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THE RELATIONS OF GENDER, HOLLAND INTEREST TYPE, AND SELF-MONITORING TO COLLEGE STUDENTS' OCCUPATIONAL PREFERENCES IN A FORCED-CHOICE SITUATION

By

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ABSTRACT

THE RELATIONS OF GENDER, HOLLAND INTEREST TYPE, AND SELF-MONITORING TO COLLEGE STUDENTS' OCCUPATIONAL PREFERENCES IN A FORCED-CHOICE SITUATION

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The present study explored the relations of gender, Holland interest type, and self-monitoring to individuals' occupational preferences in a forced-choice situation. This study was based on the premises that (a) persons tend to seek occupations that fit their interest type (Holland, 1983, 1985a), (b) prestige has been considered as one of the most stable and consistent occupational criterion (Counts, 1925; Plata, 1975), and (c) persons consider prestige to be more important than interest in career compromising situations (Gottfredson, 1981). A forced-choice survey was constructed (Occupational Preference Survey) to investigate whether individuals would be more or less likely to maintain interest-congruence over prestige when choosing occupations. In particular, the social psychological construct of self-monitoring orientation was explored as a factor influencing persons' occupational preferences. A sample of 197 female and 97 male college students was administered a set of questionnaires, including the constructed survey. Findings indicated that there were significant gender and Holland interest type differences among subjects' occupational preferences, but no differences were found for

self-monitoring orientation. Although no interactions were found, males preferred more high-prestige/low-interest occupations than females, and Investigative (I) types preferred the most high-prestige/low-interest occupations than other Holland interest types. Limitations of the study as well as implications for future research and career counseling were discussed.

I dedicate this work to my grandmother, Ms. Soon-Hwa Yang,
whose unconditional love for me will always give me
hope and faith.

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CHAPTER I

Introduction

Among career theories that focus on "why" certain occupations are chosen by people, the trait-factor, or "matching" approach has been a historically prominent explanation. This approach, originally conceived by Frank Parsons (1909), assumes that people base their occupational preferences on their self-knowledge.

> In the wise choice of a vocation there are three broad factors: (1) a clear understanding of yourself, your aptitudes, abilities, interests, ambitions, resources, limitations, and causes; (2) a knowledge of the requirements and conditions of success, advantages and disadvantages, compensation, opportunities, and prospects of different lines of work; and (3) true reasoning of the relations of these two groups of facts (Parsons, 1909, p. 5).

Since Parsons' (1909) original outline advocating the importance of people's self-knowledge in making work-related decisions, subsequent theory and research in this area has focused on specific personality traits in relation to career choice (Holland, 1973, 1985a; Williamson, 1972). One of the leading theories of career choice that has stimulated considerable research has been the work of Holland (1973, 1985a, 1985c). Holland's theory of careers is based on the assumption that a person's vocational interests describe his or her expression of personality. For Holland, people seek to achieve person-job match or "congruence" between

themselves and their prospective occupations by understanding their interests as reflecting a personality trait which includes skills, attitudes, and values (Holland, 1973, 1985a, 1985c). Accordingly, people rely on their interest-based self-knowledge as a guide in forming their occupational preferences. Holland's concept of congruence thus embodies a view of the optimal matching of person and occupation as based on the person's knowledge of his or her vocational interests. Moreover, it assumes that people prefer and seek occupations that best match this self-knowledge.

However, research on Holland's congruence concept does not adequately explain the choice behavior of individuals who prefer occupations that do not match with their self-knowledge. Although Holland's concept of congruence has received much theoretical and empirical attention, particularly in its relation to vocational criteria, such as satisfaction, stability, and academic achievement (Assouline & Meir, 1987; Nafziger, Holland, & Gottfredson, 1975; Smart, Elton, & McLaughlin, 1986; Spokane, 1985, 1987; Spokane & Derby, 1979; Wiggins, Lederer, Salkowe, & Rys, 1983), the importance of congruence was not consistently supported in its relationship to these vocational criteria.

Within the realm of vocational psychology, one modest yet noteworthy branch of research that focuses on the role of interests in occupational preferences has stemmed from the work of Gottfredson (1981). In her model of career

aspirations, Gottfredson (1981) argued that the three critical vocational dimensions of interest, prestige, and gender-type differentially affected a person's occupational preferences when compromise is inevitable. According to this model, career compromise is described as an act of "accommodation" that involves retaining or sacrificing the three vocational factors mentioned above. Similar to Holland, Gottfredson's (1981) definition of interest is based on a person's self-knowledge. Hence, research on Gottfredson's concept of interest and how it is related in the schema of occupational preference or choice may have implications for Holland's career choice theory as well.

Although Gottfredson (1981) has affirmed that people tend to sacrifice interest before prestige and prestige before gender-type in career compromising situations, subsequent research has not confirmed her view (Hesketh, Durant, & Pryor, 1990; Holt, 1989; Leung & Plake, 1991; Pryor & Taylor, 1986; Taylor & Pryor, 1985). In particular, studies examining the interest dimension in relation to prestige and/or gender-type dimensions yielded two general conclusions: (a) "interest-seeking" does not consistently explain career-related preferences, choices, and job changes, and (b) not all individuals maintain consistency with their self-knowledge of interest when establishing their occupational preferences (Hesketh, Durant, & Pryor, 1990; Holt, 1989; Taylor & Pryor, 1985). These findings suggest that interests alone do not adequately explain the

choice behaviors of individuals who face career options.

One explanation of these inconclusive results has been offered by Gati and Winer (1987). They suggested that people prefer certain occupations over others based on their subjective self-perceptions. These self-perceptions encompass a "cognitive map" of various occupational choices including occupational stereotypes (Gati & Winer, 1987). Therefore, occupational preferences may not be based on the interest dimension alone. Given this premise, relevant questions to inquire may be: Are certain individuals less compelled to use their self-knowledge of interest as a primary guide in formulating their career-related preferences? If so, then for these individuals, what other personality variables, aside from the Holland's congruency criteria, may serve as a more compelling source in guiding occupational preferences?

One personality variable that can possibly explain occupational preferences is the individual's self-monitoring orientation (Snyder, 1987). In social psychology, self-monitoring is defined as the motivational and cognitive processes by which "individuals actively plan, enact, and guide their behavioral choices in social situations" (Snyder & Cantor, 1980, p. 222). A person's self-monitoring orientation is viewed as a stable psychological trait that explains individual differences in how persons select and adapt to their environments and in how tolerant and flexible they are of personality-environment conflicts (Snyder, 1974,

1979, 1987; Snyder & Gangestad, 1986). Relative to low self-monitors, high self-monitors tend to: (a) control their "public image" to accommodate social situations and interactions; (b) be more adept at identifying social and interpersonal information that is relevant for social behavior; and (c) behave according to external expectations. Low self-monitors, on the other hand, tend to: (a) value consistency between their personal values and beliefs and their behavior; and (b) rely more on their self-knowledge in guiding their behavior in social situations (Snyder, 1987).

Given the characteristic differences between high and low self-monitors, can the self-monitoring construct offer an explanation to observed variation in people's career preference tendencies? It would seem that knowledge of a person's self-monitoring orientation should augment our ability to predict which individuals will adhere to or suspend self-knowledge when forming their occupational preferences. Specifically, low self-monitors may be especially inclined to maintain choice consistency with their self-knowledge and to prefer occupations that are congruent with their interests, whereas high self-monitors may be less inclined to maintain interest congruence when the external, socially-valued prestige differences between the alternatives are noticeably different.

Vocational psychology research has a deep-rooted, if short, history in studying gender differences in career choice and development (Betz & Fitzgerald, 1987; Betz &

Hackett, 1981; Fassinger, 1990; Fitzgerald & Betz, 1983; Fitzgerald & Crites, 1980; Gottfredson, 1981). In particular, studies that investigated occupational preferences based on Gottfredson's (1981) career compromise approach have found gender differences (Leung & Harmon, 1990; Leung & Plake, 1990; Taylor & Pryor, 1985). These studies, however, did not take self-monitoring into consideration. In fact, there has been only one study that specifically investigated gender in relation to self-monitoring and occupational choice (Brown, White, & Gerstein, 1989). Due to this lack of attention, the present study will examine gender as a factor along with Holland interest type and self-monitoring.

Problem Statement

The present study proposes that, in addition to a person's gender and occupational interests, individuals' self-monitoring orientation (Snyder, 1974, 1987) is significantly related to their occupational preferences. For many, maintaining consistency with self-knowledge of their interests is indeed highly critical to their occupational preferences. For others, achieving such agreements may be less important, especially if the considered occupational alternatives are inconsistent with respect to social prestige or status. For this latter group, an occupation's prestige level may be a more compelling criterion when choosing occupations. In general, occupational prestige distinctions reflect the social

recognition persons attribute to occupations (Holt, 1989; Plata, 1975). Therefore, prestige level may serve as a critical consideration to those who place great relevance on social recognition.

The main purpose of the study was to examine the role of persons' self-monitoring orientations in predicting the extent to which individuals would maintain versus suspend interest self-knowledge when forming occupational preferences. In investigating this relationship, the variables of gender and interest personality type were also considered in the study. A measure of occupational preference was developed that systematically varied the prestige level and the Holland personality/ interest type of occupational choices. A sample of college students (N = 413) was surveyed and asked to complete measures that identified their Holland interest type and their self-monitoring orientation. The Holland type, in this study, served as the students' own occupational self-knowledge of their interests.

The main research question under study was: Accounting for possible gender and Holland interest type differences, do persons' self-monitoring orientation predict the relative importance that is placed on prestige versus interest self-knowledge when forming their occupational preferences?

CHAPTER II

Review of Literature

This section focuses on six areas of related research including: (a) Holland's personality types; (b) Holland's congruence construct; (c) research on occupational prestige; (d) occupational prestige, interest, and career choice; (e) self-monitoring theory and research; and (f) relation of self-monitoring and career preferences.

Holland's Personality Types

Holland's theory of work personality types and work environment types or environments is one of the most extensively researched theories of vocational choice (Holland, 1973, 1985a, 1985c; Holland & Gottfredson, 1976; Weinrach & Srebalus, 1990). Holland (1973, 1985a) proposed the existence of six specific personality types and six corresponding work environments. The majority of congruence research has relied on Holland's personality types to study people's vocational interests and behavior (Spokane, 1985).

In brief review, Holland characterized: (a) Realistic (R) type persons as asocial, practical, and interested in outdoor, mechanically-oriented activities; (b) Investigative (I) type persons as analytical, cautious, and interested in science-related activities; (c) Artistic (A) type persons as imaginative, idealistic, and interested in artistic and

self-expressive activities; (d) Social (S) type persons as cooperative, empathic, and interested in helping-related activities; (e) Enterprising (E) type persons as ambitious, dominant, and interested in business-related activities; and (f) Conventional (C) type persons as methodical, careful, and interested in activities that require organizational skills.

According to Holland (1973, 1985a, 1985c), each work environment reflects its representative personality type. Realistic (R) type work environments are characterized by the prominence of physical, machine-oriented activities; Investigative (I) type environments emphasize science-oriented activities that stress analytical tasks; Artistic (A) type environments provide job opportunities for creative and artistic pursuits; Social (S) type work environments are mainly people-oriented and center around interactive and helping activities; Enterprising (E) type work environments focus on business-related opportunities that involve entrepreneurial pursuits; and Conventional (C) type work environments are characterized by structured and repetitive work tasks, often of a clerical nature.

In Holland's (1973) original work, he argued that, for the most part, people can be categorized into one of the six personality types. In order to explore the degree of similarity between personality types, Holland (1973, 1985a) empirically developed a hexagonal model based on the six types. Each corner of the hexagon is represented by a

personality type, and the sequential order of types on the hexagon begins with R (Realistic), followed by I (Investigative), A (Artistic), S (Social), E (Enterprising), and C (Conventional). The order of R, I, A, S, E, and C illustrates the conceptual "distance" between personality types, such that, the shorter the distance, the greater the similarity between types. Therefore, the most distant or least similar personality type pairs are on diagonally opposite ends of the hexagon: R and S, I and E, and A and C (Holland, 1985a).

Holland's Congruence Construct

Holland's (1973) construct of congruence and its relationship to career-relevant variables has stimulated an array of studies. Particularly relevant in his description of congruence was his assertion that, "vocational satisfaction, stability and achievement depend on the congruence between one's personality and the environment in which one works" (p. 9). This section covers the literature that specifically pertains to congruence and its relationships to work satisfaction, stability, and achievement (Assouline & Meir, 1987; Smart, Elton, & McLaughlin, 1986; Salomone & Sheehan, 1985; Spokane, 1985; Spokane & Derby, 1979; Swaney & Prediger, 1985; Wiggins, Lederer, Salkowe, & Rys, 1983).

Swaney and Prediger (1985) explored the congruence-satisfaction relationship among young adult employees in a six-year longitudinal investigation. Congruence was

measured by the Vocational Interest Profile Alternate Form (VIP-A) and the job satisfaction measure was assessed by the Institute for Demographic and Economic Studies (IDES) that contained an item pertaining to the person's "chance to do interesting work". Results showed a significant congruence-job satisfaction relationship which supported a relationship between occupational interest and job satisfaction. A stronger congruence-satisfaction relationship resulted when a subsample was tested from the general sample who met the indicators of "interest clarity", "career salience", and "value on interesting work". In conclusion, Swaney and Prediger (1985) suggested a more precise measure of congruence for future research.

Smart, Elton, and McLaughlin (1986) also found support for the congruence-satisfaction relationship. They extended their investigation to examine gender and individual Holland personality types (i.e., Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C)) differences in the congruence-satisfaction relationship. From a large subject pool (N = 10,326) originally surveyed by Astin (1982), the overall findings indicated that: (a) there was an overall significant congruence-satisfaction relationship; (b) both male and female subjects' job satisfaction was significantly related to congruence; and (c) there was no Holland personality type differences in congruence-satisfaction relationship. Specific gender differences were found with "extrinsic job

satisfaction" (i.e., income, fringe benefits, job security) more important to male subjects, whereas "overall job satisfaction" (i.e., one item asking one's overall satisfaction to his/her job) was more important to female subjects. Since Holland (1973, 1985a) provided no theoretical basis for examining the congruence construct across either gender or Holland personality type, Smart et al.'s (1986) investigation contributes to congruence research by exploring the relations among these variables.

Wiggins, Lederer, Salkowe, and Rys (1983) also found the congruence-job satisfaction relationship to be significant. Subjects in this study were 247 teachers who were asked to complete a Job Satisfaction Blank (Hoppock, 1935), and the Vocational Preference Inventory (Holland, 1975). Their results showed that Conventional and Artistic type subjects reported higher job satisfaction whereas the Enterprising type subjects reported lower job satisfaction.

However, while some studies have supported Holland's predictions regarding the relationship of congruence to occupational satisfaction, others have found contradictory results. For example, Spokane and Derby (1979) had female undergraduate students take a battery of assessments to determine relationships among congruence, satisfaction, and personality pattern. Results indicated that the congruent students were significantly more "consistent" than incongruent students, as determined by Holland's (1973) hexagonal distance between their first two Holland code

types (e.g., S and E code-types being closer in distance than S and C code-types). Furthermore, their results indicated significant congruence-certainty and congruence-perceived congruence relationships as determined by Likert scaled items measuring "certainty of career choice" and "matching of career interest". On the other hand, job satisfaction differences were not found in personality patterns using Locus of Control Scale (Levenson, 1972) and Barron's Ego Strength Scale (Barron, 1953), indicating that personality did not predict subjects' satisfaction with their jobs. Spokane and Derby (1979) concluded that once the subjects made choices based on their interests, they were more certain, more consistent, and more affirmed in their choices, but not necessarily more satisfied with their work.

In addition to the studies investigating the relationship between congruence and job satisfaction, other notable studies investigated congruence and its relationship to job stability and academic achievement (Assouline & Meir, 1987; Salomone & Sheehan, 1985; Spokane, 1985). In comparison, congruence-stability and congruence-achievement relationships were not as strongly supported as the congruence-satisfaction relationship, with more studies yielding non-significant results.

Salomone and Sheehan (1985) explored the relationship between congruence and stability, in part to clarify the definition of "stability". Using Holland's (1973)

operational definition of vocational stability (i.e., job changes over time and psychological distance between jobs), these investigators found no significant congruence-stability relationship among 470 nonprofessional employees. Their results suggested that a person's work environment need not be congruent with his or her personality type in order for it to be stable. They further concluded that for nonprofessionals, other factors, such as economic gain, may be more critical in maintaining stability than congruence between a person's interest and occupational choice.

In a comprehensive review, Spokane (1985) examined 63 studies that explored Holland's concept of person-environment congruence. Overall, he found conflicting results, suggesting that congruence did not appear to be consistently associated with pertinent career-related outcomes. He found relatively consistent results among correlational studies investigating relationships between congruence and such career-related variables as academic performance (i.e., achievement, GPA), academic persistence, job satisfaction, stability of choice, perceived congruence, and personality (i.e., ego strength), with most studies indicating minimal-to-moderate positive significant relationships (r range of .25 to .35). On the other hand, studies examining the correlation of congruence with such variables as personal, work, and academic adjustments, ability (i.e., ACT scores), leisure activities, roommate conflict, and work and personal values were found

to have either mixed findings or nonsignificant results. Interestingly, studies investigating the relation of congruence to personality factors (i.e., sociability) and self-concept resulted in nonsignificant correlations (Spokane, 1985). Spokane (1985) concluded that experimental limitations, such as poor sampling and the simplicity of the correlational design, may have contributed to these inconsistent findings.

Assouline and Meir (1987) also examined 41 studies on congruence and its relations to satisfaction, stability and achievement in their meta-analytic study. Contrary to Spokane's (1985) findings supporting congruence-stability and congruence-achievement relationships, Assouline and Meir (1987) found low correlations between these relationships. Despite the significance of the congruence-satisfaction correlation ($r = .21$), this value was still lower than Spokane's r range of .25 to .35.

Research on Occupational Prestige

Occupational prestige or status is a dimension which reflects the social value rankings of occupations (Holt, 1989). Researchers, both in sociology and vocational psychology, have found occupational prestige to be a reliable discriminating variable in identifying people's perceptions of and preferences for various occupations. From a sociological perspective, research on the stability or consistency of occupational prestige has been extensive (Counts, 1925; Deeg & Paterson, 1947; Fossum & Moore, 1975;

Hakel, Hollmann, & Dunnette, 1968; Plata, 1975; Reeb, 1974). In a landmark study by Counts (1925), a respondent sample composed of high school students, college students, and school teachers ranked 45 occupations corresponding to occupational prestige. Results indicated that occupations such as physician and lawyer ranked very high while janitor and ditch digger ranked very low.

Since then, prestige studies have yielded strong support for the consistency of perceived prestige levels (Reeb, 1974), the cross-cultural consistency of prestige rankings (Braun & Bayer, 1973; Plata, 1975), and the longitudinal and cross-sectional stability of prestige ratings (Deeg & Paterson, 1947; Hakel, Hollaman & Dunnette, 1968). For example, fifty years after Counts' (1925) study, Fossum and Moore (1975) found that the prestige level rankings of Counts' (1925) occupations remained unchanged among cross-sectional groups of college students differing in geographical regions and political orientations. These authors concluded that "among Americans, agreement on occupational prestige is extremely high" (p. 310). In another study, Plata (1975) observed that historical changes, such as the developments of equal employment, socioeconomic status, education, political climate, and technological advancement, did not affect the prestige level rankings of occupations since Counts' (1925) initial study.

A more recent occupational prestige study (Chartrand, Dohm, Dawis, & Lofquist, 1987) also supported the

consistency and stability factors of prestige. When Chartrand et al. (1987) had college students alternately rank three constructed sets of 25 occupations, which included the original occupations used by Deeg and Paterson (1946), the interrater agreement across three sets was .98, .99, and .99. Their findings also showed that the more specific educational training requirement of an occupation (e.g., lawyer, physician) the less interrater variation in prestige rankings. This finding suggested that prestige was strongly related to an occupation's educational requirements (Chartrand et al., 1987).

Several sociological studies have defined and operationalized occupational prestige, and have determined the prestige levels of different occupational categories (Duncan, 1961; Featherman & Hauser, 1976; Stevens & Cho, 1985; Stevens & Hoisington, 1987). In a study employing 1980 census occupational classification information and the revised Socioeconomic Index (SEI), Stevens and Cho (1985) defined and operationalized the occupational prestige as the combination of "persons' evaluations of the relative merits (goodness, worth, status, power) of the occupation ... (and the averaged rankings) of occupations arrayed by median education and income levels" (p. 142). These authors also identified approximately 890 categories of occupational titles that developed from the original Duncan Socioeconomic Index (SEI: Duncan, 1961). According to Stevens and Cho (1985), a critical difference between the 1970 census and

the 1980 census occupational classification schemes was that the 1980 census provided larger number of detailed occupations and occupational categories. These categories were based on a set of general occupational headings of: (a) managerial and professional specialty occupations; (b) technical, sales, and administrative support occupations; (c) service occupations; (d) farming, forestry, and fishing occupations; (e) precision production, craft, and repair occupations; and (f) operators, fabricators, and laborers (Stevens & Cho, 1985; Stevens & Hoisington, 1987).

In a subsequent study, Stevens and Hoisington (1987) investigated occupations' prestige level changes based on a noticeable increase of female workers entering into particular occupations. Despite the lack of definitional consensus for "occupational prestige", prestige rankings seemed to be consistent over time (Counts, 1925; Fossum and Moore, 1975; Plata, 1975). In this particular study, Stevens and Hoisington (1987) found "traditional" feminine and masculine occupations to have remained stable since the early 1970's. With regard to gender differences, women were mostly concentrated in the lower two-thirds of the occupational prestige hierarchy whereas men were distributed throughout the entire range. However, due to the fact that certain higher prestige occupations (e.g., social workers, teachers) were held predominantly by women and certain lower prestige occupations (e.g., truck drivers, auto mechanics) were predominantly held by men, the overall prestige

distributions were similar for women and men (Stevens & Hoisington, 1987).

Occupational Prestige, Interest, and Career Choice

In vocational psychology, a number of studies have examined how occupational interest, prestige, and gender-type considerations affect career choices (Hesketh, Elmslie, & Kaldor, 1990; Holt, 1989; Leung & Plake, 1990; Pryor & Taylor, 1986; Taylor & Pryor, 1985). Much of this work has been stimulated by Gottfredson's circumscription and compromise model of career choice (Gottfredson, 1981). Gottfredson (1981) described a person's occupation as "a very public presentation" of him or herself. While recognizing the interdependent nature of interest, prestige, and gender-type dimensions of occupations, she argued that these dimensions become differentially important when the person faces career "compromise". Compromise was defined as the act of changing and/or accommodating one's career goals when "uncontrollable circumstances" (e.g., unavailability of desired jobs, inability to have desired jobs) intervene. According to Gottfredson (1981), "Some aspects of self-concept are more central than others and will take priority when compromising occupational goals" (p. 572).

Gottfredson (1981) claimed that gender-type was the most protected aspect of self, therefore, the most resistant change when considering occupations. Occupational prestige or social standing was considered the second most protected aspect, followed by the personal interest in an occupation

(Gottfredson, 1981). Therefore, when people face career decisions where compromise is necessary, Gottfredson (1981) theorized that they first tend to sacrifice their personal interests, followed by prestige and gender-type preferences, respectively.

Studies focusing on the relationships among gender-type, prestige, and interest factors of occupations have yielded equivocal results, with the majority of the studies failing to support Gottfredson's compromise principle (Hesketh, Durant & Pryor, 1990; Hesketh, Elmslie & Kaldor, 1990; Holt, 1989; Leung & Plake, 1990; Pryor & Taylor, 1986; Taylor & Pryor, 1985).

In Taylor and Pryor's (1985) study of course choice, a sample of 287 Australian college-bound students was asked to complete a questionnaire and Vocational Preference Inventory (Holland, 1978). The questionnaire asked subjects to specify their course choice and occupational plans if they did not obtain college admission. Subjects' ideal choice and planned compromises were differentiated according to course/occupation content, Holland personality type, prestige level, and gender-type. Prestige appeared to act as a moderating variable in that those subjects who did not choose courses based on interest tended to choose them based on prestige. Between interest and gender-type dimensions on course choices, subjects maintained either neutral or "traditional" gender-type regardless of whether or not the course was of interest to them. Gender differences were

found, with males more likely than females to confine themselves to a smaller range of career options that had high prestige and traditionally masculine gender-type. Taylor and Pryor's (1985) findings provided some support to Gottfredson's theory of compromise, especially in relation to the gender-type dimension of course choice.

Shortly after their 1985 study, Pryor and Taylor (1986) conducted yet another study of people's compromising tendencies when faced with gender-type, prestige and interest considerations. This study was the first to utilize a "forced-choice" methodology in which subjects were presented with hypothetical situations/vignettes then asked to choose within occupational pairs that varied according to gender-type, prestige and interest. In Pryor and Taylor's (1986) investigation, subjects (i.e., high school students, college students, and career counseling clients) were asked to respond to a series of vignettes containing career compromising situations. Three systematically-different situations or vignettes of (a) dissimilar interest, similar prestige and gender-type option, (b) similar interest and gender-type, dissimilar or low prestige option, and (c) similar interest and prestige, dissimilar gender-type options were presented. Results indicated that the subjects were more likely to sacrifice the prestige dimension than to sacrifice interest or gender-type dimensions. There were also no significant demographic differences in the subjects' vignette responses when gender, age, or subjects' own

expressed career choices were analyzed.

Unlike Pryor and Taylor's earlier study (Taylor & Pryor, 1985) in which the students were free to specify any compromise option, this study forced its subjects to select one of three situational options. However, despite methodological differences in these studies, they both indicated that gender-type was most resistant to compromise. Pryor and Taylor (1986) suggested that future career compromise research should focus on the "social realities", such as employment situation and socioeconomic status, as well as vocational interest and aptitude.

Holt (1989) used two methodologies in his study of career compromise: (a) a forced-choice method in which occupations were paired with contrasting interest and prestige levels and (b) a card sort method in which 20 cards were presented with cards representing different interest and prestige levels. Subjects were social work (representing Social type) and engineering (representing Realistic type) college students. He found that, for engineering students, only the high status occupations were preferred regardless of interest. As for the social work students, both high and low prestige Social (S) type occupations were equally preferred indicating that the interest factor was more important to them. Therefore, Holt (1989) concluded that students' specific field setting (i.e., engineering versus social work) was a determining factor in the differential importance of prestige and

interest levels of occupations.

Leung and Plake (1990) examined the occupational preference of gender-appropriateness (or gender-type) and prestige dimensions among college students. In order to investigate students' relative preference of occupations, the authors constructed a "forced-choice" survey (i.e., Occupational Choice Dilemma Inventory) that systematically varied occupational prestige (low, medium, and high) and gender-type levels (feminine, neutral, and masculine). The survey consisted of pairs of occupations that systematically differed in prestige level and gender-type within each pair. Their results indicated that prestige was preferred over gender-type, a finding which contradicted Gottfredson's notion of the hierarchical importance for gender-type, prestige, and interest, respectively. In addition, gender was found to be an important determinant of the relative importance of occupational preference. Males were more likely to sacrifice prestige for gender-type when a traditionally-masculine/lower-prestige occupation was paired with traditionally-feminine/higher-prestige occupation and females were more likely to sacrifice gender-type for prestige when a traditionally-feminine/lower-prestige occupation was paired with traditionally-masculine/higher-prestige occupation.

Using a different methodology, Hesketh, Elmslie, and Kaldor (1990) found interest to be the most important and least compromised dimension in career choice. For their

study, they constructed a comprehensive computer-based program that included a number of preference scales. In sequential order, subjects were first asked to rate a set of occupational scales that included prestige, interest, and gender-type criteria. Subjects' own preferred ratings of the occupational scales were then systematically paired, and the subjects were asked to consider two hypothetical occupations within each paired ratings. They were then asked to choose between these two hypothetical occupations (e.g., a traditionally-masculine occupation and a low-prestige occupation). Their sample was comprised of Australian high school students, college students and adults. Subjects completed a semi-structured interview, the Strong Campbell Interest Inventory (Hansen & Campbell, 1985), the Work Aspect Preference Inventory (Pryor, 1983) and a self-assessment of the perceived importance of gender-type, prestige, and interests. Beyond the overall finding that interest was the most important preference dimension, their findings also suggested that interests have a compound nature which may include prestige and gender-type preferences. These results, therefore, not only contradicted Gottfredson's (1981) compromise "hierarchy" in which interest was considered least important, but also gave a more complex picture of people's occupational preferences.

The few studies that have considered gender differences in occupational choice based on prestige and gender-type differences have indicated that males express different

occupational preferences than females (Betz, Heesacker, & Shuttleworth, 1990; Leung & Harmon, 1990). Consistent with Taylor and Pryor's (1985) and Leung and Plake (1990) findings of gender differences, both Betz et al. (1990) and Leung and Harmon (1990) found that males were more restricted in their occupational preferences in that they avoided female-dominated academic majors and occupations. On the other hand, a replication of Wolfe and Betz's (1981) study by Betz et al. (1990) suggested that there was a significant increase among females preferring academic majors in all of "female-dominated" (traditionally feminine), "gender-equivalent" (gender-neutral), and "male-dominated" (traditionally masculine) areas. Whereas 48% of female students' major preferences were female-dominated and only 29% of female students' major preferences were male-dominated in Wolfe and Betz's (1981) study, 40% of female students' major preferences were gender-equivalent, followed by 32% of male-dominated and 28% female-dominated in Betz et al.'s (1990) study.

Leung and Harmon (1990) also found females to cross gender boundaries more readily than males when considering occupations that varied in gender-type and prestige. However, they suggested that such a finding may have been moderated by subjects' sex role orientation. Considering that there were more "masculine" females, based on Bem Sex-Role Inventory (BSRI: Bem, 1978), than masculine males, and that the "androgynous" females and males did not differ in

their occupational preferences, a more important finding may be that those in the androgynous group were more flexible and open to crossing gender boundaries than either masculine or feminine groups (Leung & Harmon, 1990).

In sum, Gottfredson's (1981) hierarchical model has been criticized for failing to take into account the effects of other individual differences and their interactions on the process of career compromise. Hesketh, Durant, and Pryor (1990) criticized Gottfredson's compromise approach for being too content-specific and exact in relation to her "hierarchical order" of gender-type, prestige, and interest dimensions. They suggested a more general career decision model, in which "content-free" structure would be allowed. In this way, individual differences (e.g., based on gender, culture, and socioeconomic circumstance) may be accommodated more comprehensively and specifically.

Self-Monitoring Theory and Research

As the primary developer of self-monitoring theory, Snyder (1987) defined the high self-monitor as a person who is "particularly sensitive to cues to the situational appropriateness of his or her social behavior and who uses these cues as guidelines for monitoring his or her expressive behavior and self-presentations" (p.14). On the other hand, the low self-monitor is a person who is "less attentive to social information about the situationally appropriate self-representation ... (whose) expressive self-representations seem, in a functional sense, controlled

by inner attitudes, dispositions, and values, rather than to be molded and shaped to fit the situation" (p.14).

According to the self-monitoring theory (Snyder, 1979), situation-specific information about socially-appropriate behaviors, and the information about person's own inner states, attitudes and dispositions play vital roles in distinguishing the behavior of high and low self-monitors. As a method of operationalizing the self-monitoring construct, Snyder (1974) then developed a 25-item Self-Monitoring Scale (SMS) to determine people's high or low orientation. This scale has since been revised into an 18-item scale (Snyder & Gangestad, 1986).

Studies have found that relative to low self-monitors, high self-monitors are: (a) relatively "situationally-guided" and observably responsive to social cues of situational appropriateness (Lippa, 1976; Snyder & Cantor, 1980; Snyder & Gangestad, 1982; Snyder & Monson, 1975); (b) more "other-directed" (Kassarjian, 1962; Riesman, 1950) in that they tend to fit their behavior according to external expectations (Snyder, 1987); and (c) more inconsistent in maintaining attitude-behavior consistency (Snyder & Swann, 1976; Snyder & Tanke, 1976). Low self-monitors, by contrast, were: (a) relatively "dispositionally-guided" and less responsive to situational appropriateness (Lippa, 1976; Snyder & Gangestad, 1982; Snyder & Monson, 1975); (b) more "inner-directed" (Kassarjian, 1962; Riesman, 1950) that focused on their values and standards (Snyder, 1987); and

(c) more consistent in making behavioral choices that corresponded to their underlying attitudes and values (Snyder & Swann, 1976; Zanna, Olson, & Fazio, 1980).

Based on the conceptualization that high self-monitors are situationally-guided and low self-monitors are dispositionally-guided, Snyder and Cantor (1980) investigated self-monitoring differences in how subjects accessed information in different social situations. Subjects in this study was asked to respond to and judge 20 personality traits (e.g., active, confident, creative) in relation to different hypothetical scenarios. These scenarios were either of a "self-image" condition (i.e., a condition to which subjects respond to and judge each personality trait "in terms of the importance or relevance to their self-image") or a "other-image" condition (i.e., a condition to which subjects respond to and judge each trait based on "the kind of person who would be very characteristic of their personality [or prototype]"). Results showed that low self-monitors were able to give more information than high self-monitors when asked to respond according to their self-image in each scenario. Conversely, high self-monitors were able to give more information than low self-monitors when asked to respond according to the prototype represented in each scenario.

To further validate this self-monitoring difference, Snyder and Cantor (1980) conducted a similar study on a different subject sample. Subjects were asked to write down

"in their own words" either the descriptions of themselves (i.e., "self-image" condition) with respect to different personality traits or the descriptions of the kind of person that represented as a "good example" (i.e., "other-image" condition). Results supported the expectation that low self-monitors would be more informative and descriptive than high self-monitors in the self-image condition. The opposite was true in the other-image condition, where high self-monitors appeared to access knowledge based on the cues around a prototypic other, while low self-monitors accessed knowledge based on internal cues. This observed difference in the cognitive processes of low and high self-monitors may be critical to the study of how people plan and guide their actions and/or behaviors in social situations.

In yet another hypothetical situation study, Snyder and Gangestad (1982) performed two separate investigations to determine: (a) whether high self-monitors systematically chose to enter and be interactive in social settings that have clear specifications of the character type that one ought to be in and (b) whether low self-monitors chose to enter and be interactive in social settings that have their own personal attributes. The first investigation involved hypothetical situations in which subjects' interest in entering and be interactive in group settings that were either "minimally-defined" in character type or "clearly-defined" in character type was assessed. Results indicated that high self-monitors were more willing to join in

clearly-defined settings than were low self-monitors. At the same time, extroverted low self-monitors were more willing than introverted low self-monitors in joining interactive group settings. There was no introvert-extrovert difference among high self-monitors.

Snyder and Gangestad's (1982) second investigation differed in that subjects were given the opportunity to alter social settings based on their own preference, whether it be based on their internal or external cues. Using two hypothetical situations of "mostly-extroverted character" condition and "mostly-introverted character" condition, subjects were then given the opportunity to change the condition to make the situation "easier" for them. Results showed that low self-monitors altered the setting based on their own personal dispositions more so than high self-monitors. Additional findings indicated that, in general, high self-monitors' responses were relatively clear and expressed in consistent terms. Snyder and Gangestad (1982) concluded that high self-monitors tend to choose social situations that enabled them to readily adapt their self-presentation to fit the situational demands of behavioral appropriateness. On the other hand, low self-monitors tended to choose social situations that readily reflected their own personal attitudes, feelings, and dispositions (Snyder & Gangestad, 1982).

In social psychology, researchers who have studied psychological constructs such as social desirability (Crowne

& Marlowe, 1964), self-perception (Bem, 1972), Machiavellianism (Christie & Geis, 1970), inner-other directedness (Kassarjian, 1962), and self-monitoring (Snyder, 1974, 1979; Gangestad & Snyder, 1985), all have, to some extent, examined the relative importance of self-knowledge and social-knowledge in people. Persons' self-monitoring and their "sense of identity" (i.e., both internal and external sense of who they are based on their values and social situation) were found to be closely related (Ickes, Layden, & Barnes, 1978; Miller & Thayer, 1988; Sampson, 1978). High self-monitors tended to embrace a "pragmatic" conception of self that is guided by specific social settings and their corresponding roles (Snyder, 1987). In one study, Sampson (1978) gave a group of college students a constructed set of "identity characteristics", with half of the items "externally-located" (e.g., "memberships that I have in various groups") and the other half "internally-located" (e.g., "emotions and feelings"), and asked them to judge the importance of each item with their "sense of who I am". He found that high self-monitors considered externally-located identity characteristics as more important than internally-located characteristics.

By contrast, Snyder (1987) noted that low self-monitors seemed to endorse a "principled" conception of self wherein consistency between "who they think they are" and "what they try to do" was highly valued. Their personal values and attitudes were consistently portrayed regardless of the

differences in social situations (Sampson, 1978; Snyder, 1987). Additionally, low self-monitors (a) reported their behavior and action as internally motivated (Brockner & Eckenrode, 1978; Gutkin & Suls, 1979; Snyder & Tanke, 1976); and (b) they possessed clear and accessible self-knowledge, especially the assessment of their own dispositions of identity (Snyder & Cantor, 1980).

In the search for the underlying processes of self-monitoring, a more recent study by Miller and Thayer (1988) investigated the relationship of self-monitoring and identity. A survey packet, containing a revised 18-item Self-Monitoring Scale (Snyder & Gangestad, 1986), Social and Personal Identity Scales (Hogan & Cheek, 1983) and Neuroticism Bipolar Adjective Scales (McClare & Costa, 1985), was administered to a sample of college students. Results indicated that high self-monitors had higher social identity scores than low self-monitors. However, there was no difference between high and low self-monitors in their personal identity concerns. This study supported the previous research on the importance of external orientation among high self-monitors (Snyder, 1974, 1987; Gangestad & Snyder, 1985). On the other hand, the absence of significant differences in personal identity between high and low self-monitors may require further study in the existing conceptualizations of self-monitoring orientations (Miller & Thayer, 1988).

Another branch of self-monitoring research has examined self-monitoring's role in specific interpersonal situations. In particular, a number of studies have focused on the interpersonal contexts of choosing friends and dating partners (Snyder, Berschied, & Glick, 1985; Snyder, Gangestad, & Simpson, 1983; Snyder & Smith, 1984; Snyder & Simpson, 1984). With regard to friendship preferences, researchers have found that high self-monitors chose specific friends for particular activities (e.g., going out to dinner, playing tennis), indicating that they had clear activity boundaries and separated friends according to activities (Snyder, Gangestad, & Simpson, 1983). Low self-monitors, on the other hand, were more likely to retain the same friends for most of the activities, preferring relatively homogeneous and undifferentiated social activities (Snyder et al., 1983).

Studies investigating dating preferences of high and low self-monitors have revealed a similar pattern (Snyder et al., 1985; Snyder & Simpson, 1984). When asked to select a potential dating partner from the file folders (containing both photographs and descriptions of personality qualities), high self-monitoring men spent significantly more time than low self-monitoring men inspecting the photographs of the potential partners. By contrast, low self-monitoring men spent significantly more time inspecting the personality profiles than high self-monitoring men (Snyder et al., 1985).

Snyder and Simpson (1984) asked a group of young adult men to choose between two prospective dating partners. One partner was physically attractive with a withdrawn and self-centered personality profile, and the other was less physically attractive with a sociable and open personality. When forced to choose between the two potential partners, 69% of the high self-monitors chose physically attractive partners and 81% of the low self-monitors preferred the partner with sociable and open personality (Snyder & Simpson, 1984). These researchers concluded that, at least during the initial stage of dating relationship, high and low self-monitors focus differently on their dating partners. For the high self-monitors, physical appearance was a more important consideration than was personality, whereas the reverse was true for the low self-monitors (Snyder & Simpson, 1984).

Relation of Self-Monitoring to Career Preferences

Snyder (1987) speculated on the relation of self-monitoring to career choice, especially about the ways people view and select different occupations. He assumed that low self-monitors are likely to choose occupations that support their own attitudes and personalities whereas high self-monitors are likely to prefer occupations that allow them to display clearly defined roles and to express their self-presentational skills. Among various career fields, Snyder (1987) suggested examples of jobs relevant for high and low self-monitors. He proposed career fields in

theater, public relations, politics, and law as probable occupations for high self-monitors. On the other hand, low self-monitors who believe themselves to be compassionate and helpful to others would choose career fields in the social service or other helping professions.

Among the work-related studies in social psychology, Caldwell and O'Reilly (1982) investigated self-monitoring differences in a corporate setting that involved "boundary-spanning" work. The boundary-spanning work demanded that employees interact as intermediaries between groups who had difficulty communicating with one another. These investigators found that subjects' self-monitoring orientation was related to their success, with high self-monitors performing more effectively than low self-monitors. This finding implied that high self-monitors had adjusted to the work role more quickly and were able to exercise their interpersonal skills in the go-between work situation more readily than were low self-monitors (Caldwell & O'Reilly, 1982; Snyder, 1987).

In vocational psychology, only a few studies have examined the relationship between self-monitoring and career choice. Brown, White, and Gerstein (1989) asked a sample of college students to complete a survey packet containing the Vocational Preference Inventory (Holland, 1977) and a revised 18-item Self-monitoring Scale (Snyder & Gangestad, 1986). Results differed based on subject's gender and self-monitoring in that low self-monitoring males preferred

Social occupations (e.g., minister, teacher, counselor) whereas high self-monitoring males preferred Enterprising occupations (e.g., real estate sales, business executive). By contrast, high self-monitoring females preferred Artistic occupations (e.g., musician, writer) and no significant occupational preferences were found among low self-monitoring females. Brown et al. (1989) suggested that gender-neutral occupations, such as Artistic occupations, allowed high self-monitoring female students to display social skills whereas they may not have as freely in male-dominated Enterprising occupations. One of the limitations of this study was that Realistic, Investigative and Conventional occupational types were not well-represented due to small sample sizes for these types.

Elsewhere, Blustein (1987) examined the relation of two social cognitive orientations (i.e., self-monitoring and location of identity) to person's vocational maturity. Vocational maturity, defined as, "the readiness to cope with the specific vocational tasks that are associated with an individual's stage in life" (Blustein, 1987, p.67), consisted of two relatively discrete domains: cognitive components (i.e., person's career decision-making skills and knowledge of occupational information) and attitudinal components (i.e., person's self-report of career planning and job exploration activities).

Results indicated that while both low self-monitoring and an internal location of identity orientations were

related to the cognitive components of vocational maturity, there was no relationship between self-monitoring and the attitudinal components of vocational maturity (Blustein, 1987). In interpreting the former finding, Blustein (1987) suggested that low self-monitors' more accessible and accurate self-knowledge may have accounted for their higher scores on the cognitive components of vocational maturity. On the other hand, the latter finding indicated a different picture. An explanation may be that the adaptability and flexibility qualities of high self-monitors allowed them to respond according to the perceived social demands of career planning and exploration activities (Blustein, 1987).

Snyder (1987) asked the question: "What correspondences might the career counselor find between the Holland themes and Self-monitoring orientations?" (p. 91). He went on to speculate that the thematic profiles of high and low self-monitors indicated that possibly Holland's (1974) Enterprising and Social types were most associated with high self-monitors and Conventional and Realistic types with low self-monitors. He did not state any reference to either Investigative or Artistic type.

The association between self-monitoring and occupations may be summed up in one statement or "theme" (Snyder, 1987). According to Snyder (1987),

> That theme is the fit between people and their work situations. It is a theme, that surfaces in considering how people choose jobs and careers, in examining how people perform on the job, and in thinking about career counseling and personnel selection. It recognizes the interactive influences of

> people's characteristic social styles and their work situations. And, it is a theme that recognizes the active role people take in choosing and influencing their occupational situations (p. 92).

Summary

The above literature review offers the following observations. First, while many people may take their personal interests into account when establishing their occupational preferences, research on the congruence hypothesis has produced inconsistent results, indicating that not all persons choose interest-congruent occupations. Therefore, Holland's assumption that persons seek to achieve "congruence" (i.e., that they seek and prefer occupations that "match" their interests or personality types) may have failed to take into account individual differences that influence the degree to which people maintain behavioral consistency with their self-knowledge.

Second, occupational prestige is a relatively stable and consensually agreed upon characteristic of occupations that, like interest compatibility, is an important dimension influencing occupational preferences. Third, efforts to establish whether one's personal interest type or the commonly perceived prestige level of an occupation is the more compelling source of information in making occupational "compromises" have likewise produced inconsistent results. Given that each interest type is different with regard to work personalities, certain Holland types place greater importance on prestige than other types. Investigations of the relations between gender and occupational preferences

have found that males are more likely than females to restrict their career options based on gender-type and prestige considerations. These findings suggest that individual differences may again affect one's preferences for occupations that vary on these critical dimensions.

Finally, research on self-monitoring has indicated that this personality construct effectively predicts whether persons are more likely to be "dispositionally-guided" or "situationally-guided" when making their behavioral choices. With regard to the limited research conducted on self-monitoring and career choice, one study revealed gender and self-monitoring differences in people's occupational preferences. In addition, speculations were made regarding the relationship between high and low self-monitors and their propensities toward specific occupations, suggesting that Artistic and Enterprising occupations were preferred by high self-monitors.

Hypotheses of the Study

Taking the above assumptions and observations into consideration, the present study examined the relationships of respondents' gender, interest/personality types (Holland interest types), and self-monitoring scores to their occupational preferences in a forced-choice situation. Three occupational preference scores were computed from respondents' responses to the forced-choice pairs of occupations: an "interest congruence" preference score (i.e., number of times respondents preferred occupations

that were congruent or "matched" their interest types relative to occupations that were incongruent or "opposite" to their interest types); an "overall prestige" preference score (i.e., number of times respondents preferred high prestige occupations over low prestige occupations); and a "prestige over interest" score (i.e., number of times respondents preferred high-prestige/low-interest [opposite Holland type] occupations over low prestige/high interest [matched Holland type] occupations).

The following hypotheses were investigated in the study:

Relationships among independent variables of gender, interest type, and self-monitoring orientation

Hypothesis 1 - There will be a significant relationship between Holland interest type and self-monitoring orientation. Specifically, Artistic(A) type and Enterprising(E) type respondents will have higher self-monitoring scores than either Investigative(I) type or Social(S) type respondents.

Hypothesis 2 - There will be no significant relationship between gender and self-monitoring orientation.

Hypotheses relating gender and interest type to 'interest congruence' scores

Hypothesis 3 - There will be no significant relationship between respondents' gender and their preference for interest-congruent occupations.

Hypothesis 4 - There will be no significant relationship between respondents' Holland interest type and their preference for interest-congruent occupations.

Hypotheses relating gender and interest type to 'overall prestige' scores

Hypothesis 5 - There will be a significant relationship between respondents' gender and their preference for high-prestige occupations. Specifically, male respondents will prefer more high-prestige occupations than will female respondents.

Hypothesis 6 - There will be a significant relationship between respondents' Holland interest type and their preference for high-prestige occupations. Specifically, I and E type respondents will prefer more high-prestige occupations than either A or S type respondents.

Hypotheses relating gender, interest type, and self-monitoring to 'prestige over interest' scores

Hypothesis 7 - Controlling for significant demographic variables, respondents' gender will explain significant variance in preferences for high-prestige/low-interest occupations. Specifically, male respondents will more likely prefer occupations that have higher prestige and lower interest-congruence than will female respondents.

Hypothesis 8 - Controlling for significant demographic variables and gender, respondents' Holland interest type will explain significant variance in preferences for high-prestige/low-interest occupations. Specifically, E type respondents will more likely prefer occupations that have higher prestige and lower interest-congruence than will I, A, and S type respondents.

Hypothesis 9 - Controlling for significant demographic variables, gender, and Holland interest type, respondents' self-monitoring orientation will explain significant variance in preferences for high-prestige/low-interest occupations. Specifically, respondents with higher self-monitoring scores will more likely prefer occupations that have higher prestige and lower interest-congruence than will respondents with lower self-monitoring scores.

Definitions

Occupational preference - In this study, occupational preference is defined as the person's choice of the more desired occupation within each presented occupational pair. Occupational preference implies a "wish" people have of their optimal occupations. Therefore, it is not based on the "reality" components (e.g., occupation's availability, occupation's skill requirement) (Gottfredson, 1981). For the purpose of convenience, "occupational preference" and "occupational choice" are used interchangeably.

Congruence - Although Holland's (1973) definition of congruence is the degree of similarity between a person's Holland personality/interest type and the work environment, congruence for this study is defined as a match between the person's primary interest type and the primary interest type of the preferred occupation (e.g., S type person choosing S type occupation). "Congruence", "person-job match" and "personality-occupation match" are used interchangeably.

Interest - Interest is defined as an expression of self-knowledge of a person's personality that plays a critical role in occupational preferences. Therefore, a person preferring a congruent occupation implies that he or she is preferring an occupation consistent with his or her self-knowledge. In this study, persons' "interest type", "personality type" and "Holland interest(or personality) type" are used interchangeably.

Occupational prestige - As defined by Stevens and Cho (1985), occupational prestige is a composite rating based on people's conceptualization of an occupation's "merits" (e.g., worth, power) and the educational and income levels of that occupation. In this study, there are high and low levels of occupational prestige based on Stevens and Cho's (1985) Total Socioeconomic Index scores. "Occupational prestige" and "prestige" are used interchangeably.

CHAPTER III

Methodology

Since the present study proposed to investigate respondents' occupational preferences in a forced-choice format, a dependent measure consisting of pairs of occupations that systematically varied interest types and prestige levels had to be developed. The following section describes the construction of this measure, Occupational Preference Survey (OPS).

The Construction of Occupational Preference Survey (OPS)

1. In general, the survey comprised pairs of occupational titles that contrasted work environment type and prestige level. Prior to developing the occupational pairs, however, a pool of occupational titles that differed in prestige levels (high, low) was needed. The Total Socioeconomic Index (TSEI: Stevens & Cho, 1985), originally developed from the Duncan Socioeconomic Index (SEI: Duncan, 1961), was used to identify occupations (or occupational titles) with high and low prestige levels. The TSEI was based on the 1980 Census data and was derived from income and education levels of approximately 890 occupational titles (Stevens & Cho, 1985). Each occupational title has a TSEI score that represents a combined regression score of prestige rankings (i.e., ratings of occupational criteria such as worth and

power) and averaged rankings of occupations' education and income levels. The TSEI was selected for this study because it: (a) was administered to both male and female adult samples, and (b) had demonstrated high correlations with other major indexes of occupational prestige (Stevens & Featherman, 1981; Stevens & Hoisington, 1987).

2. The next step involved differentiating the work environment types of the selected occupations. After a pool of occupations was selected from TSEI, they were then divided into Holland code types as identified by The Occupations Finder (Holland, 1985d). This classification booklet was developed from the Holland Dictionary of Occupational Codes (Gottfredson, Holland, & Ogawa, 1982) which listed a relatively representative sample of the 12,099 possible occupations in Holland's "three-letter" code types (Holland, 1985c). Although a single code type of Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), or Conventional (C) represented a "primary" code type that is most relevant when matching personality type with work environment, The Occupations Finder (Holland, 1985a) gave a more specific description of each occupation through a three-letter code type. For example, the three-letter code of ESC that has a occupational title of "sales manager" meant that this occupation's primary code type is Enterprising (E), with some characteristics of the Social (S) type and somewhat less of the Conventional (C) type. Following his hexagonal

model, Holland (1973, 1985a, 1985c) argued that R and S types, I and E types, and A and C types were the most "distant" or dissimilar from one another. In order to test its hypotheses, the present study required a clear contrast of work environment types between pairs of occupations. Therefore, given that The Occupations Finder (Holland, 1985d) had a three-letter code for each listed occupation, those occupations that had "opposite" or least compatible code-types in their three-letter codes were not included in the occupation pool. In other words, occupations whose three-letter codes had two codes that were inconsistent or most distant (e.g., RSE, RCS, ISE, ECA, etc.) were excluded from the occupation selection process.

3. This selection process produced a total of 212 possible occupational titles representing two prestige levels (i.e., high and low) and each of the six Holland primary code types (i.e., Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), and Conventional (C)). Twelve sets of occupational titles were prepared for the systematic pairing of occupations based on their work environment type and prestige levels (see Appendix A). Two specific classification processes were involved in the pairing of 212 occupations. The first process involved pairing of occupations that represented "opposite" or most distant environment code-types. Therefore, R type occupations were paired with S type occupations, I type occupations were paired with E type occupations, and A type occupations were

paired with C type occupations. The second process involved the same pairing of occupations, except in this case, the differentiation of high and low prestige levels was designated within each pair according to the Total Socioeconomic Index (TSEI: Stevens & Cho, 1985). A stratified random selection was needed for the prestige level pairings to insure that there was a higher and lower prestige level difference within each pair. The completed product after both classification processes yielded 106 pairs of occupations that systematically varied in work environment types and prestige levels (see Appendix B).

4. As a preliminary test of the measure's content validity, five raters (i.e., two counseling psychology faculty members and three doctoral students in counseling psychology) who were familiar with Holland's six personality types were asked to: (a) identify each occupation's Holland work environment code-type and (b) indicate the higher prestige occupation within each pair. Interrater consistency in code type and prestige identification was then examined. More specifically, those occupations whose Holland type and prestige level were correctly identified by four out of five judges (80% agreement criteria) were included in the final item pool.

5. The final OPS consisted of 60 pairs of occupations which contained six sets of 10 occupation pairs, representing each code type (i.e., R, I, A, S, E, and C) that systematically varied work environment type and prestige (see Appendix I).

The overall TSEI score range for these occupations was from 20.61 to 89.57. The TSEI score ranges of "low" and "high" prestige levels for each Holland work environment type are presented in Table D-1 (see Appendix D). These high and low prestige distinctions were comparable and not obviously differentiated, especially between high and low prestige ranges for A and E types. The TSEI prestige score difference within each pair ranged from 12.62 to 56.30 (m = 36.47). In Table D-2 (see Appendix D), the forced-choice format, or more specifically, the systematically-differentiated occupational preference format, of OPS is summarized.

A Pilot Study

To confirm that prestige differences within each occupational pair were indeed perceived, a pilot study was performed on the Occupational Preference Survey (OPS). A small sample of 27 undergraduate students (20 females, 7 males) who were enrolled in a interpersonal skills class were asked to complete a short demographic questionnaire and a preliminary form of the Occupational Preference Survey (OPS). Subjects were asked to read and sign the consent form prior to questionnaire administration (see Appendix C).

Subjects were asked to indicate the "higher prestige" occupation within each of 60 pairs. The instructions for OPS read:

> The following survey wants to know what kinds of jobs you think have higher prestige than other jobs. There are a total of 60 pairs of occupations and you are to check the one within each pair that you think has a

higher prestige. There are no right and wrong answers so please answer them as you think best. Make sure you select one occupation from each pair. Thanks for your participation.

The frequency and percentage consensus of each OPS pair's prestige level was then tabulated (see Table D-3, Appendix D).

From the 60 OPS occupational pairs, 53 items had relative consistency in being selected the "correct" higher prestige occupation within a given pair (see Table D-3, Appendix D). The higher prestige percentage agreement ranged from 55.6% to 100.0% among the 53 pairs. The remaining seven pairs, on the other hand, had a higher-prestige percentage agreement range of 18.5 % to 48.1%. Due to the unexpected discrepancy of these seven pairs, which were from S(Social)-R(Realistic) pairs and E(Enterprising)-I(Investigative) pairs, an additional step was taken which slightly adjusted these occupational titles in order to more clearly differentiate the prestige levels within each pair.

It was observed that six out of the seven occupational pairs with poor interrater agreement included the term, "technician". This word, therefore, appeared to contribute undesired variation in respondents' prestige ratings. To address this, a small group of content experts (comprised of two counseling psychologists and a pre-doctoral intern with expertise in career psychology) was approached and asked to identify a word or a label other than "technician" that more clearly implied an occupation with lower occupational prestige. The word "worker" was suggested as an

alternative, "lower prestige" term for "technician". The same group of experts was again approached with the word, "air traffic controller", and the occupational title "air traffic controller/worker" was given. Hence, the word "worker" was attached after the word "technician" in all six occupations in an attempt to lower the face validity of prestige. This procedure (i.e., attach worker with a "/" next to technician) was used instead of eliminating the term "technician" in order to preserve these occupations' actual definitions. The final OPS has the word "worker" next to "technician" and "controller" in all of seven pairs (see Appendix G).

Subjects and Procedure

A sample of undergraduate university students (N = 413) enrolled in introductory psychology classes was administered a set of paper-and-pencil measures. These psychology classes represented several different topic areas including general psychology, social psychology, and brain and behavior. Although participation in the study was voluntary, students were given two course credits for the completion of the measures. Prior to test administration, the investigator described the purpose of the study as an exploration of people's career interests and preferences. A brief written statement was accompanied with the consent form (see Appendix E). Informed consent was obtained from all subjects (see Appendix E), and they were told that the complete set of measures would take approximately 40 minutes

to finish. Aside from the demographic questionnaire, the order of (a) OPS (Occupational Preference Survey), (b) Self-Monitoring Scale (Snyder & Gangestad, 1986), and (c) Self-Directed Search (Holland, 1985b) measures was counterbalanced.

Selection of Subjects

In order to be selected for the final sample, respondents had to meet two additional criteria. First, each respondent's score difference between his or her primary and secondary Holland personality types needed to be greater than or equal to four points. Further discussion on this selection criteria is addressed in the "Self Directed Search" section under Measures. Following this selection, the sample size was decreased from 413 to 316 respondents.

The second consideration involved the Holland personality types themselves. Previous research (Holland, 1985a; Spokane, 1985) indicated that, among the traditional college age population, R (Realistic) and C (Conventional) type persons are uncommon, and are therefore not well represented in this population. In consideration of this issue, as well as the overall difficulty in having sufficient sample sizes for all six personality types, the first four most commonly identified personality types were included for the study.

Given these two considerations, the final respondent sample was composed of 294 (197 females, 97 males) respondents. The four most-identified personality types

were Social (n = 163), Enterprising (n = 50), Artistic (n = 44), and Investigative (n = 37) types in this study.

Measures

Demographic Questionnaire (Appendix F). The demographic questionnaire included the following questions: age, gender, current college major, overall GPA, ethnicity, parents' occupations and education levels, confidence levels in college major and future occupation, career plans after graduation, and four statements of the Occupational Information (OI) scale from My Vocational Situation (MVS: Holland, Daiger & Power, 1980) (see Appendix F). The OI scale was included to examine its possible relationship to the study's independent and dependent variables. The four statements in the OI represented areas of occupational information that respondents could answer either "Yes" or "No". These statements assessed the respondents' occupational needs based on their career plans. Holland et al. reported that the OI scale had adequate internal consistency within a college student sample (KR 20 = .78).

Self-Monitoring Scale (SMS) (Appendix G). A revised 18-item self-monitoring scale (SMS: Snyder & Gangestad, 1986) was administered to measure respondents' self-monitoring orientation (see Appendix G). The SMS uses a "true (T) or false (F)" response format. The SMS's total scores range from 0 to 18, with higher scores indicating a higher self-monitoring orientation. For college students, self-monitoring orientations tended to be slightly higher

than those of non-college adults, with greater than 50% of college students scoring 11 or above (Gangestad & Snyder, 1985). The present study used the SMS as a continuous measure to determine respondents' self-monitoring orientations.

This scale was derived from Snyder's (1974) original 25-item SMS and was found to have somewhat higher internal consistency (coefficient α = .70) than the original scale (α = .66) (Snyder & Gangestad, 1986). The validity of the original 25-item SMS has been extensively discussed (Lennox & Wolfe, 1984; Snyder & Gangestad, 1986). Briggs, Cheek, and Buss (1980) questioned the operationalization of SMS in measuring the construct of self-monitoring. In their investigation, Briggs et al. (1980) reliably established three item-content groups of "expressive self-control" (an ability to control expressive behavior), "social stage presence" (a willingness to perform in social situations and attract attention to oneself), and "other-directed self presentation" (a display of behaviors in social situations that others expect one to display). According to these researchers, the fact that multiple individual differences may be interrelated between self-monitoring items in the scale was a serious concern. Lennox and Wolfe (1984) also criticized the SMS's lack of "fidelity" to the self-monitoring construct and the scale's psychometric weakness based on factor analyses performed on the scale. Snyder and Gangestad (1986), however, disputed their claims by

indicating (a) the low to marginal correlations of the SMS and other personality measures, thus satisfying that SMS did measure what the self-monitoring construct implied that it should measure, and (b) such rigid adherence to a "single scale for single construct" rule may unintentionally omit the subtle expression of personality and its development.

After a considerable review, Snyder and Gangestad (1986) did subsequently drop seven items from the original 25-item scale to increase its reliability and retain its construct validity (Snyder, 1987; Snyder & Gangestad, 1986). The revised 18-item scale is reported to be more factorially pure, accounting for 62% of the common variance compared to 51% of the variance accounted for by the original 25-item scale (Gangestad & Snyder, 1985).

Self Directed Search (SDS) (Appendix H). The Self-Directed Search (SDS: Holland, 1985b) inventory was chosen to identify subjects' primary interest type. The SDS has been extensively researched for its comprehensiveness in measuring persons' career-related interests and perceived competencies (Holland, 1985c). SDS items are organized into four response categories: Activities, Competencies, Occupations, and Self-Estimates (see Appendix H). The Activities category has six scales representing R, I, A, S, E, and C code-types and each scale includes 11 items. These items are responded in a "Like or Dislike" format that assesses the respondent's interests of specific activities and behaviors of the six code-type work settings. The

Competencies category has six scales with each scale containing 11 items. These items are in a "Yes or No" format that explores the respondent's self-perceived skills and aptitudes in activities representing each of the six code-types. The Occupations category has six scales with each scale containing 14 items. These items are occupational titles from the Vocational Preference Inventory (PI). Respondents indicate the interest in each of the six code-type occupations by using a "Yes" or "No" format. The Self-Estimates category has two sets of six ratings with each rating corresponding to a code-type. These ratings use a 7-point Likert response format (i.e., Low, Average, and High) that explores the respondent's own self-evaluations of skills and abilities that relate to the six code-types.

From these four categories, the scores are totaled based on each of the six Holland personality types, or in this case, Self Directed Search (SDS) code-types. The highest total score was designated as subject's "primary" personality or interest type. Taking into account the likelihood that a respondent may have two identical or similar Holland type scores, a score difference of at least four between the primary and secondary types was established. A "rule of 8" was suggested by Holland (1985a) in an attempt to clearly distinguish a person's primary personality type from his or her other types. However, in consideration of the possibility that a large number of respondents from the sample may be dropped due to this rule,

a "rule of 4" was employed as a less conservative restriction. In fact, a noticeable decrease from 413 to 225 would have resulted if the "rule of 8" was kept in the study.

Statistically, the SDS is among the most well-researched instruments developed by Holland (1985a, 1985c). Among males and females in the age range of 19 to 25 years, the correlated split-half reliability coefficients for the 1985-version SDS Summary scales (which include the subscales of Activities, Competencies and Occupations, and Self-Estimates) ranged from .86 to .91. In general, the 1985 version was slightly more reliable than the 1977 version, and this was very evident in S and E Activities scales (.78 [1985] versus .52 [1977]; .81 [1985] versus .68 [1977], respectively) (Holland, 1985c). The correlations for the Summary scales versus the subscales (Activities, Competencies, and Occupations) and Self-Estimates ranged from .53 to .89 for females and from .62 to .90 for males. In the same age group of 19 to 25, the concurrent validity based on "% hits" (the percentage agreement from subjects between their primary SDS code-type and first-letter type of their current vocational aspiration) indicated relatively moderate-high rates of 59.0% and 61.9% hits for males and females, respectively (Holland, 1985c).

Variables

In this study, gender, Holland interest/personality types (i.e., I, A, S, and E types), and self-monitoring

score were the independent variables under investigation. The Occupational Preference Survey (OPS) scores represented the following three dependent variables examined in the analyses: (a) an 'interest congruence' preference score, (b) an 'overall prestige' preference score, and (c) a 'prestige over interest' preference score. Scores on the dependent measures were computed as follows. The OPS (Occupational Preference Survey) comprised 60 total pairs in which each set of 10 pairs represented each of six Holland types (R, I, A, S, E, and C). For the 'interest congruence' preference score, each respondent obtained a score within a potential range of 0 to 20. In this score, only the interest level of the occupational preference was taken into account. The respondent received a single count every time he or she selected an occupation that corresponded to his or her Holland type irrespective of the occupation's prestige level. For example, an A type respondent would receive one count either way for preferring "sculptor" (low-prestige/A work-environment type) over "account management analyst" (high-prestige/C work-environment type) or preferring "commercial artist" (high-prestige/A work-environment type) over "data entry operator" (low-prestige/C work-environment type).

For the 'overall prestige' score, each respondent obtained a score within a potential range of 0 to 60. In this score, only the prestige levels of the respondent's preferences were taken into account. Therefore, a

respondent received a single count every time he or she selected a higher prestige occupation over a lower prestige occupation irrespective of his or her Holland type. For example, the same A type respondent mentioned above would receive one count for preferring "commercial artist" over "data entry operator". By the same token, this respondent would also receive one count for preferring "judge" (higher prestige) over "chemical technician" (lower prestige) even though this occupational pair was based on E and I types and not A and C types.

Finally, for the 'prestige over interest' preference score, each respondent received a score within a potential range of 0 to 10. The respondent received a single count every time he or she selected a high-prestige/low-interest occupation over a high-interest/low-prestige occupation. In keeping with the same A type respondent, his or her score range would include occupational pairs that had higher prestige C type and lower prestige A type. For instance, this respondent would receive one count if she preferred "account management analyst" over "sculptor".

Analyses of Data

Preliminary analyses of intercorrelations were first examined to identify significant linear and bivariate relationships among relevant demographic variables and independent and dependent variables. These analyses were conducted: (a) to consider any significant demographic variables for the subsequent hypothesis testing, and (b) to

explore any additional significant relationships other than the hypotheses proposed in the study.

Hypotheses 1 through 6 were foundational hypotheses in this study. These hypotheses are stated in the Hypotheses of the Study section in Chapter II. Separate analyses of variance (ANOVAs) were used to investigate the hypothesized effects of gender and Holland interest type (2 x 4 ANOVAs) on self-monitoring, 'interest congruence', and 'overall prestige' scores. Although self-monitoring was considered as an independent variable, for Hypotheses 1 and 2, it was treated as a "dependent" variable in the ANOVA.

The main research question in this study was addressed via Hypothesis 9, with Hypotheses 7 and 8 investigating subsidiary questions. A multiple regression was used to test for Hypotheses 7 through 9, by investigating the amount of variance in the 'prestige over interest' scores that was explained by respondents' gender, Holland interest type, and self-monitoring orientation. A hierarchical multiple regression was performed, entering subjects' race first, followed by subjects' gender, Holland interest type, and self-monitoring. Lastly, the two and three-way interactions of the latter three variables were allowed to enter the equation.

The regression approach was chosen (a) to control for relevant demographic variables and (b) to treat self-monitoring scores as a continuous independent variable. Given that prior research has reported gender (Betz et al.,

1990; Leung & Harmon, 1990) and Holland type differences (Holt, 1989) in forced-choice occupational situations, these two variables were entered prior to self-monitoring.

The primary variable in this study, self-monitoring orientation, was entered next to investigate its effect on 'prestige over interest' score after controlling for race, gender, and Holland interest type. All interaction terms were then entered into the equation (via a forward selection procedure) in order to test whether or not the main effects were simply additive (i.e., independent of each other). Finally, given distribution range concerns with regard to respondents' 'prestige over interest' scores, a set of nonparametric tests was conducted to further confirm and refine the results of the multiple regression analyses for Hypotheses 7 through 9.

CHAPTER IV

Results

Descriptive Statistics

For the following descriptive statistics, there were no missing values and invalid responses from the respondent sample. There were 197 females and 97 males in the study, ranging in age range from 17 to 23 years (M = 19.12, SD = 1.28). As indicated in Table 1, the ethnic-makeup varied, with Anglo-Americans as the dominant subgroup (77%).

Descriptive statistics for the independent variables in this study are reported in Tables 2 through 4. The sample distribution of gender was unbalanced with 67.0% of the total sample being female. Compared to the original sample's (N = 413) gender make-up, the final sample's (N = 294) gender make-up remained virtually unchanged (see Table 2). As indicated in Table 3, female subjects with Social (S) Holland interest type accounted for 43.2% of the total sample. This overrepresentation of S type females is consistent with findings from previous research which have demonstrated the S type to be more prevalent among females than males (Gottfredson, 1981; Prince, 1984; Spokane, 1985). The distribution of self-monitoring raw scores is reported in Table 4. The median and mean values of the respondents' Self-Monitoring Scale (SMS) were almost identical, 11.0 and

Table 1. Frequencies and Percentages of Ethnicity

Ethnicity	Frequency (%)
Anglo-American	227 (77.0%)
African-American	26 (8.8%)
Asian-American	17 (5.8%)
Native-American	13 (4.4%)
Hispanic-American	7 (2.4%)
Other[a]	4 (1.6%)

Note. N = 294.

[a] In the 'other' category, there were two Biracial Americans and two Middle-Eastern Americans.

Table 2. Gender Frequencies and Percentages in Original and Final Samples

	Frequency (%)	
Gender	Original	Final
Male	146 (35.4%)	97 (33.0%)
Female	267 (64.6%)	197 (67.0%)
Total	413 (100.0%)	294 (100.0%)

Table 3. Frequencies and Percentages of Holland Interest Types[a] by Gender

	Frequency (%)	
Holland Type	Female	Male
Investigative	19 (9.6%)	18 (18.6%)
Artistic	24 (12.2%)	20 (20.6%)
Social	127 (64.5%)	36 (37.1%)
Enterprising	27 (13.7%)	23 (23.7%)
Total	197 (100%)	97 (100%)

[a] The Holland interest types were based on the Self-Directed Search (SDS: Holland, 1985c).

Table 4. Frequencies and Percentages of Self-Monitoring Scores

Score[a]	Frequency	Percent (%)
0	0	0
1	0	0
2	1	.3
3	3	1.0
4	4	1.4
5	2	4.1
6	9	3.1
7	12	4.1
8	25	8.5
9	25	8.5
10	30	10.2
11	46	15.6
12	35	11.9
13	30	10.2
14	21	7.1
15	22	7.5
16	10	3.4
17	6	2.0
18	3	1.0
Total	294	100.0

[a] The self-monitoring score was based on the 18-item Self-Monitoring Scale (SMS: Snyder & Gangestad, 1986).

10.91, respectively. The SMS's internal consistency for the present sample (α = .64) was weaker than that (α = .70) reported by Snyder and Gangestad (1986).

Descriptive statistics for raw scores on the dependent measures are reported in Table 5. In the 'interest congruence' preference measure, the mean of 16.43 out of 20 points possible suggested a relatively high consistency rate (82%) for preferring congruent over incongruent occupations. In the 'overall prestige' measure, irrespective of their interest types, respondents selected 57% (m = 34.48) of the higher prestige occupations that were paired with lower prestige occupations. For the 'prestige over interest' preference measure in which the prestige and interest levels were systematically varied, a mean of 2.28 indicated a relatively low frequency rate among the respondents in their preference for high-prestige/low-interest occupations when compared with low-prestige/high-interest occupations.

Correlational Findings

The Pearson intercorrelations among the demographic variables, dependent, and independent variables are reported in Table 6. In examining the relationships among the dependent measures, there was a high negative correlation between 'prestige over interest' and 'interest congruence' measures ($r = -.91$, $p < .001$). This relationship was expected because the 10 occupational pairs in the 'prestige over interest' measure were also included in the 'interest congruence' measure: in the first measure, these pairs are

Table 5. Descriptive Statistics of Dependent Variables

	Statistics						
Measure	Number of items[a]	Mean	Standard deviation	Skewness	Kurtosis	Minimum	Maximum
Interest congruence preference[b]	20	16.43	3.05	-1.09	.86	6.0	20.0
Overall prestige preference[c]	60	34.48	5.41	.45	.32	21.0	52.0
Prestige over interest preference[d]	10	2.28	2.33	1.20	.86	.0	10.0

Note. N= 294.

[a] Number of items represent number of occupational pairs in OPS (Occupational Preference Survey).

[b] 'Interest congruence' preference measure contains two occupational formats of high-prestige(HP)/high-interest(HI) occupation with low-prestige(LP)/low-interest(LI) occupational format (10 pairs) and HP/LI occupation with LP/HI occupational format (10 pairs): The higher the score, the higher the preference for HI occupations irrespective of prestige levels. The latter format (HP/LI and LP/HI pairs) is repeated in the 'prestige over interest' measure.

[c] 'Overall prestige' preference measure contains all 60 pairs in the OPS: The higher the score, the higher the preference for HP occupations irrespective of interest types. Both the 'interest congruence' and 'prestige over interest' measures are included in this measure.

[d] 'Prestige over interest' measure is 10 conflicted pairs of HP/LI and LP/HI format: The higher the score, the higher the preference for HP/LI occupations.

Table 6. Intercorrelations of Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age[a]	--	.19** (294)	-.06 (294)	-.10 (212)	.13* (243)	.06 (163)	-.12* (294)	-.05 (285)	-.04 (294)	-.06 (294)	.02 (294)	.06 (294)	-.07 (294)
2. Gender[b]		--	.02 (294)	-.06 (212)	-.02 (243)	-.04 (163)	-.01 (294)	.00 (285)	.14* (294)	.27*** (294)	.21*** (294)	-.25*** (294)	.04 (294)
3. Race[c]			--	.16* (212)	-.08 (243)	-.01 (163)	.13* (294)	.10 (285)	.03 (294)	-.23*** (294)	-.13* (294)	.16** (294)	-.01 (294)
4. GPA[d]				--	.17* (183)	.22* (117)	.16* (212)	.14* (204)	-.13 (212)	-.06 (212)	.12 (212)	.10 (212)	-.10 (212)
5. Major confidence[e]					--	.59*** (156)	.01 (243)	.03 (234)	-.21*** (243)	.05 (243)	.06 (243)	-.05 (243)	-.05 (243)
6. Occupational confidence[e]						--	.06 (163)	.00 (155)	-.20* (163)	.05 (163)	.03 (163)	-.01 (163)	.03 (163)
7. Mother's education[f]							--	.51*** (285)	.02 (294)	-.05 (294)	.02 (294)	.06 (294)	.01 (294)
8. Father's education[f]								--	.12* (285)	-.04 (285)	.09 (285)	.07 (285)	.01 (285)
9. Occupational information[g]									--	.01 (294)	.00 (294)	-.02 (294)	.05 (294)
10. Prestige over interest[h]										--	.65*** (294)	-.91*** (294)	.04 (294)
11. Overall prestige[h]											--	-.46** (294)	.01 (294)
12. Interest congruence[h]												--	-.03 (294)
13. Self-monitoring scale[i]													--

Table 6. Intercorrelations of Variables (cont'd)

[a] Age: range of 17 to 23.

[b] Gender was coded with female as '1' and male as '2'.

[c] Race was coded with Non-White as '1' and White as '2'.

[d] GPA was coded as follows:

1 less than 2.0
2 2.1 - 2.5
3 2.6 - 3.0
4 3.1 - 3.5
5 3.6 - 4.0

[e] Both major confidence and occupational confidence were assessed on a 6-point Likert-type scale (i.e., 0 = "not at all confident" to 5 = "very confident").

[f] Both mother's and father's education levels were coded as follows:

1 Some high school education
2 High school graduate
3 Some college education
4 College graduate
5 Some graduate school education
6 Masters degree
7 Doctoral degree

[g] Occupational Information (OI) (Holland, Daiger, & Power, 1980): In a score range of 0 to 4, higher scores represented more occupational information needed from the respondents.

[h] Dependent measures from OPS (Occupational Preference Survey).

[i] Self-Monitoring was based on the 18-item Self-Monitoring Scale (Snyder & Gangestad, 1986).

Note: Numbers in parentheses indicate n size.

* $p \leq .05$

** $p \leq .01$

*** $p \leq .001$

counted towards a preference for high-prestige/low-interest occupations, and in the latter they are counted towards a preference for low-prestige/high-interest occupations. A similar relationship was found between 'overall prestige' and 'interest congruence' measures ($r = -.46$, $p < .001$), suggesting that respondents' 'interest congruence' score increased as their 'overall prestige' score decreased. Again, this relationship was expected since all of 20 occupational pairs in the 'interest congruence' measure were counted in the reverse direction in the 'overall prestige' measure. Finally, a positive correlation was found between 'prestige over interest' and 'overall prestige' measures ($r = .65$, $p < .001$). This relationship indicated that as the respondents' preference for high-prestige/low-interest occupations increased, their preference for the high-prestige occupations (irrespective of interest types) increased as well.

The independent variable of self-monitoring did not correlate with any of the other variables (see Table 6). In particular, there was no correlation between respondents' self-monitoring and their 'prestige over interest' scores ($r = .04$). This finding suggested that the respondents' self-monitoring orientations were not related to their preference for high-prestige/low-interest occupations.

As further indicated in Table 6, other than race and gender, there were no other demographic variables related to the dependent variables of 'prestige over interest',

'overall prestige', and 'interest congruence' measures. Significant intercorrelations existed between gender (female = 1, male = 2) and all three dependent measures of 'prestige over interest' ($r = .27$, $p < .001$), 'overall prestige' ($r = .21$, $p < .01$), and 'interest congruence' ($r = -.25$, $p < .001$). The positive relationships between gender and 'prestige over interest' measure and between gender and 'overall prestige' measure indicated that male students preferred relatively more high-prestige/low-interest occupations and high-prestige occupations than did female students. The negative relationship between gender and 'interest congruence' measure indicated that female students preferred occupations that were congruent with their primary interest type more so than did male students.

Significant intercorrelations existed between race (Non-White = 1, White = 2) and 'prestige over interest' measure ($r = -.23$, $p < .001$). This finding suggested that, when compared with White (Anglo-American) students, Non-White (Non-Anglo American) students preferred relatively more high-prestige occupations that were incongruent with their primary interest type than did their White counterparts.

Small yet significant correlations were also obtained between race and 'overall prestige' measure ($r = -.13$, $p < .05$), and between race and 'interest congruence' measure ($r = .16$, $p < .01$). These results suggested that Non-White students preferred relatively more high-prestige occupations

and fewer high-interest occupations than did White students.

Correlations among several other demographic variables that are not included in the hypotheses are also reported in Table 6. There were significant relationships between the Occupational Information (OI) scale and respondent's gender ($r = .14$, $p < .05$), "major confidence" scale ($r = -.21$, $p < .01$), and "occupational confidence" scale ($r = -.20$, $p < .05$). These findings suggested that males appeared to need relatively more occupational information than did females. Also, as the students' confidence levels in their college major and occupational choices increased, their need for occupational information decreased.

The marginally-significant correlations between the respondents' GPA and major confidence ($r = .17$, $p < .05$) and between GPA and occupational confidence ($r = .22$, $p < .05$) indicated that students with higher GPAs expressed greater confidence in their academic majors and future occupations. Significant relationships were also found between respondents' mother's education and father's education levels ($r = .51$, $p < .0001$), and between respondents' college major confidence and occupational confidence ($r = .59$, $p < .0001$).

The Relations of Gender and Holland Type to Self-Monitoring

To restate Hypotheses 1 and 2:

Hypothesis 1 - There will be a significant relationship between Holland interest type and self-monitoring orientation. Specifically, Artistic(A) type

and Enterprising(E) type respondents will have higher self-monitoring scores than either Investigative(I) type or Social(S) type respondents.

Hypothesis 2 - There will be no significant relationship between gender and self-monitoring orientation.

To test Hypotheses 1 and 2, a two-way ANOVA was conducted to investigate the relations of gender and Holland interest type differences on self-monitoring scores. As reported in Table 7, both hypotheses were primarily supported in that there was a significant difference due to Holland type ($F = 9.15$, $p < .001$), but not for gender. Scheffe post-hoc tests revealed two significant pair-wise group differences in self-monitoring orientation. Based on mean scores (see Table 8), significant group differences existed (a) between I and A types, with A types scoring significantly higher on self-monitoring than I types; and (b) between E and I types, with E types scoring significantly higher than I types. On the other hand, it was expected that S types would score significantly lower than either A or E types. However, no pair-wise differences were found for S types, suggesting that S types were not significantly different from any of the other types.

The Relations of Gender and Holland Type to 'Interest Congruence' Preference

To restate Hypotheses 3 and 4:

Hypothesis 3 - There will be no significant relationship between respondents' gender and their preference for interest-congruent occupations.

Table 7. Analysis of Variance of Self-Monitoring Orientation Scores by Gender and Holland Interest Type

Source of Variation	SS	df	MS	F
Gender	.10	1	.10	.01
Holland Type	255.00	3	85.00	9.15*
Interaction	62.56	3	20.85	2.24
Residual	2656.08	286	9.29	

Note. N = 294.

* $p < .001$.

Table 8. Means and Standard Deviations of Self-Monitoring Scale (SMS) Scores by Holland Interest Type

Holland Type	M	SD	n
Investigative	9.65	3.13	37
Artistic	11.95	3.09	44
Social	10.45	3.14	163
Enterprising	12.44	2.69	50

Note. N = 294.

Hypothesis 4 - There will be no significant relationship between respondents' Holland interest type and their preference for interest-congruent occupations.

To test Hypotheses 3 and 4, a two-way ANOVA was conducted to investigate the effects of gender and Holland type on the 'interest congruence' measure (see Table 9). Contrary to the hypotheses, there were significant between group differences for both gender ($F= 16.90$, $p < .001$) and Holland type ($F = 14.86$, $p < .001$). The main effect for gender indicated that males scored significantly lower than females in their preference for interest-congruent occupations. The mean 'interest congruence' preference scores were 16.97 for females and 15.35 for males.

As for Holland interest types, Scheffe post-hoc tests revealed significant pair-wise Holland type differences between I and A, I and S, and E and A types. These results indicated that A ($m = 18.18$) type respondents preferred occupations that were congruent, or matched their interest type, significantly more than either I ($m = 14.46$) or E ($m = 15.16$) type respondents. I type respondents, by contrast, preferred occupations that matched their interest type significantly less than either A or S ($m = 16.80$) type respondents. These relatively high mean 'interest congruence' scores suggested that, across sexes and Holland types, respondents tended to prefer occupations that were congruent with their interest types. However, even among these high mean scores, there still existed gender and

Table 9. Analysis of Variance of 'Interest Congruence' Preference Scores by Gender and Holland Interest Type

Source of Variation	SS	df	MS	F
Gender	129.25	1	129.25	16.90*
Holland Type	340.98	3	113.66	14.86*
Interaction	29.86	3	9.95	1.30
Residual	2187.06	286	7.65	

Note. N = 294.

* $p < .001$.

Holland type differences. Consequently, Hypotheses 3 and 4 were not supported.

The Relations of Gender and Holland Type to 'Overall Prestige' Preference

To restate Hypotheses 5 and 6:

Hypothesis 5 - There will be a significant relationship between respondents' gender and their preference for high-prestige occupations. Specifically, male respondents will prefer more high-prestige occupations than will female respondents.

Hypothesis 6 - There will be a significant relationship between respondents' Holland interest type and their preference for high-prestige occupations. Specifically, I and E type respondents will prefer more high-prestige occupations than either A or S type respondents.

For Hypotheses 5 and 6, a 2 (gender) x 4 (Holland interest type) ANOVA was performed to investigate the relationship between respondents' gender and Holland type and their 'overall prestige' preference scores. These hypotheses were primarily supported as indicated in Table 10. There were significant group differences for gender ($F = 14.16$, $p < .001$) and Holland type ($F = 2.84$, $p < .05$). In support of Hypothesis 5, male respondents ($m = 36.08$) scored significantly higher than female respondents ($m = 33.70$) on 'overall prestige' preference scores.

Scheffe post-hoc tests indicated significant group differences between I and A types, with I types ($m = 36.35$)

Table 10. Analysis of Variance of 'Overall Prestige' Preference Scores by Gender and Holland Interest Type

Source of Variation	SS	df	MS	F
Gender	392.52	1	392.52	14.16**
Holland Type	235.88	3	78.63	2.84*
Interaction	44.05	3	14.68	< 1.0
Residual	7929.14	286	27.72	

Note. N = 294.

* $p < .05$.

** $p < .001$.

scoring significantly higher than A types (m = 33.14) in their preference for high-prestige occupations. These findings partially supported Hypothesis 6 in that although there was a significant Holland type difference in their 'overall prestige' preference scores, only I type respondents were significantly different from A type respondents in their preferences for high-prestige occupations. Neither S (m = 34.52) nor E (m = 34.18) types showed significant mean score differences relative to each other or to the other types.

The Relations of Gender, Holland Type, and Self-Monitoring to 'Prestige over Interest' Preferences

To restate Hypotheses 7 to 9:

Hypothesis 7 - Controlling for significant demographic variables, respondents' gender will explain significant variance in preferences for high-prestige/low-interest occupations. Specifically, male respondents will more likely prefer occupations that have higher prestige and lower interest-congruence than will female respondents.

Hypothesis 8 - Controlling for significant demographic variables and gender, respondents' Holland interest type will explain significant variance in preferences for high-prestige/low-interest occupations. Specifically, E type respondents will more likely prefer occupations that have higher prestige and lower interest-congruence than will I, A, and S type respondents.

Hypothesis 9 - Controlling for significant demographic variables, gender, and Holland interest type, respondents'

self-monitoring orientation will explain significant variance in preferences for high-prestige/low-interest occupations. Specifically, respondents with higher self-monitoring scores will more likely prefer occupations that have higher prestige and lower interest-congruence than will respondents with lower self-monitoring scores.

To test the extent to which gender, Holland interest type, and self-monitoring predicted preferences within occupational pairs that systematically varied in prestige and interest-congruence, a hierarchical regression analysis was conducted on 'prestige over interest' preference scores. The following variables were entered in sequential order: race, gender, Holland interest type, and self-monitoring score. To explore whether any interactions among the variables accounted for significant incremental variance on this dependent measure, interaction terms were allowed to enter into the regression equation at the last step via a "forward" entry procedure. The interaction terms included: (a) gender by each of the Holland interest types; (b) gender by self-monitoring; (c) each of the Holland interest types by self-monitoring.

In the regression analysis, race, gender, and Holland type were included as "dummy" variables. Due to the limited sample size of the various racial/racial groups, race was dichotomized: a code of '1' was used for "White" respondents (i.e., those who identified as Anglo-Americans) and a code of '0' was used for "Non-White" respondents (i.e., those who

identified as African-Americans, Asian-Americans, Hispanic-Americans, Native-Americans, and Other). The sample sizes of White and Non-White respondents were 227 and 67, respectively. For gender, females were coded as "0" and males were coded as "1". Because the four Holland interest types (I, A, S, & E) represented a set of categorical variables, they were entered into the regression as dummy codes. In this study, a coding procedure called "reference cell coding" (Glantz and Slinker, 1990) was used. Among the four Holland types, I type was randomly selected as a "reference cell" to be compared with each of the A, S, and E types. Therefore, three pair-wise comparisons (i.e., I and A, I and S, and I and E pairs), with I type coded as "0" and the other three types each coded as "1", were entered into the regression equation.

As reported in Table 11, gender ($F = 24.80$, $p < .001$) significantly predicted 'prestige over interest' scores, accounting for 7% of the variation above that already accounted for by race. Hypothesis 7 was further supported in that gender was positively correlated with scores on this dependent measure ($r = .27$), indicating that males ($m = 3.16$) scored higher on the 'prestige over interest' measure than did females ($m = 1.84$).

For Holland interest types (I, A, S, and E), the variance explained by all four types was the largest among the predictor variables, accounting for 12% ($F = 14.78$, $p < .001$) of the variance in 'prestige over interest'

Table 11. Hierarchical Multiple Regression: Predicting 'Prestige over Interest' Scores from Gender, Holland Type, and Self-Monitoring

Predictor	R	R^2 change	F change	r	β
Race[a]	.23	.05	16.58**	.23	.21
Gender	.36	.07	24.80**	.27	.25
Holland Type[b]:	.49	.12	14.78**		
A vs. I				-.21	-.46
E vs. I				.13	-.18
S vs. I				-.15	-.37
Self-Monitoring	.50	.00	1.43	.04	.06

Note. N = 294.

[a] In the regression analysis, race was entered first as a covariate.

[b] Holland type, because it is an unordered qualitative variable with four types (I, A, S, & E), was entered as a set of three dummy codes comparing A, S, and E types to I type.

** $p < .001$.

scores. The mean scores of 'prestige over interest' preference for I, E, S, and A types were 4.16, 2.96, 1.96, and 1.09, respectively. Hypothesis 8 was partially supported in that Holland interest types accounted for significant variance on the 'prestige over interest' measure, but E type respondents did not score higher than other Holland type respondents in their preference for high-prestige/low-interest occupations. Rather, I type respondents demonstrated the highest scores on this measure when compared to the other three types.

The main research question of this study (Hypothesis 9) which focused on the contribution of self-monitoring to the prediction of 'prestige over interest' preferences was not supported as indicated in Table 11. Respondents' self-monitoring orientation did not contribute to the prediction of 'prestige over interest' scores after controlling for race, gender, and Holland type. Additionally, there were no significant interactions among gender, Holland interest type, and self-monitoring that accounted for significant incremental variance on 'prestige over interest' preference scores.

Nonparametric Tests

In examining the multiple regression analysis for Hypotheses 7 through 9, the dependent measure of 'prestige over interest' demonstrated a restricted range of scores, with a mean of 2.28 and a highly skewed distribution, thus violating the normality assumption of the distribution of

error terms. As an alternative hypothesis testing strategy, a set of hierarchically nested nonparametric tests were used to support the results of the regression analysis.

Unlike parametric tests, such as multiple regression, nonparametric tests do not require distributional assumptions (Marascuilo & Serlin, 1988). Mann-Whitney and Kruskall-Wallis tests have the same conceptual bases as the t-test and one-way analysis of variance (ANOVA), respectively, in examining differences between groups. These nonparametric analyses, however, are based on "rank" scores rather than actual scores. Since nonparametric tests provided a more appropriate method of testing given the distribution problems stated above, they were used to confirm the results of the multiple regression analyses.

Prior to investigating these hypotheses non-parametrically, the continuous Self-Monitoring Scale (SMS) variable was transformed to a discrete dichotomous variable. Previous studies suggested a median-split of 0 to 10, and 11 to 18, to distinguish "low" and "high" self-monitors, respectively (Snyder, 1987; Snyder & Gangestad, 1986). Following their recommendation, therefore, respondents with scores from 0 to 10 were classified as "low" self-monitors (41.2%) and those with scores from 11 to 18 were classified as "high" self-monitors (58.8%) in this study.

The two nonparametric tests used in the study were the Mann-Whitney U test and Kruskall-Wallis test, with the former used for two-samples yielding a U statistic, and the

latter used for multiple-samples yielding a Chi-Square statistic. As a preliminary set of analyses, nonparametric tests of main effects for race, gender, Holland interest type, and self-monitoring were separately performed on the 'prestige over interest' measure. The results should be interpreted with caution because they were simple univariate tests that did not control for possible confounds. As reported in Tables 12 and 13, significant group differences were found for race ($U = 5310.0$, $p < .0001$), gender ($U = 6536.0$, $p < .0001$), and Holland type (Chi-Square = 46.46, $p < .0001$). Based on the mean ranks of these groups: (a) Non-White respondents significantly preferred more high-prestige/low-interest occupations than did White respondents; (b) males preferred more high-prestige/low-interest occupations than did females; and (c) I type respondents preferred high-prestige/low-interest occupations most, followed by E, S, and A type respondents. Although there was a significant difference between the two self-monitoring groups and the 'prestige over interest' score, the difference was of marginal significance ($U = 9112.5$, $p = .05$), with the high self-monitoring group preferring more high-prestige/low-interest occupations than did the low self-monitoring group.

The main set of nonparametric analyses were conducted to confirm and further investigate the findings from the multiple regression analysis. As mentioned previously, the hierarchically nested testing strategy using the

Table 12. Mann-Whitney U Tests of 'Prestige over Interest' Preference Scores by Race, Gender, and Self-Monitoring Orientations

Variables/Groups	Mean Rank	n	U
Race			
White	137.39	227	5310.0**
Non-White	181.75	67	
Gender			
Male	178.62	97	6536.0**
Female	132.18	197	
Self-Monitoring			
Low	136.31	121	9112.5*
High	155.33	173	

* $p \leq .05$.

** $p < .001$.

Table 13. Kruskall-Wallis Test of 'Prestige over Interest' Preference Scores by Holland Interest Types

Variables/Groups	Mean Rank	n	Chi-Square
Holland Type			46.46*
Investigative	214.32	37	
Artistic	101.78	44	
Social	134.76	163	
Enterprising	179.80	50	

* $p < .001$.

nonparametric tests was designed to parallel the hierarchical regression procedure.

As shown in Figure 1, to control for known racial differences, all analyses were first "nested" within race; that is, all analyses were performed separately for White respondents and Non-White respondents. After the respondent groups were separated by race, they were differentiated according to gender (F = females, M = males) within race, yielding the four groups of White males, White females, Non-White males, and Non-White females. This process paralleled the regression method in which gender was entered after race to test whether gender explained additional variance.

Following the group differentiation based on race and gender, these groups were then further separated into Holland interest types, each of which yielded four groups of I, A, S, and E types (see Figure 1). This step paralleled the regression method in which Holland types were entered as a third variable in the analysis. The final group differentiation was based upon low (L) and high (H) self-monitoring orientations.

Because of the multiple tests being performed, and the need to control for the inflated risk of committing a Type I error, each of the nonparametric tests was conducted at an alpha level of .01. The results for White males and females and Non-White males and females on their 'prestige over interest' preference scores are reported in Table 14. Mann-Whitney tests yielded a significant between gender group

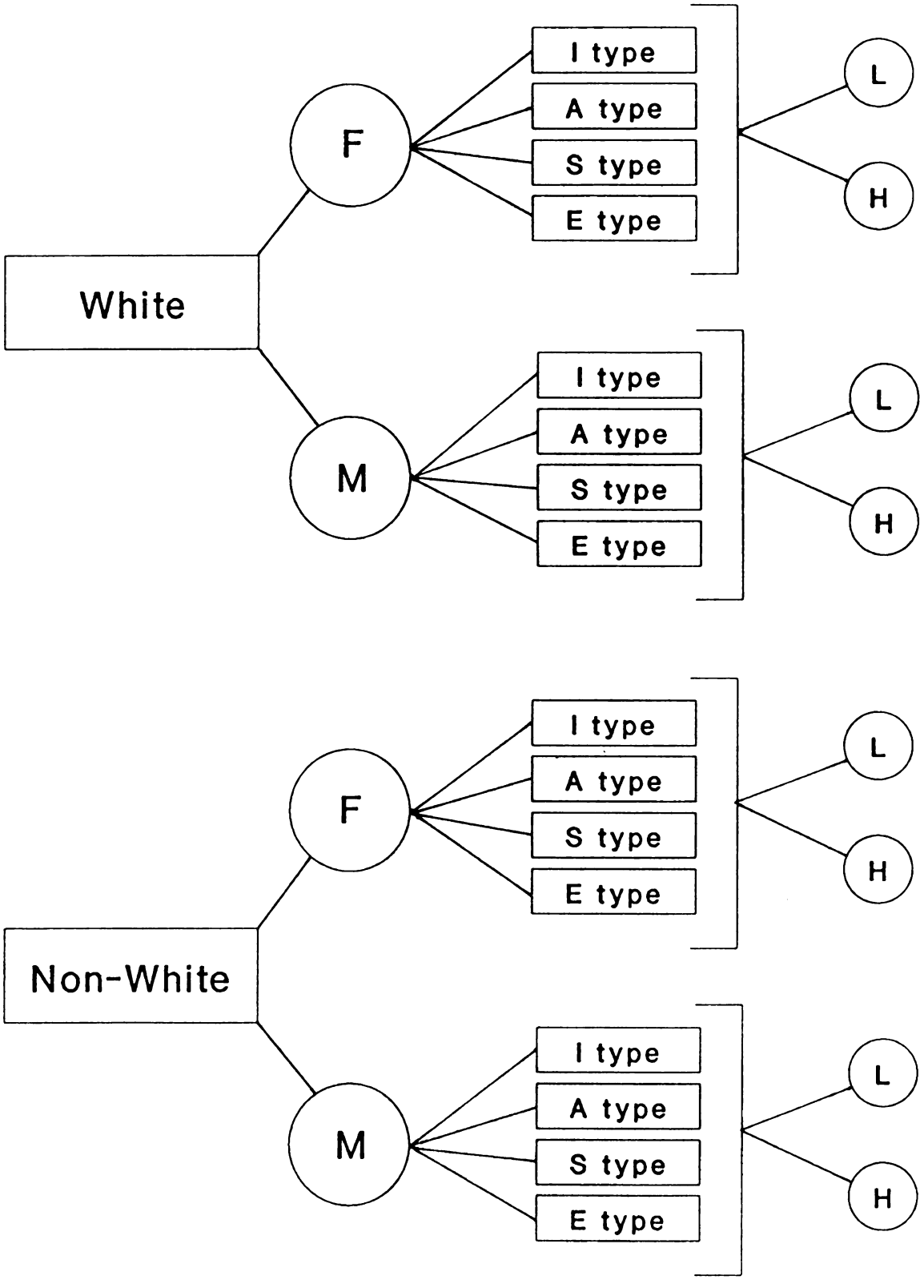

Figure 1. The Hierarchically Nested Design for Nonparametric Tests

Table 14. Mann-Whitney U Tests of 'Prestige over Interest' Preference Scores Separated by Race and Gender

No.	Groups	Mean Rank	n	U
White:				3999.5**
1.	Male	136.88	76	
2.	Female	102.49	151	
Non-White:				291.0*
3.	Male	43.14	21	
4.	Female	29.83	46	

* $p < .01$.

** $p < .001$.

difference for White respondents ($U = 3999.5$, $p < .001$) and for Non-White respondents ($U = 291.0$, $p < .01$), indicating that: (a) White males significantly preferred more high-prestige/low-interest occupations than White females, and (b) Non-White males significantly preferred more high-prestige/low-interest occupations than Non-White females. This supported the same finding in the regression analysis.

In order to examine differences in Holland interest type within White males, White females, Non-White males, and Non-White females, Kruskall-Wallis tests were conducted for each of these four groups (see Table 15). Results indicated that there were differences among Holland interest types within both White males (Chi-Square = 13.12, $p < .01$) and White females (Chi-Square = 42.08, $p < .001$) on their 'prestige over interest' preference scores. On the other hand, there were no differences among Holland interest types for either of the Non-White groups, indicating no score differences between Non-White males and females with regard to their preference for high-prestige/low-interest occupations.

Given the significant Holland type differences for the White male and White female groups, six pair-wise comparison tests among the Holland interest types were then conducted to locate specific group differences (i.e., I & A, I and S, I & E, A & S, A & E, and S & E); these comparisons were tested separately within each gender group. Steel's (1960) comparison method was used to test for the possible

Table 15. Four Kruskall-Wallis Tests of 'Prestige over Interest' Preference Scores Nested by Race, Gender, and Holland Interest Type

No.	Groups	Mean Rank	n	Chi-Square
White Male:				13.12*
1.	Investigative(I)	56.41	11	
2.	Artistic(A)	26.33	18	
3.	Social(S)	38.53	29	
4.	Enterprising(E)	39.67	18	
White Female:				42.08**
5.	I	125.85	13	
6.	A	48.13	16	
7.	S	66.99	100	
8.	E	107.77	22	
Non-White Male:				2.18
9.	I	9.21	7	
10.	A	7.75	2	
11.	S	13.29	7	
12.	E	11.60	5	
Non-White Female:				5.32
13.	I	26.67	6	
14.	A	13.88	8	
15.	S	25.67	27	
16.	E	23.40	5	

Note. N = 294.

* $p < .01$.

** $p < .001$.

pair-wise differences. As shown in Table 16, among White males, Wilcoxon Rank Sum W tests yielded significant pair-wise differences for the A and I types ($W = 237.0$, $p < .001$) and the S and I types ($W = 308.0$, $p < .01$) with respect to their 'prestige over interest' preference scores. Among White females, results indicated significant pair-wise differences between the A and I types ($W = 287.5$, $p < .001$), the S and I types ($W = 1239.0$, $p < .001$), the A and E types ($W = 173.0$, $p < .001$), and the S and E types ($W = 1970.5$, $p < .001$). These findings suggested that, among White males, I type respondents significantly preferred more high-prestige/low-interest occupations than either A or S types. As for White females, both I and E type respondents significantly preferred more high-prestige/low-interest occupations than did A and S type respondents.

Given that differences were found among Holland interest types for White respondents, but not for Non-White respondents (see Table 16), the last step in the nested nonparametric analysis was performed differently for the two racial groups. For the Non-White respondents, the tests of differences between high and low self-monitoring orientations were conducted separately within the males and females, irrespective of Holland interest type. For the White respondents, because of the Holland interest type differences, the tests were performed within each of four Holland types, nested within the two genders. In all analyses, for both White and Non-White respondents, no

Table 16. Pair-Wise Wilcoxon Rank Sum W Tests of 'Prestige over Interest' Scores by Holland Types Among White Males and Females

No.	Paired Groups	Z	W
White Male:			
1.	A & S Types	-2.08	339.0
2.	A & E Types	-1.75	279.0
3.	A & I Types	-3.28	237.0**
4.	S & E Types	- .21	441.5
5.	S & I Types	-2.53	308.0*
6.	E & I Types	-1.93	207.5
White Female:			
7.	A & S Types	-1.83	721.5
8.	A & E Types	-4.25	173.0**
9.	A & I Types	-4.19	287.5**
10.	S & E Types	-4.27	1970.5**
11.	S & I Types	-4.66	1239.0**
12.	E & I Types	-2.02	291.5

* $p < .01$.

** $p < .001$.

differences in 'prestige over interest' scores were found for the high and low self-monitors. Although group sizes were relatively small at this stage of the hierarchically nested analysis, which potentially reduced statistical power, the findings of no self-monitoring effects collaborated the similar results obtained in the multiple regression analysis.

CHAPTER V

Discussion

The present study explored college students' occupational preferences based on their tendencies to (a) be congruent with their interests, and (b) value occupational prestige as a socially desirable criterion. Given the assumption that certain individuals are more externally-guided to respond to situations based on cues of social appropriateness, and others are more internally-guided to respond according to their self-knowledge, this study examined which students are likely to either sustain or sacrifice their self-knowledge of interests when forced to choose between occupations that varied in prestige and interest-congruence.

Self-Monitoring and Occupational Preference

By introducing self-monitoring orientation as a primary variable, this study attempted to examine whether or not college students' self-monitoring orientation contributed to their occupational preferences. Results from both the multiple regression and nonparametric analyses consistently indicated that this primary hypothesis (Hypothesis 9) was not supported. There were no self-monitoring differences in subjects' preference for high-prestige/low-interest occupations. Even when a simple nonparametric test was

conducted for students' self-monitoring scores alone, only a moderate difference was found (see Table 12), suggesting that this difference may have been due to other confounding variables (e.g., gender, Holland type). In fact, there were significant gender and Holland interest type differences among students' preferences for high-prestige/low-interest occupations. These two variables appear to be influential in explaining the relative importance that individuals place on occupational prestige versus maintaining interest-congruence when expressing their occupational preferences.

Gender and Occupational Preference

In this study, subjects' gender was a consistently significant predictor of all three dependent variables. Based on 'prestige over interest', 'overall prestige', and 'interest congruence' preference scores, this study found that: (a) male students preferred more high-prestige/low-interest occupations than did female students; (b) males overall preferred more high prestige occupations than did females; and (c) females preferred more interest-congruent occupations than did males. These results confirmed the view that males consider prestige to be more relevant in their occupational selection than do females.

Previous studies (Betz, Heesacker, & Shuttleworth, 1990; Leung & Harmon, 1990) have reported gender differences based on gender-type and prestige of occupations, concluding that: (a) males were more reluctant to crossover gender-type boundaries than females, and (b) males were more likely to

compromise prestige to maintain gender-appropriate occupations. The present findings presented a different picture which suggested that, when the gender-type of an occupation was not controlled, males were more likely to prefer prestige than interest. One possible conclusion may be that perhaps prestige considerations are a more important factor in career choice for males than for females.

However, since this study did not control for the occupations' gender-type, prestige may have been confounded with gender-type in a given occupation. It may be that, in the OPS, more high-prestige traditionally-masculine occupations were represented than high-prestige traditionally-feminine occupations. In fact, Gottfredson (1981) reported that there are more high-prestige traditionally-masculine occupations by Holland types (i.e., I, R, and E types) than there are high-prestige traditionally-feminine occupations by Holland type (i.e., S types).

According to Gottfredson (1981), gender differences in occupational preferences depend, to some extent, on individuals' tolerance or acceptance levels for prestige differences among occupations (i.e., ranges of more to less highly valued occupational preferences). She considered this gender difference in tolerance levels with respect to prestige and Holland type ranges. On the average, traditionally-masculine occupations cover a wider range of prestige than do traditionally-feminine occupations.

Therefore, these preexisting occupational conditions may have been reflected in the OPS such that males' acceptable ranges for high-prestige occupations were higher than were females' acceptable ranges.

As for female students preferring more interest-congruent occupations than male students, prior studies investigating gender differences in career characteristics found that (a) females placed more importance on task significance, working conditions, and skill variety, and (b) males emphasized salary and promotion opportunity (Bigonness, 1988; Scozzaro & Subich, 1990). The observed gender differences in occupational preferences in the present study provided additional evidence of males' and females' different occupational value systems and developmental and socialization processes (Fitzgerald & Betz, 1983).

Holland Interest Types and Occupational Preference

Several interesting findings in the present study are found in the relations between subjects' Holland interest types and their occupational preferences. In summary, this study found that: (a) I type students consistently preferred more high-prestige/low-interest occupations when compared with A and S type students; (b) I type students preferred more high-prestige occupations overall than did A type students; (c) A types preferred more interest-congruent occupations than did either I or E types; and (d) S types preferred more interest-congruent occupations than did I

types. In sum, this study found students with different Holland interest types to have different importance levels for prestige and interest-congruence when preferring occupations.

The above findings did not support Hypothesis 8 which predicted E type subjects to prefer most high-prestige/low-interest occupations. The rationale for this prediction was that E types, being ambitious and interested in power and material wealth, would be most likely to prefer high-prestige occupations at the expense of maintaining interest-congruence. However, this was not the case. Both multiple regression and nonparametric results indicated that although E types scored relatively higher than either A or S types on 'prestige over interest' scores, E types scored lower than I types on this measure. In fact, I types consistently preferred more high-prestige/low-interest occupations, in addition to overall high-prestige occupations, than any other Holland types. Why this consistency among I type subjects' preference for high-prestige occupations? One reason may be in the I work environment type itself. Among the six Holland types (i.e., R, I, A, S, E, & C), I-work environment type, more than any other work environment types, have the largest number of high-prestige occupations (Gottfredson, 1981). It may be possible that I type subjects, in general, are more accustomed to high-prestige occupations because occupations in their type tend to be higher in prestige.

Another interrelated reason for I types to consistently prefer high-prestige occupations may concern their personality characteristics. I types are described to be analytical, intellectual, and conscientious (Holland, 1985a). Therefore, they may prefer occupations that would provide them with more intellectual challenge and curiosity. Gottfredson (1986b) has argued that the occupational prestige hierarchy fundamentally reflects an intelligence hierarchy. This proposition suggests that high-prestige occupations are inherently more intellectually-demanding and require more problem-solving expertise than do the occupations with lower prestige. In support of this idea, significant relationships have been found between occupations' intellectual difficulty and occupational status, self-directedness of work activities, and the performance of intellectual tasks, (i.e., reasoning and analyzing information) (Chartrand, et al., 1987; Gottfredson, 1984, cited in Gottfredson, 1986b). Therefore, it may not be surprising that I type individuals preferred most high-prestige occupations. For I type individuals, even the high-prestige/low-interest occupations such as "director of college admissions" and "legislator", may have been preferable to I type occupations such as "health technician" and "food production inspector", respectively, because the former occupations consist of more complex and intellectual challenges.

On the other hand, A and S type subjects placed greater importance in preferring interest-congruent occupations. Given that A types are described as being introspective and nonconforming (Holland, 1985a,c), perhaps these characteristics were reflected in their responses to these occupations. A types may not have been as concerned with intellectually challenging work as they were concerned with aesthetic and creative work. Overall, A type occupations are considered to have a wider and more complex prestige range than do I type occupations (Gottfredson, 1981). For example, a popular A type occupation of "painter" can vary its prestige level when it is defined as a "street painter" (low prestige) versus "established painter" (high prestige). Even the occupational title "professional painter" is vague in its prestige level if it is not clearly defined in relation to income and education. Overall, A type subjects appeared to be most consistent in selecting interest-congruent occupations in this study. The prestige level differences did not appear to impact A type subjects in their preference for interest-congruent occupations.

Finally, S types preferred more interest-congruent occupations than I types. Holt (1989) similarly reported that S type individuals significantly preferred low-prestige S type occupations over high-prestige R type occupations. The finding that interest-congruent occupations were more consistently chosen by S type subjects in this study further confirmed the importance of helping-oriented work for S

types. Furthermore, opportunities for S types to express their helping-oriented interests may be more contained within the S work-environment type whereas opportunities for I types to satisfy their interests for intellectual and complex work challenges can be found within all six Holland work-environment types. In continuing with the previous reasoning that I types are interested in highly intellectual and complex work, another major interest that I types have is in the area of science-related activities. Although these two interests overlap to some extent, not all science-related work is intellectually challenging. When considering the intellectual work alone, all six Holland types have occupations that fit this criterion. Therefore, when I types are confronted with pairs of occupations in which one is of moderate-challenge and science-related and the other is of high-challenge and not science-related, these students may vacillate more than the other types given the conflicting nature of these two interests (i.e., the interest of intellectual challenge and the interest of science-orientation).

Occupational Preference Based on Interest-Congruence and Prestige

Although there were gender and Holland interest type differences in occupational preferences, the findings from the 'interest congruence' and 'prestige over interest' preference scores in this study indicated that subjects generally preferred interest-congruent occupations. That is, there was a strong tendency among I, A, S, and E type

students to prefer I, A, S, and E type occupations, respectively. This finding supported Holland's (1973, 1985a) concept of congruence which emphasized that persons prefer work environment types that match their interest/personality types.

In another respect, based on the 'overall prestige' preference scores, only a slight preference for high-prestige occupations was found among the students, irrespective of whether or not these occupations were congruent with their Holland type. This did not support previous research findings, which claimed that people have a relative preference for high-prestige occupations (Featherman & Hauser, 1976; Treas & Tyree, 1979), and that they place importance on prestige for career choices (Gottfredson, 1981; Holt, 1989). It appeared that the college students in this study did not consider prestige to be an overriding factor in their occupational preference. There may be two possible reasons for this inconsistent finding. The first reason may be due to differences between the sample in the present study and those in prior studies. Whereas this study focused on a college sample, previous studies have also included high school and non-college adult samples. The second reason may be the differences in prestige ranges of these studies. The instrument employed in the present study (OPS) did not include the very low-prestige occupations (e.g., ditch digger, custodian) because the subjects were college students. In fact, the majority

of low-prestige occupations in this study were in the "moderate" prestige range with all of them requiring minimal college education. By comparison, prior studies included a wider range of prestige levels including the low-prestige occupations mentioned above. Leung and Plake (1990) concluded, in their career compromise study, that when comparing occupations with moderate and high-prestige levels, subjects' preferences for one over the other is rarely distinguishable. Therefore, subjects in the present study may have been less ready to prefer higher prestige occupations over what were considered as relatively "lower" prestige occupations.

Self-monitoring and Holland Interest Types

Self-monitoring was significantly related to subjects' Holland interest type. When a two-way ANOVA was performed for gender and Holland interest type on self-monitoring, there was a significant relationship between subjects' Holland type and their self-monitoring scores. On the average, E type subjects scored the highest in self-monitoring orientation, closely followed by A type subjects. According to the post-hoc findings, A and E type subjects had significantly higher self-monitoring scores than did I type subjects. These results partially supported Snyder's (1987) speculations that E types are most likely associated with high self-monitors. Although there was no interaction of gender by Holland type on self-monitoring, the finding that both A and E types were higher in self-monitoring was

consistent with Brown et al.'s (1989) findings that A type females and E type males were high self-monitors. These findings, therefore, suggested that, when compared to I types, both A and E types are more: (a) "other-directed" than "inner-directed"; (b) accommodating to different social situations; and (c) skilled at identifying external cues (Gangestad & Snyder, 1985; Snyder, 1987).

These results, however, raised a conceptual question when E and A types were separately considered in relation to their relatively high self-monitoring orientations. According to Holland (1985a,c), E type individuals tend to be described as ambitious, energetic, and extroverted. Given Snyder's descriptions of a high self-monitor and Holland's descriptions of E types, it was understandable that E types correspond to high self-monitoring orientation.

On the other hand, for A types to be considered as high self-monitors may be partially supported given their Holland type descriptions. Self-Monitoring Scale (SMS: Snyder & Gangestad, 1986) items such as, "I find it hard to imitate the behavior of other people" or "I would probably make a good actor", explore the behavioral adeptness of high self-monitors. In this respect, given A types to be creative and interested in dramatical/theatrical activities, they may be inclined toward high self-monitoring orientation. By comparison, other SMS items such as, "I can only argue for ideas which I already believe" or "I would not change my opinions (or the way I do things) in order to please someone

else or win their favor", appear to explore the accommodating tendencies of high self-monitors which do not characterize the A types. The difficulty in determining whether A types actually have these tendencies, given that they are described as independent and nonconforming (Holland, 1985a), presents conceptual inconsistencies from these results. Even Snyder (1987) presented somewhat of an incomplete picture regarding the A type individuals. Although he speculated that high self-monitors are likely to choose A type occupational fields such as theater, he omitted to mention A types as being associated with high self-monitoring orientation. Perhaps, for A types, there needs to be a clearer distinction among the SMS items between those statements that are "performance" and behavior-oriented (e.g., I am a good actor) and those that are "non-performance" and value-oriented (e.g., I would lie to be accepted by people). As previously mentioned in the Measures section, the extensive debate in previous research (Briggs, Cheek, & Buss, 1980; Lennox & Wolfe, 1984) of the SMS and in its ability to thoroughly assess the construct of self-monitoring, at least in its relation to Holland types, may be raised here as an issue given the present findings.

Limitations of the Study

OPS Limitations

The structure and the format of the Occupational Preference Survey (OPS) was constructed to minimize the interrelatedness between occupation's prestige and interest

type. By pairing the most distant Holland types together, an attempt was made to clearly distinguish interest type differences between occupations: more specifically, A type occupations paired with C type occupations; S type occupations paired with R type occupations; and E type occupations paired with I type occupations. Furthermore, in order to establish occupational comparisons that were more "realistic" for the present sample (i.e., college students), prestige levels between occupational pairs were restricted so that all of the occupations required at least some college education.

Although the above steps were taken to construct a survey that appropriately varied in prestige and interest among occupations, there were several notable limitations in the OPS. First, the gender-type of these occupations was not controlled. In other words, there was no attempt to distinguish whether an occupation was "traditionally-masculine", "traditionally-feminine", or "gender-neutral". This omission could have affected subjects' perceptions of those occupations that may have been either more traditionally-feminine or traditionally-masculine. Secondly, prestige levels, as operationalized by the TSEI (Stevens & Cho, 1985) in this study, may have been too simplistic given the complex nature of prestige. Although the TSEI scores were calculated based on the critical factors of education, income, and social standing, these scores alone may not be sufficient in assessing the

relevance of prestige to occupational preference. Particularly in relation to the study's findings between (a) Holland type and occupational preferences, and (b) gender and occupational preferences, the concept of prestige could have been more comprehensively defined if it was to consider intellectual complexity and gender-type factors as well.

The third limitation of the OPS was that certain occupations from specific Holland interest types in the survey were more homogeneous than the others. For example, high-prestige R type occupations included nine occupations that had "engineer" as a part of their title. Regardless of the different kinds of engineer, whether it be electrical engineer or materials engineer, the fact that they all had the term engineer indicated repetitiveness and similarity among these titles. Consequently, those subjects, who may have had biased perceptions about engineers of any specific field, either consistently selected or selected against these occupations for reasons other than their preferences for prestige and interest congruence.

Finally, the overall forced-choice format of OPS may also be called into question for its artificiality. As previously stated by researchers who used their own constructed surveys (Leung & Harmon, 1990; Holt, 1989), subjects were asked to choose between pairs of occupations which may be a very different situation compared to the "real-life" career situations experienced by these subjects. Given the paper-and-pencil nature of this measure, there is

the possibility that subjects may not have taken this survey (OPS) seriously. Furthermore, the OPS format was a simple occupation check-list that may have been easily misconstrued. Subjects, therefore, may have readily formed biases around certain occupations in the OPS. According to Heppner and Frazier (1992), people have capacities to form quick heuristic judgements that often prove inaccurate. In this study, for example, some individuals may consider a "jazz dancer" to be "all fun and no work", thereby preferring it over the other occupation.

Sampling Limitations

In other respects, given that this study used a non-randomly selected college sample, the generalizability of the present findings to other young adult populations may be limited. All of the subjects were enrolled in introductory psychology classes. This may have resulted in the unbalanced representation of gender and Holland types within the present sample. More specifically, there was an overrepresentation of S type females and underrepresentation of I type males and females in the subject sample. This may have limited the generalizability of the findings since the college population is more balanced in terms of gender and, to some extent, Holland interest types (Prince, 1984).

Other Statistical and Methodological Limitations

In the present study, there were some difficulties in analyzing and interpreting the two measures of 'prestige over interest' preference scores and the SMS (Snyder &

Gangestad, 1986) scores in relation to occupational preferences. These considerations may help explain, to a certain extent, why self-monitoring orientation did not play a role in subjects' occupational preference. First of all, there was a score range problem in the 'prestige over interest' measure. Although the established range for the measure was from 0 to 10, the sample mean was 2.3, with 76% of subjects scoring in the range of 0 to 3. This restricted range, therefore, created statistical limitations in performing multiple regression. Even though nonparametric tests were used to supplement the regression analyses, there was a drastic decrease in subject sample sizes after considering race, gender, and Holland interest type in the nested design. This limitation may have created difficulty in testing for self-monitoring differences.

It is also important to note that the internal consistency of the Self-Monitoring Scale (SMS) in the present study was marginal (α = .64) and lower than the moderate value reported by Snyder and Gangestad (α = .70). The weaker intercorrelations among the SMS items may possibly explain the lack of relationship between self-monitoring and occupational preferences in this study.

Another related consideration in explaining the nonsignificant relationship of self-monitoring to occupational preferences may be the nature of the SMS itself. Given that the study specifically focused on students' occupational preferences, SMS items may not be

career-specific enough to critically assess subjects' self-monitoring orientations in vocational situations. For example, SMS items such as, "In different situations and with different people, I often act like very different persons", may have been too global, encompassing diverse domains or circumstances. Subjects, therefore, may have had to guess or identify specific situations in order to respond whether or not this is "true" or "false" for them. Past research (Zanna, Olson, & Fazio, 1980) has indicated that although low self-monitors, on the average, are more consistent in expressing their own beliefs across multiple attitude-behavior domains, they were not any more consistent than the high self-monitors when examining any specific domain. Given that these subjective self-assessments may be potentially inconsistent across various circumstances, the SMS, given its generic focus, may not have been an appropriate instrument for this study.

The Self-Directed Search (SDS: Holland, 1985b), on the other hand, is a career-specific instrument and was specifically constructed and developed for career research and counseling. In many ways, subjects may have responded to these items more clearly and accurately than the SMS items because the former was designed to be a very comprehensive yet focused assessment tool.

Recommendations for Future Research

The present study attempted to examine individual differences in occupational preferences. Although the main

research hypothesis (Hypothesis 9) was not supported, this study found individual differences with regard to gender and occupational preferences, Holland type and occupational preferences, and self-monitoring and Holland types. This study also sought to integrate literatures from two psychological disciplines, vocational and social psychology, in the hopes that it might stimulate future refinements of the existing theories. In these respects, the following considerations may be helpful for future research.

Research on Career Compromise

Previous researchers (Hesketh, Durant, & Pryor, 1990; Leung & Harmon, 1990; Leung & Plake, 1990) have consistently encountered difficulty empirically distinguishing prestige and interest dimensions of occupations due to their interrelatedness. Up to this point, methodologies using free-choice and/or forced-choice formats have been instrumental for career compromise research (Hesketh, Elmslie, & Kaldor, 1990; Holt, 1989; Leung & Plake, 1990). Based on the forced-choice procedure (i.e., OPS) used in the present study, the following specific suggestions can be made to improve future methodology: (a) administering subjects a sex-role instrument (e.g., Bem Sex Role Inventory [1978]) to better control sex-role differences, (b) expanding the OPS to include a wider prestige range between selected occupational pairs, and (c) revamping occupational titles in the OPS so that more diversity be represented in their titles, particularly for high-prestige R type and

low-prestige I type occupations. In addition, combining the forced-choice and a qualitative self-assessment formats in the same investigation may provide a more thorough assessment of subjects' occupational preferences.

Research on Special Populations

Given the observed gender differences in occupational preferences, continued efforts in exploring gender as a primary variable is crucial for career choice and decision-making research. A question to pursue may be, "Why do males prefer occupational prestige more than females?" Given that there is a strong tie between prestige and traditionally-masculine occupations, this may be one of the reasons behind males' occupational preference. However, when prestige and gender-type were systematically varied, Leung and Harmon (1990) found males to compromise prestige in order to sustain traditionally-masculine occupations. A more specific question, therefore, may be, "Under what conditions does prestige play a role for both sexes in their occupational preferences?" A similar question can be asked for interest-congruence as well.

Another demographic variable that may be worthy of future research has to do with race/ethnicity. Due to small sample sizes in the individual non-majority racial/ethnic groups, the present study used the simplistic method of dichotomizing subjects into White and Non-White racial groups. Therefore, the racial differences in occupational preferences found in this study were not amenable to

specific interpretations. Nevertheless, the result that Non-White students significantly preferred more high-prestige/low-interest occupations than did White students raises (but does not address) the question of whether different occupational preferences exist among specific ethnic/racial groups. A recent upsurge of research (Arbona, 1990; Cheatham, 1990; Leong & Hayes, 1990) pertaining to different ethnic groups and career choice has focused on career aspirations and expectations, career information, and ethnic stereotyping. One possible direction for research might explore different ethnic groups' perceptions of the importance of occupational prestige. Investigating such questions as, "How is occupational prestige perceived among different ethnic groups?" and "On the basis of culture, economic and political climates, how important is prestige for African-Americans, for instance?" are clearly in order for future research.

Interest Congruence Research

Although the present study assessed interest congruence based on the match between subject's primary Holland interest type (one letter code) and the corresponding work environment type (Holland, 1985a), there are different approaches to studying interest congruence that may benefit future research in this area. One popular approach may be to use two or three-letter Holland codes when matching persons with their work environments (Spokane, 1985). For example, an S type subject in this study would

have SA types as her Holland interest types if her secondary type was A. Accordingly, an S type occupation would also become an SA type occupation if A was its secondary work environment type. This approach would not only provide a more comprehensive picture of a person's interests, but the actual match between the person and his or her work environment would be more accurate as well.

In order to confirm the importance of interest congruence in occupational preference, a different career interest scheme, other than Holland's (1985a) hexagonal model of six interest types, may be used for future research. An alternative model suggested by Gati (1989) classifies people and occupations according to the Occupational Aptitude Pattern map (OAP: Gottfredson, 1986a). More specifically, these occupations would be categorized into four clusters using Holland's letter types. These clusters include: "(a) dealing with physical relations (R + I), (b) maintaining bureaucratic order (C + E), (c) dealing with social and economic relations (S), and (d) performing (A)" (Gati, 1990, p. 184). Thus, using alternative approaches, such as the ones mention above, can assist future researchers in further examining the relation of interest-congruence and occupational preference.

Integration Between Counseling and Social Psychology

As previously indicated, the present study found that although self-monitoring differences did exist among Holland interest types, self-monitoring itself did not play a

significant role in predicting college students' occupational preferences. Additional studies, including replication studies, are needed to cross-validate the present findings. For a better understanding of individual differences, one research direction may be to conduct comparison studies of occupational preferences based on specific Holland types and their self-monitoring orientations. In the present study, both I and E type subjects preferred high-prestige/low-interest occupations, yet I types scored the lowest in their self-monitoring orientation while E types scored the highest. A basic question to start with may be, "What other factors may be accounting for this distinction between I and E type individuals?" It may be useful, for example, to control for the intellectual complexity of occupational preferences in order to clarify the nature of these differences.

As Leary and Maddux (1987) have noted, very few attempts have been made to integrate social psychological concepts into counseling psychology research. Given the applied nature of counseling psychology research, future research in this discipline can further expand and corroborate the validity of social psychological research (Heppner & Frazier, 1992). In addition to administering subjects paper-and-pencil measure of specific psychological concepts, experimenters as therapists can directly explore subjects' or clients' attitudes and inferences so that clearer information may be available for study.

Another future research possibility may be to explore occupational preferences and other social psychological areas, such as self-perception (Bem, 1972) and social desirability (Crowne & Marlowe, 1964), that also assess the "inner-directedness" and "other-directedness" in people. There may have been some implicit connections of people's cognitive processes, such as the ones mentioned above, that were not explained by self-monitoring orientation in this study. For this reason, continued research pursuits in bridging this gap of the two psychological disciplines are strongly encouraged.

Counseling Implications

Both gender and Holland interest type played critical roles in predicting students' occupational preferences in the present study. The findings that: (a) males placed greater importance on occupational prestige than females; (b) females placed greater importance on interest-congruence than males; and (c) I types averaged the highest in their preference for high-prestige/low-interest occupations, should encourage career counselors and psychologists to be sensitive to these client characteristics. However, simply recognizing these differences is not enough to appropriately help clients with career issues. Counselors and psychologists also need to be aware of their own biases and assumptions about each gender's career roles and specific Holland types. With the present findings, for example, practitioners might assume that I types only seek

high-prestige occupations. A careful assessment by the practitioners of the client's individual history would help eliminate these biases. Following up on the above example, an I type person may have high-prestige occupational preferences as a result of personal economic hardship and not necessarily due to complex intellectual challenge.

Another consideration for counselors and psychologists is to integrate both interest-congruence and prestige considerations in the career counseling process. These two considerations require exploration of client's internal concerns (e.g., values, beliefs, abilities) as well as their external concerns (e.g., income, employment opportunities, prestige level preferences). These concerns could be particularly important for clients who lack information about careers. For them, identifying their own needs as well as receiving necessary information about their external needs would be critical in their career search.

The theoretical concept of "person-job fit" that assumes people seek careers based on their self-knowledge of their values, interests, and abilities (Holland, 1973, 1985a; Parson, 1904) has been a compelling view in vocational psychology. Subsequently, there follows an overriding acceptance among many practitioners that persons' ideal career choice lies in choosing occupations that fit their self-knowledge of interests. The present study confirmed students' tendency to prefer interest-congruent occupations. However, this study also found occupational

prestige to be more important for individuals based on their gender and Holland interest type. Both interest and prestige-related factors, such as intellectual challenge and higher education, appeared to be particularly relevant for I types. From these findings, one point is clear: People's occupational preferences are individually complex. It is imperative that counselors working with career clients should not overlook these individual differences. As practitioners, several clinical and practical considerations to assist clients may be to (a) carefully identify and process clients' values, attitudes, and biases regarding their preferred occupations, (b) clarify and/or expand on clients' preferred occupations based on their self-knowledge of interests, and finally (c) provide necessary and concrete feedback (e.g., what to expect when applying to medical schools, how to prepare for job interviews) to clients who may be unaware of certain career-related information in their preferred occupations.

APPENDICES

APPENDIX A

Possible Occupational Titles for Occupational Preference Survey (OPS):

1. Sets of High Prestige(HP)/Social(S) and Low Prestige(LP)/Realistic(R):

HP/S Occupations:

_____ (126) college professor in social science (TSEI=85.04)
_____ (139) college professor in education (TSEI=86.20)
_____ (156) elementary school teacher (TSEI=70.88)
_____ (157) high school teacher in social science (TSEI=77.34)
_____ (163) high school vocational counselor (TSEI=77.34)
_____ (167) clinical psychologist (TSEI=82.48)
_____ (167) licensed school psychologist (TSEI=82.48)
_____ (014) school superintendent (TSEI=82.44)
_____ (176) clergy/religious minister (TSEI=66.03)
_____ (197) public relations specialist (TSEI=67.26)
_____ (099) occupational therapist (TSEI=59.94)
_____ (103) physical therapist (TSEI=59.94)
_____ (104) speech therapist (TSEI=59.94)
_____ (164) librarian (TSEI=65.46)

LP/R Occupations:

_____ (206) radiologic technician (TSEI=39.20)
_____ (214) industrial engineering technician (TSEI=45.21)
_____ (215) mechanical engineering technician (TSEI=49.33)
_____ (218) surveying and mapping technician (TSEI=39.43)
_____ (227) air traffic controller (TSEI=50.11)
_____ (228) broadcast equipment operator (TSEI=34.71)
_____ (308) computer operator (TSEI=36.84)
_____ (353) communications equipment operator(TSEI=25.19)
_____ (634) die maker (TSEI=31.95)
_____ (677) optician (optical lens maker) (TSEI=29.02)
_____ (677) eyeglass-lens cutter (TSEI=29.02)
_____ (678) dental laboratory technician (TSEI=32.58)
_____ (734) printing machine operator (TSEI=26.48)
_____ (735) photoengraver (TSEI=31.44)
_____ (774) photographic process machine operator (TSEI=29.19)

2. Sets of LP/S and HP/R:

LP/S Occupations:

_____ (158) special education teacher (TSEI=51.64)
_____ (097) dietitian (TSEI=43.38)
_____ (446) health aid (TSEI=25.96)
_____ (456) supervisor personal service occupations(TSEI=28.43)
_____ (463) tour guide (TSEI=26.33)
_____ (467) welfare service aid (TSEI=27.07)
_____ (468) child care worker (TSEI=23.55)
_____ (433) supervisor for food service (TSEI=20.61)
_____ (633) supervisor for quality control (TSEI=33.83)
_____ (469) social service worker (TSEI=28.38)
_____ (434) bartender (TSEI=23.96)
_____ (387) teacher's aide (TSEI=31.57)

HP/R Occupations:

_____ (045) materials engineer (TSEI=79.23)
_____ (046) mining engineer (TSEI=75.49)
_____ (047) petroleum engineer (TSEI=82.32)
_____ (055) electrical engineer (TSEI=78.97)
_____ (057) mechanical engineer (TSEI=76.71)
_____ (059) automotive engineer (TSEI=76.41)
_____ (059) optical engineer (TSEI=76.41)
_____ (059) plant engineer (TSEI=76.41)
_____ (059) civil engineer (TSEI=76.41)
_____ (075) geologist (TSEI=85.65)
_____ (226) airplane pilot & navigator (TSEI=67.55)

3. Sets of HP/Investigative(I) and LP/E(Enterprising):

HP/I Occupations:

_____ (128) college professor in mathematics (TSEI=82.46)
_____ (084) physician (TSEI=88.28)
_____ (085) dentist (TSEI=89.57)
_____ (166) economist (TSEI=78.27)
_____ (078) biological and life scientist (TSEI=77.32)
_____ (086) veterinarian (TSEI=86.60)
_____ (069) astronomer (TSEI=87.00)
_____ (074) meteorologist (TSEI=74.58)
_____ (077) food scientist (TSEI=68.44)
_____ (087) optometrist (TSEI=85.73)
_____ (117) college professor in natural science (TSEI=81.93)
_____ (089) psychiatrist (TSEI=79.58)
_____ (076) microbiologist (TSEI=80.05)
_____ (084) surgeon (TSEI=88.28)
_____ (089) radiologist (TSEI=79.58)
_____ (076) geophysicist (TSEI=80.05)
_____ (078) biologist (TSEI=77.32)
_____ (083) anesthesiologist (TSEI=76.73)

LP/E Occupations:

_____ (263) salesperson, motor vehicles & boats (TSEI=34.54)
_____ (259) wholesale sales representative (TSEI=50.01)
_____ (259) manufacturing sales representative (TSEI=50.01)
_____ (259) mining sales representative (TSEI=50.01)
_____ (633) assembly supervisor (TSEI=33.83)
_____ (267) salesperson, electrical equipments (TSEI=32.68)
_____ (318) travel agent (TSEI=39.08)
_____ (317) hotel management clerk (TSEI=25.38)
_____ (198) radio announcer (TSEI=55.39)
_____ (303) manager, general office (TSEI=37.07)
_____ (326) correspondence clerk (TSEI=32.93)
_____ (326) administrative records processing clerk (TSEI=32.93)
_____ (257) sales correspondent (TSEI=25.39)
_____ (418) private detective/investigator (TSEI=38.01)
_____ (254) insurance sales agent (TSEI=52.01)
_____ (359) service dispatcher (TSEI=30.70)

4. Sets of LP/I & HP/E:

LP/I Occupations:

_____ (689) food production inspector (TSEI=23.82)
_____ (203) clinical laboratory technician (TSEI=54.96)
_____ (223) biological technician (TSEI=39.10)
_____ (208) health technician (TSEI=44.63)
_____ (095) registered nurse (TSEI=46.40)
_____ (689) cloth tester (TSEI=23.82)
_____ (224) chemical technician (TSEI=50.04)
_____ (225) surgical technician (TSEI=46.14)
_____ (105) respiratory therapist (TSEI=59.94)
_____ (106) physician's assistant (TSEI=58.82)
_____ (206) radiologic technician (TSEI=39.20)
_____ (218) surveying technician (TSEI=39.43)

HP/E Occupations:

_____ (023) tax accountant (TSEI=64.76)
_____ (014) director of institutional research (TSEI=82.44)
_____ (013) marketing manager (TSEI=57.93)
_____ (013) advertising manager (TSEI=57.93)
_____ (013) public relations manager (TSEI=57.93)
_____ (014) administrator of educational program (TSEI=82.44)
_____ (178) corporate attorney (TSEI=88.42)
_____ (179) judge (TSEI=76.60)
_____ (255) finance & business services representative (TSEI=71.38)
_____ (003) government legislator (TSEI=57.09)
_____ (005) executive vice president–Chamber of Commerce(TSEI=54.35)
_____ (008) labor relations manager (TSEI=59.64)

5. Sets of HP/Artistic(A) & LP/Conventional(C):

HP/A Occupations:

_____ (043) landscape architect (TSEI=79.72)
_____ (195) editor of technical & scientific publications (TSEI=67.27)
_____ (195) editor, fictional stories (TSEI=67.27)
_____ (157) high school foreign language teacher (TSEI=75.14)
_____ (195) news paper reporter (TSEI=67.27)
_____ (157) high school art teacher (TSEI=75.14)
_____ (194) commercial artist (TSEI=55.67)
_____ (183) book author (TSEI=71.43)
_____ (194) fashion artist (TSEI=55.67)
_____ (197) audiovisual production specialist (TSEI=67.26)
_____ (187) motion picture director (TSEI=51.80)
_____ (195) columnist/commentator (TSEI=67.27)
_____ (183) playwright (TSEI=71.43)
_____ (195) news editor (TSEI=67.27)
_____ (195) photojournalist (TSEI=67.27)
_____ (184) screen writer (TSEI=59.58)

LP/C Occupations:

_____ (347) data entry operator (TSEI=23.97)
_____ (337) general–ledger bookkeeper (TSEI=30.43)
_____ (036) assembly line inspector (TSEI=43.68)
_____ (337) accounting clerk (TSEI=30.43)
_____ (035) building inspector (TSEI=36.38)
_____ (225) medical record technician (TSEI=46.14)
_____ (337) insurance clerk (TSEI=30.43)
_____ (314) stenographer (TSEI=29.94)
_____ (315) data typist (TSEI=25.22)
_____ (336) medical clerk (TSEI=31.90)
_____ (337) auditing clerk (TSEI=30.43)
_____ (234) legal assistant/secretary (TSEI=41.79)
_____ (796) fabric inspector (TSEI=22.03)
_____ (327) court clerk (TSEI=28.92)
_____ (797) automobile tester (TSEI=21.50)
_____ (337) supervisor for distribution and scheduling clerks (TSEI=31.43)

6. Sets of LP/A & HP/C:

LP/A Occupations:

_____ (188) quick-sketch artist (TSEI=54.42)
_____ (189) still photographer (TSEI=42.86)
_____ (193) jazz dancer (TSEI=29.32)
_____ (188) sculptor (TSEI=54.42)
_____ (186) music composer (TSEI=45.69)
_____ (656) model maker (TSEI=30.62)
_____ (436) pastry chef (TSEI=17.54)
_____ (185) theatrical set designer (TSEI=48.80)
_____ (185) furniture designer (TSEI=48.80)
_____ (188) make-up artist (TSEI=54.42)
_____ (186) musician (TSEI=45.69)
_____ (193) professional dancer (TSEI=29.32)
_____ (188) printmaker (TSEI=54.42)
_____ (188) painter (TSEI=54.42)

HP/C Occupations:

_____ (025) business management programmer (TSEI=61.62)
_____ (023) certified public accountant (TSEI=64.76)
_____ (023) systems accountant (TSEI=64.76)
_____ (157) high school business teacher (TSEI=75.14)
_____ (024) insurance underwriter (TSEI=54.09)
_____ (026) account management analyst (TSEI=70.00)
_____ (183) bibliographer (TSEI=71.43)
_____ (026) financial analyst (TSEI=70.00)
_____ (023) cost accountant (TSEI=64.76)
_____ (023) auditor (TSEI=64.76)
_____ (025) time study analyst (TSEI=61.62)
_____ (025) account analyst (TSEI=61.62)

APPENDIX B

Validity Survey for OPS:
DIRECTIONS: Thank you for helping me with the construction of this survey. I would like for you to do two things with the following 106 pairs of occupations.

First, please go through each occupation and write down a Holland code-type of R (realistic), I (investigative), A (artistic), S (social), E (enterprising), or C (conventional) next to each occupation*. You can put two code-types for each occupation if you cannot decide on one code-type.
After you have completed all 212 occupations**, go back to the beginning and check mark one occupation, within each pair, that is higher in prestige or status than the other. Please call me (Randi's message phone: 332-1846) after you have finished. Thanks again for your participation.

*I have enclosed a table of Holland's six personality types for your convenience.
**Some occupations are repeated in the survey.

1. ___ college professor in education
   ___ mechanical engineering technician

2. ___ physician
   ___ manufacturing sales representative

3. ___ landscape architect
   ___ general-ledger bookkeeper

4. ___ special education teacher
   ___ aerospace engineer

5. ___ theatrical set designer
   ___ certified public accountant

6. ___ clinical laboratory technician
   ___ director of institutional research

7. ___ business management programmer
   ___ model maker

8. ___ welfare service aid
   ___ operations & systems analyst

9. ___ editor of technical & scientific publications
   ___ accounting clerk

10. ___ college professor in mathematics
    ___ salesperson, motor vehicles & boats

11. ___ elementary school teacher
    ___ radiologic technician

12. ___ public relations manager
    ___ biological technician

(cont'd)

13. ___ industrial engineering technician
___ licensed school psychologist

14. ___ mining sales representative
___ dentist

15. ___ assembly line inspector
___ high school teacher in foreign language

16. ___ health technician
___ administrator of college admissions

17. ___ furniture designer
___ high school teacher in business

18. ___ mining engineer
___ welfare service aid

19. ___ manager, general office
___ college professor in natural science

20. ___ dental laboratory technician
___ clergy/religious minister

21. ___ supervisor for quality control
___ mechanical engineer

22. ___ insurance underwriter
___ pastry chef

23. ___ corporate attorney
___ respiratory therapist

24. ___ news paper reporter
___ insurance clerk

25. ___ occupational therapist
___ lithographer

26. ___ college professor in industrial arts
___ supervisor for fire-fighting occupations

27. ___ still photographer
___ certified systems accountant

28. ___ surgical technician
___ finance & business services representative

29. ___ astronomer
___ radio announcer

30. ___ audiovisual production specialist
___ medical record technician

(cont'd)

31. ___ airplane pilot & navigator
___ child care worker

32. ___ food production inspector
___ government legislator

33. ___ high school vocational counselor
___ surveying and mapping technician

34. ___ high school teacher in art
___ medical clerk

35. ___ travel agent
___ biological and life scientist

36. ___ musician
___ auditor

37. ___ health technician
___ high school teacher in industrial arts

38. ___ judge
___ chemical technician

39. ___ dietician
___ geologist

40. ___ optometrist
___ assembly supervisor

41. ___ building inspector
___ editor, fictional stories

42. ___ librarian
___ make-up artist

43. ___ public relations specialist
___ broadcast equipment operator

44. ___ economist
___ wholesale sales representative

45. ___ electrical engineer
___ hairdresser

46. ___ time study analyst
___ sculptor

47. ___ physician's assistant
___ administrator of educational systems/programs

48. ___ commercial artist
___ data entry operator

(cont'd)

49. ___ administrative records processing clerk
___ veterinarian

50. ___ supervisor for food service
___ petroleum engineer

51. ___ college professor in social science
___ air traffic controller

52. ___ music arranger
___ cost accountant

53. ___ tax accountant
___ registered nurse

54. ___ auditing clerk
___ book author

55. ___ meteorologist
___ hotel management clerk

56. ___ executive vice president-Chamber of Commerce
___ cloth tester

57. ___ motion picture director
___ data typist

58. ___ physical therapist
___ photographic process machine operator

59. ___ automotive engineer
___ tour guide

60. ___ financial analyst
___ quick-sketch artist

61. ___ computer operator
___ personnel and labor relations manager

62. ___ health aid
___ materials manager

63. ___ food-nutrition scientist
___ salesperson, electrical equipment

64. ___ stenographer
___ commercial artist

65. ___ bibliographer(bibliography compiler)
___ jazz dancer

66. ___ labor relations specialist
___ printing machine operator

(cont'd)

67. ___ high school teacher in social science
___ die maker

68. ___ dietitian
___ civil engineer

69. ___ microbiologist
___ wholesale sales representative

70. ___ radiologic technician
___ columnist/commentator

71. ___ playwright
___ legal assistant

72. ___ model maker
___ auditor

73. ___ school superintendent
___ photoengraver

74. ___ bartender
___ plant engineer

75. ___ optometrist
___ sales correspondent

76. ___ labor relations manager
___ dental laboratory technician

77. ___ high school teacher in art
___ bookkeeper

78. ___ account management analyst
___ make-up artist

79. ___ clinical psychologist
___ optician (optical lens maker)

80. ___ speech therapist
___ photoengraver

81. ___ automotive engineer
___ special education teacher

82. ___ social service worker
___ optical engineer

83. ___ travel agent
___ surgeon

84. ___ radiologist
___ private detective/investigator

(cont'd)

85. ___ news editor
___ data entry operator

86. ___ director of institutional research
___ surveying technician

87. ___ business programmer
___ professional dancer

88. ___ health technician
___ marketing manager

89. ___ court clerk
___ photojournalist

90. ___ printmaker
___ systems accountant

91. ___ clinical psychologist
___ broadcast equipment operator

92. ___ mining engineer
___ health aid

93. ___ real estate sales agent
___ geophysicist

94. ___ screen writer
___ automobile tester

95. ___ painter
___ account management analyst

96. ___ eyeglass-lens cutter
___ librarian

97. ___ teacher's aide
___ materials engineer

98. ___ landscape architect
___ supervisor for distribution & scheduling clerks

99. ___ director of special education
___ detail drafter

100. ___ real estate appraiser
___ instrument mechanic

101. ___ production planner
___ occupational therapy assistant

102. ___ sales correspondent
___ biologist

(cont'd)

103. ___ anesthesiologist
___ insurance sales agent

104. ___ advertising copywriter
___ electronics assembler

105. ___ orchestrator
___ fabric inspector

106. ___ psychiatrist
___ service dispatcher

APPENDIX C

Consent Form (Pilot Study):

Dear Participant,

This packet contains a set of questionnaires that asks about your knowledge of careers and personal characteristics. Your responses will help me see whether or not people have a good sense of different jobs. Thanks for filling out these questionnaires and please raise your hand if you have any questions.

Randi I. Kim, M.S.

****

I have consented to participate in this study on a voluntary basis. I understand the nature of this study and am guaranteed complete anonymity and confidentiality. I also understand that the overall result of the study will be made available to me at my request.

Signature_____

Full Name in Print_____

Date_____

APPENDIX D:

TABLE D-1
TABLE D-2
TABLE D-3

APPENDIX D

Table D-1. TSEI Prestige Score Ranges of Holland Work Environment Types

Holland Work Environment Type	TSEI[a] Ranges	
	Low Prestige	High Prestige
Realistic(R)	29.02 to 50.11	67.55 to 82.32
Investigative(I)	23.82 to 50.04	77.32 to 89.57
Artistic(A)	30.62 to 54.42	55.67 to 79.72
Social(S)	20.51 to 51.64	59.94 to 86.20
Enterprising(E)	25.38 to 50.01	54.35 to 88.42
Conventional(C)	23.97 to 41.79	61.62 to 70.00

[a] TSEI: Total Socioeconomic Index (Stevens and Cho, 1985).

Table D-2. The OPS Forced-Choice Format

	Occupation 1		Occupation 2	
Set(Pair)	Holland Type	Prestige	Holland Type	Prestige
1.[a]	Investigative(I)	High	Enterprising(E)	Low
	i.e. [physician]		[manufacturing sales representative]	
2.	Social(S)	High	Realistic(R)	Low
	i.e. [college professor in education]		[mechanical engineering technician]	
3.	Artistic(A)	High	Conventional(C)	Low
	i.e. [landscape architect]		[general-ledger bookkeeper]	
4.	R	High	S	Low
	i.e. [mining engineer]		[welfare service aid]	
5.	C	High	A	Low
	i.e. [certified public accountant]		[theatrical set designer]	
6.	E	High	I	Low
	i.e. [public relations manager]		[biological technician]	

[a] Set (Pair) 1 represents the OPS "conflicted" pair. In this particular pair, "physician" is of a Investigative work environment type with higher prestige level than "manufacturing sales representative". Manufacturing sales representative, on the other hand, is of a Enterprising work environment type (an opposite type of I type) with a lower prestige level than the physician. Therefore, a person with E Holland type would have an occupational preference conflict when faced with Set 1 since physician is of higher prestige but lower in interest whereas manufacturing sales representative is of higher interest but lower in prestige.

Table D-3. Frequency and Percent distributions of OPS Occupational Pairs (N = 27)

	OPS Pairs	Frequency	%
1.	college professor in education	13	48.1
	mechanical engineering technician*	14	51.9
2.	physician	27	100.0
	manufacturing sales representative	0	0.0
3.	landscape architect	21	77.8
	general-ledger bookkeeper	6	22.2
4.	mining engineer	23	85.2
	welfare service aid	4	14.8
5.	theatrical set designer	3	11.1
	certified public accountant	24	88.9
6.	elementary school teacher	12	44.4
	air traffic controller*	15	55.6
7.	public relations manager	8	29.6
	biological technician*	19	70.4
8.	mining sales representative	1	3.7
	dentist	26	96.3
9.	editor of technical & scientific publications	22	81.5
	accounting clerk/assistant	5	18.5
10.	health technician	7	25.9
	administrator of college admissions	20	74.1
11.	manager, general office	6	22.2
	college professor in natural science	21	77.8
12.	supervisor for quality control	6	22.2
	mechanical engineer	21	77.8
13.	industrial engineering technician*	18	66.7
	licensed school psychologist	9	33.3
14.	corporate attorney	21	77.8
	radiologic technician	6	22.2
15.	news paper reporter	19	70.4
	insurance clerk	8	29.6
16.	still photographer	6	22.2
	systems accountant (certified)	21	77.8
17.	surgical laboratory technician*	22	81.5
	finance & business representative	5	18.5
18.	airplane pilot & navigator	26	96.3
	child care worker	1	3.7
19.	health aid	5	18.5
	petroleum engineer	22	81.5
20.	food production inspector	3	11.1
	government legislator	24	88.9

Table D-3 (cont'd)

	OPS Pairs	Frequency	%
21.	high school vocational counselor	12	44.4
	surveying and mapping technician*	15	55.6
22.	travel agent	1	3.7
	biological and life scientist	26	96.3
23.	musician	12	44.4
	auditor	15	55.6
24.	judge	23	85.2
	chemical technician	4	14.8
25.	public relations specialist	23	85.2
	broadcast equipment operator	4	14.8
26.	economist	25	92.6
	wholesale sales representative	2	7.4
27.	account management analyst	20	74.1
	sculptor	7	25.9
28.	private detective/investigator	11	40.7
	administrator of educational systems/programs	16	59.3
29.	commercial artist	20	74.1
	data entry operaator	7	25.9
30.	supervisor for food service	5	18.5
	automotive engineer	22	81.5
31.	music arranger	12	44.4
	accountant (cost-related)	15	55.6
32.	auditing clerk	2	7.4
	book author	25	92.6
33.	real estate sales agent	4	14.8
	geophysicist	23	85.2
34.	executive vice president-Chamber of Commerce	26	96.3
	cloth tester	1	3.7
35.	physical therapist	26	96.3
	photographic process machine operator	1	3.7
36.	materials engineer	26	96.3
	tour guide	1	3.7
37.	bibliographer (bibliography compiler)	16	59.3
	jazz dancer	11	40.7
38.	high school teacher in social science	23	85.2
	die maker	4	14.8
39.	editor, fictional stories	26	96.3
	data typist	1	3.7
40.	dietitian	11	40.7
	civil engineer	16	59.3

Table D-3 (cont'd)

	OPS Pairs	Frequency	%
41.	playwright	17	63.0
	legal assistant/secretary	10	37.0
42.	model maker	12	44.4
	time study analyst	15	55.6
43.	school superintendent	27	100.0
	photoengraver	0	0.0
44.	bartender	0	0.0
	plant engineer	27	100.0
45.	licensed optometrist	27	100.0
	sales correspondent	0	0.0
46.	labor relations manager	12	44.4
	dental laboratory technician*	15	55.6
47.	high school teacher in art	16	59.3
	bookkeeper	11	40.7
48.	account analyst	22	81.5
	furniture designer	5	18.5
49.	clinical psychologist	20	74.1
	optician (optical lens maker)	7	25.9
50.	travel agency manager	0	0.0
	surgeon	27	100.0
51.	news editor	24	88.9
	data entry operator	3	11.1
52.	social service worker	2	7.4
	optical engineer	25	92.6
53.	director of institutional research	23	85.2
	surveying technician	4	14.8
54.	business programmer	21	77.8
	professional dancer	6	22.2
55.	court clerk	4	14.8
	photojournalist	23	85.2
56.	printmaker	1	3.7
	financial analyst	26	96.3
57.	eyeglass-lens cutter	12	44.4
	librarian	15	55.6
58.	anesthesiologist	27	100.0
	insurance sales agent	0	0.0
59.	electrical engineer	23	85.2
	special education teacher	4	14.2
60.	psychiatrist	27	100.0
	service dispatcher	0	0.0

*Lower prestige occupations that have higher prestige consensus by the subjects. In consideration to this disparity, the word "worker" was added next to "technician" (with a "/") to give a lower prestige face validity.

APPENDIX E

Consent Form:

Dear Participant,

This survey packet contains several questionnaires that ask about your interest and preferences for different jobs and other job-related activities. Your responses to these questionnaires will help me see if there are certain jobs that people like more than others. Thank you for filling out these questionnaires and please raise your hand if you have any questions.

Randi I. Kim, M.S.

****

I, as a participant in this study, have agreed and understood the following conditions.

They are:

1. I have voluntarily consented to participate in this study by completing the survey packet.

2. The purpose of the study has been explained to me and I understand what my participation will involve.

3. I understand that there will be no risks and that I will not, in any way, be uncomfortable by participating in this study. I also understand that I am free to discontinue at any time during the questionnaire administration.

4. I understand that the study's results will be handled in strictest of confidence and that I will not be identified by name in any analyzing and reporting of this study.

5. The findings of the study will be made available to me upon request.

6. I understand that the questionnaire packet will take approximately 35-40 minutes to complete.

Signature: _____

Print full Name: _____

Date: _____

APPENDIX F

BACKGROUND INFORMATION

DIRECTIONS: The following are some questions that we are interested in knowing about you and your background. Please answer them to your best knowledge. We will again emphasize that your anonymity will be protected. Thank you for your participation in this study.

1. Age: _____

2. Gender (circle one): 1) Male 2) Female

3. Your ethnic background: (Circle one number below.)
   1) Anglo-American
   2) African-American
   3) Hispanic-American
   4) Asian/Pacific-American
   5) Native-American
   6) Other (specify): _____

4. Your current overall GPA at Michigan State: (circle one)
   1) less than 2.0
   2) 2.1 - 2.5
   3) 2.6 - 3.0
   4) 3.1 - 3.5
   5) 3.6 - 4.0

5. Have you decided on a major? (circle one) 1) YES 2) NO

   1) If <u>yes</u>, specify: _____

   2) How confident are you in your decision about your major?
      (Circle one number below.)

0	1	2	3	4	5
not at all confident		moderately confident		very confident	

6. Have you decided on an occupation? (circle one)

   1) YES 2) NO

   1) If <u>yes</u>, specify: _____

   2) How confident are you in your decision about your occupation?
      (Circle one number below.)

0	1	2	3	4	5
not at all confident		moderately confident		very confident	

(cont'd)

7. **Your parents' occupations and educational levels:**

A) What is your **mother's** current occupation?

_____

B) Please circle the letter that best describes your **mother's** highest education level:

1) She has some high school education.
2) She has a high school diploma.
3) She has some college education.
4) She has a college degree.
5) She has some graduate school education.
6) She has a masters degree.
7) She has a doctorate degree.

C) What is your **father's** occupation?

_____

D) Please circle the letter that best describes your **father's** highest education level:

1) He has some high school education.
2) He has a high school diploma.
3) He has some college education.
4) He has a college degree.
5) He has some graduate school education.
6) He has a masters degree.
7) He has a doctorate degree.

8. What is your career plan after graduating from college? (Please circle <u>one</u> number that relates to you most at present time.)

1) Will continue on to graduate school immediately.
2) Thinking about going to graduate school, but no definite plans.
3) Will find a full-time job immediately.
4) Thinking about finding a full-time job, but no definite plans.
5) Not sure at all.

9. <u>For those who have chosen 1) or 3) above</u>, please <u>specify</u> what type of graduate program (for graduate school) or what type of work (for a full-time job) that you have in mind:

_____

10. For the following statements, please circle YES or NO as they apply to you.

I need the following information:	*YES*	*NO*
How to find a job in my chosen career.	1	2
What kinds of people enter difference occuaptions.	1	2
More information about employment opportunities.	1	2
How to get the necessary training in my chosen career.	1	2

APPENDIX G

SMS Questionnaire:

Directions: The statements concern your personal reactions to a number of different situations. No two statements are exactly alike, so consider each statement carefully before answering. If a statement is **TRUE** or **MOSTLY TRUE** as applied to you, circle "1" under "**T**". If a statement is **FALSE** or **USUALLY FALSE** as applied to you, circle "2" under "**F**". It is important that you answer as frankly and as honestly as you can. Your answers will be kept in the strictest confidence.

		T	*F*
1.	I find it hard to imitate the behavior of other people.	1	2
2.	At parties and social gatherings, I do not attempt to do or say things that others will like.	1	2
3.	I can only argue for ideas which I already believe.	1	2
4.	I can make impromptu speeches even on topics about which I have almost no information.	1	2
5.	I guess I put on a show to impress or entertain people.	1	2
6.	I would probably make a good actor.	1	2
7.	In a group of people I am rarely the center of attention.	1	2
8.	In different situations and with different people, I often act like very different persons.	1	2
9.	I am not particularly good at making other people like me.	1	2
10.	I'm not always the person I appear to be.	1	2
11.	I would not change my opinions (or the way I do things) in order to please someone else or win their favor.	1	2
12	I have considered being an entertainer.	1	2
13.	I have never been good at games like charades or improvisational acting.	1	2
14	I have trouble changing my behavior to suit different people and different situations.	1	2
15.	At a party I let others keep the jokes and stories going.	1	2
16.	I feel a bit awkward in company and do not show up quite so well as I should.	1	2

SMS (cont'd)

		T	*F*
17.	I can look anyone in the eye and tell a lie with a straight face (if for a right end).	1	2
18.	I may deceive people by being friendly when I really dislike them.	1	2

APPENDIX H

SDS Questionnaire:
ACTIVITIES

The following items look at your likes and dislikes of various activities. Please circle "1" under "Like" for these activities you would like to do. Circle "2" under "Dislike" for those things you would dislike doing or would be indifferent to.

	Like	Dislike
Fix electrical things	1	2
Repair cars	1	2
Fix mechanical things	1	2
Build things with wood	1	2
Raise dairy cows or beef cattle	1	2
Use metalworking or mechanical tools	1	2
Be a hunting or fishing guide	1	2
Take Shop course	1	2
Take Mechanical Drawing course	1	2
Take Woodworking course	1	2
Take Auto Mechanics course	1	2
Read scientific books or magazines	1	2
Work in a laboratory	1	2
Work in a scientific project	1	2
Study a scientific theory	1	2
Work in a chemistry set	1	2
Read about special subjects on my own	1	2
Apply mathematics to practical problems	1	2
Take Physics course	1	2
Take Chemistry course	1	2
Take Mathematics course	1	2
Take Biology course	1	2
Sketch, draw or paint	1	2
Act in a comedy or play	1	2
Design furniture, clothing, or posters	1	2
Play in a band, group or orchestra	1	2
Practice a musical instrument	1	2
Write for a magazine or newspaper	1	2
Create portraits or photographs	1	2
Write novels or plays	1	2

ACTIVITIES (cont'd)

	Like	Dislike
Read or write poetry	1	2
Take Art course	1	2
Arrange or compose music of any kind	1	2
Meet important educators or therapists	1	2
Read sociology articles or books	1	2
Work for the Red Cross	1	2
Help others with their personal problems	1	2
Take care of children	1	2
Study juvenile delinquency	1	2
Teach in a college	1	2
Read psychology books	1	2
Help handicapped people	1	2
Take Human Relations course	1	2
Teach in a high school	1	2
Influence others	1	2
Sell something	1	2
Learn strategies for business success	1	2
Operate on my own service or business	1	2
Attend sales conferences	1	2
Take a short course on administration and leadership	1	2
Serve as an officer of any group	1	2
Supervise the work of others	1	2
Meet important executives and leaders	1	2
Lead a group in accomplishing some goal	1	2
Take charge of a political campaign	1	2
Fill out income tax forms	1	2
Type papers or letters for yourself or for others	1	2
Add, subtract, multiply and divide numbers in business	1	2
Operate business machines of any kind	1	2
Keep detailed records of expenses	1	2
Set up a record system	1	2
Take Business course	1	2
Take Bookkeeping course	1	2
Take Commercial Math course	1	2
Operate a computer	1	2
Take an inventory of supplies or products	1	2

COMPETENCIES

The following items look at your abilities in various areas and not your likes and dislikes. Circle "1" under "Yes" for those activities you can do well or competently. Circle "2" under "No" for those activities you have never performed or performed poorly.

	Yes	No
I have used wood shop power tools (e.g., power saw, sander)	1	2
I can make a scale drawing	1	2
I can change a car's oil or tire	1	2
I have operated power tools (e.g., drill press, sewing machine)	1	2
I can refinish furniture or woodwork	1	2
I can read blueprints	1	2
I can make simple electrical repairs	1	2
I can repair furniture	1	2
I can use most carpentry tools	1	2
I can make simple repairs on a TV set or radio	1	2
I can make simple plumbing repairs	1	2
I can use algebra to solve mathematical problems	1	2
I can perform a scientific experiment or survey	1	2
I understand the "half-life" of a radioactive element	1	2
I can use logarithmic tables	1	2
I can use a calculator or slide rule	1	2
I can use a microscope	1	2
I can program a computer to study a scientific problem	1	2
I can describe the function of the white blood cells	1	2
I can interpret simple chemical formula	1	2
I understand why man-made satellites do not fall to the earth	1	2
I can name three foods that are high in protein content	1	2
I can play a musical instrument	1	2
I can participate in two- or four-part choral singing	1	2
I can perform as a musical soloist	1	2
I can act in a play	1	2
I can do interpretive reading	1	2
I can write news stories or technical reports	1	2
I can sketch people so that they can be recognized	1	2
I can do painting, watercolor, or sculpture	1	2
I can arrange or compose music	1	2
I can design clothing, posters, or furniture	1	2
I write stories or poetry well	1	2

COMPETENCIES (cont'd)

	Yes	No
I find it easy to talk to all kinds of people	1	2
I can lead group discussions	1	2
I am good at explaining things to others	1	2
I have participated in charity or benefit drives	1	2
I could work as a neighborhood organizer	1	2
I can teach children easily	1	2
I can teach adults easily	1	2
I am good at helping people who are upset or troubled	1	2
I can plan entertain for a party	1	2
I am competent at entertaining people older that I am	1	2
People seek me out to tell me their troubles	1	2
I won an award for work as a salesperson or leader	1	2
I know how to be a successful leader	1	2
I am a good public speaker	1	2
I could manage a small business or service	1	2
I can make social or work groups go well	1	2
I have a reputation for being able to deal with difficult people	1	2
I can manage a sales campaign	1	2
I can organize the work of others	1	2
I am an ambitious and assertive person	1	2
I am good at getting people to do things my way	1	2
I am a good salesperson	1	2
I can type 40 words a minute	1	2
I can operate a duplicating or adding machine	1	2
I can take shorthand	1	2
I can file correspondence and other papers	1	2
I have held an office job	1	2
I can use a bookkeeping machine	1	2
I can do a lot of paper work in a short time	1	2
I can use a calculator	1	2
I can use simple data processing equipment (e.g., keypunch)	1	2
I can post credits and debits	1	2
I can keep accurate records of payments or sales	1	2

OCCUPATIONS

This is an inventory of your feelings and attitudes about many kinds of work. Show the occupations that interest or appeal to you by circling "1" under "Yes". Show the occupations that you dislike or find uninteresting by circling "2" under "No".

	Yes	No
airplane mechanic	1	2
firefighter	1	2
auto mechanic	1	2
carpenter	1	2
fish & wildlife specialist	1	2
tree surgeon	1	2
truck driver	1	2
surveyor	1	2
construction specialist	1	2
radio operator	1	2
bus driver	1	2
locomotive engineer	1	2
mechanist	1	2
electrician	1	2
meteorologist	1	2
biologist	1	2
astronomer	1	2
medical laboratory technician	1	2
anthropologist	1	2
zoologist	1	2
chemist	1	2
independent research scientist	1	2
writer of scientific articles	1	2
editor of a scientific journal	1	2
geologist	1	2
botanist	1	2
scientific research worker	1	2
physicist	1	2
poet	1	2
symphony conductor	1	2
musician	1	2
novelist	1	2
actor/actress	1	2
free-lance writer	1	2
musical arranger	1	2
journalist	1	2
artist	1	2
singer	1	2

OCCUPATIONS (cont'd)

	Yes	No
composer	1	2
sculptor	1	2
playwright	1	2
cartoonist	1	2
sociologist	1	2
high school teacher	1	2
juvenile delinquency expert	1	2
speech therapist	1	2
marriage counselor	1	2
school principal	1	2
physical therapist	1	2
clinical psychologist	1	2
social science teacher	1	2
director of welfare agency	1	2
youth camp director	1	2
personal counselor	1	2
social worker	1	2
vocational counselor	1	2
speculator	1	2
buyer	1	2
advertising executive	1	2
manufacturer's representative	1	2
life insurance salesperson	1	2
radio-TV announcer	1	2
business executive	1	2
restaurant manager	1	2
master of ceremonies	1	2
salesperson	1	2
real estate salesperson	1	2
travel guide	1	2
department store manager	1	2
sales manager	1	2
bookkeeper	1	2
business teacher	1	2
budget reviewer	1	2
certified public accountant	1	2
credit investigator	1	2
court stenographer	1	2
bank teller	1	2
tax expert	1	2
inventory controller	1	2

OCCUPATIONS (cont'd)

	Yes	No
IBM equipment operator	1	2
financial analyst	1	2
cost estimator	1	2
payroll clerk	1	2
bank examiner	1	2

SELF-ESTIMATES

Rate yourself by circling one appropriate number on each of the following abilities and skills as you really think you are capable of when compared with other persons your own age. Give the most accurate estimate of how you see yourself. Please avoid rating yourself the same in each ability.

	Low			Average			High
Mechanical Ability	1	2	3	4	5	6	7
Scientific Ability	1	2	3	4	5	6	7
Artistic Ability	1	2	3	4	5	6	7
Teaching Ability	1	2	3	4	5	6	7
Sales Ability	1	2	3	4	5	6	7
Clerical Ability	1	2	3	4	5	6	7
Manual Skills	1	2	3	4	5	6	7
Math Ability	1	2	3	4	5	6	7
Musical Ability	1	2	3	4	5	6	7
Understanding of Others	1	2	3	4	5	6	7
Managerial Skills	1	2	3	4	5	6	7
Office Skills	1	2	3	4	5	6	7

APPENDIX I

OPS:

DIRECTIONS: This is a survey that asks for your preference of various occupations. There are a total of 60 pairs of occupations and you are to check the one within each pair that you prefer more. You need not consider whether you have the abilities or skills to pursue these occupations. Only consider your relative preference for the occupations listed in each item pair. There are no right or wrong answers so please answer them as they apply to you. Make sure you select one occupation from each pair. Thanks for your participation.

1.	_____	college professor in education
	_____	mechanical engineering technician/worker
2.	_____	physician
	_____	manufacturing sales representative
3.	_____	landscape architect
	_____	general-ledger bookkeeper
4.	_____	mining engineer
	_____	welfare service aid
5.	_____	theatrical set designer
	_____	certified public accountant
6.	_____	elementary school teacher
	_____	air traffic controller/worker
7.	_____	public relations manager
	_____	biological technician/worker
8.	_____	mining sales representative
	_____	dentist
9.	_____	editor of technical & scientific publications
	_____	accounting clerk/assistant
10.	_____	health technician
	_____	administrator of college admissions
11.	_____	manager, general office
	_____	college professor in natural science
12.	_____	supervisor for quality control
	_____	mechanical engineer
13.	_____	industrial engineering technician/worker
	_____	licensed school psychologist

OPS (cont'd)

14. _____ corporate attorney
_____ radiologic technician

15. _____ news paper reporter
_____ insurance clerk

16. _____ still photographer
_____ systems accountant (certified)

17. _____ surgery laboratory worker
_____ finance & business representative

18. _____ airplane pilot & navigator
_____ child care worker

19. _____ health aid
_____ petroleum engineer

20. _____ food production inspector
_____ government legislator

21. _____ high school vocational counselor
_____ surveying and mapping technician/worker

22. _____ travel agent
_____ biological and life scientist

23. _____ musician
_____ auditor

24. _____ judge
_____ chemical technician

25. _____ public relations specialist
_____ broadcast equipment operator

26. _____ economist
_____ wholesale sales representative

27. _____ account management analyst
_____ sculptor

28. _____ private detective/investigator
_____ administrator of educational systems/programs

29. _____ commercial artist
_____ data entry operator

30. _____ supervisor for food service
_____ automotive engineer

OPS (cont'd)

31. _____ music arranger
_____ accountant (cost-related)

32. _____ auditing clerk
_____ book author

33. _____ real estate agent
_____ geophysicist

34. _____ executive vice president-Chamber of Commerce
_____ cloth tester

35. _____ physical therapist
_____ photographic process machine operator

36. _____ materials engineer
_____ tour guide

37. _____ bibliographer (bibliography compiler)
_____ jazz dancer

38. _____ high school teacher in social science
_____ die maker

39. _____ editor, fictional stories
_____ data typist

40. _____ dietitian
_____ civil engineer

41. _____ playwright
_____ legal assistant/secretary

42. _____ model maker
_____ time study analyst

43. _____ school superintendent
_____ photoengraver

44. _____ bartender
_____ plant engineer

45. _____ licensed optometrist
_____ sales correspondent

46. _____ labor relations manager
_____ dental laboratory technician/worker

47. _____ high school teacher in art
_____ bookkeeper

OPS (cont'd)

48. _____ account analyst
_____ furniture designer

49. _____ clinical psychologist
_____ optician (optical lens maker)

50. _____ travel agency manager
_____ surgeon

51. _____ news editor
_____ data entry operator

52. _____ social service worker
_____ optical engineer

53. _____ director of institutional research
_____ surveying technician

54. _____ business programmer
_____ professional dancer

55. _____ court clerk
_____ photojournalist

56. _____ printmaker
_____ financial analyst

57. _____ eyeglass-lens cutter
_____ librarian

58. _____ anesthesiologist
_____ insurance sales agent

59. _____ electrical engineer
_____ special education teacher

60. _____ psychiatrist
_____ service dispatcher

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