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COMPROMISES IN CAREER-RELATED DECISIONS:
HYPOTHETICAL CHOICES, INDIVIDUAL DIFFERENCES,
AND ACTUAL OUTCOMES

BY

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DISSERTATION

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ABSTRACT

This study examined the process, correlates, and outcomes of compromise in career-related decisions, as a test of Gottfredson's (2002) theory of circumscription and compromise. Sex-type, prestige, and work activities are important dimensions along which individuals consider occupational alternatives. However, because these dimensions naturally covary across occupations, it is difficult to make unequivocal statements about the relative importance of these dimensions. 194 college seniors (127 females, 44 males, 26 non-responses) took part in an experimentally manipulated occupational choice task. They also provided additional information about their grades, self-efficacy perceptions, personality and vocational interests, as well as their parents' education levels and occupations. Results from this study indicated that (for this predominantly female sample) preferred occupations tended to be more prestigious, and more feminine in sex-type than less preferred occupations. In addition, when individuals were forced to choose among unacceptable occupations, females tended to choose more feminine (less masculine) occupations over other occupations. Males also tended to choose the more feminine occupation, although markedly less so than females. When forced to choose among preferred alternatives, both males and females tended to choose options more consistent with their interests over those options less consistent with their interests. Individual differences on ability, socio-economic status, and self-efficacy were also found to positively predict which occupations participants found acceptable. However, personality differences did not (in general) predict differences in participants' occupational choices. Lastly, in a follow-up, post-graduation interview ($n = 44$), individuals who experienced discrepancies

between their intended and actual post-graduation positions reported less satisfaction with these positions than individuals who did not experience discrepancies. Limitations and implications of this work are discussed.

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CHAPTER 1

INTRODUCTION

Work influences us throughout our lives as few activities do. No other choice we make — with the possible exception of our spouse — influences each of us, our families, our children, our values, or our status as much as our choice of a job or occupation. Throughout our lives, but especially from our late teens and early 20s to our 60s, we spend more time engaged in work activities than any other single pursuit (except for sleep, which does not seem to be a pursuit or activity).

Hulin (2002)

Work provides a central source of meaning and identity for most adults (Blustein, 2006; Fouad & Bynner, 2008; Hulin, 2002), with unemployment, underemployment, and job (dis)satisfaction predicting a wide range of both personal (Friedland & Price, 2003; Murphy & Athanasou, 1999) and organizational outcomes (Hulin & Judge, 2003). The cultural context, the work available, and even the notion of what work means has changed dramatically in recent history (Blustein, 2006; Burke & Cooper, 2002; Greenhaus, 2003; Howard, 1995). Shorter, more frequent career cycles require that individuals make a greater number of important career decisions over the course of their lives (Hall, 1976; Schein, 1978; U.S. Bureau of Labor Statistics, 2008). Taken together with a social climate promoting freedom of choice in general, and the opportunity to explore a wide range of occupational alternatives in particular, the responsibility falls on the individual to choose wisely when making career-related decisions (Gottfredson, 2005).

The paradox of choice ensures that most individuals will be unable to maximize their choices in a purely objectively utilitarian sense (Schwartz, 2004; Simon,

1955). Matching occupational aspirations to perceptions of what is available and achievable requires knowledge of self, occupational requirements and rewards, and the manner in which they match (Parsons, 1909). It also requires time, effort, and significant cognitive investment (Gati, 1986; Janis & Mann, 1977; Savickas, 2007). Theories of career choice and decision-making suggest that satisficing rather than optimizing is the norm (Gati, 1993; Ginzberg, Ginsburg, Axelrad, & Herma, 1951; Gottfredson, 1981); some degree of compromise is almost always involved. In fact, the ability to compromise is viewed as crucial for efficient career decision making (Super, 1953), indicative of both competence (Mann, Harmoni, & Power, 1989) and maturity (Crites, 1976).

1.1 Research Objectives

The major objective of the proposed study is to examine the process, correlates, and outcomes of compromise in career-related decisions. Within the context of occupational choice, I assume that occupations may be usefully organized along three major dimensions: (a) masculinity-femininity, (b) prestige, and (c) type of work activities. Compromise occurs when an individual relinquishes a preferred state (i.e., position on one or more dimensions) for a less preferred one to achieve a related and valued outcome. Compromise is necessary to align with an external reality where choices are not equally accessible or achievable. Although no one decision is necessarily final, an individual's first full-time job frequently serves as a turning point. It requires the commitment of significant resources to pursue. These sunk costs severely limit the re-direction of one's career path in the future. Career decisions offer significant opportunities but often also preclude many other options. The processes by which individuals make such choices are only poorly understood.

Four major research questions are addressed in this study. First, does occupational preference differ as a function of underlying occupational dimensions? Second, does the severity of the compromise required change the salience of these di-

mensions when people are forced to choose among alternatives? Decision-making theories provide evidence that people switch decision rules based on changing conditions (Simonson, 1989, Lichtenstein & Slovic, 2006). We know that each dimension influences occupational choice, but the inherent relationships among the dimensions make unequivocal statements regarding the salience or importance of each dimension difficult.

Third, are there individual differences that influence occupational preference? Evidence suggests that one's abilities, personality, interests, and perceptions of self-efficacy (e.g., Ackerman & Beier, 2003) are meaningfully related to one's occupational choices. Yet the manner in which individual differences influence how a person makes compromises is rarely studied.

Fourth, most vocational theories posit that a good fit to one's job is related to greater job satisfaction. Do individuals who experience compromise (i.e., individuals for whom there is a discrepancy between their current and intended jobs) report less satisfaction with their jobs than individuals who have not had to compromise?

1.2 Rationale

College students are at the 'cusp of adulthood' (Roberts, O'Donnell & Robins, 2004), a transitional period where individuals make significant decisions regarding the roles (e.g., mother, wife, lawyer) and goals (e.g., to have children, win a Pulitzer prize) they have in life (Arnett, 2000, Erickson, 1968, Super, 1980). Most are deciding among occupational alternatives; the difficulty of untangling different, often unvoiced, assumptions regarding the dimensions along which individuals consider these alternatives is amplified because the dimensions are inherently confounded with one another.

An analysis of the compromise process is likely to yield theoretical and practical benefits (Gottfredson, 1986, 2005). Studying students' as they make this decision allows us to observe the dimensions (and changes in the salience of the

dimensions) that are considered. Theoretical advances are also likely to provide specific information that would allow targeted student counseling, and the provision of resources to guide individuals through a difficult and often anxiety provoking process.

Although occupational choice is often viewed as an individual's decision, the societal consequences are obvious – organizations and society as a whole benefit when people's skills and aptitudes are channeled into activities (e.g., jobs) that they are good at and motivated to perform in. Debate in the fields of science, technology, engineering and mathematics (STEM) provide a case in point (Handelsman, Cantor, Carnes, et al., 2005; Tierney, 2008). Based on the assumption that the distribution of STEM-related talent is equal across the genders, the relative scarcity of females in these fields reflects an inability by society to maximize our human capital, and an inability or unwillingness by women to maximize their career opportunities. A counter-perspective is based on findings that men and women tend to have differing interests and goals. They thus choose to apply their skills in different occupational fields. Similarly, the management and leadership literature is replete with anecdotes of work-family compromises that impact the careers of men and women differentially (e.g., Heinz, 2003).

CHAPTER 2

LITERATURE REVIEW

A developmental perspective is implicit, if not explicit, in almost all theories of career development and choice (e.g. Crites, 1969; Dawis & Lofquist, 1984; Ginzberg, et al., 1951; Super, 1980). In their most fundamental forms, vocational theories postulate that a match (or fit) between person-focused variables and occupation-focused variables leads to satisfactory outcomes on personal, organizational, and societal levels; to varying degrees, they acknowledge that fit is an episodic, ongoing process, and not an all or nothing, one-timed event. Although they all suggest that vocational interests influence occupational choices, they differ in the extent to which they account for person-focused social identity constructs such as gender, ethnicity, and status. They also differ in how they relate vocational interests to other individual differences such as self-efficacy, cognitive ability, and personality.

The match occurs between two entities. Both vary on multiple, often correlated attributes. As a result, the process is cognitively complex, even if all the information required were available. It is not. Instead, matching occurs based on an individual's perceptions of self (referred to as *self-concept*) and occupation (referred to as *occupational image*). These perceptions are often aligned with reality, but do not have to be. The degree to which perceptions align with objective indicators (e.g., employment information) depend partly on personal attributes of the perceiver (such as cognitive ability), and the availability of information.

Figure 2.1 presents a schematic on how this match might occur between a person's self-concept and an occupational image. It also presents the major theoretical constructs reviewed in the following sections, and how they may match. For example, based on Figure 2.1, we would expect higher status, more able individ-

uals to pick more prestigious occupations over less prestigious ones. Similarly, we would expect individuals from more affluent backgrounds to pick more prestigious jobs, on average, as compared to their less affluent peers.

2.1 Perceptions of Occupations: Occupational Images

An occupational image refers to a person's perception of what an occupation is like. It is mainly focused on occupational aspects that are readily accessible or observable. For this reason, occupational images tend to be based on the personalities of those in the job, or on the lifestyle that the occupation provides the incumbent (e.g., being famous and driving fast cars, which would correspond to the prestige of the job). They say less about the work activities that are involved in the job (e.g., that teachers may spend much of their time on administrative or disciplinary activities), or the education and training requirements for the job.

People hold similar ideas about occupations in general, despite their differential access to particular occupations (Gottfredson, 1981; Shivy, Rounds, & Jones, 1999). Occupations may be organized along a few major dimensions (i.e., sex-type, prestige, and work activity) that also represent the world of work (see Figure 2.2). This mapping conveys information about occupations, but it also conveys information about individual workers, based on the kinds of work the job entails.

2.1.1 Sex-type

Sex-type refers to the perceptions of how suitable a job is for men as opposed to women. It describes how masculine or feminine an occupation is. For example, most people imagine a woman when they imagine a nurse, or a man when they imagine a butcher or an engineer. In Figure 2.2, 'butcher' and 'engineer' would occur on the far left of the graph, corresponding to masculine sex-typed jobs. 'Nurse' would occur on the far right of the graph, corresponding to a feminine sex-typed job. In general, occupational sex-types correspond fairly well with actual

percentages of men versus women in those same occupations (Krefting, Berger, & Wallace, 1978). All things being equal, we would expect females to prefer more feminine occupations and males to prefer more masculine occupations.

2.1.2 Prestige

Prestige refers to social standing, generally achieved through success, influence or wealth (Merriam-Webster, 2004). Occupations confer status to a person. Thus, more prestigious occupations (e.g. doctor, lawyer) are generally more highly valued and desirable than less prestigious occupations (e.g. sales clerk, plumber). In Figure 2.2, ‘doctor’ and ‘lawyer’ would occur higher up on the graph than ‘sales clerk’ or ‘plumber’, indicating the relatively higher prestige associated with these occupations. At the same time, attaining more prestigious occupations usually requires more education, training, and effort (Gottfredson, 1986). All things being equal, individuals are likely to prefer more prestigious occupations over less prestigious occupations. In addition, individuals with greater ability are likely to gravitate towards more prestigious occupations (Wilk, Desmarais, & Sackett, 1995).

2.1.3 Work Activities

Occupations may be classified by the similarity of their work characteristics, generally based on some kind of job analysis (e.g., The Dictionary of Occupational Titles). Such work characteristics may include work contexts, activities performed, and knowledge and skill requirements. They may also be classified by the attributes of people that perform those jobs. Holland (1997) provides perhaps the best known interest classification system of this type. Based on the assumption that people contribute significantly to the work environment, he characterized occupational environments on the same typology he used to describe personality types found within that environment (Realistic, Investigative, Artistic, Social,

Enterprising, and Conventional; referred to by the acronym RIASEC). Realistic environments are described by practical, physical, or hands-on work activities, Investigative environments by analytic, intellectual or explorative work activities, Artistic environments by creative activities, Social environments by helping, nurturing, and cooperative activities, Enterprising environments by competitive activities and activities requiring persuasive skills, and Conventional environments by detail-oriented or clerical work activities.

2.2 Perception of Self: Self-Concept

Self-concept refers to our perceptions about ourselves in terms of our personality, abilities, need, and values. It is dependent on behaviors, people, and things that we care about (Gottfredson, 1981; Lubinski & Benbow, 2000). It is also influenced by the social identities conferred to us by our group memberships. For some groups (e.g., gender, ethnicity), membership is based on easily observable characteristics that we might have little control over.

2.2.1 Gender

Whereas sex refers to the biological classification of individuals as males or females, gender refers to the psychological and societal aspects of being male or female. According to the American Psychological Association Publication Manual (2001, p.63), the term ‘gender’ should be used when referring to men and women as social groups, and the term ‘sex’ should be used when emphasizing the biological distinctions between individuals. Although it is true that a person’s gendered-experience is not synonymous with that person’s sex, for the purposes of this study, I assume that individuals’ self-reported biological status provides a reasonable proxy for their gender identity. That is, I will assume that, in general, males (sex) tend to be more masculine (gender), whereas females (sex) tend to be more feminine (gender). The extent to which an individual’s gender iden-

tity conforms with his or her sex is however, an empirical question that has not been directly addressed in this study. With regards to occupational choice, to the degree that males have feminine interests (e.g., Social interests, majoring in psychology) we would expect these males to find more feminine sex-typed occupations acceptable. In the same way, we would expect females that have masculine interests (e.g., Realistic interests, majoring in engineering) to find more masculine sex-typed occupations acceptable.

2.2.2 Socioeconomic Status

Socioeconomic status refers to a person's position in society relative to others. It is typically measured by an individual's income, education, and occupation (i.e., achieved status). However, when referring to children or youths, it is typically their parents' income, education, and occupations that are used to index socioeconomic status (i.e., ascribed status). A person's status in society also provides information about the resources they are likely to have available, as well as the norms and expectations that they (and others) have for them, and the social roles that they should enact in life. All things being equal, we would expect job prestige to be more important for individuals from higher status families than it would be for individuals from lower status families.

2.2.3 Cognitive Ability

As stated earlier, individuals are likely to gravitate or be forced into jobs commensurate with their cognitive ability. Additionally, Lubinski and Benbow (2000) report that specific abilities, such as mathematical, spatial, and verbal reasoning, differentially predict educational and vocational outcomes, and they do so incrementally over general mental abilities. For example, people with strong quantitative and spatial skills tend to gravitate toward engineering courses and careers, while others with strong verbal skills tend to gravitate toward the humanities (cf.

Achter et al., 1999; Humphreys, Lubinski, & Yao, 1993).

2.2.4 Self-Efficacy

Vocational theories emphasizing self-efficacy (e.g., Krumboltz, Mitchell, & Jones, 1976, Lent, Brown, & Hackett, 2002) all draw on Bandura's (1977) proposal that our belief about our specific abilities influences our decision to engage in activities that utilize those same abilities. If one perceives that one is poor at mathematics, it seems reasonable that one avoids curricula that requires mathematical skills, when given the choice to do so. This in turn narrows the range of occupational choices that one is able to engage in later in life to those that do not require strong mathematical skills. Indeed, research provides support for the hypothesis that self-efficacy expectations about different career-related domains (e.g. science, technology, and mathematics related fields) moderate career choice and adjustment (for reviews see Betz & Hackett, 1997; Betz & Luzzo, 1996).

2.2.5 Vocational Interests

Definitions of vocational interests typically focus on the identification and classification of individuals' preferences for a set of activities or tasks over other sets of activities or tasks (Crites, 1969; Holland, 1997; Osipow & Fitzgerald, 1996). In this sense, they are related to the work activities mentioned earlier. For example, an individual who enjoys thinking about ideas would be described as having Investigative interests and would likely seek out Investigative occupations such as being a researcher. Thus, an individual's preferences for certain activities and tasks also influences the means via which he or she interacts with the larger world. Working at a particular job forms a large component of most of these interactions (Deci, 1992). In this way, vocational interests are considered a motivational construct which expedite "person-environment interactions by uniting subject-object, and behavior into a vital relationship" (Savickas, 1999).

2.2.6 Personality

Personality refers to the relatively enduring characteristics or behaviors that may be used to describe an individual and differentiate him from another. There are five personality factors that have typically been agreed upon: (a) Extraversion is typified by sociability, cheerfulness, and activity; (b) Agreeableness is typified by friendliness and a willingness to go along with others; (c) Neuroticism is typified by lability and negative emotionality; (d) Conscientiousness is typified by hard work, orderliness, and self-discipline; and (e) Openness to Experience is typified by imagination, broad-mindedness, and intellectual interests (Cloninger, 2008).

2.3 Gottfredson's Theory of Circumscription and Compromise

As mentioned earlier, prominent theories of vocational choice (e.g. Dawis & Lofquist, 1984; Holland, 1985, 1997) have tended to emphasize person-level characteristics that match occupational requirements and environments. They suggest that good person-environment fit should lead to both personal job satisfaction as well as organizationally relevant outcomes (see Edwards, 1991, Kristof, 1996, & Kristof-Brown, et al., 2005 for reviews). However, the decision-making process that underlies such choice behavior has been less studied, leading Greenhaus (2003) to state that "it is less a matter of suggesting ways to make the research more relevant to the contemporary work scene than it is of encouraging researchers to enter this arena in the first place".

In this section, I review Gottfredson's (2002) theory of circumscription and compromise. In line with the constructs reviewed earlier, Gottfredson's theory provides testable hypotheses about how social identity concepts such as gender and status influences an individual's occupational preference and eventual choice, over and above more psychological factors such as personality and vocational interests.

2.3.1 Circumscription: Zone of Acceptable Alternatives

Gottfredson argues that occupational aspirations develop in tandem with a child's cognitive maturity in understanding both self and the larger world. In a process that Gottfredson defines as circumscription, children progressively eliminate portions of the world of work that do not match their conceptions of who they are and where they exist (or want to exist) within the social world. The range of occupations an individual finds acceptable corresponds to this circumscribed social space encompassing their perceptions of a social self in the world. She refers to this as the *zone of acceptable alternatives* (see Figure 2.3).

In this figure, the hypothetical zone of acceptable alternatives for a typical female of average intelligence and average social standing is portrayed. As she develops and begins to understand what an occupation is, masculine occupations such as 'truck driver' or 'policeman' are likely to be ruled out as inconsistent with her developing gender identity. This is represented by the *tolerable sex-type boundary*, a threshold beyond which occupations are perceived as too masculine. As she ages and becomes aware of status differences in society, considerations about what are acceptable levels of prestige in an occupation are now taken into consideration. Within her social group for example, being a teacher might be an acceptably prestigious occupation, but being a sales clerk might not. The *tolerable level boundary* represents this lower bound. And lastly, as she begins to understand her own capabilities (e.g., getting feedback from school grades or encouragement from teachers), she begins to determine what is achievable and what is not. The *tolerable effort boundary* demarcates those occupations that have been eliminated because they are considered too difficult to attain. Importantly, once occupations are eliminated, they are no longer considered in later stages. As an individual matures, this leads to a progressively more circumscribed view of what are acceptable occupational alternatives.

2.3.2 Compromise: Maintaining Social Identity

As individuals mature and begin to tune into their “internal, unique selves” (e.g., their personality, values, abilities, interests, and goals), they also begin the process of compromise – relinquishing preferred states for less preferred ones. They do so in order to better align with an external reality where choices are not all equally accessible or achievable (Crites, 1969; Gottfredson, 2002). Accessibility may be real (experienced) or perceived (anticipatory), and due to situational (e.g., labor market) or personal factors.

At this point the matching process is difficult because there are many factors to consider. Similar to the process of circumscription, Gottfredson suggests that compromise is influenced by the salience and importance of occupational stereotypes on the dimensions of sex-type, prestige, and type and level of work, in addition to other idiosyncratic factors. Aside from occupational considerations, individuals also need to consider other important roles and aspects of their lives, and the degree to which work is likely to facilitate or interfere with their aspirations in these areas. All individuals perform this match with incomplete knowledge, (Gottfredson, 2005), further increasing the likelihood that some form of compromise will be experienced.

Specifically, Gottfredson’s (2002) principles of compromise stem from the assumption that individuals are most concerned with maintaining an acceptable social identity, and only secondarily with fulfilling a more private psychological self. Thus, when career compromises are required or anticipated, conditional priorities are set such that perceptions of sex-type appropriateness is maintained when compromise is perceived to be severe, prestigious jobs are favored when compromise is moderate, and interest preferences are considered when compromises required are minimal. Further, her substantially revised (Gottfredson, 2002) theory places greater emphasis on the differences across individuals from similar reference groups within society. For example, she suggests that the range of occupational alternatives considered by two individuals from the same group varies

widely, and attributes this to individual differences such as abilities, personalities and goals.

2.4 The Current Study

The focus of this study is testing Gottfredson’s hypotheses regarding the process of compromise in career-related decisions. Although compromise is dependent on the process of circumscription (i.e., compromise occurs based on what has been previously circumscribed), this study is not designed to test circumscription.

Tests of Gottfredson’s theory of career compromise have examined anticipatory, experiential, and simulated compromise (for a review see Gottfredson, 1996). The research questions addressed in each of these approaches have emphasized different components of Gottfredson’s theory, and thus relied on different research designs. For example, studies examining anticipatory or experienced compromises have tended to use survey based approaches, while studies focused on the relative importance of sex-type, prestige, and interest in determining compromise choices have tended to use experimentally manipulated stimuli.

2.4.1 Hypothetical Choices: Compromise on Different Occupational Dimensions

By far the most popular study design involved experimental manipulation of either occupational titles (Blanchard & Lichtenberg, 2003; Holt, 1989; Leung, 1993; Leung & Plake, 1990; Pryor & Taylor, 1986; Tsousides and Jome, 2008), or occupational attributes (Hesketh, Durant, & Pryor, 1990; Hesketh, Elmslie, & Kaldor, 1990). As suggested by Gottfredson (1981), most of these studies used a forced-choice procedure (Holt, 1989; Leung, 1993; Leung & Plake, 1990, Pryor & Taylor, 1986), although “fuzzy rating” scales (i.e., a 100-point semantic differential scale on which both point and range estimates could be provided; for scale see Hesketh, Pryor, & Gleitzman, 1989; Hesketh, Durant, & Pryor, 1990; Hesketh, Elmslie, &

Kaldor, 1990), Q-sort (Holt, 1989), and rankings (Blanchard & Lichtenberg, 2003; Tsousides and Jome, 2008) have also been used.

Based on some of the earlier work, Gottfredson published a revision of her theory (Gottfredson, 1996) to include degree of compromise as an important moderator of the relative importance of sex-type, prestige, and interest dimensions. A Psych Info search revealed that only Blanchard and Lichtenberg (2003) and Tsousides and Jome (2008) have tested this revision, with Tsousides & Jome (2008) using a slightly modified version of the procedure outlined in Blanchard and Lichtenberg (2003). Blanchard & Lichtenberg's (2003) study occurred in two phases. The first phase involved participants rating 89 occupations on the dimensions of sex-type, prestige, and interests. For each occupation, they were asked "Who do you believe does this job?" (1=only women, 5 = only men), "How would you rate the prestige level of this job?" (1 = very low, 5 = very high), and "How well does this job match your interests?" (1 = not at all, 5 = very well). Participants returned two weeks later, and categorized these same 89 occupations into "acceptable", "uncertain", or "unacceptable" categories. They were then randomly assigned to one condition (i.e., low, moderate, or high compromise, corresponding to the acceptable, uncertain, or unacceptable categories), and required to rank order their choices of eight randomly selected occupations from within that category. Dimension ratings associated with each participant's top-ranked occupation were used as the dependent variables to compare sex-type, prestige, and interests across the three compromise conditions. Consistent with previous studies, Blanchard and Lichtenberg (2003) found support for the relative importance of vocational interests in low compromise situations, and for the relative importance of sex-type and prestige in moderate and severe compromise conditions.

In both the Blanchard and Lichtenberg (2003) and Tsousides and Jome (2008) studies, compromise was manipulated as a between- rather than within- persons condition, even though level of compromise is perhaps best understood as a within-persons phenomenon. Also, by using only the top-ranked occupation, almost all

the (potentially useful) data was discarded. Lastly, subjective indicators were used to measure sex-type, prestige, and interest.

In this study, I also examine how compromise severity changes the salience of important dimensions (i.e., sex-type, prestige, and work activities) that may be used to organize and decide among occupational alternatives. However, I address the two limitations listed earlier by manipulating compromise as a within-persons variable, and by using all the available information provided by participants. In addition, I used objectively derived indicators to measure sex-type, prestige, and interest. As highlighted in the literature review, dimensions are based on the perceptions of occupational images, which in turn convey social information regarding the relationships, lifestyles, and activities of people in such occupations. Occupations confer social identity to individuals, which they are motivated to preserve. That is, individuals should choose occupations based on how well sex-type, prestige, and work activities match up with their self-concept (i.e., gender, social status, and interests).

Hypothesis 1a. Gender moderates the relationship between occupational preference and sex-type. For females, preferred occupations are more feminine than acceptable occupations; acceptable occupations are more feminine than unacceptable occupations. For males, preferred occupations are more masculine than acceptable occupations; acceptable occupations are more masculine than unacceptable occupations.

Hypothesis 1b. Preferred occupations are more prestigious than acceptable occupations; acceptable occupations are more prestigious than unacceptable occupations. No gender differences are hypothesized.

Hypothesis 1c. Preferred occupations have work activities that more closely match a participant's vocational interests than acceptable occupations; acceptable occupations have work activities that more closely

match a participant's vocational interests than unacceptable occupations. No gender differences are hypothesized.

When individuals have to compromise, they do so based on the dimension that is least threatening to their self-concept.

Hypothesis 2a. When level of compromise is minimal (i.e. choosing among preferred occupations), chosen occupations have work activities that more closely match an individual's vocational interests than unchosen occupations; chosen occupations are comparable to unchosen occupations in terms of sex-type and prestige.

Hypothesis 2b. When level of compromise is moderate (i.e., choosing among acceptable occupations), chosen occupations are more prestigious than unchosen occupations; chosen occupations are comparable to unchosen occupations in terms of sex-type and interest.

Hypothesis 2c. When level of compromise is severe (i.e., choosing among unacceptable conditions), gender moderates the relationship between occupational choice and sex-type. For females, chosen occupations are more feminine than unchosen occupations. For males, chosen occupations are more masculine than unchosen occupations. Chosen occupations are comparable to unchosen occupations in terms of prestige and interest.

2.4.2 Individual Difference Predictors

To date, there do not seem to be explicit tests of individual differences in compromise as suggested in Gottfredson's (2002) article. However, Leung and Harmon (1990) studied individual and sex differences in the zone of acceptable alternatives, and found that a sex-role (as measured by Bem's sex-role inventory, 1974)

interaction qualified the main effect of gender. They found that women were more likely than men to cross gender boundaries, but that individuals classified as androgynous in terms of their sex-roles had the most flexible zones of acceptable alternatives, i.e., the occupations they considered varied more widely in terms of both prestige and sex-type. Additionally, Taylor and Pryor (1985) found that there were individual differences in people's willingness to compromise, with some individuals refusing to make an alternative choice when they were faced with the option that their preferred choices was unachievable. Related work in support of social cognitive career theory (Lent, Brown, & Hackett, 2002), career maturity (Crites, 1978), career decidedness (Gati, Krausz, and Osipow, 1996), and career decision making strategies, for example, also provide evidence that there are meaningful individual differences involved in how individuals make compromises when selecting among occupational alternatives.

In this study, I examine differences in the zone of acceptable alternatives that individuals are willing to consider. As reviewed earlier, individual differences such as social status, cognitive ability, self-efficacy, vocational interests and personality may influence occupational choice.

Hypothesis 3a. Individuals higher on Openness to Experience should consider occupational alternatives less consistent with their gender than individuals lower on Openness to Experience. No other a priori predictions were made for other personality factors.

Hypothesis 3b. Individuals from higher socio-economic status families will have preferred and acceptable alternatives with higher prestige means than individuals from lower socio-economic status families.

Hypothesis 3c. Individuals with higher cognitive abilities will have preferred and acceptable alternatives with higher prestige means than individuals with lower cognitive abilities.

Hypothesis 3d. Individuals with greater self-efficacy expectations will have preferred and acceptable alternatives with higher prestige means than individuals with lesser self-efficacy expectations.

Hypothesis 3e. Individuals higher on Openness to Experience should consider occupational alternatives less consistent with their interests than individuals lower on Openness to Experience. No other a priori predictions were made for other personality factors.

2.4.3 Occupational Discrepancy as Proxy for Compromise

In studies examining anticipatory compromise (Armstrong & Crombie, 2000; Davey & Stoppard, 1993; Taylor & Pryor, 1985), participants were asked to state their preferred majors or occupations, versus their expected or potential alternatives. In these studies, the researchers found that at least some form of compromise was anticipated for most participants. Armstrong & Crombie (2000) obtained preferred and expected occupations from 502 adolescents at three time points (Grades 8, 9, and 10) to test compromises in adolescent aspirations and expectations across time. Students were then classified as either discrepant (their aspirations did not match their expectations), or not. Results indicated that adolescents made significant changes to their aspirations over time. In particular, discrepant individuals shifted aspirations in the direction of their prior expectations, providing support for Gottfredson's theory.

Similar to studies examining anticipatory compromise, studies examining experienced compromise have tended to focus on the discrepancy between aspirations and outcomes. They have used either longitudinal (Carr, 1997) or cross-sectional designs (Hesketh & Mclachan, 1991; Oceansey, 2000) to test the psychological impact of accommodating to compromise. Carr (1997) examined the impact of discrepancies between occupational aspiration and attainment in a large

sample of women. Occupational attainment was measured seventeen years after the initial measurement of occupational aspiration. At that point, Carr found that women who had attained or exceeded their earlier career aspirations reported significantly better psychological health than women who had fallen short of their earlier aspirations. Women who had not attained their earlier stated aspirations reported elevated levels of depression, and lower levels of life satisfaction and psychological well-being.

Oceansey (2000) used a study design similar to Hesketh & Mclachan (1991), and found that teachers who perceived teaching as a compromise career reported lower levels of satisfaction with job status, occupational opportunities, and work relationships than teachers who did not perceive teaching as a compromise. They also reported that they were less likely to stay on as teachers, as compared to individuals who did not perceive teaching as a compromise. In general, studies of anticipated and experienced compromise suggest that compromise has important implications for both the individual and the organization.

In a longitudinal study designed to examine the validity of Gottfredson's (1981) theory, Junk and Armstrong (2010) attempted to statistically control for the relationships among sex-type, prestige, and interest. Data were collected from college-aged participants at two points, spaced a year apart. Occupational aspirations were measured using the open-ended question stating "What career do you currently plan to pursue? If you are undecided, name the career that currently appeals the most to you." Reported occupations were coded according to the O*NET version 10.0 (USDOL, 2006), and the Dictionary of Holland Occupational Codes (Gottfredson & Holland, 1989). Compromise was measured using a yes-no response to the single item: "Sometimes people feel their career plans are the result of some kind of compromise with what they really want to do. What about you? Does your current career choice represent a compromise at all?" For participants that indicated 'yes', a follow-up question "What other occupation would you like if this compromise were not necessary?" Similar to previous findings, their results suggested that prestige and interest were more salient factors

than sex-type in determining career decisions. However, Gottfredson's revisions to her theory (1996, 2002) addresses this particular issue and suggests that the salience of sex-type is evident only in cases when compromise is severe.

In this study, I compare individuals' intended occupations (or graduate school programs) to their obtained occupations (or graduate school programs). In line with theories of vocational fit, "mismatched" individuals should express less job satisfaction than "matched" individuals. In this study, mismatch was used as a proxy for having to compromise.

Hypotheses 4. Individuals whose actual job matches their intended job should express greater job satisfaction than individuals for whom there is a mismatch.

2.5 Summary

Empirical work testing the relative importance of sex-type, prestige, and interest in career compromise provides support for the importance of sex-type, prestige, and work activity, but inconsistent and inconclusive evidence regarding their relative rankings against one another. They also suffer from several notable limitations. First, where examined, they have randomly assigned individuals to compromise conditions, even though compromise severity as outlined in Gottfredson (1996, 2002) appears to vary meaningfully within persons. Second, they have used either survey designs that do not allow experimental control over occupational dimensions of interest, or experimental designs in hypothetical situations that do not allow conclusions to be drawn regarding the prediction of actual choice outcomes. Third, despite evidence suggesting that individual differences in ability, motivation, and personality influence occupational aspirations, choice, and eventual attainment (Judge, Cable, & Boudreau, 1995; Judge, Higgins, Thoresen, & Barrick, 1999; Judge & Kammeyer-Mueller, 2007), none of the studies listed above has collected information on any of these critical variables.

2.6 Figures

Individual	Occupation
Gender Personality (e.g., Openness)	Sex-type
Socioeconomic Status Ability Self-Efficacy	Prestige
Vocational Interests Personality (e.g., Openness)	Work Activity

Figure 2.1: Matching Between Individual and Occupational Attributes

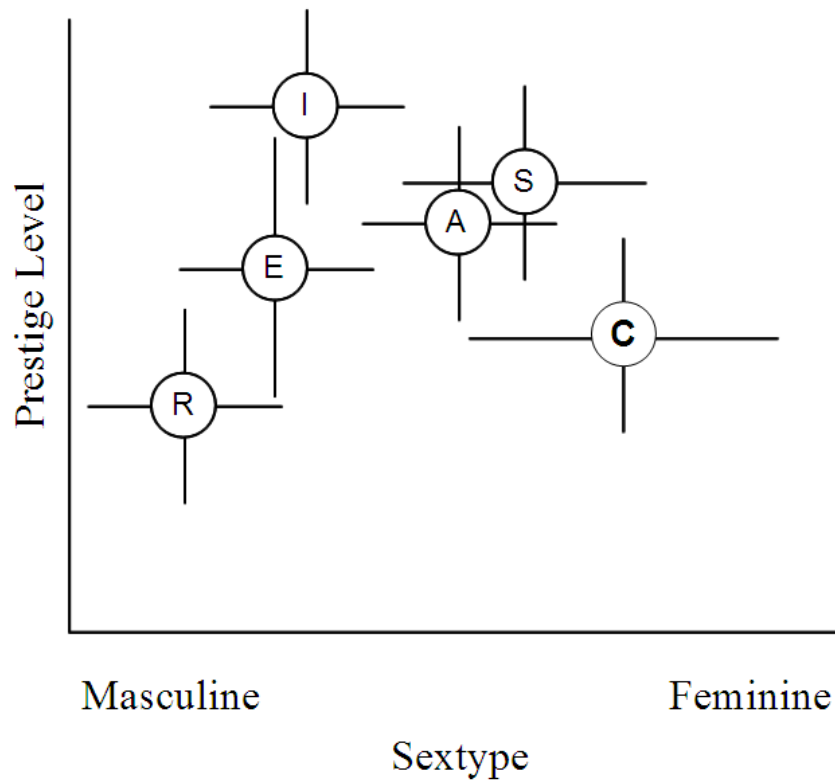


Figure 2.2: Occupational Map Categorizing Occupations on the Dimensions of Prestige, Sex-type, and Work Activities. Letters in circles represent Holland's types (1997) and are used to describe work activities. R = Realistic, I = Investigative, A = Artistic, S = Social, E = Enterprising, and C = Conventional. Crosses indicate the one standard deviation range. Figure adapted from Gottfredson (1981).

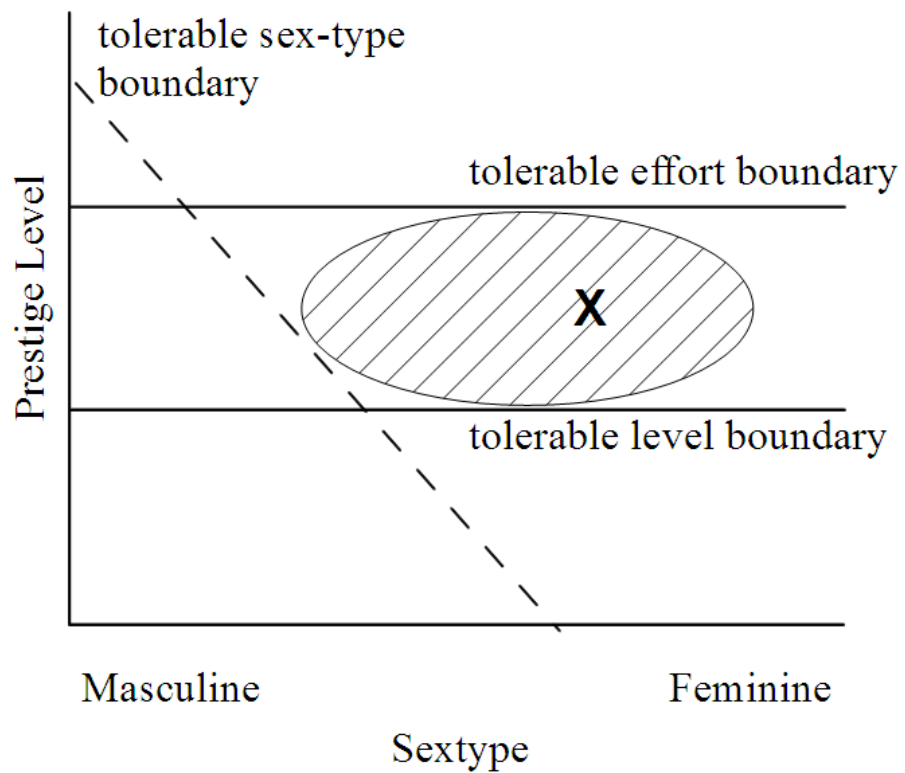


Figure 2.3: Example Zone of Acceptable Alternatives for a Female. X indicates her current ideal occupational choice, although she would be willing to consider occupations that fall within the shaded area. This shaded area represents the zone of acceptable alternatives. This figure is adapted from Gottfredson (2002).

CHAPTER 3

METHOD

3.1 Participants and Procedure

Participants were 194 college seniors (127 females, 44 males, 26 non-responses) from the University of Illinois at Urbana-Champaign. They ranged in age from 20 to 28 years old ($M = 21.64$, $SD = .89$). College seniors were recruited through the Psychology Advising Office and The Career Center. Participants came from 12 colleges in the university, although most (58%) came from the College of Liberal Arts and Sciences (LAS). As a point of comparison, college seniors in LAS constituted 42% of the university population in the semester the study was conducted. Within LAS, females constituted 50% of the population; within Psychology females constituted 73% of the population. For more information, see: <http://www.dmi.illinois.edu/stuenr/>. As can be seen in Table 3.1, both male and female participants reported greater interests in Social, Artistic, and Investigative activities than Enterprising, Realistic, or Conventional activities (see section 3.2.2 for description of vocational interest measure). The pattern of results presented in Table 3.1 would suggest that the females in this sample are fairly representative of females in general, whereas the men in this sample are much less representative of males in general (see meta-analyses of sex differences in interests by Su, Rounds, and Armstrong, 2009).

Participant flow through the study is depicted in Figure 3.1. Initial contact with students was made via an email or informational sheet placed outside of the Psychology Advising Office and The Career Center. Students were invited to participate in an on-line career-decision making study, in exchange for a chance to

win a cash lottery. All participants completed the first section of the occupational choice task (described in section 3.2.1) and 179 (92%) completed the second section of the occupational choice task; 171 (88%) also provided additional personal information about themselves (for measures see section 3.2).

One hundred and twenty one participants expressed interest in being interviewed post-graduation, also in exchange for a chance to win a cash lottery. Approximately 6 – 10 months after the initial study, each participant was contacted at least three separate times, via email and via telephone if a number was provided. A final sample of 48 participants were involved in a phone or email ($n = 2$) interview. Of these, 4 participants had not graduated college and thus could not report on their current job satisfaction. The 44 eligible participants were divided into two groups based on their responses: those who held jobs congruent with their intended jobs pre-graduation ($n = 33$), and those who were still seeking employment or who held jobs discrepant from their intended jobs pre-graduation ($n = 11$).

3.2 Measures

3.2.1 Occupational Choice Task

The occupational choice task consisted of two sections. In the first section, participants indicated whether each listed occupation was unacceptable, acceptable, or preferred. I assumed that the outcome corresponds to their circumscribed social space. That is, a participant's zone of acceptable alternatives includes preferred and acceptable occupations, and excludes unacceptable occupations. Within each preference condition (i.e., unacceptable, acceptable, and preferred), occupations were also blocked by uncorrelated sex-type by prestige groups. Within each of these 15 groups, i.e., 3 levels of condition by 5 levels of block, all (or up to 10) pair-wise comparisons were presented to participants. If more than 10 comparisons were possible, a random subset of 10 comparisons was presented. Partic-

ipants were asked to pick one option from each pair. This was an attempt to simulate compromise within different regions of the participant’s circumscribed social space. If participants selected one occupation (or no occupations) within a condition, then no forced choice alternative was presented within that condition.

50 occupational titles from the Occupational Preference Inventory (OPI, Deng, Armstrong, & Rounds, 2007) were used as stimuli in this task (see Table 3.2). The OPI included 268 occupational titles that covered approximately 85% of all jobs in the United States. Occupational titles in the OPI were measured on three dimensions: sex-type, prestige, and work activities. The sex-type ratings were based on the difference between the female and male mean interest rating of each occupation. That is, if males and females were equally interested in the occupation, it received a score of zero and may be interpreted as a sex-neutral occupation. If many more males than females were interested in the occupation, it received a negative score and may be interpreted as a masculine occupation. The correlation between this operationalization of sex-type and the percentage of female employees in that occupation was $r = .78$ in the sample used by Deng et al. (2007; based on the 2003 U.S. Census data). For the 50 occupations used in this study, the mean sex-type rating was $-.24$ (range: $-1.39 - 1.24$). That is, there were more masculine occupations in the choice task than feminine occupations.

The prestige score for each occupation was created from the principal component loadings of: (a) recognition and social status, (b) salary, and (c) education or training required for the occupation. All three variables were weighted about equally (.37, .37, and .38, respectively). The ratings for recognition, social status and education or training required were obtained from the O*NET. For the 50 occupations used in this study, the mean prestige rating was $-.13$ (range: $-2.27 - 1.42$).

As part of O*NET, many occupations have RIASEC scores assigned to them by subject matter experts (Rounds, Smith et al., 1999). Scores ranged from 1 = “not characteristic at all” to 7 = “extremely characteristic”. For example,

a conventional job like Accountant was scored $R = 2.66$, $I = 3.66$, $A = 1.66$, $S = 2.66$, $E = 4.66$ and $C = 7.00$. These scores were used as the work activity ratings in this study. For the 50 occupations, the mean for each interest score was $R = 4.72$, $I = 3.70$, $A = 2.76$, $S = 3.34$, $E = 3.92$, and $C = 4.07$.

The following procedure was used to select the subset of 50 titles: (1) the 268 items were rank-ordered based on their prestige scores and separated into fifths; (2) within each fifth of the prestige scale, 10 occupational titles were selected such that sex-type ratings were uncorrelated with prestige scores. That is, prestige varies across blocks, but sex-type and prestige are uncorrelated (average correlation $r < .05$) in each block. Across blocks, prestige and sex-type were correlated .12. Work activity scores, based on the RIASEC model, were not controlled for.

3.2.2 O*Net Interest Profiler

The 60-item O*NET Interest Profiler (Rounds, Smith et al., 1999; Rounds, Walker et al., 1999) was used in this study. It consisted of 10 items per RIASEC type. Each item described a work-related activity (e.g., “Study weather conditions”, “Help conduct a group therapy session”). Participants indicated how much they would like to perform each activity, using a 5-point Likert scale ranging from 1 = “Dislike Strongly” to 5 = “Strongly Like”. A participant’s score for each Holland type is simply the sum of the ratings across each of the 10 items.

3.2.3 Cognitive Ability

Ability was measured by a unit-weighted average of self-reported overall college grade-point average and overall SAT or ACT score. SAT and ACT scores were equated using the concordance table provided by Dorans (1999). For participants who reported both SAT and ACT scores ($n = 21$, $r_{SAT,ACT} = .75$), SAT scores were used to form the composite. Variables were standardized, then combined.

3.2.4 Socioeconomic Status

Socioeconomic status was measured by a unit-weighted average of parental (i.e., father and mother) education level and occupation. A seven-point scale was used to report each parent’s highest education level, with 1 = “less than high school” to 7 = “doctorate degree”. Participants reported each parent’s current (or last, if retired) occupation. These occupations were coded using the prestige scores obtained from the OPI (Deng, et al., 2007). If an exact match could not be found, the author and a research assistant discussed till consensus regarding the closest available match. Variables were standardized, then combined.

3.2.5 Personality Inventory

The Big Five Inventory (BFI, John & Srivastava, 1999) was used to measure personality. The BFI is a 44-item measure of the five broad factors of personality that uses short phrases with relatively accessible vocabulary. Eight items were used to measure Extraversion (e.g., “Tends to be quiet”), nine items to measure Agreeableness (e.g., “Likes to cooperate with others”), nine items to measure Conscientiousness (e.g., “Is easily distracted”), eight items to measure Neuroticism (e.g., “Worries a lot”), and ten items to measure Openness (e.g., “Likes to reflect, play with ideas”).

3.2.6 Self-efficacy Expectations

Participants’ self-efficacy expectations for their intended occupation was measured by asking them to indicate their confidence in their ability to complete the duties (or educational requirements) for their intended job (or graduate school program). Confidence was rated using a 10-point scale: 1 = “completely unsure” to 10 = “completely sure”. This measure is an adaptation of the instrument used by Betz and Hackett (1981).

3.2.7 Occupational Discrepancy

During the initial study, participants reported their intended post-graduation plans (e.g., go to medical school, become a marketing manager). During the follow-up phone interview, participants reported their current job (or graduate school program). Participants were categorized as having congruent jobs if this response was the same as their response in the initial study. Otherwise, they were categorized as having discrepant jobs.

3.2.8 Job Satisfaction

A six-item measure adapted from Brayfield and Rothe's (1951) job satisfaction measure was used (Agho, Price, & Mueller, 1992) to measure current job (or graduate school) satisfaction. The measure included items like "I am satisfied with my job for the time being".

3.3 Figures and Tables

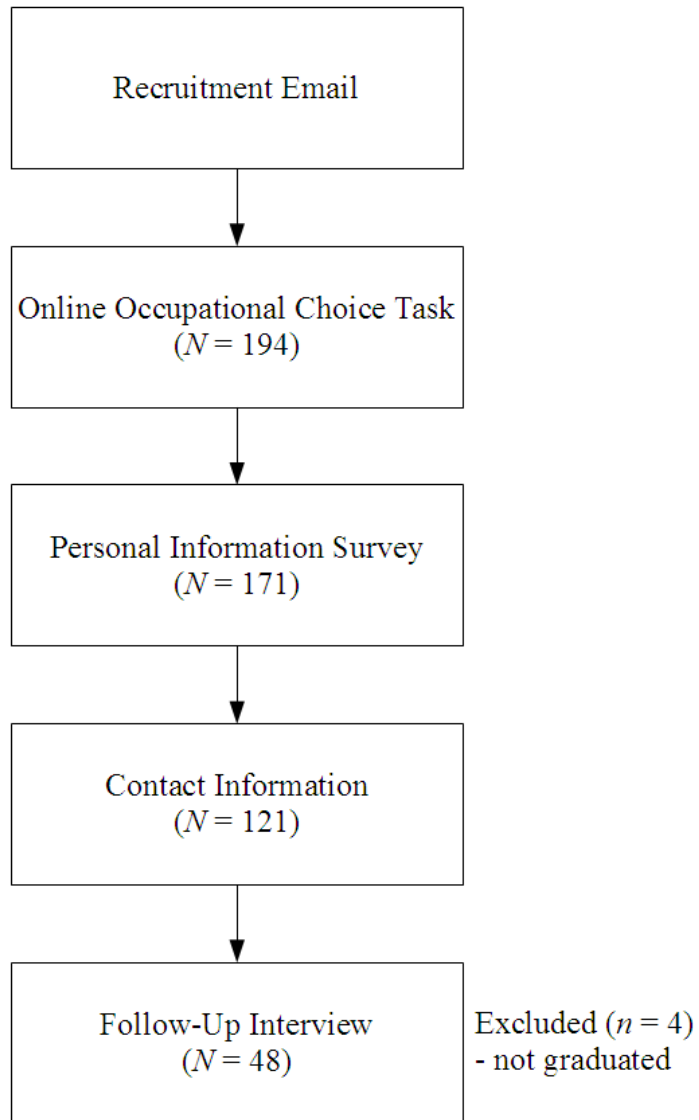


Figure 3.1: Flow of Participants Through Each Stage of the Study

Table 3.1: Means, Standard Deviations and Correlations for Vocational Interests

Interest Area	Males		Females		Realistic	Investigative	Artistic	Social	Enterprising	Conventional
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>						
Realistic	26.84	6.96	20.56	6.97	1.00	.37	.33	.09	.19	.52
Investigative	37.43	7.11	31.74	8.73	.24	1.00	.16	.15	.01	.05
Artistic	32.57	8.30	33.39	8.19	.43	.40	1.00	.17	.41	.22
Social	34.25	7.76	38.73	6.52	.21	.53	.33	1.00	.15	-.02
Enterprising	31.20	6.59	32.00	7.62	.28	.19	.24	.35	1.00	.44
Conventional	25.93	7.88	25.44	8.10	.54	.02	.23	.04	.40	1.00

Note. Correlations for males presented in the lower diagonal, correlations for females presented in the upper diagonal.

Table 3.2: List of Occupational Titles

No.	Occupational Title	Block	Prestige	Sex-type	R	I	A	S	E	C
1	Fisher man/woman	1	-2.08	-1.39	6.33	2.66	2.00	2.66	5.00	3.33
2	Janitor	1	-2.27	-.41	6.66	1.66	1.66	2.33	2.33	3.00
3	Meter reader	1	-1.45	.01	5.66	2.33	1.66	2.33	3.66	6.33
4	Gas pump station operator	1	-.97	-.47	6.66	2.66	1.66	1.66	2.33	3.33
5	Host/hostess	1	-1.89	.62	4.00	1.66	2.00	5.00	5.66	3.66
6	Rail transportation worker	1	-1.57	-.61	6.33	2.33	1.66	1.66	2.00	4.00
7	Trapper	1	-1.85	-.87	6.66	2.33	2.00	1.66	3.00	3.00
8	Packer/packager	1	-1.89	-.22	6.66	1.66	1.66	1.66	2.00	3.00
9	Private household worker	1	-2.27	.09	6.66	1.66	2.00	3.33	2.33	3.33
10	Cashier	1	-1.89	.13	4.00	2.00	2.00	3.00	4.33	6.00
11	New accounts clerk	2	-.58	-.19	2.66	2.00	1.66	4.33	6.00	6.00
12	Plasterer	2	-.52	-.52	6.66	2.00	1.66	1.66	2.66	3.33
13	Library assistant	2	-.61	.19	4.33	3.33	2.66	3.66	3.66	6.00
14	Cook	2	-.71	.12	6.00	2.66	4.33	3.33	5.66	3.66
15	Sheetmetal worker	2	-.49	-.92	6.66	2.33	1.66	1.66	2.33	2.66
16	Small engine mechanic	2	-.68	-1.27	6.66	2.66	1.66	1.66	3.00	3.33
17	Bank teller	2	-.71	.04	3.66	2.33	1.66	3.66	4.66	6.66
18	Retail sales worker	2	-.45	.16	3.66	2.33	2.66	4.33	6.33	3.33
19	Court reporter	2	-.53	.32	2.33	3.00	2.00	3.66	4.33	6.33
20	Correction officer	2	-.55	-.38	6.00	2.00	2.00	5.00	3.66	3.66
21	Probation officer	3	-.08	-.02	3.33	2.66	2.66	6.66	3.33	4.33
22	Radiological technologist	3	.02	-.39	6.00	5.00	2.00	4.00	2.66	3.00
23	Numerical tool programmer	3	-.10	-.63	6.00	5.00	2.00	2.00	2.66	5.66
24	Purchaser/buyer	3	-.04	.46	2.66	3.00	2.66	4.00	6.33	6.00
25	Desktop publisher	3	-.10	-.05	6.33	2.33	4.00	1.66	2.33	3.33

Table 3.2: List of Occupational Titles (cont.)

No.	Occupational Title	Block	Prestige	Sex-type	R	I	A	S	E	C
26	Computer/office repairer	3	-.07	-1.01	6.66	3.33	1.66	1.66	2.00	4.00
27	Tool and die maker	3	-.07	-.79	6.66	3.00	1.66	1.66	2.33	3.66
28	Adjuster or collector	3	-.11	-.59	2.66	4.66	2.00	4.00	6.66	4.00
29	Hotel manager	3	-.10	.06	3.00	1.66	2.00	4.66	6.33	5.00
30	Cost estimator	3	-.01	-.54	3.33	3.00	2.00	3.66	5.33	6.33
31	Optician	4	.65	-.15	4.66	3.33	3.00	4.00	6.00	5.00
32	Urban/regional planner	4	.75	-.29	3.00	6.00	3.66	3.33	5.33	3.66
33	Designer	4	.66	1.24	4.33	3.00	6.66	3.66	5.66	2.33
34	Anthropologist	4	.69	-.17	2.00	6.66	4.33	4.66	2.00	3.33
35	Computer programmer	4	.69	-.85	4.66	6.00	2.33	2.00	2.33	4.33
36	Botanist	4	.79	-.26	5.66	7.00	2.33	2.00	3.00	4.00
37	Market research analyst	4	.63	.13	3.00	6.00	2.66	2.66	5.00	4.00
38	Librarian	4	.72	.18	2.66	4.00	6.00	3.66	3.66	5.00
39	Farm operator/ manager	4	.57	-.63	5.33	3.33	2.00	3.00	6.33	4.66
40	Geologist	4	.73	-.66	6.00	7.00	3.00	2.00	2.33	4.00
41	Electrical engineer	5	1.01	-1.19	6.33	6.33	2.33	2.33	3.33	3.66
42	Economist	5	1.04	-.83	3.33	6.33	2.66	3.33	4.66	4.33
43	Education administrator	5	1.01	.43	2.00	4.33	3.66	6.66	5.66	3.00
44	Director	5	1.39	-.14	3.66	2.66	6.66	4.33	5.66	3.33
45	Biological scientist	5	1.11	-.58	5.00	7.00	3.33	2.00	2.33	3.66
46	News caster	5	1.01	-.11	2.66	4.00	6.66	5.00	4.33	3.00
47	Occupational therapist	5	.95	.78	4.66	4.33	4.00	6.66	3.00	3.00
48	Meteorologist	5	1.01	-.61	5.66	7.00	3.00	3.00	2.66	3.66
49	Political science professor	5	1.42	-.05	2.33	5.33	4.00	6.00	3.00	2.66
50	Dietitian	5	1.10	1.09	4.33	6.00	3.00	4.66	5.00	3.66

CHAPTER 4

RESULTS

4.1 Analytic Overview

For Hypotheses 1 - 3, the outcome variables are occupational sex-type, prestige, and interest. Sex-type and prestige have been previously defined and operationalized (details in Section 3.2.1). To recap, negative values for sex-type indicate more masculine occupations, positive values indicate more feminine occupations, and values close to zero indicate sex-type neutral occupations. For prestige, larger values indicate more prestigious occupations and smaller values indicate less prestigious occupations. *Interest* is defined here as the degree to which an occupation's work activities (details in Section 3.2.1) is consistent with an individual's vocational interest profile (details in Section 3.2.2), both described using Holland's types. Given that Holland's types are represented by six correlated dimensions, I used Mahalanobis' distance to obtain a single interest-consistent measure that accounted for the covariation among dimensions (Mahalanobis, 1936).¹ Values close to zero indicate that an occupation's work activities are consistent with an individual's vocational interests, large positive values indicate that an occupation's work activities are inconsistent with an individual's vocational interests.

For Hypothesis 1 (i.e., occupational preference differs as a function of sex-type, prestige, and interest), univariate analyses were conducted to test if sex-type, prestige, and interest differed across the three preference conditions: unaccept-

¹The Mahalanobis distance, D , is given by the equation: $D = \sqrt{(\bar{x} - \bar{y})' S^{-1} (\bar{x} - \bar{y})}$, where \bar{x} is a vector of the occupation's standardized work activity ratings, \bar{y} is a vector of the individual's standardized vocational interest profile, and S is a correlation matrix describing the relationships among Holland's types.

able, acceptable, and preferred. For Hypothesis 2 (i.e., severity of compromise changes the salience of dimensions used to select occupations within preference conditions), multivariate analyses were conducted within each preference condition to test if chosen alternatives differed from unchosen alternatives for the outcome variables sex-type, prestige, and interest. For Hypothesis 3 (i.e., individual differences influence occupational choice), univariate analyses were conducted to test if individual differences (e.g., ability and personality) predicted differences for sex-type, prestige, and interest.

I used the *nlme* package in R version 2.11.0 (Pinheiro, Bates, et al., 2009) to estimate multilevel regression models for Hypotheses 1 – 3. Multilevel regression analysis models the within- and between- persons relationships for repeated measures designs (Bryk & Raudenbush, 1992; Snijders & Bosker, 1999), accounting for the statistical dependence of observations within persons. Unlike a typical repeated measures analysis of variance however, partial responses (due to the experimental design and attrition) may be included in the analyses to maximize power. Although multilevel models are frequently used to estimate both random and fixed effects, these analyses focus only on the fixed effects (γ), which are interpreted in a fashion analogous to ordinary least squares regression coefficients.

For Hypothesis 4, an independent samples *t*-test was performed comparing individuals who held positions congruent with their intended occupations to individuals who held positions discrepant from their intended occupations.

4.2 Preferences

Table 4.1 describes the data used to test Hypothesis 1, which states that preferred occupations should be more consistent with one’s gender identity (H1a), higher in prestige (H1b), and more consistent with one’s interests (H1c) than less preferred occupations. As can be seen in Table 4.1, far fewer occupations were preferred (14.36%) than either acceptable (38.90%) or unacceptable (46.74%). For both males and females, as preference increased (i.e., across preference conditions), oc-

occupations became less masculine (sex-type increased from $-.36$ to $-.04$) and more prestigious (prestige increased from $-.50$ to $.47$). Females preferred more interest-consistent occupations (*interest* decreased from 4.29 to 4.00 ; i.e., the Mahalanobis distance between their interest profiles and the occupation’s work activities profile became smaller as preference increased), but males did not (*interest* increased from 4.13 to 4.92).

A two-step approach was used to test each hypothesis. The first step assessed if gender was an important predictor in the model. Theoretically, I expect gender differences when sex-type is the outcome; I have no theoretical expectation for gender differences for interest and prestige, except to the extent that they covary with sex-type. I used maximum likelihood (ML) ratio tests to compare (a) a full model including gender and its interaction terms to (b) a reduced model without these terms. These models are conceptually represented as:

$$\begin{aligned}
 \textit{Full : Outcome} &= \textit{intercept} + \textit{preference} \\
 &\quad + \textit{gender} + \textit{preference} \times \textit{gender} \\
 \textit{Reduced : Outcome} &= \textit{intercept} + \textit{preference}
 \end{aligned}$$

If the full model provides a significantly better fit to the data than the reduced model, then gender moderates the relationship between preference and the outcome variable, and both gender and its interaction terms are included in the final model. If the reduced model is not a significantly worse fit to the data, then a more parsimonious model is preferred, and the final model excludes gender and its interaction terms. The second step was to estimate the final model using restricted maximum likelihood (REML) estimation procedures; ML estimation leads to under-estimates of the standard errors, which may lead to incorrect inferences being drawn. Results are presented in Table 4.2.

Hypothesis 1a states that gender moderates the relationship between occupational preference and sex-type. For females, preferred occupations are more feminine than acceptable occupations; acceptable occupations are more feminine

than unacceptable occupations. For males, preferred occupations are more masculine than acceptable occupations; acceptable occupations are more masculine than unacceptable occupations. For Hypothesis 1a, model comparison in step one indicated that gender and its interaction terms should be included in the final model ($\chi^2_{(3)} = 62.45, p < .05$). Estimates for this model are presented in Table 4.2 column two (Sex-type), and indicate that preferred occupations were more feminine (i.e., higher sex-type) than acceptable occupations ($\gamma = .14, p < .05$), whereas unacceptable occupations were more masculine (i.e., lower sex-type) than acceptable occupations ($\gamma = -.27, p < .01$). Males preferred more masculine occupations than females ($\gamma = -.08, p < .05$), although these results were qualified by significant Preference \times Gender interactions ($\gamma_{P \times G} = -.11, p < .05$, and $\gamma_{U \times G} = .21, p < .05$). The interactions suggest that the relationship between preference and sex-type is stronger for females than for males — compared to females, males preferred more masculine occupations and found unacceptable less masculine occupations.

To facilitate interpretation, these results are also presented graphically in Figure 4.1. The figure on the left shows the expected pattern of results that should be obtained if Gottfredson’s theory is correct. This pattern of results is based on an interpretation of the verbal statements made in Gottfredson’s theory, not on simulated data. It is the pattern (i.e., shape), not the magnitude, that is of interest. The expected pattern of results serves as a comparison to the figure on the right, which shows the observed pattern of results obtained by plotting the mean function for the results in Table 4.2 column two (Sex-type). Hypothesis 1a is fully supported for females, occupations were more feminine (or at least less masculine) as preference increased. However, Hypothesis 1a was not supported for males. Instead, they showed the same pattern of results as females, albeit the relationship between preference and sex-type was weaker.

Hypothesis 1b states that preferred occupations are more prestigious than acceptable occupations; acceptable occupations are more prestigious than unacceptable occupations. No gender differences were hypothesized. For Hypothesis

1b, model comparison in step one indicated that gender and its interactions terms should be excluded from the final model ($\chi^2_{(3)} = .81, p > .05$). Estimates for this model are presented in Table 4.2 column three (Prestige), and indicate that preferred occupations were more prestigious than acceptable occupations ($\gamma = .40, p < .05$), whereas unacceptable occupations were less prestigious than acceptable occupations ($\gamma = -.64, p < .05$). These results are presented graphically in Figure 4.2. Once again, the expected pattern of results are presented in the graph on the left, and the observed pattern of results are presented in the graph on the right. Hypothesis 1b was supported for both males and females, occupations were more prestigious as preference increased.

Hypothesis 1c states that preferred occupations have work activities that more closely match a participant's vocational interests than acceptable occupations; acceptable occupations have work activities that more closely match a participant's vocational interests than unacceptable occupations. No gender difference were hypothesized. For Hypothesis 1c, model testing in step one indicated that gender and its interaction terms should be included in the final model ($\chi^2_{(3)} = 8.60, p < .05$). Estimates for Hypothesis 1c are presented in Table 4.2 column four. Preferred occupations were significantly more consistent with participants' interest than acceptable occupations ($\gamma = -.09, p < .05$), although there was no significant difference between acceptable and unacceptable occupations on interest ($\gamma = -.04, p > .05$). Males and females did not differ on interest across preference conditions ($\gamma = .04, p > .05$), although these results were qualified by a significant Preference \times Gender interaction ($\gamma_{P \times G} = .07, p > .05$, and $\gamma_{U \times G} = -.13, p < .05$). To facilitate interpretation, these results are also shown graphically in Figure 4.3. Once again, the expected pattern of results are presented in the graph on the left, and the observed pattern of results are presented in the graph on the right. Hypothesis 1c was not supported for either males or females. For males, preferred occupations were less in line with their interests than acceptable or unacceptable occupations. For females, both preferred and unacceptable occupations seemed more in line with their interests than acceptable occupations.

4.3 Severity of Compromise

Hypotheses 2a – 2c state that the severity of compromise changes the salience of sex-type, prestige, and interest in choosing among occupational alternatives. Specifically, when individuals have to choose among unacceptable occupations, compromise is assumed to be maximal, and occupational sex-type is hypothesized to be most salient (H2a). When individuals have to choose among acceptable occupations, compromise is assumed to be moderate, and occupational prestige is hypothesized to be most salient (H2b). Lastly, when individuals have to choose among preferred occupations, compromise is assumed to be minimal, and interest in occupational activities is hypothesized to be most salient (H2c). Note that for this set of analyses, we are interested in the relative difference between chosen and unchosen occupations within particular conditions; we are less interested in the differences across conditions, which was examined in Hypothesis 1.

Table 4.3 describes the data used to test Hypothesis 2. The focal comparisons are highlighted in bold along the main diagonal. Overall, when forced to choose among unacceptable occupations, participants selected the less masculine option (–.25 vs. –.41); when forced to choose among acceptable occupations, they selected the less prestigious option (.08 vs. .10); and when forced to choose among preferred occupations, they selected the more interest-consistent option (4.19 vs. 4.31). This suggests that we may find support for Hypotheses 2a and 2c, but we are unlikely to find support for Hypothesis 2b as the descriptive results run counter to what we would expect based on theory. The pattern of results is somewhat different for males and females, but I leave the discussion of gender differences until formal hypothesis testing has been conducted.

Similar to testing Hypotheses 1a – 1c, a two-step approach was taken to test each hypothesis. Following the same logic, likelihood ratio tests were used to compare a full model: $outcomes = intercept + gender + choice + gender \times choice$, to a reduced model where non-significant terms were removed. For example, if likelihood ratio tests indicate that gender is not a significant explanatory variable

(i.e., the reduced model is not a significantly worse fit than the full model), then this suggests that the pattern of results is the same for both males and females. In the same way, if likelihood ratio tests indicate that choice is not a significant explanatory variable, then this suggests that chosen and unchosen options within a condition are not different from one another. The second step was to re-estimate the final model using REML estimation procedures.

For Hypothesis 2a, model comparison in step one indicated that the reduced model presented in Table 4.4 column two (Unacceptable) was not a significantly worse fit to the data than a full model ($\chi^2_{(3)} = 6.94, p > .05$). That is, model comparison indicated that in the unacceptable condition, Gender, Choice, and Gender \times Choice were significant predictors for sex-type and interest, but not for prestige. For our focal analysis (Unacceptable, Sex-type), both the effects of gender ($\gamma = .23, p < .05$) and choice ($\gamma = .25, p < .05$) were significant, although they were qualified by a significant Gender \times Choice interaction ($\gamma = -.22, p < .05$). These results suggest that unacceptable occupations were significantly more feminine for males than females, and that when compromise was severe, more feminine occupations (i.e., higher sex-type) were chosen over less feminine occupations. To facilitate interpretation of the interaction, these results are presented graphically in Figure 4.4. As with the earlier figures, the predicted pattern of results are shown in the graph on the left and the observed pattern of results are shown in the graph on the right. Hypothesis 2a is supported for females. When forced to choose among unacceptable alternatives, the chosen option is more feminine (or at least less masculine) than the unchosen option. Contrary to Hypothesis 2a, males also choose the more feminine (less masculine) option, although the difference between chosen and unchosen options is much smaller for males than females.

For Hypothesis 2b, model comparison in step one indicated that the reduced model presented in Table 4.4 column three (Acceptable) was not a significantly worse fit to the data than a full model ($\chi^2_{(3)} = 1.47, p > .05$). Gender was a significant predictor for both sex-type and prestige, choice was a significant

predictor for sex-type and interest, and the Gender \times Choice interaction was significant only for interest. As the focal analysis (Acceptable, Prestige) was a comparison of prestige scores for chosen and unchosen alternatives, this parameter was retained in the final model. There was no significant effect of choice ($\gamma = -.02$, $p > .05$), although there was a significant effect of gender ($\gamma = -.11$, $p < .05$). As seen in Figure 4.5, prestige scores were significantly lower for males than females, although in both cases chosen occupations were lower in prestige than unchosen occupations. Hypothesis 2b is not supported for females or males, chosen occupations did not differ significantly from unchosen occupations on prestige.

For Hypothesis 2c, model comparison in step one indicated that the reduced model presented in Table 4.4 column four (Interest) was not a significantly worse fit to the data than a full model ($\chi^2_{(3)} = .23$, $p > .05$). Gender was a significant predictor for sex-type, prestige, and interest, choice was a significant predictor for sex-type and interest, but the Gender \times Choice interaction was significant only for sex-type. For our focal analysis (Preferred, Interest), both the effects of gender ($\gamma = .55$, $p < .05$) and choice ($\gamma = -.11$, $p < .05$) were significant. These results (also presented in Figure 4.6) provide support for Hypothesis 2c and suggest that when choosing among preferred alternatives, both males and females choose the options that were more in line with their interest.

4.4 Individual Differences

Hypotheses 3a – 3e state that the zone of acceptable alternatives is influenced by individual differences such as status, ability, efficacy, and personality. Specifically, individuals from higher status families should select occupations higher on prestige than individuals from lower status families (Hypothesis 3b). Similarly, individuals with greater cognitive ability or self-efficacy should select occupations higher on prestige than individuals with less cognitive ability or self-efficacy (Hypothesis 3c and 3d, respectively). *A priori* hypotheses were made only for the personality factor Openness to Experience. Individuals higher on Openness to

Experience should consider a wider range of alternatives, and it was hypothesized that they would select less gender- and interest-consistent occupations than individuals lower on Openness to Experience (Hypotheses 3a and 3e, respectively). Means, standard deviations, and correlations among the individual difference predictors are presented in Table 4.5.

Three steps were taken to test each hypothesis. First, individual difference variables were mean centered so as to minimize collinearity among variables and facilitate interpretation of the intercept terms (Aiken & West, 1991, Cohen, Cohen, West, & Aiken, 2003); self-efficacy was square-root transformed before mean centering to minimize the skewness of this distribution. Steps two and three mirror the approach taken in the earlier analyses. In step two, model comparison was used to remove non-significant terms. In step three, REML estimation procedures were used to re-fit the final model. These results are presented in Table 4.6. Note that the focal analyses (i.e., comparison of acceptable and preferred occupations against unacceptable occupations) are represented by the regression coefficients for Pref1, and the interaction terms involving Pref1.

Contrary to Hypothesis 3a, model comparison in step two indicated that Neuroticism was the only personality factor predicting sex-type differences in the zone of acceptable alternatives ($\chi^2(12) = 17.66, p > .05$); Openness to Experience did not predict sex-type differences in the zone of acceptable alternatives. Estimates for this final model are presented in Table 4.6 column two (Sex-type). There was no significant main effect of Neuroticism ($\gamma = .00, p > .05$), although results indicated that for more Neurotic individuals, preferred occupations were more feminine in sex-type than acceptable occupations ($\gamma = .06, p < .05$). Consistent with earlier analyses, there was also a significant gender effect. For the overall sample, occupations within the zone of acceptable alternatives was significantly more feminine than those outside the zone unacceptable alternatives ($\gamma = .22, p < .05$). For males though, the zone of acceptable alternatives was significantly more masculine than it was for females ($\gamma = -.17, p < .05$).

For Hypotheses 3b – 3d, model comparison in step two indicated that abil-

ity, socioeconomic status, and self-efficacy independently contributed to prestige differences in the zone of acceptable alternatives ($\chi^2(12) = 17.13, p > .05$). Estimates for this final model are presented in Table 4.6 column three (Prestige). There were no significant main effects of ability ($\gamma = .04, p > .05$), SES ($\gamma = .01, p > .05$), or self-efficacy ($\gamma = .02, p > .05$), although interactions were significant such that higher status ($\gamma = .05, p < .05$), more able ($\gamma = .04, p < .05$), and more efficacious ($\gamma = .13, p < .05$) individuals selected occupations with higher prestige as acceptable. This is consistent with Hypotheses 3b – 3d, ability, SES, and self-efficacy all predicted prestige level differences in acceptable alternatives as compared with unacceptable alternatives.

Contrary to Hypothesis 3c, model comparison in step two indicated that none of the personality factors predicted interest differences in the zone of acceptable alternatives ($\chi^2(15) = 12.40, p > .05$). Estimates for this final model are presented in Table 4.6 column four (Interest). Although there was no marginal effect of gender ($\gamma = -.02, p > .05$), for males, the zone of acceptable alternatives was significantly more consistent with their interests than it was for females ($\gamma = -.10, p < .05$).

4.5 Compromise and Job Satisfaction

Hypothesis 4 states that individuals in their intended jobs (or graduate school programs) will have higher job satisfaction than individuals who are not in the job (or graduate school program) that they intended to pursue pre-graduation. Results support this hypothesis and found that people who had jobs congruent with their intended occupations reported higher levels of satisfaction ($M = 4.47, SD = .51, n = 33$) than people who had jobs discrepant from their intended occupations ($M = 3.21, SD = .68, n = 11$), $t(42) = 6.56, p < .01$; Levene's test for equality of variances = 1.11, $p = .30$). These results provide support for Hypothesis 4.

4.6 Figures and Tables

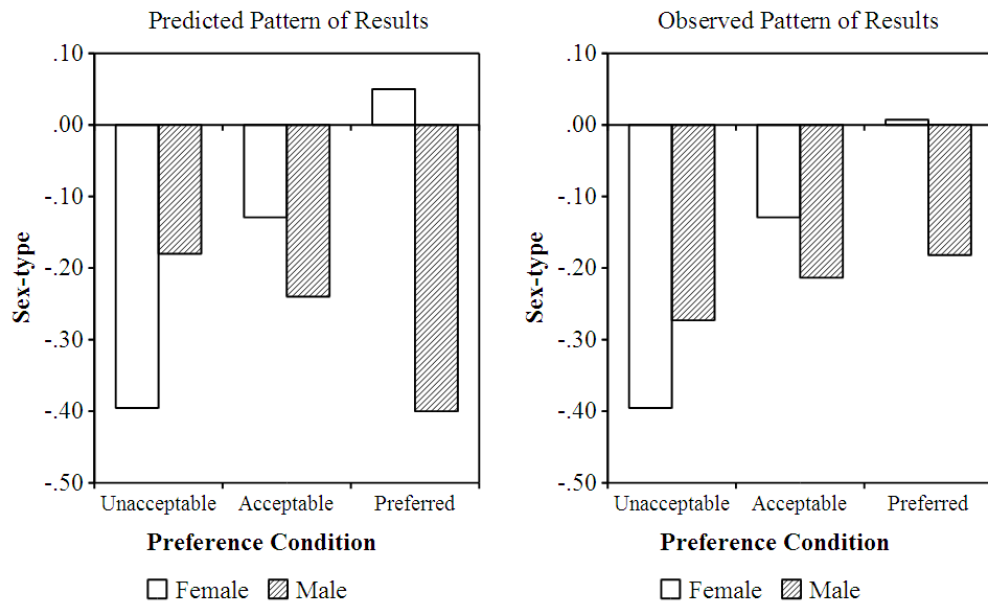


Figure 4.1: Sex-type of Occupations Across Preference Condition. The figure on the left shows the pattern of results that would be predicted from Gottfredson's theory. The figure on the right is a plot of the mean functions for the final model. This pattern of results provide support for Hypothesis 1a for females, but not for males.

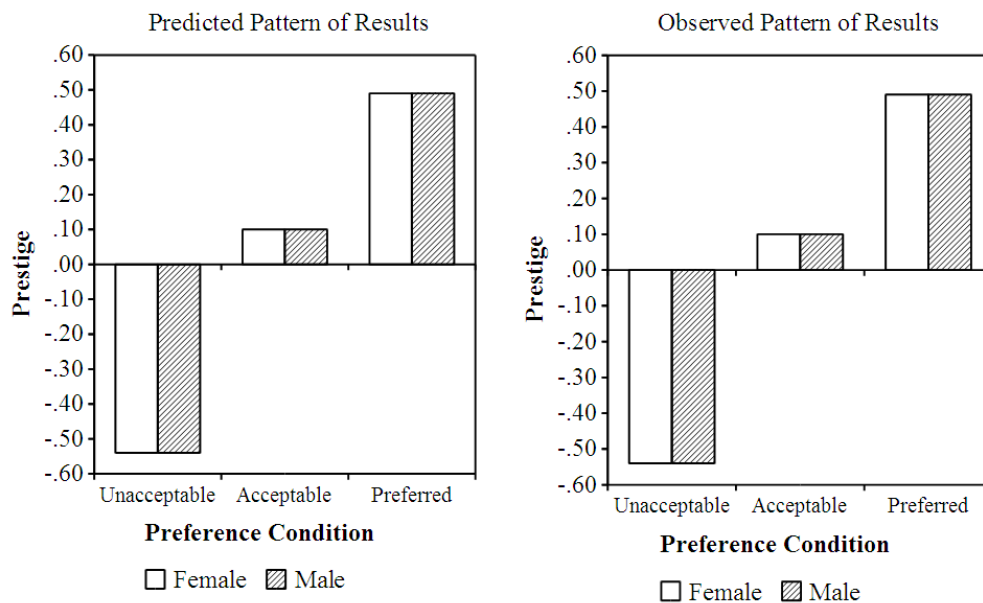


Figure 4.2: Prestige of Occupations Across Preference Condition. The figure on the left shows the pattern of results that would be predicted from Gottfredson's theory. The figure on the right is a plot of the mean functions for the final model. This pattern of results provide support for Hypothesis 1b for both females and males.

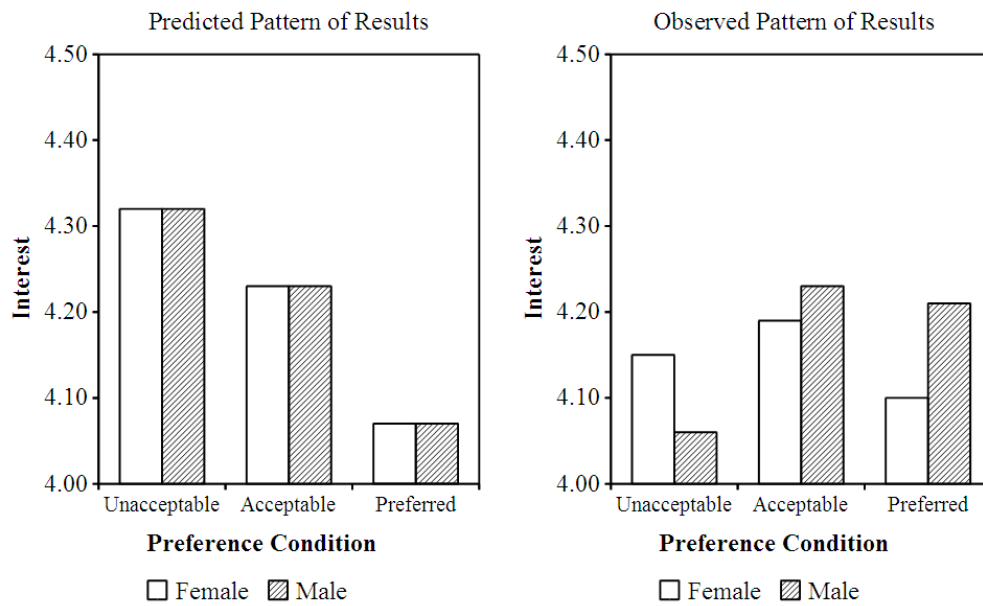


Figure 4.3: Interest of Occupations Across Preference Condition. The figure on the left shows the pattern of results that would be predicted from Gottfredson's theory. The figure on the right is a plot of the mean functions for the final model. This pattern of results does not provide support for Hypothesis 1c.

Unacceptable Condition

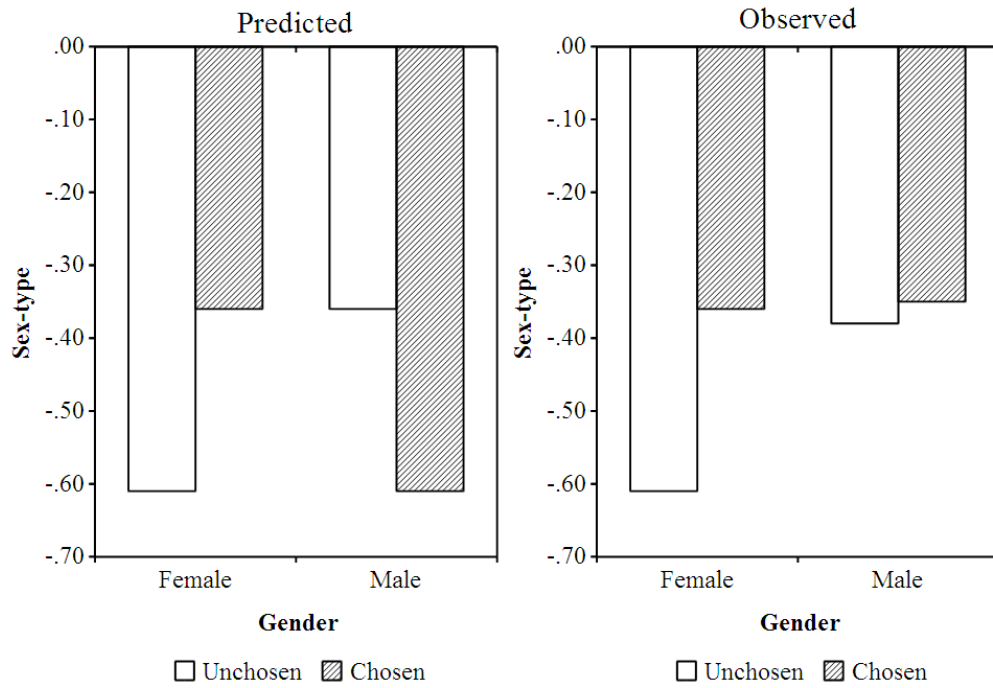


Figure 4.4: Sex-type for Chosen and Unchosen Occupations in the Unacceptable Condition. Choosing among unacceptable occupations is taken to reflect having to make severe compromises. The figure on the left shows the pattern of results that would be predicted from Gottfredson's theory. The figure on the right is a plot of the mean function for the final model. This pattern of results provides support for Hypothesis 2a for females but not for males.

Acceptable Condition

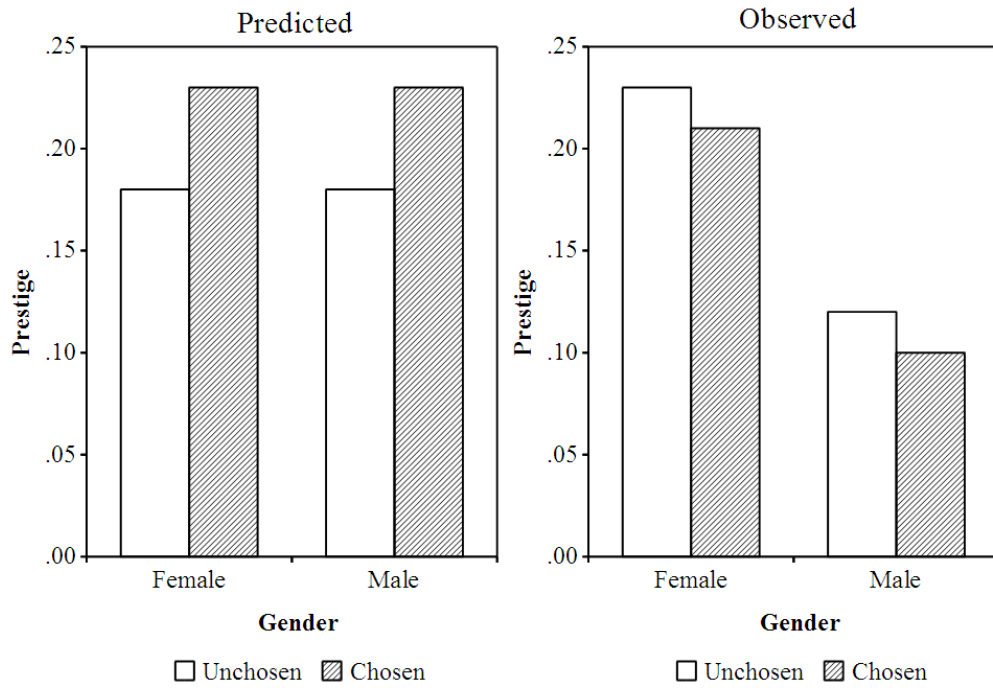


Figure 4.5: Prestige for Chosen and Unchosen Occupations in the Acceptable Condition. Choosing among acceptable occupations is taken to reflect having to make moderate compromises. The figure on the left shows the pattern of results that would be predicted from Gottfredson's theory. The figure on the right is a plot of the mean function for the final model. This pattern of results does not provide support for Hypothesis 2b for females or males.

Preferred Condition

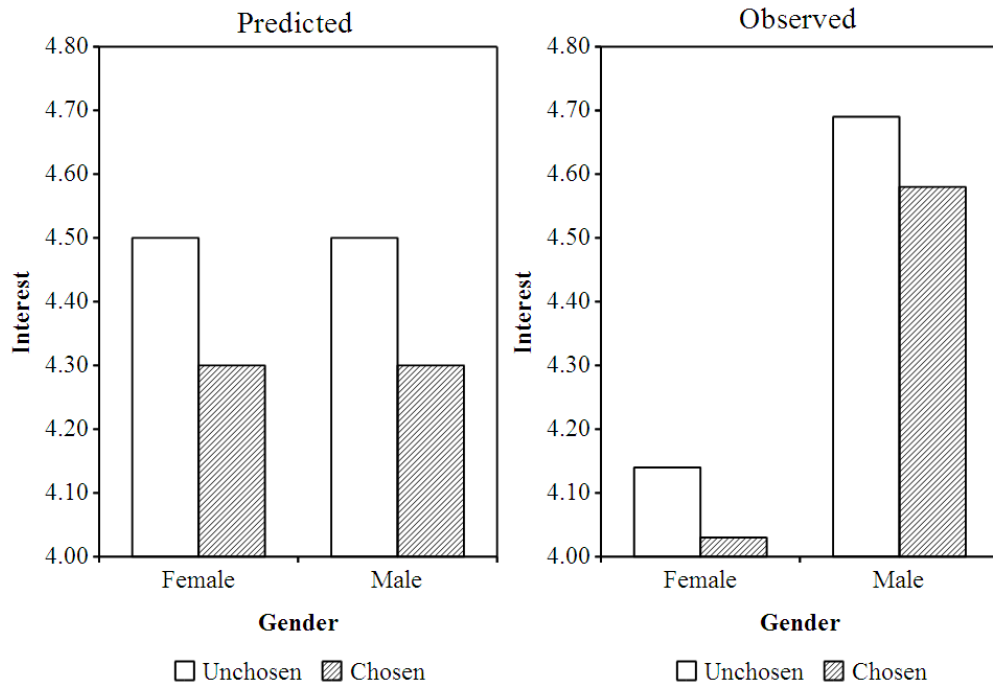


Figure 4.6: Interest for Chosen and Unchosen Occupations in the Preferred Condition. Choosing among preferred occupations is taken to reflect having to make minimal compromises. The figure on the left shows the pattern of results that would be predicted from Gottfredson's theory. The figure on the right is a plot of the mean function for the final model. This pattern of results provides support for Hypothesis 2c for females and for males.

Table 4.1: Percentages, Means, and Standard Deviations of Outcome Variables Across Preference Condition

Outcome	Unacceptable		Acceptable		Preferred	
	%		%		%	
Overall	46.74		38.90		14.36	
Females	47.02		38.42		14.56	
Males	43.18		42.05		14.77	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
<i>Sex-type</i>						
Overall	-0.36	0.52	-0.15	0.55	-0.04	0.60
Female	-0.39	0.50	-0.13	0.55	0.00	0.60
Male	-0.27	0.54	-0.21	0.56	-0.18	0.58
<i>Prestige</i>						
Overall	-0.50	1.05	0.08	0.95	0.47	0.78
Female	-0.50	1.05	0.08	0.95	0.50	0.74
Male	-0.52	1.05	0.08	0.95	0.40	0.84
<i>Interest</i>						
Overall	4.25	1.80	4.08	1.56	4.25	1.74
Female	4.29	1.87	4.06	1.48	4.00	1.50
Male	4.13	1.62	4.12	1.76	4.92	2.16

Table 4.2: REML Estimates for Models Testing Hypotheses 1a - 1c

Parameter	Sex-type		Prestige		Interest	
	Est.	SE	Est.	SE	Est.	SE
Intercept	-.13*	.01	.10*	.02	4.19*	.13
Preferred	.14*	.02	.40*	.04	-.09*	.04
Unacceptable	-.27*	.02	-.64*	.03	-.04	.03
Gender	-.08*	.02			.04	.26
Preferred x Gender	-.11*	.04			.07	.08
Unacceptable x Gender	.21*	.03			-.13*	.06

Note. Est. = Estimate, SE = Standard Error. Preferred = comparison between preferred and acceptable conditions (preferred = 1, acceptable = 0), Unacceptable = comparison between unacceptable and acceptable conditions (unacceptable = 1, acceptable = 0), Gender = comparison between males and females (males = 1, females = 0).

* $p < .05$.

Table 4.3: Means and Standard Deviations of Outcome Variables for Chosen and Unchosen Occupations Across Preference Condition

Outcome	Unacceptable			Acceptable			Preferred					
	Unchosen		Chosen	Unchosen		Chosen	Unchosen		Chosen			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
<i>Sextype</i>												
Overall	-0.44	0.48	-0.25	0.53	-0.27	0.55	-0.11	0.54	-0.14	0.62	-0.04	0.64
Female	-0.49	0.47	-0.24	0.52	-0.29	0.55	-0.07	0.53	-0.14	0.63	0.01	0.64
Male	-0.30	0.50	-0.28	0.56	-0.24	0.54	-0.18	0.57	-0.18	0.58	-0.18	0.62
<i>Prestige</i>												
Overall	-0.68	1.93	-0.71	1.94	0.10	1.50	0.08	1.53	0.58	1.56	0.57	1.56
Female	-0.67	1.05	-0.70	1.08	0.11	0.90	0.10	0.94	0.70	0.61	0.68	0.61
Male	-0.72	1.02	-0.74	1.02	0.09	0.98	0.07	1.00	0.34	0.86	0.33	0.87
<i>Interest</i>												
Overall	4.25	1.04	4.28	1.07	4.12	0.93	4.03	0.96	4.31	0.72	4.19	0.74
Female	4.30	2.00	4.36	2.01	4.10	1.40	4.00	1.42	4.12	1.42	4.01	1.42
Male	4.12	1.71	4.02	1.68	4.17	1.74	4.10	1.79	4.74	1.78	4.62	1.82

Table 4.4: REML Estimates for Models Testing Hypotheses 2a - 2c

Parameter	Unacceptable ^a		Acceptable		Preferred	
	Est.	SE	Est.	SE	Est.	SE
<i>Sex-type</i>						
Intercept	-.61*	.05	-.18*	.04	-.12*	.05
Gender	.23*	.03	-.04	.03	-.10	.10
Choice	.25*	.02	.21*	.02	.15*	.03
Gender x Choice	-.22*	.04	-.15*	.04	-.16*	.07
<i>Prestige</i>						
Intercept	-.81*	.05	.23*	.04	.71*	.05
Gender			-.11*	.03	-.42*	.09
Choice			-.02	.02		
Gender x Choice						
<i>Interest</i>						
Intercept	4.18*	.05	4.21*	.04	4.14*	.05
Gender	-.14*	.03			.55*	.09
Choice	.06*	.02	-.10*	.02	-.11*	.03
Gender x Choice	-.15*	.04				

Note. Est. = Estimate, SE = Standard Error. Gender = comparison between males and females (males = 1, females = 0), Choice = comparison between chosen and unchosen alternatives (chosen = 1, unchosen = 0).

^a Results based on ML estimation, the REML estimation did not converge.

* $p < .05$.

Table 4.5: Means, Standard Deviations and Correlations among Hypothesis 3 variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Ability	-0.02	0.88	—							
2. SES	-0.01	0.74	.21	—						
3. Self-Efficacy	8.36	1.60	.05	.02	—					
4. Extraversion	3.45	0.67	-.08	-.12	.29	(.83)				
5. Agreeableness	3.89	0.54	-.02	.05	.14	.19	(.77)			
6. Conscientiousness	3.80	0.44	.15	.09	.33	.26	.32	(.65)		
7. Neuroticism	2.68	0.66	.12	-.07	-.27	-.20	-.43	-.19	(.80)	
8. Openness	3.73	0.54	-.01	.05	.29	.37	.17	.32	-.19	(.80)

Note. Correlations presented based on pair-wise deletion. *N* = 166 (ability & SES), *N* = 155 (self-efficacy), *N* = 163 (Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness). Coefficient α shown in parentheses along the diagonal. SES = socioeconomic status, Openness = Openness to Experience.

Table 4.6: REML estimates for Hypotheses 3a – 3e

Parameter	Sex-type		Prestige		Interest	
	Est.	SE	Est.	SE	Est.	SE
Intercept	-.17*	.01	.03	.02	4.14*	.14
Pref1	.22*	.01	.57*	.02	-.01	.02
Pref2	.06*	.01	.21*	.02	-.05*	.02
Gender	-.05*	.01			-.02	.27
Neuroticism	.00	.01				
Ability			.01	.02		
SES			.01	.02		
Self-efficacy			.02	.02		
Pref1 x Gender	-.17*	.02			-.10*	.00
Pref2 x Gender	-.04	.02			-.02	.53
Pref1 x Neuroticism	.02	.01				
Pref2 x Neuroticism	.06*	.01				
Pref1 x Ability			.04*	.02		
Pref2 x Ability			.03	.02		
Pref1 x SES			.05*	.02		
Pref2 x SES			.00	.02		
Pref1 x Self-efficacy			.13*	.06		
Pref2 x Self-efficacy			.00	.06		

Note. Est. = estimate, SE = standard error, SES = socioeconomic status. Pref1 = comparison between preferred and acceptable, and unacceptable occupations (preferred = 0.5, acceptable = 0.5, unacceptable = -1.0), Pref2 = comparison between preferred and acceptable occupations (preferred = 1, acceptable = -1).

* $p < .05$.

CHAPTER 5

DISCUSSION

The purpose of this study was to examine the process, correlates, and outcomes of compromise in career-related decisions, as a test of Gottfredson's (2002) theory of circumscription and compromise. Sex-type, prestige, and work activities, are important dimensions along which individuals consider occupational alternatives. However, because these dimensions naturally covary across occupations, it is difficult to make unequivocal statements about the relative importance of these dimensions based simply on people's chosen or self-reported occupational choices. Instead, either a well-designed longitudinal study, or an experimental design representing a wide array of occupational alternatives is required. Ideally, the dimensions of sex-type, prestige, and work activities should also be independent of each other in the research design. In this study, I was able to unconfound sex-type and prestige, but not their relationships with work activities. That is, stimuli were presented in blocks such that sex-type and prestige were uncorrelated within a block, although across blocks they were correlated .12.

Results from this study demonstrated that occupations were more feminine and more prestigious as preference increased across conditions. Given the nature of the sample (i.e., 3:1 ratio of females to males; both females and males have greater interests in Social, Investigative and Artistic work activities than Realistic, Enterprising, or Conventional work activities) this provides partial support for Hypothesis 1. Preferred occupations were more in line with the overall sample's gender identity (i.e., feminine), and more prestigious than less preferred occupations. For males, compared to females, unacceptable jobs were significantly more feminine, which is consistent with the fact that males had rejected these jobs for

being inconsistent with their gender-identities. No consistent pattern was found for interest across preference conditions.

When forced to choose within preference conditions, sex-type was significantly different for chosen and unchosen options in the unacceptable condition, and interest was significantly different for chosen and unchosen options in the preferred condition. This provides support for Hypotheses 2a and 2c. Specifically, when forced to choose among unacceptable alternatives, females chose significantly more feminine (less masculine) occupations over the other occupations, providing support for the proposition that they were attempting to choose jobs that would protect their gender identity. Males also tended to choose the more feminine option, although markedly less so. This is contrary to a strict interpretation of Gottfredson's theory. However, to the extent that the sample consisted of men with more feminine interests than the general population, these results may also be taken simply to suggest that such men tend to prefer feminine occupations.

When forced to choose among preferred alternatives, both males and females chose occupations more consistent with their interests over occupations less consistent with their interests. Notably, these occupations also tended to be more feminine for females, and more masculine for males (see Table 4.4 column four (Preferred)). However, prestige of the chosen and unchosen occupations were not significantly different when participants were choosing among acceptable occupations. This finding is contrary to Hypothesis 2b. However, this finding should also be interpreted in light of the very clear differentiation of occupations by prestige when participants initially categorize occupations (see Figure 4.2). Taken together, these results would suggest that individuals may be deciding about the suitability of occupations primarily on their perceptions of how prestigious the occupation is. When forced to make finer distinctions within preference categories, the occupations within a category may have been effectively equated on prestige, and thus occupational differences on sex-type and/or interest may have driven participants' choice instead (see Table 4.4 column three (Acceptable)).

Individual differences on ability, socioeconomic status, and self-efficacy all pos-

itively predicted one's zone of acceptable alternatives: acceptable alternatives were higher on prestige for individuals higher on ability, status, and self-efficacy. This provides support for Hypotheses 3b – 3d, and suggests that the zone of acceptable alternatives varies as a function of an individual's ability, social standing, and perceptions of self-efficacy. This is consistent with Gottfredson's theory. Although individuals tend to have similar perceptions of how prestigious occupations are, they don't all select the most prestigious occupations. Instead, their social standing, ability, and perceptions of self-efficacy influence what they find acceptable and what they are willing to strive for.

Individual differences on Openness to Experience did not significantly predict lower sex-type or higher interest scores for acceptable alternatives. These results do not provide support for Hypotheses 3a or 3e, neither do they provide support for other personality factors as predictors of one's zone of acceptable alternatives. Potential limitations of the study design, and modifications for future research are discussed below.

Lastly, participants currently in jobs (or graduate school programs) matching their intended jobs (or graduate school program) were significantly more satisfied with their jobs (or programs) than those who were in different jobs from what they intended pre-graduation. This provides support for Hypothesis 4, and is consistent with earlier work (e.g., Carr, 1997; Oceansey, 2000) suggesting that compromise may have long-range effects on one's job satisfaction.

5.1 Limitations

Several limitations need to be acknowledged in order for us to meaningfully interpret the results obtained in this study. First, the sample is a relatively homogeneous one. It is comprised of college students who are relatively high on ability and social standing – they were attending the premier public university in the state, and many of them are from the relatively affluent suburbs of Chicago. Prestige is likely to be an even more important (and salient) dimension of oc-

cupational choice for this sample, as compared to the overall population in the United States. The ability to choose among preferred options may be a privilege more prevalent in this group than in other groups of young adults. For instance, findings from this group are unlikely to generalize to those who have not been graduated from high school and for whom moderate and severe compromises are very real issues. The sample is also heavily weighted with females and individuals mainly from the liberal arts and sciences. In this study, self-reported sex was used as a proxy for gender. As can be seen from their self-reported vocational interests (Table 3.1) however, the men in this sample are even less likely than the women to be representative of men in general. Instead, compared to the prototypical male, the men in these sample may be described as having more feminine interests, and thus, caution is especially warranted when generalizing from the small number of males obtained in this sample.

Second, although the experimental stimuli covered a wide range of occupations, masculine occupations were predominantly Realistic in terms of their work activities, and feminine occupations were predominantly Social or Conventional in their work activities. To the degree that males and females did not have Realistic, or Social and Conventional interests, respectively, the dimensions of sex-type and work activities are confounded in this study. For males, one post hoc explanation for their consistent choice of more feminine sex-typed jobs is that, as a group, Investigative and Social were their two strongest interest areas, whereas Realistic is their second to last interest area. Additionally, there was a small positive correlation between sex-type and prestige in occupations used as stimuli in this study.

Third, there does not appear to be a well-accepted measure of congruence between an individual's vocational interests and an occupation's work activities. In this study, the Mahalanobis distance measure was used. This measure captured both the shape and the elevation of the respective profiles, and provided one way of using all the available information to compare individuals on the same scale. In order to check if different operationalizations of congruence would affect the

substantive interpretations in this study, Spearman's rank-order correlation (ρ) was also used to index congruence. Unlike the Mahalanobis distance measure, ρ captures only the shape of the profiles, and not the elevation (McCloy, Campbell, Oswald, Lewis, & Rivkin, 1999). Re-analyses with this measure did not change the overall findings in this study. Neither of these congruence measures however, provide the opportunity to test specific hypotheses about the differences in individual's zone of acceptable alternatives as a function of personality differences. For instance, this approach did not allow a test of whether Extroverted individuals were more likely to find Social occupations acceptable, or whether Open individuals were more likely to find Investigative and Artistic occupations acceptable. However, the use of dominant codes to classify occupations does discard potentially valuable data and suffers from its own set of limitations.

Fourth, although the occupational stimuli covers a wide range of jobs, it may be that it was a rather 'blunt' instrument for testing individuals' zones of acceptable alternatives. Far more jobs were unacceptable than either acceptable or preferred, providing far less precision in our ability to tease apart the impact of choice within these two conditions. This study also used relatively broad measures of ability and personality. The decision to do so was based on the assumption that "general (culture-independent) traits" are pre-cursors to "ends-specific trait combinations" like vocational interests, specific skills, and perceptions of self-efficacy (Gottfredson, 2002). However, it seems reasonable that more fine-grained analysis, for example, by using specific abilities, specific personality facets, or basic interest level scales would provide a better (or at least more proximal) test of individual differences that drive observable outcomes such as occupational preferences and eventual choice (Ackerman & Heggested, 1997).

Fifth, to the degree that the objective coding of an occupation's sex-type, prestige, and interest does not match up with an individual's image of that occupation, these results would be uninformative about the dimensions driving an individual's occupational choice. The matching process, after all, takes place between an individual's perception of self and an individual's perception of the

occupation.

Last, sample attrition was a problem throughout the study. Especially in the follow-up interview, individuals willing to be interviewed were predominantly those in graduate programs. Although graduate school often represents a major commitment towards a profession, with competitive selection practices ensuring that not all individuals will get their program of choice, schools often provide some shelter from the harsher realities of the working world. Satisfaction with one's current graduate program may be a poor proxy for one's satisfaction with one's job.

5.2 Implications

Despite the limitations of this study, it does provide a fair amount of support for Gottfredson's theory of circumscription and compromise. It provides evidence that (a) occupational dimensions influence whether individuals consider a job unacceptable, acceptable, or preferred; (b) sex-type influences occupational choice when individuals are in situations requiring severe compromise and interest influences occupational choice when individuals are in situations requiring minimal compromise; (c) some individual differences do influence what a person considers acceptable in a job, and (d) compromise is related to less satisfaction with one's job.

Although it was difficult to independently account for the effects of sex-type, prestige, and interest on occupational choice, there is strong evidence that sex-type and prestige influence occupational choice. And there is also support for the fact that these dimensions are differentially salient under different degrees of compromise. This would suggest that in career-counseling situations, greater emphasis needs to be placed on other occupational dimensions besides vocational interests, especially when there is some degree of compromise that is required. For example, for individuals who want to be medical doctors but struggle with the necessary pre-requisites, nursing would be one alternative that could be proposed

based on the perceived similarity of the work-activities. However, switching to law school might be the alternative that one would propose based on these research findings: prestige is comparable across occupations, although the work activities are fairly different. In this situation, sex-type is unlikely to be compromised. Unlike this situation, nursing is likely to represent a sex-type compromise for many men.

For personnel selection researchers, this findings suggests that we need to be more cognizant that people are often circumscribing large swathes of the world of work (see Figure 5.1). Although we have traditionally focused on selecting the ‘best’ individuals from our applicant pools, this research would indicate that greater efforts are required to first recruit individuals from the general population *into* our relevant applicant pools. People can and often do make occupational choices based on their perceptions of occupations. To the degree that these perceptions are simply stereotypes (e.g., engineering is for boys, academics do nothing to help real people in real situations), they may preclude the entry of otherwise capable individuals into these jobs. Recruiting strategies highlighting less salient dimensions of the occupation (e.g., engineers frequently work in teams) may be one step in the right direction (Eccles, 2007). In a related fashion, it is likely that people may revise their occupational image if they are provided more experience with the occupation. Activities such as informational interviews, job shadowing, or internships might provide opportunities to put flesh on the bare bones of a stereotype.

Results from this study also suggest that people who held positions discrepant with what they intended were also less satisfied with their occupations than people who held positions congruent with their intended occupations. In line with Gottfredson’s theory, there may be a relationship between the degree of compromise and an one’s job satisfaction. I was unable to test this hypothesis in this study, due to the small number of people who experienced discrepancy, but this might be a fruitful area for further research.

5.3 Future Directions

Does it matter if it is interest rather than prestige that has to be compromised in order to align with reality? What if it was sex-type rather than interest or prestige that had to be compromised? As it stands, Gottfredson's theory provides little guidance regarding how what gets compromised differentially predicts outcomes. For instance, might child-bearing and rearing enable a woman in a cross sex-typed occupation to invest in a social role consistent with her gender identity, thereby negating some of the negative consequences of having had to compromise? Or, work typically being a central role in people's lives, might it be possible that compromise on core aspects of the self detrimentally affects a person, even if there are ways to compensate in other roles?

Are there occupations that allow individuals to 'recover', over time, aspects that may have been compromised earlier on? In terms of prestige for instance, are there occupations where barriers to upward mobility are fewer, or perhaps less contingent on general mental ability? It may be that career counselors do already advise their clients toward such occupations (e.g., working one's way up the chain of command in the military), but understanding the particular mechanisms that are likely to influence a person's relative satisfaction with aspects that have had to be compromised are poorly understood.

This study focused on the underlying dimensions that likely influence occupational choice. Although some preliminary analyses were conducted looking at individual differences that impact occupational choices, as noted above, more narrowly defined predictions need to be outlined and tested. In addition to the matching that occurs based on occupational dimensions, occupations also influence a wide range of other life activities (e.g., time one can spend on leisure activities, with one's children, etc.) that people are likely to consider when making occupational choices. How these factors are related to the dimensions of sex-type, prestige, and interests has been relatively understudied. Lastly, as noted by Taylor and Pryor (1985), individuals are likely to differ in their willingness to com-

promise in a given situation. However, compromise has rarely been studied as a construct, and the nomological net within which it exists has yet to be established and warrants future research attention.

5.4 Figure

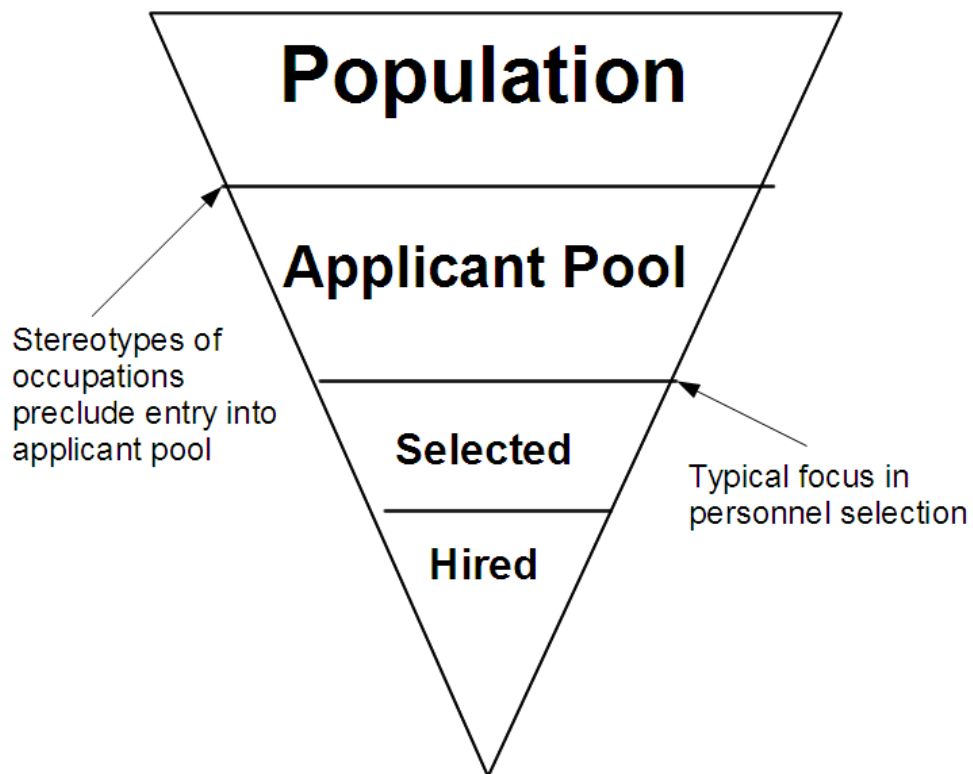


Figure 5.1: Schematic Representation of the Personnel Selection Process

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