional career aspirations will feel counsellors had less influence on their career choice than females with traditional career
aspirations. Hopkins-Best (1987), Packer (1983), Rice (1977) and Schwartz (1974) have obtained similar results. If females with nontraditional career aspirations feel that counsellors discourage these aspirations, and they are still planning on pursuing this nontraditional occupation, they are not likely to rate counsellors as influencing their career choice.

(c) Satisfaction with discussion of job opportunities.

Hypothesis #9. Male students will be more satisfied with their discussion of job opportunities than female students. This was based on Rice's (1977) research which found that male clients were more likely to report having discussed career issues than female clients.

Hypothesis #10. Students will be more satisfied with their discussion of job opportunities with female counsellors than with male counsellors. This hypothesis was also based on Rice's (1977) research which implied that female counsellors gave more diversified career information than male counsellors.

Hypothesis #11. Students with traditional career aspirations will be more satisfied with their discussion of job opportunities (with counsellors) than students with nontraditional career aspirations.
(d) **Degree to which counsellors really listened.**

*Hypothesis #12.* Males will feel counsellors listened to them more than will females.

*Hypothesis #13.* Traditional aspirants will feel counsellors listened to them more than nontraditional aspirants.

*Hypothesis #14.* Students will feel female counsellors listened to them more than male counsellors.

These hypotheses modify Buczek's (1981) research which found varying levels of counsellor recollections of clients' concerns. These hypotheses are examining whether students feel counsellors are listening to what they (the student) want to do.

(e) **Degree to which counsellors encouraged or discouraged nontraditional careers.**

*Hypothesis #15.* Both males and females will recall more encouragement toward traditional careers for their gender as opposed to nontraditional careers.

*Hypothesis #16.* Students will recall female counsellors as having encouraged nontraditional careers to a greater extent than male counsellors.

*Hypothesis #17.* Both males and females with nontraditional career aspirations will recall counsellor discouragement toward this career choice more than will males and females with traditional career aspirations. These hypotheses were based on research by Arnold (1981),
Haring et al. (1983) and Rohfeld (1977) which suggested that counsellors discourage nontraditional career aspirations.

3. Extracurricular Activities and Career Choice

**Hypothesis #18.** There will be a difference in the selection of nontraditional careers such that:

(a) females who participate in nontraditional extracurricular activities will be more likely to choose nontraditional careers than females who participate in traditional extracurricular activities.

(b) males who participate in nontraditional extracurricular activities will be more likely to choose nontraditional careers than males who participate in traditional extracurricular activities.

**Hypothesis #19.** There will be a difference in the selection of traditional careers such that:

(a) females who participate in traditional extracurricular activities will be more likely to choose traditional careers for their gender than females who participate in nontraditional extracurricular activities.

(b) males who participate in traditional extracurricular activities will be more likely to choose traditional careers for their gender than
males who participate in nontraditional extracurricular activities.

4. **Individuals Influencing Career Choice**

   **Hypothesis #20.** Nontraditional female aspirants will cite their fathers as having influenced their career choice more often than their mothers.

   **Hypothesis #21.** Traditional male aspirants will cite their fathers as having influenced their career choice more often than their mothers.

   These two hypotheses are based on the belief that a father is the role model or mentor for the nontraditional female aspirant and the traditional male aspirant.

   **Hypothesis #22.** Nontraditional female aspirants will cite their mothers as having influenced their career choice more often if their mothers occupied a nontraditional occupation as opposed to a traditional occupation. This hypothesis was based on Kutner and Brogan's (1979) research which suggested a relationship between a mother's occupational choice and that of her daughter's.

5. **Career Confidence**

   **Hypothesis #23.** Males will be more confident in the perceived success of their careers than females. This hypothesis was based on the research which indicates that
females may experience a fear of success (Horner, 1972a, 1972b).

Hypothesis #24. Females who choose traditional careers will be more confident in their ability to be successful in their careers than nontraditional aspirants. This hypothesis is based on the belief that nontraditional aspirants may be unsure of their potential success in a male-dominated workforce.

Objectives and Hypotheses of Study 2

The purpose of Study 2 was to examine the extent of bias against students entering nontraditional careers; whether teachers were biased specifically against traditional students entering nontraditional careers; and, whether male teachers were more biased than female teachers.

Vocational bias was defined in terms of the degree to which teachers:

1. agreed/disagreed with the occupational choice of the student.
2. would encourage/discourage the occupational choice of the student.
3. would suggest additional or alternative occupations.
4. felt the student would be personally successful.
5. felt the student would be financially successful.
6. felt the student would be personally satisfied.
7. felt the student would be financially satisfied.
8. suggested additional occupations that were gender-stereotypic.

As stated previously, the technique used to examine these variables was the vignette. This technique will be elaborated on in the method section.

**Type of Occupation**

**Hypothesis #1.** It is hypothesized that teachers will be less biased:

(a) if the female student indicated interest in the traditional occupation as opposed to the nontraditional occupation;

(b) if the male student indicated interest in the traditional occupation as opposed to the nontraditional occupation; and,

(c) against the male student entering the traditional male occupation than the female student entering a traditional male occupation (i.e., nontraditional female occupation).

The above hypothesis is based on past research in this area suggesting that gender-discrepant occupational choices appear to be generally discouraged by counsellors (i.e., Arnold, 1981; Haring et al., 1983; Hopkins-Best, 1987; Packer, 1983; Schwartz, 1974).
Traditionality of the Student

Hypothesis #2. It is hypothesized that teachers will be less biased against:

(a) the traditional female student, as opposed to the nontraditional female student, pursuing the traditional occupation;

(b) the nontraditional female student, as opposed to the traditional female student, pursuing the nontraditional occupation;

(c) the traditional male student, as opposed to the nontraditional male student, pursuing the traditional occupation; and,

(d) the nontraditional male student, as opposed to the traditional male student, pursuing the nontraditional occupation.

The above hypothesis is based on research by Shapiro (1977) and Towson et al. (1985) which implied that the traditionality of the student may influence attitudes regarding the perceived appropriateness for nontraditional careers.
Teacher Gender

Hypothesis #3. It is hypothesized that male teachers as compared to female teachers, will be more biased against:

(a) the nontraditional female pursuing the nontraditional occupation;
(b) the traditional female pursuing the nontraditional occupation;
(c) the nontraditional male pursuing the nontraditional occupation; and,
(d) the traditional male student pursuing the nontraditional occupation.

The above hypothesis is based on findings by Arnold (1981), Haring et al. (1983), Shapiro (1977), and Thomas and Stewart (1971) which implied that male counsellors may be less accepting than female counsellors of nontraditional career choices.
CHAPTER II

Study 1

METHOD

Subjects

A total of 260 first year introductory psychology students (96 males and 164 females) at the University of Windsor participated in the first study. First year undergraduate students were selected instead of students in higher levels because of their more recent experiences with high school vocational counsellors. Of those students who completed the measures, 64 males and 136 females were between the ages of 18 and 20 years. Only the 18 to 20 year old age group was used in this analysis. Sixty-eight percent of males and females in this age group saw counsellors ten times or less during their years at high school while 20.5% saw counsellors 11 to 20 times.

Subjects were given credit toward their introductory psychology grade for participation. All subjects who participated signed a consent form (See Appendix A).
Procedure

Subjects completed the questionnaire during classroom time, were informed that participation was voluntary and that confidentiality of their responses would be maintained, as per standard research procedures. Also, they were told that the purpose of the study was to examine students' career aspirations as well as examine experiences with high school counsellors.

Students were asked to complete all questions on the questionnaire and to circle the most appropriate answer for each question. Furthermore, they were informed that no right or wrong answer existed for any question. Respondents were thanked for their time and cooperation in filling out the questionnaire. The consent form was collected separately in order to maintain anonymity of responses. The results were later made available to those who were interested.

Measures

Subjects were given a questionnaire (See Appendix A) designed by the author to examine the five, previously mentioned, objectives:

1. Career aspirations. The purpose of this objective was to determine the traditionality of students' current career aspirations. The two variables examined were student gender and career choice. Item #1 (Part 1) on the
questionnaire addressed this objective by asking the student what type of occupation/job/career he/she would most like to pursue after graduation.

A traditional occupation or career was defined as one in which one gender has traditionally occupied (i.e., 70% or more). A nontraditional occupation was defined as one which women or men have not traditionally occupied (i.e., 30% or less). An occupation that was neither traditional nor nontraditional (hereafter referred to a NTNN occupation) was defined as one in which both genders have traditionally occupied (i.e., 31% - 69%). All occupations were classified into one of the three aforementioned categories based on the 1986 Census Canada report on the percentages of males and females in these occupations. A list of those occupations can be found in Appendix C.

2. Experiences with counsellors. The purpose of this objective was to determine the types of experiences students had with their high school counsellors. Items #3, 4 and 5 (Part 1) asked students how many times they saw their high school counsellor, the counsellor's gender and the reason(s) for seeing the counsellor. In addition, items #6 through 9 (Part 1) ask students to rate how helpful the counsellor was for: a) vocational purposes (i.e., career possibilities); school-related purposes (i.e., problem with courses); and, personal purposes (i.e., family relationships). Although
the author was primarily interested in the helpfulness of counsellors on vocational issues, the other two types of helpfulness were also included in the analysis. The ratings scale that was used for items 6 through 9 was a five-point Likert scale.

Also on a five-point Likert scale (Items #7, 8-Part 1 and #1-Part 2), students were asked how satisfied they were with the discussion of job opportunities, the degree to which they thought the counsellor really listened to them and the degree to which they thought the counsellor influenced their career choice. Finally, students were asked whether they recalled a counsellor encouraging or discouraging a particular occupation (Item #5-Part 1). If they had such a recollection, they were asked to state the occupation and whether they felt it was encouraged or discouraged (Item #6-Part 1).

The independent variables were student gender (male or female), counsellor gender (male or female) and career choice (traditional, nontraditional, or NTNN).

3. Extracurricular activities and career choice. The purpose of this objective was to see whether the type of extracurricular activities students participate in (i.e., traditional versus nontraditional) is related to the traditionality of their career choice. Item #6 (Part 3) addressed this objective by asking students to state three
extracurricular activities in which they participate. Participation in extracurricular activities was divided into two sections: 1) participation within the past five years; and, 2) participation prior to the past five years. Two time frames were used to determine whether a difference would occur over time. The variables included were student gender, career choice and the traditionality of the extracurricular activity (traditional or nontraditional).

4. **Individuals influencing career choice.** The purpose of the fourth objective was to examine which individuals would be cited most often as having influenced career choice. Specifically, the purpose was to see whether students would more frequently cite counsellors or teachers as influential individuals affecting their career choice. In addition, what role (if any) did students feel their parents play in influencing occupational choices? Item #2-Part 1 addressed this objective by asking students to circle three individuals they felt influenced their present career choice. The variables included were student gender, career choice and the gender and occupation of the individual cited as having influenced the student's career choice and the career choice.

5. **Career confidence.** The final objective examined whether career confidence differed for males and females and whether career confidence was affected by the traditionality
of one's career choice. Item #11 (Part 3) addressed this objective by asking students how confident they were that they would be successful in their chosen occupation/job/career. The rating scale that was used for this item was a five-point Likert scale.

The Statistical Analysis System (SAS)(Version 5.0) General Linear Models (GLM) Procedure was used for the analysis. In addition, the Chi-square statistic was also used.

A summary table of each objective, its respective hypotheses, variables and statistics used for Study 1, is illustrated in Table 1.
<table>
<thead>
<tr>
<th>OBJECTIVES</th>
<th>HYPOTHESES</th>
<th>VARIABLES</th>
<th>STATISTICS USED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Career Aspirations</td>
<td>#1 and #2</td>
<td>Career choice, student gender</td>
<td>Chi-square</td>
</tr>
</tbody>
</table>
| 2. Experiences with Counsellors | #3 to #17 | DEPENDENT  
| | | a/ helpfulness of counsellors  
| | | b/ counsellors influence on career choice  
| | | c/ satisfaction with discussion of job opportunities  
| | | d/ degree to which counsellors listened  
| | | e/ degree to which counsellors encouraged or discouraged a career choice* | 2 x 2 x 3 ANOVA  
| | | INDEPENDENT  
| | | Student gender, counsellor gender, career choice | Chi-square |
| 3. Extracurricular Activities and Career Choice | #18 to #19 | Career choice, student gender, extracurricular activities | Chi-square |
| 4. Individuals Influencing Career | #20 to #22 | Career choice, student gender, gender and occupation of individual cited | Chi-square |
| 5. Career Confidence | #23 to #24 | DEPENDENT  
| | | Career confidence  
| | | INDEPENDENT  
| | | Student gender, career choice | 2 x 3 ANOVA |

* This variable is not a dependent variable as it was subjected to the chi-square analysis.
CHAPTER III

Study 1

RESULTS

1. Career Aspirations

The statistical analysis used for this variable was the Chi-square statistic. The following results are discussed in terms of the 18 to 20 year old age group. For the following results, "n" signifies the number of responses and "N" signifies the total number of respondents.

Hypothesis #1 and #2 were both supported. As indicated in Figure 1, both males, $X^2 (1, N = 45) = 28.8, p < .001$, and females, $X^2 (1, N = 96) = 46.76, p < .001$, were more likely to choose careers traditional for their gender than nontraditional careers (Hypothesis #1). In addition, females were more likely than males to have chosen a nontraditional career, $X^2 (1, N = 18) = 4.5, p < .05$ (Hypothesis #2). An additional finding was that both males, $X^2 (1, N = 60) = 7.35, p < .01$, and females, $X^2 (1, N = 121) = 14.58, p < .001$, were significantly more likely to choose a traditional career for their gender than a NTNN career. Further, both males, $X^2 (1, N = 23) = 8.52, p < .01$, and
females, $X^2 (1, N = 53) = 10.87, p<.01$, were also more likely to choose a NTNN career than a nontraditional career for their gender.
Figure 1. Frequency distribution of student career choices.
2. **Students' Experiences with Counsellors**

The statistical analysis used for this variable was a 2(student gender) X 2(counsellor gender) X 3(career choice) analysis of variance for unequal cell sizes.

(a) **Helpfulness of counsellors.**

**Hypothesis #3.**

(i) One hundred and forty-seven students responded to the question addressing the vocational helpfulness of counsellors. A significant main effect was found for student gender, $F(1, 135) = 3.82, p < .05$ (See Table 2). However, the direction of the finding was opposite to the predicted hypothesis. Females felt counsellors were more helpful, in the vocational area, than males. Hypothesis #3 (i) must, therefore, be rejected.
### Table 2

**Analysis of Variance for Helpfulness of Counsellors Regarding Vocational Issues**

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Gender (A)</td>
<td>4.22</td>
<td>1</td>
<td>4.20</td>
<td>3.82*</td>
</tr>
<tr>
<td>Counsellor Gender (B)</td>
<td>0.00</td>
<td>1</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Career Choice (C)</td>
<td>4.56</td>
<td>2</td>
<td>2.28</td>
<td>2.07</td>
</tr>
<tr>
<td>AB</td>
<td>0.48</td>
<td>1</td>
<td>0.47</td>
<td>0.43</td>
</tr>
<tr>
<td>BC</td>
<td>1.41</td>
<td>2</td>
<td>0.70</td>
<td>0.64</td>
</tr>
<tr>
<td>AC</td>
<td>4.18</td>
<td>2</td>
<td>2.08</td>
<td>1.89</td>
</tr>
<tr>
<td>ABC</td>
<td>1.34</td>
<td>2</td>
<td>0.67</td>
<td>0.61</td>
</tr>
<tr>
<td><strong>Within cell</strong></td>
<td>148.86</td>
<td>135</td>
<td>1.10</td>
<td></td>
</tr>
</tbody>
</table>

*p < .05*
(ii) One hundred and sixty-seven students responded to the question addressing the school-related helpfulness of counsellors. Although there was no main effect for student gender, in the school-related area (Hypothesis #3 (ii)), an interesting non-hypothesized finding occurred. A significant interaction (career choice X counsellor gender) was found for students who saw counsellors for school-related purposes ($F (2, 155) = 5.55, p < .01$) (See Table 3). The Least Squares Means procedure, used to examine simple effects, indicated that:

(a) male counsellors were rated as more helpful by students aspiring toward traditional occupations as opposed to nontraditional occupations ($p < .001$); and,

(b) male counsellors were rated as more helpful by students pursuing a NTNN career than by students pursuing nontraditional occupations ($p < .001$).

(c) students pursuing traditional, nontraditional and NTNN careers rated female counsellors as more helpful than students pursuing nontraditional careers who saw male counsellors ($p < .01$).

The interaction is illustrated in Figure 2. Higher means indicate greater helpfulness ratings by students.
Table 3

Analysis of Variance for Helpfulness of Counsellors Regarding School-Related Issues

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Gender (A)</td>
<td>0.10</td>
<td>1</td>
<td>0.09</td>
<td>0.09</td>
</tr>
<tr>
<td>Counsellor Gender (B)</td>
<td>11.49</td>
<td>1</td>
<td>11.50</td>
<td>11.27***</td>
</tr>
<tr>
<td>Career Choice (C)</td>
<td>3.54</td>
<td>2</td>
<td>1.76</td>
<td>1.73</td>
</tr>
<tr>
<td>AB</td>
<td>3.29</td>
<td>1</td>
<td>3.29</td>
<td>3.23</td>
</tr>
<tr>
<td>BC</td>
<td>11.31</td>
<td>2</td>
<td>5.66</td>
<td>5.55**</td>
</tr>
<tr>
<td>AC</td>
<td>0.96</td>
<td>2</td>
<td>0.48</td>
<td>0.47</td>
</tr>
<tr>
<td>ABC</td>
<td>3.03</td>
<td>2</td>
<td>1.65</td>
<td>1.62</td>
</tr>
<tr>
<td>Within cell</td>
<td>158.04</td>
<td>155</td>
<td>1.02</td>
<td></td>
</tr>
</tbody>
</table>

**p<.01

***p<.001
Figure 2. Mean scores for school-related helpfulness according to career and counsellor gender.
Unfortunately, an insufficient number of students (N = 36) saw counsellors for personal reasons so Hypothesis #3 (iii) could not be subjected to a 2 (student gender) X 2 (counsellor gender) X 3 (career choice) analysis of variance. The analysis of variance table for helpfulness of counsellors regarding personal issues can be found in Appendix D. Table 4 shows the means and standard deviations for each type of helpfulness by student gender.

Table 4
Means and Standard Deviations for Each Type of Helpfulness by Student Gender

<table>
<thead>
<tr>
<th>Type of Helpfulness</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal</td>
<td>M = 4.25</td>
<td>M = 3.76</td>
</tr>
<tr>
<td></td>
<td>SD = 0.50</td>
<td>SD = 1.06</td>
</tr>
<tr>
<td>Vocational*</td>
<td>M = 3.32</td>
<td>M = 3.48</td>
</tr>
<tr>
<td></td>
<td>SD = 1.09</td>
<td>SD = 1.03</td>
</tr>
<tr>
<td>School-Related</td>
<td>M = 3.68</td>
<td>M = 3.81</td>
</tr>
<tr>
<td></td>
<td>SD = 1.07</td>
<td>SD = 1.01</td>
</tr>
</tbody>
</table>

* Means were significantly different.

Hypothesis #4.

(i) The effect for counsellor gender did not reach significance for vocational helpfulness. That is, female counsellors were not rated as significantly more helpful than male counsellors.
(ii) A significant main effect for gender did occur for school-related helpfulness, \( F (1, 155) = 11.27, p<.001 \). Female counsellors were rated as more helpful on school-related issues than male counsellors. Hypothesis #4 (ii) was confirmed.

(iii) As already stated, there were not enough respondents who saw counsellors for personal reasons to examine this variable. However, inspection of the means indicated that female counsellors were rated as somewhat more helpful than male counsellors. Table 5 shows the means and standard deviations for each type of helpfulness by counsellor gender.

Table 5
Means and Standard Deviations for Each Type of Helpfulness by Counsellor Gender

<table>
<thead>
<tr>
<th>Type of Helpfulness</th>
<th>Male Counsellor</th>
<th>Female Counsellor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal</td>
<td>M = 3.70</td>
<td>M = 3.94</td>
</tr>
<tr>
<td></td>
<td>SD = 1.13</td>
<td>SD = 0.90</td>
</tr>
<tr>
<td>Vocational</td>
<td>M = 3.36</td>
<td>M = 3.55</td>
</tr>
<tr>
<td></td>
<td>SD = 1.07</td>
<td>SD = 1.03</td>
</tr>
<tr>
<td>School-Related*</td>
<td>M = 3.69</td>
<td>M = 3.90</td>
</tr>
<tr>
<td></td>
<td>SD = 1.06</td>
<td>SD = 0.97</td>
</tr>
</tbody>
</table>

* Means were significantly different.
Hypothesis #5. Since, females with nontraditional career aspirations did not rate counsellors as less helpful than females with traditional career aspirations for any type of helpfulness (i.e., vocational, school-related or personal), hypothesis # 5 was not supported. Table 6 shows the means and standard deviations for each type of helpfulness for females.

Table 6
Means and Standard Deviations for Each Type of Helpfulness by Career Choice for Females

<table>
<thead>
<tr>
<th>Type of Helpfulness</th>
<th>Traditional</th>
<th>Nontraditional</th>
<th>NTNN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal</td>
<td>M = 4.11</td>
<td>M = 3.29</td>
<td>M = 3.33</td>
</tr>
<tr>
<td></td>
<td>SD = 0.66</td>
<td>SD = 1.70</td>
<td>SD = 1.03</td>
</tr>
<tr>
<td>Vocational</td>
<td>M = 3.35</td>
<td>M = 3.60</td>
<td>M = 3.72</td>
</tr>
<tr>
<td></td>
<td>SD = 1.12</td>
<td>SD = 1.07</td>
<td>SD = 0.75</td>
</tr>
<tr>
<td>School-Related</td>
<td>M = 3.83</td>
<td>M = 3.40</td>
<td>M = 3.89</td>
</tr>
<tr>
<td></td>
<td>SD = 0.91</td>
<td>SD = 1.51</td>
<td>SD = 1.04</td>
</tr>
</tbody>
</table>

* Means were significantly different.

(b) Counsellors' influence on career choice.

None of the hypotheses regarding counsellor's influence on career choice was supported. Males did not feel counsellors influenced their career choice significantly more than did females (Hypothesis #6) and students with same-gender counsellors did not rate counsellors as having
influenced their career choice significantly more than students with opposite-gender counsellors (Hypothesis #7). Finally, nontraditional female aspirants did not feel counsellors had less influence on their career choice than traditional female aspirants (Hypothesis #8). The analysis of variable table of counsellor influence on career choice is illustrated in Appendix E. Tables 7, 8 and 9 show the means and standard deviations for counsellor influence of career choice.

Table 7
Means and Standard Deviations for Additional Dependent Variables by Student Gender

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counsellor Influence</td>
<td>M = 2.33</td>
<td>M = 2.39</td>
</tr>
<tr>
<td></td>
<td>SD = 0.95</td>
<td>SD = 0.84</td>
</tr>
<tr>
<td>Satisfaction with Discussion of Job</td>
<td>M = 3.07</td>
<td>M = 3.31</td>
</tr>
<tr>
<td>Opportunites*</td>
<td>SD = 1.01</td>
<td>SD = 0.99</td>
</tr>
<tr>
<td>Degree to which Counsellors Listened*</td>
<td>M = 3.61</td>
<td>M = 3.60</td>
</tr>
<tr>
<td></td>
<td>SD = 0.99</td>
<td>SD = 1.05</td>
</tr>
<tr>
<td>Career Confidence</td>
<td>M = 3.89</td>
<td>M = 3.52</td>
</tr>
<tr>
<td></td>
<td>SD = 1.04</td>
<td>SD = 0.89</td>
</tr>
</tbody>
</table>

* Means were significantly different.
Table 8
Means and Standard Deviations for Additional Dependent Variables by Counsellor Gender

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counsellor Influence</td>
<td>M = 2.33</td>
<td>M = 2.44</td>
</tr>
<tr>
<td></td>
<td>SD = 0.92</td>
<td>SD = 0.79</td>
</tr>
<tr>
<td>Satisfaction with Discussion of Job Opportunities</td>
<td>M = 3.19</td>
<td>M = 3.32</td>
</tr>
<tr>
<td></td>
<td>SD = 0.97</td>
<td>SD = 1.06</td>
</tr>
<tr>
<td>Degree to which Counsellors Listened</td>
<td>M = 3.54</td>
<td>M = 3.71</td>
</tr>
<tr>
<td></td>
<td>SD = 1.08</td>
<td>SD = 0.92</td>
</tr>
</tbody>
</table>

Table 9
Means and Standard Deviations for Additional Dependent Variables by Career Choice

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Traditional</th>
<th>Nontraditional</th>
<th>NTNN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Counsellor Influence</td>
<td>M = 3.37</td>
<td>M = 2.23</td>
<td>M = 2.41</td>
</tr>
<tr>
<td></td>
<td>SD = 0.89</td>
<td>SD = 1.01</td>
<td>SD = 0.81</td>
</tr>
<tr>
<td>Satisfaction with Discussion of Job Opportunities</td>
<td>M = 3.20</td>
<td>M = 3.23</td>
<td>M = 3.32</td>
</tr>
<tr>
<td></td>
<td>SD = 1.04</td>
<td>SD = 1.17</td>
<td>SD = 0.85</td>
</tr>
<tr>
<td>Degree to which Counsellors Listened*</td>
<td>M = 3.58</td>
<td>M = 3.38</td>
<td>M = 3.74</td>
</tr>
<tr>
<td></td>
<td>SD = 0.95</td>
<td>SD = 1.54</td>
<td>SD = 0.99</td>
</tr>
<tr>
<td>Career Confidence</td>
<td>M = 3.70</td>
<td>M = 3.56</td>
<td>M = 3.55</td>
</tr>
<tr>
<td></td>
<td>SD = 0.93</td>
<td>SD = 1.56</td>
<td>SD = 0.96</td>
</tr>
</tbody>
</table>

* Means were significantly different.
(c) **Satisfaction with the discussion of job opportunities.**

Of the three hypotheses pertaining to this area, two were not confirmed. Student satisfaction with their discussion of job opportunities did not differ significantly by counsellor gender (Hypothesis #10) or by student career choice (Hypothesis #11). A significant main effect for student gender was found, $F(1, 133) = 5.40$, $p < .05$. However, the direction of the finding was opposite to the predicted hypothesis. That is, females were more satisfied with their discussion of job opportunities than males (See Table 10). The means and standard deviations for this variable are shown in Table 7.
Table 10

Analysis of Variance for Satisfaction with Discussion of Job Opportunities

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Gender (A)</td>
<td>5.38</td>
<td>1</td>
<td>5.40</td>
<td>5.40*</td>
</tr>
<tr>
<td>Counsellor Gender (B)</td>
<td>0.34</td>
<td>1</td>
<td>0.34</td>
<td>0.34</td>
</tr>
<tr>
<td>Career Choice (C)</td>
<td>0.08</td>
<td>2</td>
<td>0.04</td>
<td>0.04</td>
</tr>
<tr>
<td>AB</td>
<td>0.41</td>
<td>1</td>
<td>0.41</td>
<td>0.41</td>
</tr>
<tr>
<td>BC</td>
<td>2.36</td>
<td>2</td>
<td>1.18</td>
<td>1.18</td>
</tr>
<tr>
<td>AC</td>
<td>3.53</td>
<td>2</td>
<td>1.77</td>
<td>1.77</td>
</tr>
<tr>
<td>ABC</td>
<td>1.81</td>
<td>2</td>
<td>0.91</td>
<td>0.91</td>
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<tr>
<td>Within cell</td>
<td>132.48</td>
<td>133</td>
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</tbody>
</table>

*p < .05
(d) **Degree to which counsellors really listened.**

Although a significant main effect for student gender was found, $F(1, 182) = 6.38, p<.01$, the direction of the finding was opposite to the predicted hypothesis (Hypothesis #11). That is, females felt counsellors listened to them more than males (See Table 11). However, hypothesis #13 was supported since traditional aspirants felt counsellors listened to them more than nontraditional aspirants, $F(1, 182) = 3.92, p<.05$. Also, students aspiring toward NTNN careers felt counsellors listened to them more than nontraditional aspirants, $F(2, 182) = 3.92, p<.05$. The means and standard deviations for this variable are shown in Table 7. Finally, one non-hypothesized finding showed that there was a significant interaction (student gender X career choice) for this dependent variable, $F(2, 182) = 4.67, p<.01$. The Least Squares Means procedure, used to examine simple effects, indicated that:

(a) males choosing traditional careers felt counsellors really listened more than males choosing nontraditional careers ($p<.01$);

(b) males choosing NTNN careers felt counsellors really listened more than males choosing nontraditional careers ($p<.01$); and,

(c) females choosing traditional, nontraditional and NTNN careers felt counsellors really listened more
than males choosing nontraditional careers (p<.01).

The interaction is illustrated in Figure 3. Higher means indicate that counsellors listened more.

Table 11

Analysis of Variance Regarding the Degree to which Counsellors Really Listened

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
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<td>6.51</td>
<td>6.38**</td>
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<tr>
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<td>0.00</td>
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<td>3.92*</td>
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<tr>
<td>AB</td>
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<td>1</td>
<td>2.77</td>
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<td>BC</td>
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<td>2</td>
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<td>0.95</td>
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<td>2</td>
<td>4.76</td>
<td>4.67**</td>
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</table>

*p<.05

**p<.01
CAREER CHOICES

Figure 3. Mean scores for degree to which students felt counsellors really listened, according to student gender and career choice.
(e) Degree to which counsellors encouraged or discouraged nontraditional careers. A Chi-square analysis showed that only one of the three hypotheses pertaining to this area was confirmed. The degree to which counsellors encouraged or discouraged nontraditional careers did not differ by counsellor gender (Hypothesis #16) or by student career choice (Hypothesis #17). However, students did recall more encouragement toward a traditional career for their gender as opposed to a nontraditional career, \( \chi^2 (1, N = 50) = 12.5, p<.001 \) (Hypothesis #15).

It is worth noting that although there was not a large percentage of student recollections of encouragement and/or discouragement by their high school counsellors, 19\% of males and 17\% of females did feel that they experienced some degree of discouragement from their career choice. Of those students, 17\% of males and 35\% of females felt a nontraditional career choice had been discouraged. Students' recollection of counsellors' encouragement regarding career choice was also fairly low. In particular, only 38\% of males and 39\% of females experienced encouragement toward their career choice. Of those students, 4\% of males and 21\% of females felt a nontraditional career choice had been encouraged. Figure 4 shows the frequency distribution of students who felt a career choice was encouraged or discouraged.
A final note, 74% of males and 71% of females indicated that they would like to have received more help with career planning from the counselling staff at their high school.
Figure 4. Frequency distribution of students who felt a career choice was encouraged or discouraged.

Hypothesis #18.

(i) Females participating in nontraditional extracurricular activities were not significantly more likely to choose nontraditional careers than females participating in traditional extracurricular activities, although there was some tendency in this direction. This was true for participation both within and prior to the past five years. Hypothesis #18 (i) was, therefore, not supported.

(ii) Because there were too few males who were aspiring toward nontraditional careers who responded to this question, it could not be subjected to analysis.

Hypothesis #19.

(i) Females participating in nontraditional extracurricular activities were more likely to choose traditional careers than females participating in traditional extracurricular activities. This finding was opposite to the predicted hypothesis. This was true for participation within, $X^2 (1, n=105) = 27.71, p<.001$, and prior to the past five years, $X^2 (1, n=114) = 17.76, p<.001$. Hypothesis #19 (i) was, therefore, not supported.

(ii) Males participating in traditional extracurricular activities were more likely to choose traditional careers than males participating in
nontraditional extracurricular activities. This was true for participation within, $X^2 (1, n=41) = 35.22, p<.001$ and prior to the past five years, $X^2 (1, n=41) = 35.22, p<.001$. Hypothesis #19 (ii) was, therefore, supported.

One non-hypothesized finding was that females were more likely to participate in nontraditional than traditional extracurricular activities. This was true for participation within the past five years, $X^2 (1, n=171) = 35.58, p<.001$ and prior to the past five years, $X^2 (1, n=183) = 28.32, p<.001$. In addition, females were more likely to participate in nontraditional than NTNN extracurricular activities. This was also true for participation within the past five years, $X^2 (1, n=175) = 31.29, p<.001$ and prior to the past five years, $X^2 (1, n=173) = 38.87, p<.001$.

Males, on the other hand, were more likely to participate in traditional than nontraditional extracurricular activities. This was true for participation within the past five years, $X^2 (1, n=62) = 56.15, p<.001$ and prior to the past five years, $X^2 (1, n=64) = 50.76, p<.001$. In addition, males were more likely to participate in NTNN than nontraditional extracurricular activities. This difference was only significant for participation within the past five years, $X^2 (1, n=13) = 7.69, p<.01$. Finally, males were more likely to participate in traditional than NTNN extracurricular activities. This was true for participation within the past five years, $X^2 (1, n=73) = 31.56, p<.001$ and
prior to the past five years, \( X^2 (1, n=67) = 65.01, p<.001 \).

Figure 5 shows the frequency distribution of students' participation in extracurricular activities within the past five years. Figure 6 shows the frequency distribution for participation prior to the past five years.
Figure 5. Frequency distribution of participation in extracurricular activities within the past five years.
Figure 6. Frequency distribution of participation in extracurricular activities prior to the past five years.
4. **Individuals Influencing Career Choice**

A Chi-square analysis revealed that none of the hypotheses regarding this variable were supported. Nontraditional female aspirants did not cite their fathers as having influenced their career choice more often than their mothers (Hypothesis #20) and nontraditional female aspirants did not cite 'nontraditional' mothers as having influenced their career choice more than 'traditional' mothers (Hypothesis #22). Although traditional male aspirants did cite their fathers as having influenced their career choice more often than their mothers, this finding did not reach statistical significance (Hypothesis #21).

This study also suggests that both males, $X^2 (1, N = 36) = 4.69$, $p<.05$ and females, $X^2 (1, N = 78) = 4.63$, $p<.05$, were more likely to cite teachers as having influenced their career choice than counsellors. In fact, of the ten types of individuals students could have cited as having influenced their career choice, teachers ranked fourth and counsellors ranked sixth.

The three types of individuals cited most often as having influenced students' career choices (listed in order of importance) were mothers, friends and fathers. However, it was also found that 68% of students' mothers and 80% of students' fathers occupied a traditional occupation for their gender. Intuitively, it would follow that students
would aspire to traditional careers for their gender if their parents are also in traditional occupations/roles.

Females were more likely to rate their mothers as having influenced their career choice than their fathers, $X^2 (1, N =135) = 5.01, p<.05$, and males were more likely to rate their fathers as having influenced their career choice than their mothers. The latter finding, however, did not reach significance. An important finding was that females typically cited other females as having influenced their career choice more than they cited males, $X^2 (1, N =348) = 8.69, p<.01$. Similarly, males cited other males as having influenced their career choice more than they cited females, $X^2 (1, N =167) = 31.04, p<.001$. 

5. Career Confidence

The statistical analysis used for career confidence was a $2$(student gender) $X$ $3$(career choice) analysis of variance. Neither hypothesis regarding career confidence was significant. However, there was a tendency for males to report higher confidence with respect to their perceived success in all types of future careers (e.g., traditional, nontraditional and NTNN) than females (Hypothesis #23). On the other hand, females aspiring toward traditional careers did not report higher confidence than their nontraditional counterparts (Hypothesis #24) (See Appendix F). Means and standard deviations can be found in Tables 7 and 9.
Additional Findings

**Traditionality of counsellor-suggested occupations.**

Two additional variables were also examined. Students were asked whether:

1/ their counsellor had suggested any occupation that they did not consider pursuing at that time but are considering now.

2/ their counsellor had suggested any occupations that they had considered pursuing at that time but are not considering now.

They were then asked to list up to three of those occupations for each question. The results indicated that 61% of students had considered counsellor suggested occupations but they were not currently still considering them. On the other hand, only 15.7% were currently considering counsellor suggested occupations. Thus, students were more likely to have considered counsellor suggested occupations than they were to be currently considering counsellor suggested occupations, $X^2 (1, N=111) = 36.9, p<.001$.

Upon examining the traditionality of these choices students were currently considering, none of the types of occupations (i.e., traditional, nontraditional and NTNN) were cited significantly more frequently than others, for both males and females. However, there was a tendency for
both males and females to be considering traditional as opposed to nontraditional occupations. Further, there was a greater tendency for females to be considering NTNN occupations as opposed to nontraditional occupations.

Some interesting significant differences were found upon comparing the traditionality of occupational choices students had previously considered. First, both males, $X^2 (1, N=27) = 21.33, p<.001$ and females, $X^2 (1, N=49) = 6.61, p<.05$ were more likely to have considered traditional rather than nontraditional occupations. In addition, both males, $X^2 (1, N=10) = 4.9, p<.05$ and females, $X^2 (1, N=48) = 6.02, p<.05$ were more likely to have considered NTNN occupations than nontraditional occupations. Finally, only males were more likely to have considered traditional occupations than NTNN occupations, $X^2 (1, N=35) = 7.31, p<.01$. Figure 7 shows the frequency distribution of students who are currently considering counsellors suggested occupations. Figure 8 shows the frequency distribution of students who had considered counsellor suggested occupations but are not considering them now.
Figure 7. Frequency distribution of students now considering counsellor suggested occupations.
Figure 8. Frequency distribution of students who previously considered counsellor suggested occupations.
CHAPTER IV

Study 1

DISCUSSION

The results of this study have implications for those individuals (i.e., teachers, counsellors, parents) who are in a position to influence or guide students during their "formative" years. Each topic discussed will be presented as it was in the previous section.

1. Career Aspirations

The results of this study indicated that Canadian undergraduate students continue to aspire to traditional careers for their gender. This finding was not only indicated upon examining their current career choices, but was also evident upon examining the types of career they had considered (i.e., counsellor suggested occupations). This finding would support the view that further efforts should be made by teachers, counsellors and parents to encourage and not discourage nontraditional career choices, especially among females.
In addition, there was a greater tendency among females than males to indicate interest in nontraditional careers. This finding should not be too surprising since a male's interest in a nontraditional career would typically lower his earning capabilities, occupational status and opportunities for advancement. If a male expresses a genuine interest in a nontraditional career, it is up to these individuals to ensure this is the best choice for him—its appropriateness should not be based on gender stereotypes. Influential individuals should not be making recommendations based on what they consider to be appropriate careers for males.

Further, both males and females are more likely to indicate interest in a NTNN as opposed to a nontraditional career. This finding was also evident upon examining students' current career aspirations as well as upon examining occupations they had considered in the past but were not currently considering (i.e., counsellor suggested occupations). This finding illustrates, at least in part, a tendency towards less gender-typed occupational choice.

2. Experiences with Counsellors

(a) Helpfulness of counsellors. The present findings indicated that females rated counsellors as more helpful regarding vocational issues than did males. One explanation for this unexpected finding is that perhaps males have
raised their expectations regarding the information they plan to receive from counsellors. Conversely, perhaps females have lowered their expectations regarding the information they plan to receive. If either of these suggestions is true, this would lower males' or elevate females' ratings of counsellors. Another possible explanation is that counsellors have become more aware of and sensitive to the needs of females. If this is true, perhaps females are noticing counsellors' greater awareness and sensitivity.

For all types of helpfulness, female counsellors were rated as more helpful than male counsellors. However, this finding was only significant for school-related helpfulness. Had more students reported seeing counsellors for personal reasons, this finding might have reached significance. The lack of a significant difference between male and female counsellors in the vocational area may indicate that male counsellors are beginning to meet students' needs more adequately. Perhaps their guidance is becoming less gender-stereotypic. This finding also illustrates the importance for researchers to separate the types of helpfulness counsellors can be rated on.

Finally, nontraditional female aspirants may not have rated counsellors as less helpful than traditional female aspirants because the former may have already made up their minds prior to seeing a counsellor. Another possibility, as
suggested above, is that counsellors are beginning to meet the needs of nontraditional female aspirants.

(b) Counsellor influence on career choice. There was no main effect for student gender and counsellor gender, nor was there a significant student gender by career interaction. The point to be made here is that regardless of career choice, students felt that counsellors had little influence on their career choice. This finding indicates that more research needs to be done examining the biases of other individuals (i.e., teachers and parents) who students typically rate as having a greater influence on their career choice than counsellors. Another implication of this finding is that more training should be available for high school counsellors so that they can meet the needs of the students. If they are not influencing career choice then what are they doing? At a minimum, they should be providing students with the available information they require to make informed decisions regarding career choice. Further, it does not seem unreasonable to hold that they should be assessing students with appropriate vocational inventories (preferably those that are not gender-biased) and informing them about the types of occupations that they would be best suited for. Whether or not students ultimately follow such advice is not the counsellor's responsibility. Since the present findings showed that the majority of students would
like to have received more information regarding career planning from the counsellors at their high school, it does not seem unrealistic to state that students feel disappointment in this area.

(c) **Satisfaction with discussion of job opportunities.** For the most part, students were neither satisfied nor dissatisfied with the discussion of job opportunities with counsellors. Regardless of career choice (i.e., traditional, nontraditional, or NTNN), it is again important that students are satisfied with the discussion of job opportunities so that they can make informed decisions as to which career is appropriate for them. This finding implies that students must take the initiative to find out more about the occupations they are interested in because the amount of information coming from counsellors is not likely to be sufficient.

(d) **Degree to which counsellors really listened.** Upon examining this variable, it was perhaps surprising that it was females who felt counsellors listened to them most meaningfully. Once again, the possibility exists that counsellors are beginning to meet the needs of females. Another possibility is that females are perceiving that counsellors are really listening to them and caring about what they are saying, when in reality this may only be a projection.
Further, it is evident that nontraditional aspirants disagreed more with this statement (i.e., counsellors really listened and cared about what I was saying) than their traditional and NTNN counterparts. Upon examining gender differences, however, it is evident that the nontraditional male aspirants tended to strongly disagree with this statement. This finding illustrates the probability that counsellors are not adequately meeting the needs of nontraditional aspirants, especially male aspirants.

Finally, since there was no significant main effect for counsellor gender, it appears that students are currently not viewing male and female counsellors differently, at least for this variable. At the same time, while students do not rate male and female counsellors differently, they do not rate counsellors very positively overall.

(e) Degree to which counsellors encouraged or discouraged nontraditional careers. Since students are more likely to recall encouragement toward a traditional career for their gender than a nontraditional career, it appears that this type of bias may still be prevalent among counsellors. At the same time, students were not more likely to recall discouragement from a nontraditional career for their gender than a traditional career for their gender. The implication of these findings indicate that while students do not feel that counsellors discouraged
nontraditional career choice, they also do not feel much encouragement.

The results also showed that female counsellors were not more likely to encourage nontraditional careers than male counsellors. Once again, there is an indication that the gender differences regarding counsellor bias, which have been evident in past literature, are diminishing. It is important to keep in mind that there were generally very few recollections of encouragement toward nontraditional careers. It is possible that students are not expressing an interest in nontraditional careers. This would help explain, if not justify, the lack of encouragement by counsellors toward them.

3. Extracurricular Activities and Career Choice

It appears that traditional female aspirants may be balancing the traditional and nontraditional aspects of their lives while nontraditional female aspirants tend to have other nontraditional interests.

A surprising finding was that females were more likely to participate in nontraditional extracurricular activities than traditional or NTNN extracurricular activities regardless of career choice. Why were the females in this sample more likely to participate in nontraditional extracurricular activities when past research (e.g.,
Firebaugh, 1989) has indicated the opposite? It is possible that the age difference affects participation rates (i.e., 18-20 versus 20-29). That is, perhaps younger females are more likely to participate in nontraditional extracurricular activities than older females. Second, perhaps the frequency with which females participate in these activities is important. For example, the females in this study may participate in nontraditional extracurricular activities on an infrequent basis. Future research of this issue should examine how often the sport is participated in.

With respect to the male students, it was obvious that very few males participate in nontraditional extracurricular activities. Therefore, it appears that males not only continue to be fairly rigid in the traditionality of their occupational choices, they are also extremely stereotypic in their choice of extracurricular activities. Since there were so few nontraditional male aspirants in this sample, it is difficult to ascertain their preferences in extracurricular activities.

4. Individuals Influencing Career Choice

Mothers, friends, fathers, teachers and counsellors are individuals who students frequently name as having influenced their career choices. Further, it appears that parents' occupations do not strongly influence the choices of their children. With respect to nontraditional female
aspirants, perhaps they are influenced by other females in nontraditional occupations. Since females are more likely to cite other females as having influenced their career choice, it would seem important that they be exposed to other females (i.e., role models, mentors, etc.) in nontraditional careers.

Since teachers were cited more frequently than counsellors as having influenced students' career choices, more research should be directed toward teachers' attitudes on nontraditional careers for students. Further evidence to support this recommendation is the finding that very few students (15.7%) were currently considering counsellor suggested occupations.

5. Career Confidence

With respect to students' levels of career confidence, it appears that the gap between male and female confidence levels is becoming more narrow. However, male confidence levels for each type of career (e.g., traditional, nontraditional and NTNN) were still higher than each of the female confidence levels, respectively. This finding indicates that efforts should continue to be made to increase the confidence levels of females aspiring toward all types of careers.
CHAPTER V

Study 2

METHOD

Subjects

A total of 197 teachers (61 males and 136 females) enrolled in the 1989/90 In-Service Program at the Faculty of Education, University of Windsor, were selected to participate in the study. Thirty-nine per cent were over the age of 41 and 27.6% were between the ages of 36 and 40. Approximately 30% of the teachers had attended graduate school for one year, 20% had attended graduate school for two years while another 20% had never been in graduate school. Finally, 87% of teachers had a bachelors degree in arts, science or education while 9% had a masters degree in one of these disciplines.

Subjects' participation was voluntary and dependent on whether the author was granted permission to administer the vignettes and related questions during classroom time. All subjects who participated signed a consent form (See Appendix B).
Procedure

Subjects completed the questionnaire during classroom time. They were informed that their participation was voluntary and that confidentiality of their responses would be maintained, as per standard research procedures. First, each subject was presented with one of eight vignettes. After reading the vignette, subjects responded to a number of questions based on the information they had just read. Subjects were asked to complete all questions as quickly but as accurately as possible. They were told that the purpose of the study was to examine teachers' and counsellors' perceptions of hypothetical counselling situations. They were also asked to answer all questions on the questionnaire even if they did not feel that they had been given enough information. Respondents were thanked for their time and cooperation in filling out the questionnaire. The consent form was collected separately in order to maintain anonymity of responses. The results were made available later for those who were interested.

Measures

Vignettes. Each subject was given one of eight biographies or vignettes to read. A vignette is a short description of a person or social situation. Each vignette contains some information which is the same and some which differs from other vignettes. The information in the vignette is thought to contain the most important factors
required in the decision-making process (Alexander & Becker, 1978). The advantages of using this technique over another are numerous. First, it standardizes the information so all teachers have an opportunity to make their decisions based on the same information. Second, it makes the decision-making situation as realistic as possible without carrying out an actual student-teacher interaction (Alexander & Becker, 1978). Third, it has been suggested that individuals are less likely to consciously bias their report when responding to questions involving a vignette as they are when being asked the same questions directly (Alexander & Becker, 1978). In Study 2, socially desirable responses were eliminated by presenting only one of the eight vignettes to each teacher. On final advantage of the vignette method is that variables which occur together can be separated and assessed individually (Nosanchuk, 1972; Alexander & Becker, 1978).

Administration of vignettes, while varying the gender of the individual in the vignette, has been well-established in the literature. (See Babcock (1977), Donahue and Costar (1977), Feather (1975), Heneman (1977), Hopkins-Best (1987), Munchinsky and Harris (1977), Packer (1983), Rosen and Jerdee (1974), Schwartz (1974), and Shaw (1972).) The traditionality of the client/applicant has been varied in some studies using videotapes and in pseudo-counselling sessions but not vignettes. (See Shapiro (1977) and Towson
et al. (1985).) Furthermore, traditionality has only been manipulated by altering client/applicant dress and speech. Finally, the manipulation of occupations in vignettes has been used frequently. (See Donahue and Costar (1977), Hopkins-Best (1987), Packer (1983), and Schwartz (1974).)

The vignette used in this study differed in three ways: student gender, traditionality of the student and the type of occupation.

The first way in which the vignettes differed was **student gender**. As a result, four of the vignettes described a female student and the other four described a male student.

The second way in which the vignettes differed was in the student's **traditionality**. The traditional student was one who conformed to the gender role stereotype for his or her gender. The traditionality of the student was indicated by: his/her choice in extracurricular activities and the activities that occupied his/her spare time. In the vignette, the traditional female student participated in extracurricular sporting activities that have traditionally been thought to be feminine in nature--gymnastics, figure skating and jazz dancing. All three activities used in the vignette follow the guidelines suggested by previous researchers (Metheny, 1972; Rohrbaugh, 1979). Sporting activities that are exclusive to one gender (e.g., synchronized swimming) were excluded from the vignette
because it would be unlikely that a male would participate in such an activity. Finally, the traditional female student spent her spare time babysitting.

The traditional male student participated in masculine extracurricular sporting activities--soccer, hockey and baseball and spent his spare time fixing cars (e.g., automechanics).

The nontraditional male student was portrayed in the same way as the traditional female student and the nontraditional female student was portrayed in the same way as the traditional male student. As previously stated, the purpose of including the traditionality of the student was to examine if teachers are biased only against traditional women entering nontraditional occupations. A further purpose was to examine whether the traditionality of the male student was related to teachers' recommendations as to his appropriate career goal.

The third way in which the vignettes differed was in the type of occupation the student was considering. The nontraditional occupation chosen for the female in the vignette was dentistry. Out of approximately of 5500 dentists in Ontario (Royal College of Dental Surgeons, personal communication, June 27, 1989), only 500 are women (9%) (Dr. C. Gruson, Ontario Society of Women Dentists, personal communication, June 27, 1989). In all of Canada, the percentage of dentists who are female is 13.2% (Census
Canada 1986, 1989; Statistics Canada, 1981). This occupation, therefore, continues to be a nontraditional career for women. The traditional occupation chosen for the female in the vignette was dental hygienist. This occupation continues to be a traditional career for women with 99% of dental hygienists in Ontario being women (Royal College of Dental Surgeons, personal communication, July 5, 1989). In all of Canada, the percentage of dental hygienists who are male is 1.9%. These occupations were chosen because they require similar skills and interests but differ in the amount of education required and in terms of their traditionality.

Questionnaire. Subjects were given a questionnaire (See Appendix B) designed by the author to examine vocational bias. The dependent variable, vocational bias, was operationally defined in eight different ways, as previously mentioned. These definitions were adapted from Packer (1983), Schlossberg and Pietrofesa (1973) and Towson et al. (1985).

To assess teachers' reactions to the vignettes (Part 2 of the questionnaire), teachers were asked to respond to eight questions (See Appendix B). Using a seven-point Likert scale, teachers were asked the degree to which they agreed/disagreed with the students occupational choice (Item #1), would encourage/discourage the students occupational choice (Item #3), would suggest additional or alternative
occupations (Item #5). In addition, they were asked to suggest additional occupations that the student might want to consider (Item #6). Finally, they were asked whether they felt the student would be personally successful, financially successful, personally satisfied and financially satisfied in the chosen occupation (Items #7 through 10).

The purpose of examining vocational bias in a number of ways was to determine if teachers show differential patterns of responses. For example, teachers may agree with the female's decision to pursue a nontraditional career, but at the same time, they may indicate that she would not be personally successful in the position. On the other hand, teachers may agree with the male student's decision to pursue the same career but feel he would be personally successful in the position. Different measures of vocational bias have not been utilized previously in the same study.

In Part 3 of the questionnaire, teachers indicated their age, gender, highest educational degree received thus far and number of years in graduate school (Items #1 through 4).

The last two questions on the questionnaire asked teachers what percentage of dentists they thought were female (Item #5) and what percentage of dental hygienists they thought were male (Item #6). These questions were
designed as a check, that is, in order to assess how accurate teachers were in determining these percentages.

**Design and Analyses.** The design was that of a 2 (student gender) X 2 (traditionality or type of student) X 2 (type of occupation) X 2 (teacher gender) Multivariate Analysis of Variance (MANOVA) for seven of the eight dependent variables. The eighth dependent variable (e.g., the additional occupations teachers suggested) was analyzed using the Chi-square statistic.

A summary of each objective, its respective hypothesis, dependent and independent variables and statistics used is illustrated in Table 12.
### Table 12

**Summary of Objectives, Hypotheses, Variables and Statistics Used for Study 2**

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<th>OBJECTIVES</th>
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<td>Student Gender</td>
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<td>c) would suggest an additional career choice</td>
<td>Type of Student</td>
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<td>Degree to which counsellors felt the student would be: d) personally successful</td>
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<tr>
<td></td>
<td></td>
<td>e) financially successful</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>f) personally satisfied</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>g) financially satisfied</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Degree to which counsellors suggested: h) occupations that were gender-stereotyped</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Attitudes</td>
<td>#2 a, b, c, d</td>
<td>As Above</td>
<td>As Above</td>
<td>As Above</td>
</tr>
<tr>
<td>Toward the Traditionality of the Student</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Attitudes of Male Teachers as Compared to Female Teachers</td>
<td>#3 a, b, c, d</td>
<td>As Above</td>
<td>As Above</td>
<td>As Above</td>
</tr>
</tbody>
</table>

*This variable is not a dependent variable as it was subjected to the chi-square analysis*
CHAPTER VI

Study 2

RESULTS

Using the SAS (Version 5) GLM (General Linear Models) procedure, a 2(student gender) X 2(type of student) X 2(type of occupation) X 2(teacher gender) Multivariate Analysis of Variance (MANOVA) was computed on seven of the eight dependent variables measuring vocational bias.

Type of Occupation

Hypothesis #1. A significant two-way (student gender X type of occupation) interaction was found using the Hotelling-Lawley Trace criterion (multivariate $F (7, 172) = 6.66, p<.0001$). Univariate analyses (ANOVA$\text{s}$) were found to be significant for five of the seven dependent variables. Each significant dependent variable will be discussed in turn.

Degree to which teachers AGREED/DISAGREED with the occupational choice. A significant interaction (student gender X type of occupation was found, $F (1, 178) = 16.67$, $p<.0001$ (See Table 13). Of the three hypotheses pertaining
to this area, two were not confirmed. Although teachers did agree less with the male's choice in the nontraditional career, as compared to the traditional career, the two means in question (i.e., the means for the traditional male aspirant as compared to the nontraditional male aspirant) did not differ significantly (Hypothesis #1 (b)). In addition, although teachers agreed slightly more with the female indicating a nontraditional choice than they did with the male indicating a traditional choice, the two means in question did not differ significantly (Hypothesis #1 (c)).

However, it was surprising to find that teachers agreed less with the female student's choice in the traditional occupation than they did with her choice in the nontraditional occupation (p<.0001). This finding is opposite to what was predicted so Hypothesis #1 (a), therefore, must be rejected.

Further examination of the univariate ANOVAs from the significant (student gender X type of occupation) interaction, indicated that:

1. Teachers agreed more with the male pursuing the traditional occupation than the female pursuing the traditional occupation (p<.001).

2. Teachers agreed more with the male pursuing the nontraditional occupation than the female pursuing the traditional occupation (p<.05).
3. Teachers agreed more with the female pursuing the nontraditional occupation than the male pursuing the nontraditional occupation \((p < .05)\).

The interaction is shown in Figure 9. Higher means indicate that teachers agreed more with the student's occupational choice.
Table 13

Analysis of Variance for Degree to Which Teachers Agreed/Disagreed with the Student's Occupational Choice

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Gender (A)</td>
<td>1.92</td>
<td>1</td>
<td>1.92</td>
<td>1.00</td>
</tr>
<tr>
<td>Type of Student (B)</td>
<td>0.36</td>
<td>1</td>
<td>0.36</td>
<td>0.67</td>
</tr>
<tr>
<td>Type of Occupation (C)</td>
<td>11.08</td>
<td>1</td>
<td>11.08</td>
<td>5.74*</td>
</tr>
<tr>
<td>Teacher Gender (D)</td>
<td>3.74</td>
<td>1</td>
<td>3.74</td>
<td>1.94</td>
</tr>
<tr>
<td>AB</td>
<td>0.03</td>
<td>1</td>
<td>0.03</td>
<td>0.02</td>
</tr>
<tr>
<td>BC</td>
<td>0.07</td>
<td>1</td>
<td>0.07</td>
<td>0.04</td>
</tr>
<tr>
<td>AC</td>
<td>32.18</td>
<td>1</td>
<td>32.18</td>
<td>16.67***</td>
</tr>
<tr>
<td>AD</td>
<td>2.86</td>
<td>1</td>
<td>2.86</td>
<td>1.48</td>
</tr>
<tr>
<td>BD</td>
<td>6.81</td>
<td>1</td>
<td>6.81</td>
<td>3.53</td>
</tr>
<tr>
<td>CD</td>
<td>6.21</td>
<td>1</td>
<td>6.21</td>
<td>3.22</td>
</tr>
<tr>
<td>ABC</td>
<td>1.68</td>
<td>1</td>
<td>1.68</td>
<td>0.87</td>
</tr>
<tr>
<td>ABD</td>
<td>0.77</td>
<td>1</td>
<td>0.77</td>
<td>0.40</td>
</tr>
<tr>
<td>ACD</td>
<td>0.86</td>
<td>1</td>
<td>0.86</td>
<td>0.44</td>
</tr>
<tr>
<td>BCD</td>
<td>0.97</td>
<td>1</td>
<td>0.97</td>
<td>0.50</td>
</tr>
<tr>
<td>ABCD</td>
<td>3.39</td>
<td>1</td>
<td>3.39</td>
<td>1.75</td>
</tr>
<tr>
<td><strong>Within cell</strong></td>
<td>69.45</td>
<td>178</td>
<td>4.63</td>
<td></td>
</tr>
</tbody>
</table>

*p<.05

**p<.01

***p<.001
Figure 9. Mean scores for the degree to which counsellors agreed/disagreed with the occupational choice according to student gender and type of occupation.
Degree to which teachers would ENCOURAGE/DISCOURAGE the occupation. A significant interaction (student gender X type of occupation was found ($F(1, 178) = 14.44$, $p<.001$) (See Table 14). Of the three hypotheses pertaining to this area, two were not confirmed. However, it was astounding to find that teachers were more likely to encourage the female indicating the nontraditional occupational choice as opposed to the traditional occupational choice ($p<.01$).
Since this finding is opposite to what was predicted, Hypothesis #1 (a) was, therefore, not supported. In addition, teachers were more likely to encourage the male if his chosen occupation was traditional as opposed to nontraditional ($p<.05$). Hypothesis #1 (b) was, therefore, supported. Finally, teachers were not more likely to encourage the traditional male aspirant than they were to encourage the nontraditional female aspirant. Hypothesis #1 (c), therefore, must be rejected.

Further examination of the univariate ANOVAs from the significant (student gender X type of occupation) interaction, indicated that teachers were more likely to encourage the:
1. traditional male aspirant than the traditional female aspirant ($p<.01$).
2. nontraditional female aspirant as opposed to the nontraditional male aspirant ($p<.01$).
The interaction is shown in Figure 10. Higher means indicate greater encouragement by teachers.
Table 14

Analysis of Variance for Degree to which Teachers Would Encourage/Discourage the Student's Occupational Choice

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Gender (A)</td>
<td>0.06</td>
<td>1</td>
<td>0.06</td>
<td>0.04</td>
</tr>
<tr>
<td>Type of Student (B)</td>
<td>3.02</td>
<td>1</td>
<td>3.02</td>
<td>2.08</td>
</tr>
<tr>
<td>Type of Occupation (C)</td>
<td>0.15</td>
<td>1</td>
<td>0.15</td>
<td>0.10</td>
</tr>
<tr>
<td>Teacher Gender (D)</td>
<td>8.58</td>
<td>1</td>
<td>8.58</td>
<td>5.90*</td>
</tr>
<tr>
<td>AB</td>
<td>1.51</td>
<td>1</td>
<td>1.51</td>
<td>1.04</td>
</tr>
<tr>
<td>BC</td>
<td>0.39</td>
<td>1</td>
<td>0.39</td>
<td>0.27</td>
</tr>
<tr>
<td>AC</td>
<td>20.99</td>
<td>1</td>
<td>20.99</td>
<td>14.44***</td>
</tr>
<tr>
<td>AD</td>
<td>0.72</td>
<td>1</td>
<td>0.72</td>
<td>0.49</td>
</tr>
<tr>
<td>BD</td>
<td>7.98</td>
<td>1</td>
<td>7.98</td>
<td>5.49*</td>
</tr>
<tr>
<td>CD</td>
<td>0.36</td>
<td>1</td>
<td>0.36</td>
<td>0.25</td>
</tr>
<tr>
<td>ABC</td>
<td>0.87</td>
<td>1</td>
<td>0.87</td>
<td>0.59</td>
</tr>
<tr>
<td>ABD</td>
<td>2.04</td>
<td>1</td>
<td>2.04</td>
<td>1.40</td>
</tr>
<tr>
<td>ACD</td>
<td>3.21</td>
<td>1</td>
<td>3.21</td>
<td>2.21</td>
</tr>
<tr>
<td>BCD</td>
<td>1.13</td>
<td>1</td>
<td>1.13</td>
<td>0.78</td>
</tr>
<tr>
<td>ABCD</td>
<td>0.74</td>
<td>1</td>
<td>0.74</td>
<td>0.51</td>
</tr>
<tr>
<td>Within cell</td>
<td>45.87</td>
<td>178</td>
<td>2.10</td>
<td></td>
</tr>
</tbody>
</table>

*p<.05

**p<.01

***p<.001
Figure 10. Mean scores for the degree to which counsellors would encourage/discourage the student according to student gender and type of occupation.
Degree to which teachers though the student would be financially successful, personally satisfied and financially satisfied. A significant interaction (student gender X type of occupation) was found for financial success, $F(1, 178) = 38.29$, $p<.0001$, personal satisfaction, $F(1, 178) = 19.98$, $p<.0001$, and financial satisfaction, $F(1, 178) = 31.60$, $p<.0001$ (See Tables 15, 16 and 17). Of the three hypotheses pertaining to this area, two were not confirmed. It was extremely encouraging to find that teachers felt the nontraditional female aspirant would be more:

(a) financially successful ($p<.0001$);

(b) personally satisfied ($p<.01$); and,

(c) financially satisfied ($p<.001$)

than the traditional female aspirant even though this finding is opposite to what was predicted. Hypothesis #1 (a) must be rejected. In addition, teachers felt the nontraditional male aspirant would be less:

(a) financially successful ($p<.0001$);

(b) personally satisfied ($p<.001$); and,

(c) financially satisfied ($p<.0001$)

than his traditional counterpart. Hypothesis #1 (b) was, therefore, confirmed. Finally, teachers did not feel that the traditional male aspirant would be more financially successful, personally satisfied and, financially satisfied than the nontraditional female aspirant. Hypothesis #1 (c) was not supported.
Table 15

Analysis of Variance for Degree to which Teachers Feel the Student will be Financially Successful

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Gender (A)</td>
<td>0.00</td>
<td>1</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Type of Student (B)</td>
<td>0.02</td>
<td>1</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Type of Occupation (C)</td>
<td>0.09</td>
<td>1</td>
<td>0.09</td>
<td>0.12</td>
</tr>
<tr>
<td>Teacher Gender (D)</td>
<td>0.23</td>
<td>1</td>
<td>0.23</td>
<td>0.30</td>
</tr>
<tr>
<td>AB</td>
<td>0.89</td>
<td>1</td>
<td>0.89</td>
<td>1.16</td>
</tr>
<tr>
<td>BC</td>
<td>0.73</td>
<td>1</td>
<td>0.73</td>
<td>0.96</td>
</tr>
<tr>
<td>AC</td>
<td>29.25</td>
<td>1</td>
<td>29.25</td>
<td>38.29***</td>
</tr>
<tr>
<td>AD</td>
<td>0.09</td>
<td>1</td>
<td>0.09</td>
<td>0.11</td>
</tr>
<tr>
<td>BD</td>
<td>0.02</td>
<td>1</td>
<td>0.02</td>
<td>0.03</td>
</tr>
<tr>
<td>CD</td>
<td>1.21</td>
<td>1</td>
<td>1.21</td>
<td>1.58</td>
</tr>
<tr>
<td>ABC</td>
<td>0.00</td>
<td>1</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>ABD</td>
<td>1.36</td>
<td>1</td>
<td>1.36</td>
<td>1.78</td>
</tr>
<tr>
<td>ACD</td>
<td>1.00</td>
<td>1</td>
<td>1.00</td>
<td>1.31</td>
</tr>
<tr>
<td>BCD</td>
<td>0.15</td>
<td>1</td>
<td>0.15</td>
<td>0.20</td>
</tr>
<tr>
<td>ABCD</td>
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<td>1</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Within cell</td>
<td>35.42</td>
<td>178</td>
<td>2.36</td>
<td></td>
</tr>
</tbody>
</table>

***p<.001
Table 16

Analysis of Variance for Degree to which Teachers Feel the Student will be Personally Satisfied

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Gender (A)</td>
<td>0.01</td>
<td>1</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Type of Student (B)</td>
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<td>1</td>
<td>0.29</td>
<td>0.18</td>
</tr>
<tr>
<td>Type of Occupation (C)</td>
<td>0.87</td>
<td>1</td>
<td>0.87</td>
<td>0.56</td>
</tr>
<tr>
<td>Teacher Gender (D)</td>
<td>4.57</td>
<td>1</td>
<td>4.57</td>
<td>2.93</td>
</tr>
<tr>
<td>AB</td>
<td>0.03</td>
<td>1</td>
<td>0.03</td>
<td>0.02</td>
</tr>
<tr>
<td>BC</td>
<td>0.61</td>
<td>1</td>
<td>0.61</td>
<td>0.39</td>
</tr>
<tr>
<td>AC</td>
<td>30.12</td>
<td>1</td>
<td>30.12</td>
<td>19.34***</td>
</tr>
<tr>
<td>AD</td>
<td>0.55</td>
<td>1</td>
<td>0.55</td>
<td>0.35</td>
</tr>
<tr>
<td>BD</td>
<td>0.19</td>
<td>1</td>
<td>0.19</td>
<td>0.12</td>
</tr>
<tr>
<td>CD</td>
<td>2.12</td>
<td>1</td>
<td>2.12</td>
<td>1.40</td>
</tr>
<tr>
<td>ABC</td>
<td>0.15</td>
<td>1</td>
<td>0.15</td>
<td>0.09</td>
</tr>
<tr>
<td>ABD</td>
<td>0.15</td>
<td>1</td>
<td>0.15</td>
<td>0.10</td>
</tr>
<tr>
<td>ACD</td>
<td>1.28</td>
<td>1</td>
<td>1.28</td>
<td>0.82</td>
</tr>
<tr>
<td>BCD</td>
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<td>1</td>
<td>0.10</td>
<td>0.06</td>
</tr>
<tr>
<td>ABCD</td>
<td>0.06</td>
<td>1</td>
<td>0.06</td>
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</tr>
<tr>
<td>Within cell</td>
<td>41.43</td>
<td>178</td>
<td>2.77</td>
<td></td>
</tr>
</tbody>
</table>

***p<.001
Table 17

Analysis of Variance for Degree to which Teachers Feel the Student will be Financially Satisfied

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Gender (A)</td>
<td>0.66</td>
<td>1</td>
<td>0.66</td>
<td>0.44</td>
</tr>
<tr>
<td>Type of Student (B)</td>
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<td>1</td>
<td>0.39</td>
<td>0.26</td>
</tr>
<tr>
<td>Type of Occupation (C)</td>
<td>0.22</td>
<td>1</td>
<td>0.22</td>
<td>0.14</td>
</tr>
<tr>
<td>Teacher Gender (D)</td>
<td>1.59</td>
<td>1</td>
<td>1.59</td>
<td>1.06</td>
</tr>
<tr>
<td>AB</td>
<td>0.30</td>
<td>1</td>
<td>0.30</td>
<td>0.20</td>
</tr>
<tr>
<td>BC</td>
<td>2.09</td>
<td>1</td>
<td>2.09</td>
<td>1.39</td>
</tr>
<tr>
<td>AC</td>
<td>47.32</td>
<td>1</td>
<td>47.32</td>
<td>31.60***</td>
</tr>
<tr>
<td>AD</td>
<td>0.59</td>
<td>1</td>
<td>0.59</td>
<td>0.39</td>
</tr>
<tr>
<td>BD</td>
<td>0.15</td>
<td>1</td>
<td>0.15</td>
<td>0.10</td>
</tr>
<tr>
<td>CD</td>
<td>1.68</td>
<td>1</td>
<td>1.68</td>
<td>1.13</td>
</tr>
<tr>
<td>ABC</td>
<td>0.07</td>
<td>1</td>
<td>0.07</td>
<td>0.05</td>
</tr>
<tr>
<td>ABD</td>
<td>0.17</td>
<td>1</td>
<td>0.17</td>
<td>0.12</td>
</tr>
<tr>
<td>ACD</td>
<td>0.02</td>
<td>1</td>
<td>0.02</td>
<td>0.01</td>
</tr>
<tr>
<td>BCD</td>
<td>0.10</td>
<td>1</td>
<td>0.10</td>
<td>0.07</td>
</tr>
<tr>
<td>ABCD</td>
<td>0.08</td>
<td>1</td>
<td>0.08</td>
<td>0.06</td>
</tr>
<tr>
<td>Within cell</td>
<td>67.33</td>
<td>178</td>
<td>4.49</td>
<td></td>
</tr>
</tbody>
</table>

***p<.001
Further examination of the univariate ANOVAs from the significant (student gender X type of occupation) interaction, indicated that teachers felt the male choosing the traditional occupation, would be more:

a) financially successful \( (p<.0001) \);
b) personally satisfied \( (p<.01) \); and,
c) financially satisfied \( (p<.001) \)

than the female choosing the traditional occupation. In addition, teachers felt the female, pursuing the nontraditional occupation, would be more:

a) financially successful \( (p<.0001) \);
b) personally satisfied \( (p<.001) \); and,
c) financially satisfied \( (p<.0001) \)

than the male choosing the nontraditional occupation.

The interactions for these variables are shown in Figures 11, 12 and 13, respectively. Higher means indicate greater financial success, personal satisfaction and financial satisfaction.

It is noteworthy that two of the dependent variables (degree to which teachers would suggest an alternative occupation and the degree to which teachers feel the student will be personally successful) did not reach significance at the multivariate or univariate level. The analyses of variances tables can be found in Appendices G and H, respectively.
Figure 11. Mean scores for financial success according to student gender and type of occupation.
Figure 12. Mean scores for personal satisfaction according to student gender and type of occupation.
Figure 13. Mean scores for financial satisfaction according to student gender and type of occupation.
Degree to which teachers suggested additional occupations that were GENDER STEREOTYPED. A Chi-square analysis was conducted to assess the degree to which teachers suggested an alternative career that was gender-stereotyped.

**Hypothesis #1.**

(a) Teachers were not more likely to suggest a traditional occupation to the nontraditional female aspirant than they were to the traditional female aspirant. Hypothesis #1 (a) must be rejected.

(b) Teachers were significantly more likely to suggest a traditional career to the nontraditional male aspirant than they were to the traditional male aspirant, $X^2 (1, N=78) = 5.65, p<.05$. Hypothesis #1 (b) was confirmed.

(c) Teachers were not more likely to suggest a traditional alternative to the traditional male aspirant than they were to suggest a nontraditional career to the nontraditional female aspirant. Hypothesis #1 (c) was, therefore, not supported.

In summary, the male in the vignette was more likely to experience teachers' biases than the female. Teachers were more likely to encourage the traditional male aspirant, and feel that he will be more financially successful, personally successful and financially satisfied than his nontraditional counterpart.
Traditionality of the Student

Hypothesis #2. The three-way interaction (student gender X type of student X type of occupation) did not reach significance for neither the MANOVA nor for the univariate ANOVAs. In addition, the Chi-square statistic, which was used to examine the association between the variables (student gender, traditionality of student, type of occupation and the degree to which teachers suggested additional occupations that were gender stereotyped), was also not significant. Therefore, hypothesis #2 (a), (b), (c) and (d) must be rejected. More specifically, teachers were not less biased against the:

(a) traditional female student, as opposed to the nontraditional female student, pursuing the traditional occupation;

(b) nontraditional female student, as opposed to the traditional female student, pursuing the nontraditional occupation;

(c) traditional male student, as opposed to the nontraditional male student, pursuing the traditional occupation;

(d) nontraditional male student, as opposed to the traditional male student, pursuing the nontraditional occupation.
Teacher Gender

Hypothesis #3. This hypothesis predicted a significant four way interaction (student gender X type of student X type of occupation X teacher gender). The MANOVA did not reach statistical significance; however, some of the univariate ANOVAs did show some interesting trends. For example, although no effects were significant for the dependent variable, degree to which teachers agreed/disagreed with the occupational choice, the comparisons between individual means, using the Least Squares Means procedure, indicated that male teachers were more likely, than female teachers, to agree with the:

1. nontraditional female's choice in the nontraditional occupation, and

2. nontraditional male's choice in the nontraditional occupation.

The only other dependent variable that yielded some interesting findings was the dependent variable, degree to which teachers suggested additional occupations that were gender-stereotyped. A Chi-square statistic, which was used to assess the degree to which teachers suggested an alternative career that was gender-stereotyped, yielded the following:

(a) Although male teachers were less likely than female teachers to suggest a nontraditional occupation to
the nontraditional female pursuing the nontraditional occupation, there were too few responses for a significant result to be obtained. Therefore, hypothesis #3 (a) was not supported.

(b) Male teachers were less likely than female teachers to suggest a nontraditional occupation to the traditional female pursuing the nontraditional occupation, $X^2 (1, N=21) = 6.86, p<.01$. Hypothesis #3 (b) was supported.

(c) Male teachers were not less likely than female teachers to suggest a nontraditional occupation to the nontraditional male pursuing the nontraditional occupation. Hypothesis #3 (c) must be rejected.

(d) Male teachers were not less likely than female teachers to suggest a nontraditional occupation to the traditional male pursuing the nontraditional occupation. Hypothesis #3 (d) was not supported.

With the exception of Hypothesis #3 (b), for teacher gender alone, Hypothesis #3 (a), (b), (c) and (d) for all other dependent variables were rejected. More specifically, male teachers were not more biased against the:

(a) nontraditional female pursuing the nontraditional career than were female teachers;
(b) traditional female pursuing the nontraditional occupation, as compared to female teachers;
(c) nontraditional male pursuing the nontraditional career, as compared to female teachers;
(d) traditional male student pursuing the nontraditional occupation than female teachers.

Validity Check

The Chi-square statistic was computed to determine how accurate teachers were as to the percentage of dentists who were female and the percentage of dental hygienists who were male. However, prior to computing this statistic, it was evident that 16 teachers misinterpreted the question. This error was noticed because those teachers' percentages added up to 100%. For example, if a teacher reported that 20% of dentists were female and 80% of dental hygienists were male, it was assumed that the teacher misinterpreted the question.

After discarding the 16 misinterpreted responses. The sample of teachers felt that 16.4% of dentists were female and 9.5% of dental hygienists were male. After comparing these percentages with the Canadian statistic, it was evident that:

(a) Although teachers overestimated the percentage of female dentists (16.4% versus 13.2%), the Chi-square was not statistically significant,

\[ X^2 (1, N=179) = 2.32, p>.05. \]
(b) Teachers significantly overestimated (9.5% versus 1.9%) the percentage of dental hygienists who were male, $X^2 (1, N=179) = 20.1, p<.001$.

Aside from the fact that teachers overestimated the percentage of male dental hygienists, these findings indicate that teachers were, for the most part, fairly accurate in the percentages of males and females they assigned to these occupations.

Additional Findings

A number of additional findings were encountered upon examining the data. All relevant significant findings will be outlined first for the MANOVA followed by significant univariate (ANOVA) results. However, the results from univariate ANOVAs should be interpreted with caution since significant multivariate results were not obtained.

A significant two-way (type of occupation X teacher gender) interaction was found using the Hotelling-Lawley Trace criterion (multivariate $F (7, 122) = 2.06, p=.05$). Examination of univariate ANOVAs showed that differences were found to approach significance in only one of the seven dependent variables, the degree to which teachers agreed/disagreed with the occupational choice, $F (1, 178) = 3.22, p=.07$ (See Table 13).
The Least Squares Means procedure, which examines the significant differences between means, found that male teachers agree more with the occupation of:

(a) dentistry than dental hygiene ($p<.01$);

(b) dentistry than female teachers did with the occupation of dental hygiene ($p<.01$); and,

(c) dentistry than female teachers ($p<.05$).

Upon examining the univariate ANOVAs, a significant main effect for type of occupation was found, $F(1, 178) = 5.74$, $p<.05$. That is, teachers tended to agree more with the occupational choice of dentistry than dental hygiene.

In addition, there was a marginally significant interaction (type of student X teacher gender), $F(1, 178) = 3.53$, $p<.06$ for this dependent variable. Upon examining the means, using the Least Squares Means procedure, it was evident that teachers agree more with the traditional female than the nontraditional female ($p<.05$) and agreed more with the nontraditional male than the nontraditional female ($p<.05$). The interaction in illustrated in Figure 14. Higher means indicate that teachers agreed more with the student's occupational choice.
Figure 14. Mean scores for the degree to which teachers agreed/disagreed with the student's choice according to the type of student and teacher gender.
A significant main univariate effect was found for teacher gender, $F(1, 178) = 5.90$, $p<.05$. More specifically, male teachers were more likely to encourage occupational choices than female teachers (See Table 14).

There was also a significant univariate (type of student X teacher gender) interaction, $F(1, 178) = 5.49$, $p<.05$. Upon examining the means, using the Least Squares Means procedure, it was found that teachers were more likely to encourage the nontraditional male as opposed to the traditional male ($p<.05$), traditional female ($p<.01$), nontraditional female ($p<.001$). The interaction is shown in Figure 15. Higher means indicate greater encouragement by teachers.
Figure 15. Mean scores for the degree to which teachers would encourage/discourage the student according to type of student and teacher gender.
When additional chi-square statistics were computed on the variable, degree to which teachers suggested additional occupations that were gender stereotyped, it was found that teachers were significantly more likely to suggest a:

1. nontraditional career, as opposed to a traditional career, to both the traditional, $X^2 (1, N=50) = 21.78$, $p<.001$ and nontraditional, $X^2 (1, N=47) = 12.25$, $p<.001$ female aspirants.

2. traditional career, as opposed to a nontraditional career, to both the nontraditional male aspirant, $X^2 (1, N=59) = 27.11$, $p<.001$ and the traditional male aspirant, $X^2 (1, N=35) = 11.4$, $p<.001$.

In addition, it was found that female teachers were more likely than male teachers to suggest a nontraditional career to the traditional female pursuing the traditional career, $X^2 (1, N=20) = 6.05$, $p<.05$. Finally, female teachers were more likely to suggest a traditional career to the traditional male pursuing the nontraditional career than to the nontraditional male pursuing the traditional career, $X^2 (1, N=26) = 6.5$, $p<.05$.

In summary, teachers were more likely to agree with the male, pursuing dental hygiene, than the female, pursuing dental hygiene. Some relevant comments are made in the discussion section.
CHAPTER VII

Study 2

DISCUSSION

The results of Study 2 imply that teachers possess very little bias against females entering dentistry. However, there appears to be somewhat more bias against males entering dental hygiene.

Type of Occupation

Teachers indicated an overall bias against dental hygiene. That is, teachers agreed more with the occupational choice of dentistry over dental hygiene. More specifically, male teachers were found to exhibit this tendency more than female teachers. Future research should examine other traditional female occupations to determine whether a bias against this occupation prevails across occupations or whether it is limited to the occupation of dental hygiene. Further, female teachers tended to be less accepting of the occupational choice of dentistry (for both the male and female student) than male teachers. This finding could mean that female teachers are less in favour
of students pursuing occupations that are nontraditional for their gender.

**Females and career choice.** The data indicate that teachers are more likely to agree with and encourage females aspiring toward dentistry than females aspiring toward dental hygiene. This finding is certainly encouraging in light of past research which has examined the types of biases counsellors hold regarding gender-discrepant occupational choice for females. Future research should examine other nontraditional occupations to ensure that this agreement and encouragement is not limited to this one nontraditional occupation.

Although teachers felt the female pursuing dentistry would be more personally satisfied, financially satisfied and financially successful than her traditional counterpart, teachers did not feel that she would be more personally successful. Upon examining the number of female dentists in Canada, this accomplishment would certainly be a personal success for any female. Why teachers do not perceive this accomplishment to be a personal success is difficult to explain. One possibility is that teachers do not feel females measure personal success in terms of career accomplishments. Instead, they may feel females measure their personal success in terms of their relationships or in terms of the family.
On the one hand, it was also extremely encouraging to find that teachers were not more likely to suggest an alternative occupation to the female pursuing dentistry, especially since past research (e.g., Donahue & Costar; Packer, 1983; Schwartz, 1974) has indicated that counsellors tend to suggest gender stereotyped career alternatives. On the other hand, however, it was also disappointing that teachers were not more likely to suggest an alternative occupation to the female pursuing dental hygiene. The fact that teachers were not more likely to suggest an alternative occupation to the traditional female aspirant can be interpreted as one type of bias that may be still prevalent—that is, teachers are not suggesting other occupations to traditional female aspirants. However, of those teachers who stated that they would be likely to suggest an alternative, they were more likely to suggest a nontraditional alternative, as opposed to a traditional alternate to both the female pursuing dentistry and the female pursuing dental hygiene. This finding is encouraging since it indicates that teachers, when they do suggest an alternative, will suggest a nontraditional career instead of a traditional career.

Males and career choice. Teachers were less likely to encourage and agree with the male aspiring toward dental hygiene as opposed to dentistry. These findings imply that
teachers are somewhat biased against males entering the nontraditional career of dental hygiene.

Teachers also felt the male pursuing dental hygiene would be less personally satisfied, financially satisfied and financially successful than the both the male and female pursuing dentistry. In Study 1, it was mentioned that nontraditional male aspirants typically obtain occupations that are lower in status and pay than their traditional counterparts. This would account for teachers lower ratings on the financial satisfaction and financial success variables. However, there is no indication that a nontraditional male aspirant would be less satisfied personally with his occupational choice. Teachers may feel that males would not be happy or feel uncomfortable working in an occupation dominated by women. Another possibility is that teachers realize that, in most instances, men measure their competence by their occupation (either its status or its rate of pay). Since dental hygiene is a lower paying and lower status position, teachers may feel he would be less personally satisfied.

Teachers were also more likely to suggest a traditional alternative, as opposed to a nontraditional alternative to both the male pursuing dentistry and the male pursuing dental hygiene. This finding indicates a bias against males entering nontraditional careers.
Males, females and career choice. Teachers tended to agree more with the female, as compared to the male, pursuing dentistry. This finding is positive in light of past research (e.g., Hopkins-Best, 1987) which has found that counsellors agree less with women pursuing male-dominated jobs, than men. In addition, teachers also agreed more with the male, as compared to the female, pursuing dental hygiene. This finding can be interpreted in two ways. First, it may mean that teachers are becoming more accepting of nontraditional career aspirations in males. Another interpretation, however, is that teachers were reacting against females pursuing traditional careers. That is, they were more likely to disagree with this choice simply because it is a traditionally-oriented female occupation. Teachers may agree less with the female pursuing dental hygiene because they feel she may be limiting her options in a traditional career. Another possibility is that teachers agree more with the male pursuing dental hygiene because they do not see anything wrong with males pursuing nontraditional careers for their gender.

Teachers were just as likely to encourage the male as they were to encourage the female pursuing dentistry. In addition, teachers were more likely to encourage the male pursuing dentistry than the female pursuing dental hygiene. Teachers were also more likely to encourage the female
pursuing dentistry than the male pursuing dental hygiene. These findings imply that teachers are not encouraging female students based on gender stereotypes. However, there is an indication that teachers are biased against the male pursuing dental hygiene since they were less likely to encourage that nontraditional occupation.

Teachers felt the female and male pursuing dentistry would be equally successful and satisfied financially. Since female dentists earn less money than male dentists ($46,777 versus $79,346) (Census Canada 1986, 1989), this finding does not reflect what really happens. At the same time, it is possible that females in nontraditional careers are financially satisfied with the amount of money they are making since it is considerably more than they would be making in virtually any traditionally-oriented career. For example, female dental hygienists earn $18,708.

While, teachers did not feel that the female pursuing dentistry would be more personally successful than the male pursuing dentistry, there was a tendency for teachers to feel that the male pursuing dentistry would be more personally satisfied than the female pursuing dentistry. This latter finding may indicate an underlying gender bias. Perhaps teachers feel that the male pursuing dentistry would be more personally satisfied than the female pursuing dentistry because they feel females would be happier in traditional careers. As previously mentioned, another
possibility is that teachers do not feel females measure their competence by their occupational achievements.

**Traditionality of the Student**

Since none of the hypotheses for any of the dependent variables reached statistical significance, it appears that the traditionality of the student does not influence any gender-biases teachers may have regarding the appropriateness of students' career choice. However, some unexpected findings are noteworthy.

First, teachers were more likely to encourage the nontraditional male over the traditional male, the traditional female and the nontraditional female. Teachers may have felt that because he indicated nontraditional interests, he may require more direction in his goals.

An additional finding approached significance. There was an indication that teachers agreed more with the occupational choice of the traditional female and nontraditional male than the nontraditional female. This finding may indicate a bias against nontraditional females. This interpretation is tentative since a significant result was not obtained.

Another reason as to why the traditionality of the student does not influence teachers opinions is that teachers do not readily attend to this type of information in written form. In addition, it is also possible that
there was not enough information presented to indicate the traditionality of the student. A further possibility is that this type of bias can only be noticed visually. Recall that Towson et al. (1985) used the appearance of the females to indicate their traditionality. Since the present study was the first to attempt to manipulate male or female traditionality in written form, it is possible that this method is not as useful a strategy.

**Teacher Gender**

Male teachers, as compared to female teachers, were somewhat more in agreement for nontraditional career aspirations in the nontraditional female and male. In addition, male teachers were found to be more likely than female teachers to encourage occupational choices. This finding indicates less bias than what was expected. Perhaps, male teachers are becoming more aware of and sensitive to the career needs of, and options for, women. There is a possibility, however, that this greater acceptance among male teachers was specific to this career (i.e., dentistry). Once again, future research should examine alternative nontraditional careers to see if similar findings are obtained.
CHAPTER VIII

OVERALL CONCLUSIONS

Upon comparing the findings of Study 1 and Study 2, some comments are noteworthy. First, both studies seem to indicate a tendency towards an acceptance of nontraditional careers for women. However, since Study 2 only examined the nontraditional career of dentistry, generalizations must be made with caution. It is possible that teachers have biases against women entering other nontraditional careers. Further, although there appeared to be some acceptance for women pursuing nontraditional careers, very few women in Study 1 were actually aspiring toward nontraditional occupations. Why were there so few women indicating a nontraditional career interest? One explanation is that females are not being actively discouraged from traditional careers. Study 2 did find teachers were more likely to encourage nontraditional career choices for women; however, it did not find teachers to be more likely to discourage traditional career choices in females. The fact that teachers did not state any discouragement could be due to the design of the question. In future, a separate question
should be asked: one to determine encouragement and the other to determine discouragement. A similar change should be made for the variable which examined the degree to which teachers would agree or disagree with the students occupational choice. Teachers may have felt forced to answer on the positive side of the scale (i.e., agree and encourage). Another explanation is that women are still, for the most part, not considering nontraditional career options let alone discussing them with teachers. A further possibility is that females think they may feel uncomfortable working in a collegial relationship in a predominantly male environment. It is also possible that females do not want to pursue nontraditional occupations because of the additional years spent in school. Finally, they may realize that there may be greater pressures involved in combining a demanding career and family responsibilities.

While Study 1 indicates that males generally aspire only to traditional careers, Study 2 indicates that teachers also consider gender-discrepant occupational choices for males inappropriate. The above qualification regarding the type of career tested applies here as well. That is, perhaps there is a greater acceptance for certain nontraditional careers for males and the occupation of dental hygienist is not one of them. Future research should
examine other types of careers before any generalizations can be made.

There also appears to be some congruency between students' perceived degree of career confidence and teachers' perceptions of students' successfulness in their chosen occupation. In Study 1, there was no significant indication that nontraditional female aspirants felt they would be less successful in their chosen occupation than their traditional female or traditional male counterparts. Further, in Study 2, there was no significant indication that teachers felt that the nontraditional female aspirant would be less financially successful or personally and financially less satisfied than her traditional female or traditional male counterpart. Future research examining career confidence, success and satisfaction could be done by asking women why they have chosen a traditional career when an alternative but comparable nontraditional occupation exists. The occupations of dental hygiene and dentistry are very similar. Some similarities include: work environment, work schedule, number of hours per day, clientele, job skills (e.g., good hand-eye co-ordination) and academic subjects required (e.g., sciences). Further, entrance into both programs is competitive. For example, the University of Toronto Faculty of Dentistry accepts approximately 64 out of a possible 700 applicants (9%) each year. George Brown College's Dental Hygiene program accepts 44 out of 1000
applicants (4.4%) each year. It is not being argued that all applicants to a dental hygiene program could be accepted into a dentistry program. The point to be made here is that not easy to gain entrance into either program. One difference between the occupations is the length of time it takes to complete the program. It takes approximately six years to complete a degree in dentistry whereas it takes only two and one-half years to become a dental hygienist. However, the financial advantages of being a dentist certainly outweigh the extra years it takes to pursue that avenue. As a rough estimate, the length of time it would take for a female to make up for four years of lost wages excluding any debts incurred during that period would be 1.6 years. Further, dentistry is a higher status position with greater room for advancement (e.g., specialization as an orthodontist, oral/dental surgeon, gum specialist, etc.).

Both Study 1 and Study 2 included students' nonacademic interests. Due to sporadic significant and insignificant findings, it is difficult to state how worthwhile it was pursuing this variable. Study 1 found the majority of females participating in nontraditional extracurricular activities and the majority of males participating in traditional extracurricular activities. While males pursued traditional careers and traditional nonacademic activities, females pursued traditional careers and nontraditional nonacademic activities. Assuming participation rates for
females was not sporadic, this finding implies that females pursuing traditional occupations balance the traditional and nontraditional aspects of their lives. Although women may be developing certain skills that would benefit them in nontraditional careers, they appear not to be using them to their advantage. In order to better determine whether participation in nontraditional extracurricular activities benefits women, future research should concentrate on women currently in nontraditional careers. That way, their current and past participation rates in various extracurricular activities could be examined to determine if a positive correlation actually exists.

Future research should also concentrate on parents' attitudes towards nontraditional career choices for their children. Since parents were cited more frequently than other individuals, their views should be explored. After all, teachers and counsellors can only influence career choice to a limited degree. If there is minimal parental support for the occupational choice, the efforts of teachers and counsellors might be futile.

Finally, there is an indication that both teachers and counsellors are becoming more accepting of nontraditional career choices for women. However, two assumptions must be true in order for this statement to be correct. First, in Study 1, students must be accurately reporting their experiences with counsellors. Since students were not
explicitly told that this study was examining counsellor
biases, there is no reason to believe students would distort
their experiences with counsellors. The first assumption,
therefore, appears not to be violated. Second, in Study 2,
teacher actions must be congruent with their beliefs. In
other words, there is a possibility that teachers state that
they would encourage the student, when in reality they would
not. The only way this can be controlled for is by the
designing a study in such a way as to conceal its purpose
without violating subjects' rights. The methodology (i.e.,
vignettes) used for this study assisted the author in
achieving this objective. All efforts were made to do this
for Study 2, so it appears that the second assumption is not
violated.

There appears to be a lack of acceptance regarding
nontraditional career options for males. As a result, they
will probably continue to aspire to traditional careers for
some time. The situation for females is somewhat different.
With appropriate encouragement and guidance from influential
individuals such as parents, teachers and counsellors,
females can and will begin to significantly increase their
representation in nontraditional occupations. How long it
will take until females are equally represented in
nontraditional occupations is difficult to ascertain at this
time. Significant influential individuals can help by
actively encouraging nontraditional careers and actively
discouraging traditional careers in females who have the potential.
APPENDIX A

Undergraduate Student Questionnaire
Psychology Research Consent Form

I hereby volunteer to participate in a study being conducted by Brenda A. Tomini under the supervision of Dr. S. Page, Department of Psychology, University of Windsor.

I understand the purpose of the study is to examine my career aspirations as well as some of my experiences with high school counsellors.

I understand that this study will involve the following procedures:

1. I will be asked a number of questions about my experiences with my high school counsellor(s).

2. I will be asked about my particular career/job aspirations.

3. I will be asked some background questions as to my sex, age, and outside-of-school interests as well as some questions regarding my family.

I understand that my participation in this study is voluntary, anonymous and confidential.

I understand that I will not endure any physical or mental/emotional discomfort from participating in this study.

I understand that a description of the study will be given, if I request it, following the termination of the study.

I agree not to discuss the nature of the study with other undergraduate students at the University of Windsor.

Dated at Windsor this ____________ day of _______1989.

__________________________
Name (Please print)

__________________________
Signature
Part 1: Please respond to the following questions as accurately and honestly as possible.

1. What type of occupation/job/career would you most like to pursue after graduation? (Please respond even if you are not totally sure at this time.) ________________

2. Circle three of the following that you feel influenced your present career choice. Beside each, if applicable, please circle M if the person was male or F if the person was female.

   mother       father       sister
   brother      relative (M / F)  teacher (M /F)
   guidance counsellor (M / F)  friend (M / F)
   clergy (priest/minister) (M / F)  boss (M / F)
   other (Please specify)____________________

3. Approximately how many times did you see a guidance counsellor in high school? ________________

   IF YOU SAW MORE THAN ONE COUNSELLOR, PLEASE THINK OF THE ONE YOU SAW MOST OFTEN WHEN RESPONDING TO THE FOLLOWING QUESTIONS.

4. Was this counsellor a male or a female? MALE  FEMALE

5. Why did you see the counsellor? (Circle more than one, if applicable)

   a) personal reasons (e.g., family, relationships, etc.)
   b) vocational reasons (e.g., career possibilities, etc.)
   c) school related reasons (e.g., problem with courses)
   d) other (Please specify)____________________

6. If you answered (a) to question 5, how helpful would you rate the counsellor?

   |-----------------|-----------------|-----------------|-----------------|
   definitely     not very    neither   helpful    very
   not helpful    helpful     helpful    helpful
   nor unhelpful  useful     useful    unhelpful
7. If you answered (b) to question 5, how helpful would you rate the counsellor?

|----------------|----------------|----------------|----------------|
definitely       not very       neither       helpful
not helpful      helpful         helpful       very
helpful          helpful         nor unhelpful

8. If you answered (c) to question 5, how helpful would you rate the counsellor?

|----------------|----------------|----------------|----------------|
definitely       not very       neither       helpful
not helpful      helpful         helpful       very
helpful          helpful         nor unhelpful

9. If you answered (d) to question 5, how helpful would you rate the counsellor?

|----------------|----------------|----------------|----------------|
definitely       not very       neither       helpful
not helpful      helpful         helpful       very
helpful          helpful         nor unhelpful

IF YOU ANSWERED (B) FOR ONE OF YOUR RESPONSES TO QUESTION 5, PLEASE RESPOND TO THE FOLLOWING QUESTIONS. IF NOT, PLEASE GO TO PART 2 ON PAGE 3

1. Did your high school counsellor suggest any jobs or occupations to you that you did not consider at that time but are considering now? YES   NO

2. If yes, what are these jobs or occupations:

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________

3. Did your high school counsellor suggest any jobs or occupations to you that you considered pursuing at that time? YES   NO

4. If yes, what were those jobs or occupations:

_________________________________________________________________
_________________________________________________________________
_________________________________________________________________
5. Do you remember the counsellor either encouraging or discouraging you from entering a particular type of occupation?  
   **YES**  **NO**

6. If so, can you state the type of occupation and whether or not you feel you were encouraged or discouraged.

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<thead>
<tr>
<th>Occupation</th>
<th>Encouraged or Discouraged</th>
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<tbody>
<tr>
<td>Occupation</td>
<td>Encouraged or Discouraged</td>
</tr>
<tr>
<td>Occupation</td>
<td>Encouraged or Discouraged</td>
</tr>
</tbody>
</table>

7. Please state the degree to which you feel your counsellor influenced your career choice?

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<td>no influence</td>
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<td>some</td>
<td>much</td>
<td>very</td>
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<tr>
<td>at all</td>
<td>influence</td>
<td>influence</td>
<td>influence</td>
<td>influence</td>
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8. How satisfied would you say you were with the discussion of job opportunities you had with your counsellor?

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<tr>
<td>very dissatisfied</td>
<td>neither satisfied</td>
<td>satisfied nor</td>
<td>satisfied</td>
<td></td>
</tr>
<tr>
<td>dissatisfied</td>
<td></td>
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</table>

Part 2: Please answer the following questions:

1. How would you respond to the following statement: "I feel the counsellor really listened to me and cared about what I was saying?"

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<thead>
<tr>
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<tbody>
<tr>
<td>strongly disagree</td>
<td>neither agree</td>
<td>agree</td>
<td>strongly agree</td>
<td></td>
</tr>
<tr>
<td>disagree</td>
<td></td>
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</tbody>
</table>

2. Would you like to have received more help with career planning than you did from the counselling staff at your high school?  
   **YES**  **NO**
Part 3: Please answer ALL of the following questions.

1. Sex: Male Female

2. Age: _________

3. Mother's (or female guardian's) Occupation:

__________________________________________________________

4. Father's (or male guardian's) Occupation:

__________________________________________________________

5. Please state three things you do to occupy your spare time. (i.e., hobbies, crafts, jobs, etc.)

1. ________________  3. ________________

2. ________________

6. Please state at least three extracurricular sporting activities that you do (i.e., within the last 5 years) and have done (i.e., prior to the past 5 years) in your spare time. (i.e., soccer, skating, etc.)

Within past 5 years

1. __________________

2. __________________

3. __________________

Prior to the past 5 years

1. __________________

2. __________________

3. __________________

7. Are you currently dating one particular person? YES NO

8. If yes, how long have you been dating this person?

__________ months
9. What would you consider to be the biggest problems facing students entering the job market today?
   a) for females: ____________________________________________
   __________________________________________________________
   b) for males: ____________________________________________
   __________________________________________________________

10. What do you think the biggest problem(s) will be for you when you enter the job market?
    ________________________________________________________
    ________________________________________________________
    ________________________________________________________

11. How confident are you that you will be successful in whatever occupation/job/career you choose?

   not very | somewhat | confident | very | extremely
   confident | confident | confident | confident

Thank you very much for your participation.

Brenda A. Tomini
APPENDIX B

Questionnaire for Teachers
Consent Form

I hereby volunteer to participate in a study being conducted by Brenda A. Tomini under the supervision of Dr. S. Page, Department of Psychology, University of Windsor.

I understand the purpose of the study is to examine some aspects of my perceptions of counselling situations. I understand that this study will involve my reading a brief vignette and answering some questions about it. I will also be asked some general background questions.

I understand that my participation in this study is completely voluntary, anonymous and confidential.

I understand that I will not endure any physical or mental/emotional discomfort from participating in this study.

I understand that a description of the purposes and results of this study will be given following the termination of the study.

I agree not to discuss the nature of the study with other students at my university.

_________________________________________
Date

_________________________________________
Name (Please print)

_________________________________________
Signature
Part 1: Please read the following information.

Susan/Peter is 18 years old. She/He is in her/his final year in high school and is having difficulty make some decisions for her/his future. Susan/Peter has always done very well in school—her/his grades are well-above average and she/he has been on the honour roll twice in the past three years. In addition to her/his academic achievements, she/he actively participates in (baseball, soccer and hockey/gymnastics, jazz dancing and figure skating). During her/his spare time, (she/he babysits for neighbours and friends to make extra money/ she/he fixes cars for neighbours and friends to make extra money).

Susan/Peter has expressed an interest in post-secondary education, but is somewhat uncertain as to what direction she/he should pursue. Although Susan/Peter does well in most subjects, A- to A range, she/he does particularly well in biology and chemistry. She/He has thought of pursuing a career in (dentistry/dental hygiene). Susan/Peter feels she/he will make good money at this profession and be personally fulfilled. She/He is aware that there are other areas that she/he could pursue while still using his/her aptitudes to the fullest.
Part 2: Please respond to the following questions based only on the information you have just read. Be as specific as possible. Do not turn back to the vignette.

1. Based on the information given to you, state the degree to which you would agree with this student's occupational choice.

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>strongly disagree</td>
<td>somewhat disagree</td>
<td>neither</td>
<td>somewhat agree</td>
<td>agree</td>
<td>strongly agree</td>
</tr>
<tr>
<td>disagree</td>
<td>disagree</td>
<td>agree</td>
<td>nor disagree</td>
<td></td>
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</tr>
</tbody>
</table>

2. Please state your thoughts on this. (i.e., explain briefly the reasons for your rating.)


3. Based on the information given to you, state the degree to which you would actively encourage or discourage the student's occupational choice.

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</tr>
</thead>
<tbody>
<tr>
<td>greatly discourage</td>
<td>somewhat discourage</td>
<td>neither</td>
<td>somewhat encourage</td>
<td>encourage</td>
<td>greatly encourage</td>
<td></td>
</tr>
<tr>
<td>discourage</td>
<td>discourage</td>
<td>encourage</td>
<td>nor discourage</td>
<td></td>
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</tbody>
</table>

4. Please state the reason for your encouragement or discouragement.


5. If you had the opportunity to discuss this choice with the student, do you think you might also suggest an alternative occupational choice(s).

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</tr>
</thead>
<tbody>
<tr>
<td>very unlikely</td>
<td>somewhat unlikely</td>
<td>uncertain</td>
<td>somewhat likely</td>
<td>likely</td>
<td>very likely</td>
<td></td>
</tr>
<tr>
<td>unlikely</td>
<td>unlikely</td>
<td>likely</td>
<td>likely</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6. If you think you might suggest an alternative occupational choice(s), what type of occupation might it/they be? Why?


7. How financially successful do you feel this student will be in the occupation chosen?

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</thead>
<tbody>
<tr>
<td>very unsuccessful</td>
<td>somewhat successful</td>
<td>neither successful</td>
<td>somewhat successful</td>
<td>very successful</td>
</tr>
<tr>
<td>somewhat unsuccessful</td>
<td>successful</td>
<td>successful</td>
<td>successful</td>
<td>nor unsuccessful</td>
</tr>
</tbody>
</table>

8. Excluding financial considerations, how successful do you feel this student will be in the occupation chosen?

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>very unsuccessful</td>
<td>somewhat successful</td>
<td>neither successful</td>
<td>somewhat successful</td>
<td>very successful</td>
</tr>
<tr>
<td>somewhat unsuccessful</td>
<td>successful</td>
<td>successful</td>
<td>successful</td>
<td>nor unsuccessful</td>
</tr>
</tbody>
</table>

9. Based on your answer to question #7, how satisfied do you feel this student will be with this level of financial success?

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>very unsatisfied</td>
<td>somewhat satisfied</td>
<td>neither satisfied</td>
<td>somewhat satisfied</td>
<td>very satisfied</td>
</tr>
<tr>
<td>satisfied</td>
<td>unsatisfied</td>
<td>satisfied</td>
<td>satisfied</td>
<td>nor satisfied</td>
</tr>
</tbody>
</table>

10. Based on your answer to question #8, how satisfied do you feel this student will be with this level of success?

<table>
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<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>very unsatisfied</td>
<td>somewhat satisfied</td>
<td>neither satisfied</td>
<td>somewhat satisfied</td>
<td>very satisfied</td>
</tr>
<tr>
<td>satisfied</td>
<td>unsatisfied</td>
<td>satisfied</td>
<td>satisfied</td>
<td>nor satisfied</td>
</tr>
</tbody>
</table>
Part 3: For the following questions, please circle the most appropriate response.

1. Age: a) 20 - 25 b) 26 - 30 c) 31 - 35
d) 36 - 40 e) 41 and over

2. Sex: Male Female

3. Highest Degree Received Thus Far:
a) Bachelor of Arts/Education/Science
b) Master of Arts/Education/Science
c) Other (Please Specify)______________

4. Number of years in graduate school: ________________

5. In Canada, what percentage of practising dentists do you think are females? _____ %

6. In Canada, what percentage of practising dental hygienists do you think are male? ______ %
APPENDIX C

Coding of Careers
<table>
<thead>
<tr>
<th>Traditional Female Occupations</th>
<th>Total</th>
<th># Female</th>
<th>% Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio and Speech Therapist (Speech pathologist)</td>
<td>2,760</td>
<td>2,405</td>
<td>87%</td>
</tr>
<tr>
<td>Barbers, Hairdressers, Related Occupations</td>
<td>87,855</td>
<td>71,345</td>
<td>81.2%</td>
</tr>
<tr>
<td>Bookkeepers</td>
<td>395,010</td>
<td>331,435</td>
<td>83.9%</td>
</tr>
<tr>
<td>Camp Counsellors</td>
<td>68,340</td>
<td>49,875</td>
<td>72.9%</td>
</tr>
<tr>
<td>Cashiers and Tellers</td>
<td>295,090</td>
<td>267,375</td>
<td>90.6%</td>
</tr>
<tr>
<td>Court Reporters (Secretaries and Stenographers)</td>
<td>442,725</td>
<td>437,575</td>
<td>98.8%</td>
</tr>
<tr>
<td>Dental Hygienists and Assistants</td>
<td>23,315</td>
<td>22,865</td>
<td>98.1%</td>
</tr>
<tr>
<td>Dietician and Nutritionists (Clinical dietician)</td>
<td>4,225</td>
<td>4,225</td>
<td>100%</td>
</tr>
<tr>
<td>Electronic Data Processing, Equipment Operators (Computer dispatcher, Processing operator)</td>
<td>112,575</td>
<td>90,005</td>
<td>79%</td>
</tr>
<tr>
<td>Elementary and Kindergarten Teachers</td>
<td>194,975</td>
<td>157,985</td>
<td>81%</td>
</tr>
<tr>
<td>Librarians</td>
<td>18,225</td>
<td>14,730</td>
<td>80.8%</td>
</tr>
<tr>
<td>Medical Lab Technologist and Technicians (Pharmacy technician)</td>
<td>39,060</td>
<td>30,515</td>
<td>76%</td>
</tr>
<tr>
<td>Nursing, Therapy, Related Assisting Occupations (Health Care Aide)</td>
<td>27,945</td>
<td>21,630</td>
<td>77%</td>
</tr>
<tr>
<td>Occupational Therapists</td>
<td>2,530</td>
<td>2,075</td>
<td>82%</td>
</tr>
<tr>
<td>Physiotherapists</td>
<td>11,380</td>
<td>9,540</td>
<td>83.8%</td>
</tr>
<tr>
<td>Radiological Technologists and Technicians (X-ray technician)</td>
<td>9,795</td>
<td>8,190</td>
<td>83.6%</td>
</tr>
<tr>
<td>Occupation</td>
<td>TOTAL</td>
<td># FEMALE</td>
<td>% FEMALE</td>
</tr>
<tr>
<td>------------------------------------------</td>
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</tr>
</tbody>
</table>
| Social Workers                           | 43,975 | 29,550   | 67.2%    *
| (Health and social service individual,   |        |          |          |
| Probation officer/parole officer,        |        |          |          |
| Counsellor for troubled kids,            |        |          |          |
| Certified addiction counsellor)          |        |          |          |
| Travel                                   | 30,620 | 21,550   | 70.37%   |
| (i.e., agent)                            |        |          |          |
| Waitress/Waiter                          | 276,235| 222,335  | 80.5%    |
| **NONTRADITIONAL FEMALE OCCUPATIONS**    |        |          |          |
| Administrators in Teaching and Related   | 38,870 | 11,650   | 30%      |
| Fields (Principal)                       |        |          |          |
| Airtraffic Controllers                   | 5,210  | 585      | 11.2%    |
| Architects                               | 8,510  | 1,110    | 13%      |
| Athletes                                 | 330    | ---      | 0%       |
| Bus Drivers                              | 4,620  | 580      | 12.6%    |
| Chemists                                 | 10,735 | 2,845    | 26.5%    |
| Community Planners (Urban Planner)       | 7,310  | 1,925    | 26.3%    |
| Dentists                                 | 12,080 | 1,595    | 13.2%    |
| Denturists                               | 1,895  | 265      | 14%      |
| Firefighters                             | 26,180 | 345      | 1.3%     |
| Foreman/Forewoman and Other Construction | 68,705 | 1,105    | 1.6%     |
| Trades                                   |        |          |          |
| Funeral Directors, Embalmers and Related | 1,740  | ----     | 100%     |
| Occupations                              |        |          |          |

* Social work was included as a traditional occupation after the author consulted with the Ontario Association of Professional Social Workers (Ontario Professional Association of Social Workers, 1986). Their report indicated that females hold 77% of BSW degrees, 67% of MSW degrees and 41.7% of DSW degrees.
<table>
<thead>
<tr>
<th>Occupation</th>
<th>TOTAL</th>
<th># FEMALE</th>
<th>% FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geologists (Oceanography)</td>
<td>8,150</td>
<td>945</td>
<td>11.6%</td>
</tr>
<tr>
<td>Guards (Custodian, Correctional officer)</td>
<td>96,060</td>
<td>20,410</td>
<td>21.2%</td>
</tr>
<tr>
<td>Inspectors and Regulatory Officers, Government (Health inspectors, Custom officers)</td>
<td>30,115</td>
<td>6,200</td>
<td>21%</td>
</tr>
<tr>
<td>Judges and Magistrates</td>
<td>2,445</td>
<td>320</td>
<td>13.1%</td>
</tr>
<tr>
<td>Mailcarriers</td>
<td>26,320</td>
<td>5,370</td>
<td>20.4%</td>
</tr>
<tr>
<td>Meteorologists (Climatologists)</td>
<td>970</td>
<td>----</td>
<td>0%</td>
</tr>
<tr>
<td>Ministers of Religion</td>
<td>3,640</td>
<td>----</td>
<td>100%</td>
</tr>
<tr>
<td>Motor Vehicle Fabricating and Assembling Occupations (Automotive Assembly)</td>
<td>540</td>
<td>----</td>
<td>100%</td>
</tr>
<tr>
<td>Musicians and Singers</td>
<td>12,790</td>
<td>3,700</td>
<td>28.9%</td>
</tr>
<tr>
<td>Lawyers</td>
<td>41,840</td>
<td>9,225</td>
<td>22%</td>
</tr>
<tr>
<td>Occupations in Labouring and other elemental work: Chemicals, Petroleum, Rubber, Plastic and Related Materials Processing Occupations</td>
<td>15,720</td>
<td>3,580</td>
<td>23%</td>
</tr>
<tr>
<td>Occupations in Labouring and other elemental work: Clay, Glass and Stone Processing and Forming</td>
<td>725</td>
<td>----</td>
<td>0%</td>
</tr>
<tr>
<td>Occupations in Labouring and other elemental work: Other Construction Trades</td>
<td>32,300</td>
<td>730</td>
<td>2.3%</td>
</tr>
<tr>
<td>Occupations in Life Sciences</td>
<td>4,650</td>
<td>1,065</td>
<td>22.9%</td>
</tr>
<tr>
<td>Osteopaths and Chiropractors</td>
<td>1,885</td>
<td>495</td>
<td>17%</td>
</tr>
<tr>
<td>Occupation/Group</td>
<td>Total</td>
<td>Female</td>
<td>% Female</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
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<td>----------</td>
</tr>
<tr>
<td>Physical Sciences Technologists and Technicians</td>
<td>18,880</td>
<td>5,405</td>
<td>28.6%</td>
</tr>
<tr>
<td>Physicians and Surgeons (Forensic Medicine Specialist)</td>
<td>46,765</td>
<td>9,845</td>
<td>7.9%</td>
</tr>
<tr>
<td>Police Officers</td>
<td>56,265</td>
<td>3,340</td>
<td>5.6%</td>
</tr>
<tr>
<td>Radio/TV announcers (Sports commentators)</td>
<td>7,095</td>
<td>1,500</td>
<td>21.1%</td>
</tr>
<tr>
<td>Sales and Advertising Management Occupations (Claims Manager, Public Relations, Sales Manager, Public Relations Director/Manager, Public Affairs)</td>
<td>219,970</td>
<td>63,305</td>
<td>29%</td>
</tr>
<tr>
<td>Shipping and Receiving Clerks</td>
<td>98,175</td>
<td>17,075</td>
<td>18.2%</td>
</tr>
<tr>
<td>Slaughtering, Meat, Cutting, Canning, Curing and Packaging Occupations</td>
<td>43,880</td>
<td>8,715</td>
<td>20%</td>
</tr>
<tr>
<td>Supervisors: Sales Occupations, Services (Insurance broker, Claims manager, District supervisor sales)</td>
<td>21,730</td>
<td>6,550</td>
<td>30%</td>
</tr>
<tr>
<td>Surveyors</td>
<td>16,990</td>
<td>950</td>
<td>5.6%</td>
</tr>
</tbody>
</table>

**OCCUPATIONS CLASSIFIED AS NEITHER TRADITIONAL NOR NONTRADITIONAL (NTNN)**

<table>
<thead>
<tr>
<th>Occupation/Group</th>
<th>Total</th>
<th>Female</th>
<th>% Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actor/Actress</td>
<td>4,010</td>
<td>1,680</td>
<td>41.9%</td>
</tr>
<tr>
<td>Administrators in Medicine Health (Clinical Instructor, Nursing Administrator for Aged)</td>
<td>16,495</td>
<td>9,880</td>
<td>59.9%</td>
</tr>
<tr>
<td>Biologists and Related Scientists (Marine Biologist, Zoologist)</td>
<td>8,040</td>
<td>2,960</td>
<td>36.8%</td>
</tr>
<tr>
<td>Coaches, Trainers, Instructors, Sports and Recreation (Fitness instructor)</td>
<td>26,485</td>
<td>15,425</td>
<td>58.2%</td>
</tr>
<tr>
<td>Commercial Artists</td>
<td>995</td>
<td>445</td>
<td>44.7%</td>
</tr>
<tr>
<td>Community College and Vocational School Teachers (College Teachers)</td>
<td>37,705</td>
<td>16,355</td>
<td>43.3%</td>
</tr>
<tr>
<td>Occupation</td>
<td>TOTAL</td>
<td># FEMALE</td>
<td>% FEMALE</td>
</tr>
<tr>
<td>--------------------------------------------------------</td>
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<td>----------</td>
</tr>
<tr>
<td>Conductors</td>
<td>1,310</td>
<td>405</td>
<td>31%</td>
</tr>
<tr>
<td>Dental Technicians</td>
<td>4,405</td>
<td>1,650</td>
<td>37.5%</td>
</tr>
<tr>
<td>Educational and Vocational Counsellors</td>
<td>7,465</td>
<td>4,150</td>
<td>55.6%</td>
</tr>
<tr>
<td>Life Sciences Technologists and Technicians</td>
<td>102755</td>
<td>3,830</td>
<td>37.3%</td>
</tr>
<tr>
<td>(Research technician)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machine Operator--34 types</td>
<td>2,840</td>
<td>380</td>
<td>13.38%</td>
</tr>
<tr>
<td></td>
<td>15,720</td>
<td>3,575</td>
<td>22.7%</td>
</tr>
<tr>
<td></td>
<td>4,355</td>
<td>2,610</td>
<td>59.9%</td>
</tr>
<tr>
<td></td>
<td>8,223</td>
<td>3,623</td>
<td>44%</td>
</tr>
<tr>
<td></td>
<td>9,260</td>
<td>3,520</td>
<td>38%</td>
</tr>
<tr>
<td>AVERAGE</td>
<td></td>
<td></td>
<td>35.6%</td>
</tr>
<tr>
<td>Occupations in Law and Jurisprudence (Legal Clerk)</td>
<td>10,255</td>
<td>6,940</td>
<td>63.4%</td>
</tr>
<tr>
<td>Occupations Related to Management and Administration</td>
<td>72,220</td>
<td>32,965</td>
<td>45.6%</td>
</tr>
<tr>
<td>(Public Relations Officer, Representative, Supervisor, Public Administrator)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Officials and Administrators Unique to Government (Unemployment Insurance Investigator)</td>
<td>9,840</td>
<td>3,490</td>
<td>35%</td>
</tr>
<tr>
<td>Other Clerical and Related Occupations ( Classified Aj Taker)</td>
<td>87,370</td>
<td>60,335</td>
<td>69%</td>
</tr>
<tr>
<td>Other Occupations in Social Sciences (Political scientists)</td>
<td>6,920</td>
<td>4,625</td>
<td>66.8%</td>
</tr>
<tr>
<td>Personnel and Industrial Relations Management Occupations</td>
<td>31,705</td>
<td>11,425</td>
<td>36%</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>16,835</td>
<td>8,485</td>
<td>50.4%</td>
</tr>
<tr>
<td>Producers/Directors</td>
<td>12,160</td>
<td>3,960</td>
<td>32.6%</td>
</tr>
<tr>
<td>Product and Interior Designers (Magazine layout, Costume and scenic design)</td>
<td>24,580</td>
<td>15,430</td>
<td>62.7%</td>
</tr>
<tr>
<td>Occupation</td>
<td>TOTAL</td>
<td># FEMALE</td>
<td>% FEMALE</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>--------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>Psychologists (Guidance Counsellor)</td>
<td>11,465</td>
<td>6,760</td>
<td>59%</td>
</tr>
<tr>
<td>Real Estate</td>
<td>64,350</td>
<td>25,640</td>
<td>39.8%</td>
</tr>
<tr>
<td>Respiratory</td>
<td>2,880</td>
<td>1,955</td>
<td>67.9%</td>
</tr>
<tr>
<td>Sales (Retail, Salesman/saleswoman)</td>
<td>642,780</td>
<td>363,390</td>
<td>56.5%</td>
</tr>
<tr>
<td>Secondary School Teachers</td>
<td>134,610</td>
<td>61,045</td>
<td>45.3%</td>
</tr>
<tr>
<td>Service Management Occupations (Hotel Manager)</td>
<td>63,920</td>
<td>23,030</td>
<td>36%</td>
</tr>
<tr>
<td>Sociologist, Anthropologist and Related Social Sciences (Criminologist, Archaeologists)</td>
<td>1,330</td>
<td>630</td>
<td>47.4%</td>
</tr>
<tr>
<td>Supervisors: Food and Beverage Preparation and Related Services Occupations</td>
<td>57,645</td>
<td>29,970</td>
<td>52%</td>
</tr>
<tr>
<td>Systems Analysts, Computer Programmers, Related Occupations</td>
<td>102,190</td>
<td>32,185</td>
<td>32%</td>
</tr>
<tr>
<td>Translator/Interpreters</td>
<td>7,450</td>
<td>4,890</td>
<td>66%</td>
</tr>
<tr>
<td>Veterinarians (Veternarian assistant)</td>
<td>4,174</td>
<td>1,460</td>
<td>35%</td>
</tr>
<tr>
<td>Writers/Editors (Journalist, Commentators, Communications)</td>
<td>34,270</td>
<td>15,795</td>
<td>46.1%</td>
</tr>
</tbody>
</table>
APPENDIX D

Analysis of Variance for Helpfulness of Counsellors Regarding Personal Issues

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APPENDIX E

Analysis of Variance of Counsellor Influence on Career Choice

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APPENDIX F

Analysis of Variance for Students' Level of Career Confidence

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APPENDIX G

Analysis of Variance for Degree to which Teachers Would Suggest an Alternative Occupation

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APPENDIX H

Analysis of Variance for the Degree to which Teachers Feel the Student Will be Personally Successful

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REFERENCES


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VITA AUCTORIS

Brenda A. Tomini was born on February 27, 1964 in Toronto, Ontario. She received her high school diploma from York Mills Collegiate Institute (June 1983) and her Bachelor of Arts degree from York University (June 1987). Since September, 1988 she has been enrolled in the Doctoral programme in applied social psychology at the University of Windsor.