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The right attitude: gender, conservatism, and career choice

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The right attitude: Gender, conservatism, and career choice

by

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A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
MASTER OF SCIENCE

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ABSTRACT

Despite reductions in overt sexism and structural barriers to the advancement of women in the workforce, differences in the representation of women and men in various careers remain. Specifically, women tend to be overrepresented in traditionally feminine careers, which also tend to be lower in prestige and pay. The present study explored potential gender-related barriers to women's advancement through examination of the perceptions of the femininity and masculinity of the RIASEC types (Holland, 1959; 1997). Specifically, the study sought to determine the role that the gender of the person portrayed in a career plays in the perceptions of the RIASEC types, as well as the contribution of the covariates right-wing authoritarianism, religious fundamentalism, and attitudes toward women. Participants were 334 university students who completed questionnaires and a card sort in which they sorted adjectives from the Bem Sex Role Inventory (Bem, 1981) to job descriptions representative of the RIASEC types. MANOVA and MANCOVA were used and gender and condition were found to have significant effects on the perceptions of the RIASEC types, while no significant covariates emerged. Implications of these results are discussed, including the fact that perceptions of the RIASEC types may be somewhat influenced by the gender of the person seen in the representative career.

CHAPTER 1. INTRODUCTION

Career choices are among the most important choices made by an individual in her or his lifetime. One's career often represents a significant part of identity and is information often sought by others. Despite relatively recent reduction or removal of the structural barriers that once kept women from entering some careers, sex segregation in the workforce continues. Women and men tend to seek and enter different careers. However, reasons for this continued discrepancy are still unclear. The present study addresses this question through the examination of various psychological factors, vocational constructs, and the perceptions of the femininity and masculinity of occupations.

The number of women in the workforce has increased dramatically over time. Women have also approached equality with men in a number of areas. The U.S. Bureau of Labor Statistics, in their 2011 report entitled "Women in the Labor Force", noted that the majority of these changes have taken place since the 1970s. This report also highlights the increased number of women in the workforce with college degrees (from 11% in 1970 to 36% in 2010) and the larger number of women who hold full-time jobs. In addition, women have begun to close the pay gap and, in 2010, earned approximately 81% of the money men earned. This represents an improvement from 1970, in which women earned only 62% of the earnings of men. The United States workforce is currently made up of, approximately, 47% women (U.S. Bureau of Labor Statistics, 2011).

In spite of this clear evidence of progress made by women, the U.S. Bureau of Labor Statistics report "Women in the Labor Force" also shows continued differences in career choices and outcomes of women and men. Women are still underrepresented in traditionally masculine careers (e.g. in math- and science-related fields) and overrepresented in traditionally feminine

careers (e.g. clerical and service fields). Furthermore, careers chosen by women in disproportionately large numbers are often those careers that have lower prestige, status, and salary than their more “masculine” counterparts. For example, 91.9% of registered nurses are women, but women make up only 32.3% of physicians and surgeons (U.S. Bureau of Labor Statistics, 2011).

Many researchers have addressed the rise of feminism and increases in feminist attitudes in women and men over time. Twenge (1997) reported that college-aged women and men demonstrated more feminist attitudes in the 1990s than in the 1970s. In 2011, she found that college students in the 2000s showed more support for gender equality than did previous generations of college students.

If structural barriers to the equal employment of women are currently absent or weakened, it would seem possible for women to reach this equal employment and to reduce sex segregation in the workforce. A decrease in prejudicial attitudes toward women, along with an increase in endorsement of feminist attitudes, on a societal level, would also suggest that women may be able to close the gaps discussed above. However, as has also been demonstrated here, this has not necessarily been the case. Thus, questions remain related to the causes of these continued discrepancies.

The present study attempts to address some of these questions through the examination of various gender- and conservatism-related factors that may influence beliefs about women, men, and careers. Ultimately, these beliefs may impact career choice. The relationships between these traits and vocational constructs will be explored, in addition to the ways in which perceptions of the femininity and masculinity of occupations are related to the perceived gender of the person working in the occupation.

CHAPTER 2. LITERATURE REVIEW

Overview

The following literature review will cover a variety of topics related to the hypotheses of the present study. The review will begin with a discussion of gender as a psychological construct, including the study of the dimensionality of femininity and masculinity, and the measurement of the construct. Vocational interests, gender differences in vocational interests, and potential influences on gender differences in general will follow. Finally, the review will turn to discussion of attitudes toward women, religious fundamentalism, right-wing authoritarianism, and the relation of these constructs to prejudice and career choice. It is proposed, in this study, that these constructs may relate to traditional beliefs about appropriate roles for women and men and therefore may contribute to restriction of occupational exploration, more sex-typed vocational interests, and differential career choices in women and men.

Gender as a Psychological Construct

It is common to differentiate between people on the basis of certain aspects of identity. Gender, a facet of identity that influences many areas of life, is one of the most common ways that we differentiate between individuals. Gender is liable to impact the way one interacts with the world, the way others respond to the individual, and other factors such as vocational choices (Egan & Perry, 2001; Bussey & Bandura, 1999). It is no surprise, given its influence, that gender is one of the most frequently studied constructs in psychology (Egan & Perry, 2001; Hyde, 1990; Petersen & Hyde, 2010). Knowledge of the large influence of gender, combined with awareness that biological sex does not necessarily determine gender identity, led researchers to begin to differentiate between biological sex and gender. This distinction arose in the 1950s (Money, Hampson, & Hampson, 1955, a, b; 1957) and was responsible for greater opportunities in

psychological research to examine social influences on gender differences, rather than only biological influences (Crawford & Kaufman, 2006).

Femininity and Masculinity

From the 1950s and 1960s, researchers began to describe gender roles in terms of femininity and masculinity. Those with gender roles described as feminine exhibited more feminine traits, or traits traditionally associated with women. Those with gender roles described as masculine exhibited more masculine traits, or traits traditionally associated with men. It was typically assumed that a person exhibiting more feminine traits would also be shown to exhibit fewer masculine traits and vice versa. Therefore, it was presumed that femininity and masculinity existed on a single bipolar dimension, with femininity on one end and masculinity on the other (Gough, 1964; Terman & Miles, 1936). In other words, the possession of a large number of feminine traits would preclude the possession of masculine traits, and vice versa.

As research on gender progressed, researchers started to raise new questions and more closely examine certain assumptions about the nature of femininity and masculinity. Researchers became motivated to determine what, precisely, the constructs of femininity and masculinity were accessing or describing. In addition, other researchers began to consider the underlying dimensionality of femininity and masculinity, questioning the traditional assumption that these constructs exist on a single bipolar dimension. Some researchers have proposed new terms for what has been traditionally called femininity and masculinity, feeling that other terms more accurately express what is being described. In 1955, Parsons and Bales suggested the utilization of the terms 'expressivity' and 'instrumentality' in place of femininity and masculinity, respectively. Expressivity has been described as a concern for interpersonal relations and caring for others. Instrumentality, on the other hand, has been defined as an emphasis on solving

problems and getting things done and being more concerned with the self than with relationships with others (Bem, Martyna, & Watson, 1976).

Expressivity and instrumentality have frequently been described in terms that strongly resemble traditional gender roles for women and men. For example, Parsons and Bales (1955) discussed the roles of expressivity and instrumentality in systems such as families. In general, the expressive leader of the family could be said to be responsible for the inner workings of the family system, such as mediating disputes and providing individual care to family members. The instrumental leader could be seen as more responsible for the functions and tasks of the family related to the outside world. This person may frequently take on the role of making important decisions and problem-solving. Parsons and Bales (1955) stated that women frequently adopt expressive roles in systems, while men are more likely to adopt instrumental roles in systems. Researchers have shown that people tend to view expressive traits as characteristic of the ‘ideal woman’ and instrumental traits as characteristic of the ‘ideal man’ (Spence & Helmreich, 1978).

Femininity and masculinity have also been alternatively termed ‘communion’ and ‘agency’, respectively (Bakan, 1966). The descriptions of these terms are very similar to descriptions of expressivity and instrumentality, as well as femininity and masculinity. Communion has been described as a primary interest in relationships with others, being part of a system, and helping others achieve their goals. Agency, on the other hand, could be seen as an emphasis on personal goals and a recognition of oneself as an individual (Bakan, 1966; Helgeson & Fritz, 1999). These alternative terms for femininity and masculinity, along with others discussed above, strongly resemble descriptions of traditional gender roles and highlight the differential roles women and men often adopt. The expression of traditional gender roles is often seen in career choice, with women often taking, for example, caretaking and serving positions while men may be more likely to be found in leadership and supervisory positions.

Dimensionality of Femininity and Masculinity

As previously noted, early researchers made assumptions that femininity and masculinity existed on opposite ends of one bipolar dimension (Gough, 1964; Terman & Miles, 1936). This conceptualization assumed that those with many feminine traits would have fewer masculine traits and vice versa. More explicitly, women and men could not have both many feminine and many masculine traits. The possession of large numbers of feminine traits would preclude the possession of large numbers of masculine traits, and vice versa. Furthermore, this perspective implies that women, who are often expected to possess predominantly feminine traits, may be unsuitable for careers perceived as requiring large numbers of masculine traits. The same would hold true for men, expected to possess masculine traits, pursuing careers perceived as requiring largely feminine traits.

Others began to question this assumption, suggesting that femininity and masculinity were separate constructs varying independently of one another (Spence, Helmreich, & Holahan, 1979). This conceptualization allows for the possibility that a person, female or male, could exhibit feminine and masculine traits in more equal numbers than previously assumed. Researchers began to examine the evidence for the single bipolar dimension assumption. In general, they concluded that there was sufficient evidence to warrant further study of the idea that femininity and masculinity were two separate orthogonal dimensions (Constantinople, 1973; Spence & Helmreich, 1978). This idea lies in opposition to the traditional assumption that femininity and masculinity exist on one bipolar dimension and vary in concert with each other, with the possession of one precluding the possession of the other.

As a result of these developments, some researchers turned their attention to the development of new measures to assess femininity and masculinity. The most prominent example of this work was the Bem Sex Role Inventory (BSRI; Bem, 1974). The BSRI considers femininity and masculinity as separate, independently varying dimensions. Bem developed items for

feminine and masculine subscales by determining characteristics and traits that were viewed as socially desirable for women and men, respectively. A third subscale featured gender-neutral socially desirable and undesirable traits. One of the notions that shaped the development of the BSRI was androgyny, the existence of feminine and masculine traits in the same individual (Bem, 1974). Bem proposed that if this new conceptualization of femininity and masculinity as separate dimensions proved true, evidence of androgyny could be found in research. If androgyny exists, femininity and masculinity cannot be seen as existing on opposite ends of a single bipolar dimension.

Bem believed that individuals, through the use of the BSRI, could be determined to be sex-typed or androgynous. Specifically, an individual was sex-typed if she or he had large differences in scores on the feminine and masculine subscales. On the other hand, if differences were small, the individual would be labelled androgynous (Bem, 1974). Later, researchers began to question whether distinctions should be made among individuals with small differences in feminine and masculine subscale scores, depending on whether differences were small due to low or high numbers of both feminine and masculine traits. Eventually, it became common to make this distinction and to discuss the following four groups: 1) feminine (high femininity and low masculinity), 2) masculine (high masculinity and low femininity), 3) androgynous (high femininity and high masculinity), and 4) undifferentiated (low femininity and low masculinity), into which individuals could be divided (Bem, 1977; Spence, Helmreich, & Stapp, 1975).

Gender and Psychological Well-Being

Researchers have long been interested in the relationship between sex type and psychological health and well-being. Traditionally, many assumed that people would be most psychologically healthy if their sex type matched their biological sex. In other words, among women, those who were most feminine would be most healthy. Among men, those who were most masculine would be most healthy (Kagan, 1964;

Mussen, 1969). Other researchers, however, believed that androgyny would be more likely to predict good psychological health (Block, Von der Lippe, & Block, 1973; Heilbrun, 1968).

Empirical evidence seemed to suggest that androgynous individuals were most psychologically healthy (Bem& Lewis, 1975; Bem&Lenney, 1976; Block, von der Lippe, & Block, 1973; Spence, Helmreich, &Stapp, 1975). However, further research demonstrated that, rather than the possession of both feminine and masculine traits, it was largely the possession of masculine traits that was responsible for individuals with better scores on measures of psychological health, such as higher self-esteem and less anxiety (Bassoff& Glass, 1982; Whitley, 1983, 1985). Researchers began to consider the reasons for the positive impact of the possession of masculine traits. One researcher (Cook, 1985) described a ‘masculine supremacy effect’, existing in society, that values masculine traits over feminine traits and sets up more masculine individuals for better psychological health. Egan and Perry (2001) found evidence supporting this assertion that masculine traits are more highly valued and, in addition, that this tendency to prefer masculine traits is stronger in societies in which the power and status differential between women and men is wider (men have more power and status than women).

Hofstede (2001) showed that the United States still leans toward greater gender differentiation, despite the advances women have made. Women and men continue to possess, in general, differing amounts of status and power. This fact is often related to the jobs women and men pursue. Although many structural and legal barriers to women’s advancement have been removed, women are still underrepresented in traditionally masculine jobs, which often have higher prestige than traditionally feminine jobs. Some researchers, therefore, have turned to examination of vocational interests as one factor that could be contributing to the different vocational choices made by women and men.

Vocational Interests

Vocational interests have been extensively studied as integral to and predictive of career choice. Robust gender differences in vocational interests have been found that correspond to gender differences in career choice and likely contribute to the differential rates in which women and men enter various careers. Furthermore, gender differences in vocational interests may relate to the perceptions of the femininity and masculinity of various careers. These topics will be discussed in more detail in this section.

Holland's Theory of Vocational Choice

Vocational interests have been most often described through the use of Holland's RIASEC model (1959, 1997). Holland's model suggests the existence of six vocational interest types: 1) Realistic, 2) Investigative, 3) Artistic, 4) Social, 5) Enterprising, and 6) Conventional (RIASEC). Interest types represent typical modes of interacting with the world and are assumed to describe people and work environments. This makes it possible to talk about the degree to which a person's vocational interest type matches the type of the environment she or he is in or considering, also known as person-environment fit (Holland, 1959; 1997).

The *Realistic* type tends to prefer hands-on activities with practical goals. This type is associated with the use of tools, objects, or machines. This person would be likely to see her or himself as being technically, athletically, or mechanically skilled (Holland, 1997). This type is likely to be considered more masculine than feminine, given traditional definitions of these constructs and the activities and skills associated with the type.

The *Investigative* type often prefers activities in which she or he can work toward the resolution of mathematical or scientific problems. She or he is likely to value scholarly and scientific work and to see her or himself, accordingly, as logical, intelligent, precise, and capable

of doing such work (Holland, 1997). This type, and its activities and values, are seen as more traditionally masculine than feminine.

The *Artistic* type is often comfortable with ambiguity in a workspace or project and prefers activities in which she or he can use creativity and expressivity to create something new, such as art or music. This person will likely see her or himself as original, independent, and a free-thinker (Holland, 1997). This type, given the expressivity that is at its core, is likely to be seen as more feminine than masculine.

The *Social* type prefers activities in which she or he is able to teach, help, or provide information to others. She or he is likely to value assisting others through interpersonal interaction and working toward the resolution of social problems (Holland, 1997). These considerations, along with the fact that this type is typically associated with strong interpersonal skills, contribute to make this type representative of traditional femininity.

The *Enterprising* type generally enjoys activities in which she or he can work with others to lead or persuade them. This person would be likely to value achievement in certain specialized arenas, such as business or politics, and would, in general, see her or himself as ambitious, confident, and persuasive (Holland, 1997). This type's activities and skills are fairly consistent with traditional notions of masculinity, although significant differences in Enterprising interests have not been found (Su, Rounds, & Armstrong, 2009).

The *Conventional* type prefers working with data, such as numbers or records, to present and store it in a systematic and orderly way (Holland, 1997). She or he would likely value achievement in settings such as business and would enjoy establishing and following set plans for carrying out tasks. Some characteristics of this type seem more traditionally feminine, such as the preference for supportive tasks. However, other characteristics, such as the emphasis on goal attainment, would seem more traditionally masculine.

These six types form a hexagonal structure that is based upon the degree of similarity between the types (see Figure 1). Types that share more similarities with each other are found closer together within the structure. As mentioned earlier, the types describe both people and work environments and it is assumed that job satisfaction will increase with greater congruence between the types of the person and the environment (Holland, 1997). Researchers have found support for this model and have highlighted its contribution to research, the development of related psychological measures, and career counseling (Armstrong, Hubert, & Rounds, 2003; Darcy & Tracey, 2007; Su et al., 2009).

Prediger's Bipolar Dimensions

Prediger proposed that there are two bipolar dimensions underlying the hexagonal structure of the RIASEC interests, Things-People and Data-Ideas (1982). Later, work tasks were described that represent these bipolar dimensions (Prediger & Swaney, 2004). 'Things' refers to non-personal objects such as machines and tools. 'People' refers to a preference for interpersonal helping, teaching, or supporting activities. Therefore, it can be seen that the Things-People bipolar dimension emphasizes the difference in activities that are largely non-personal or largely interpersonal. 'Data' refers to work with facts or numbers and typically impersonal activities, while 'Ideas' refers to work with theories or abstract concepts that are intrapersonal in nature. The Data-Ideas bipolar dimension emphasizes the difference in activities that are largely non-personal or largely intrapersonal.

Gender Differences in Vocational Interests

Significant differences have been found between women and men in vocational interests. One meta-analysis (Su et al., 2009) found that women are significantly more interested than men in Artistic, Social, and Conventional areas and activities, while men are significantly more interested than women in Realistic and Investigative areas and activities. As was stated earlier,

no significant gender differences were found in Enterprising interests. These researchers also examined gender differences in interests related to Prediger's bipolar dimensions. Women were significantly more interested in People and men were significantly more interested in Things. Gender differences on the Data-Ideas bipolar dimension were small.

Bubany and Hansen (2011) conducted a cross-temporal meta-analysis of vocational interests. A primary purpose of this analysis was to determine whether or not gender differences in interests have changed over time. Analyzing samples from 1976 to 2004, with a total sample size of 33,520, these authors did indeed find that some changes had taken place. First, women in later years were significantly more interested in the Enterprising area than women in earlier years. Second, interests of men in the Realistic, Investigative, and Artistic areas decreased over time. These changes, taken together, may suggest a movement toward fewer gender differences in interests, although this conclusion should not be accepted without proper consideration of results that were *not* found in this study. Specifically, women did not show increases in the traditionally masculine Realistic or Investigative areas. Men did not show increases in the traditionally feminine Social area. Clearly, significant gender differences in interests still exist and are likely impacting the career choices of women and men.

Vocational interests relate to the representation of women and men in various areas of work. A well-known example of this is the underrepresentation of women in STEM (Science, Technology, Engineering, and Mathematics; Ceci, Williams, & Barnett, 2009) fields. STEM fields are often very Realistic and Investigative in nature, precisely the types in which men are more likely to express interest. In addition, jobs in which women make up a larger percentage often are represented by interest types, such as Social, Artistic, and Conventional, that women express more interest in (O*NET OnLine, 2012). The influence of gender differences in interests

found along the Things-People dimension can be seen here as well. A valuable area of research has examined the influences and factors that work to create or maintain these gender differences.

Influences on Gender Differences

Researchers have examined a variety of factors that may contribute to the differences between women and men, including differences in vocational interests. Some have focused on the development of differences and gender identity, particularly in children. Others have focused more attention on the factors that serve to maintain gender differences and gender identity. In addition, potential biological influences on observed gender differences in attitudes and behavior have been investigated, and will be discussed here.

Gender Role Socialization

Gender role socialization involves the development and maintenance of gender identity and, therefore, gender differences. First, the development of gender identity in children will be discussed. Then, this review will move to discussion of specific factors that serve to develop and maintain gender identity and differences over the lifespan. Researchers have demonstrated that self-knowledge related to gender identity develops fairly early. Specifically, gender identity begins with a knowledge of one's membership in a gender category (female or male), which eventually progresses to an understanding that gender typically does not change over time (Slaby & Frey, 1975; Egan & Perry, 2001). Research on the origins of this self-knowledge related to gender is valuable for its eventual relation to the development of gender differences in a variety of areas, including vocational choice.

Those studying the development of gender identity and differences in children have often focused on children's play. Play, for children, is a primary means of social interaction and is therefore rife with information about what children have learned and are learning about gender identity. By three years of age, children often have developed a preference for same-sex playmates (Fagot, 1991; Howes, 1988; Howes & Phillipsen, 1992), a preference that has not been

found in younger children (La Freniere, Strayer, & Gauthier, 1984). Furthermore, others have examined the style of play amongst children and have found that children tend to play in ways consistent with societal expectations and traditional norms for their gender (Maccoby, 1998). Girls often engage in cooperative play, while boys often engage in competitive play. Theories and models have been proposed as attempts to explain the gender identity development and, therefore, gender differences. One will be reviewed briefly here, gender schema theory.

Gender Schema Theory

Proposed by Bem in 1981, gender schema theory is one explanation offered for the differences that exist between women and men. A 'schema' is a cognitive structure through which people organize perceptions and information. Her theory suggests that children learn to see the world in gendered terms and to handle new information by processing it through what they have been taught about gender. Furthermore, children learn that they are expected to develop and maintain gender-congruent behavior, which often leads to development of traits/skills associated with a certain gender and an assumption that others of their gender will show similar traits (Bem, 1981, 1983; Martin & Halverson, 1981; Martin, Ruble, & Szkrybalo, 2002). Children get messages from people in their lives, such as parents, about the appropriateness or inappropriateness of certain activities and behaviors. Parents are likely to show support for sex-typed activities. They are likely to encourage behavior that is gender-congruent, particularly for boys (Fling & Manosevitz, 1972; Lansky, 1967; Maccoby & Jacklin, 1974).

Gender Stereotypes in Advertising

Eisend (2010) conducted a meta-analysis of gender roles in advertising to determine the extent to which gender stereotyping in advertising occurs and how it has changed over time and to provide further evidence in a debate regarding whether advertising typically shapes or is shaped by societal developments. He concluded that gender stereotyping, in which women and

men are portrayed in traditional gender roles, occurs less frequently than in the past. Still, this change is due almost completely to changes occurring in countries in which gender differentiation is greater and masculine traits are more highly valued (also called 'high masculinity countries'). In his meta-analysis, four components of gender stereotypes were discussed: 1) trait descriptors, 2) physical characteristics, 3) role behaviors, and 4) occupational status. He concluded that gender stereotyping was most likely to occur within the component of occupational status, meaning that women and men were likely to be shown in stereotypically traditional jobs and stereotypically traditional locations (e.g. the home, the workplace outside of the home) for their gender. Finally, he examined evidence from his meta-analysis for the purpose of lending support to either the 'mold' argument or 'mirror' argument that exists regarding the relationship between gender stereotyping in advertising and gender-related developments in society. The 'mold' argument holds that gender stereotyped advertising is likely to produce gender-related developments and value changes, while the 'mirror' argument holds that gender stereotyped advertising reflects changes in society. Eisend's evidence suggests that advertising is more likely to depend on changes in society, supporting the 'mirror' argument.

Gender Priming

Some researchers have studied the effects of gender priming on the likelihood that women will express interest or confidence in various occupations. Steele and Ambady (2006) conducted a series of three studies designed to determine the degree to which gender priming, or a condition in which female gender was made salient, influenced female participants' liking for art- (stereotypically female) or math-related (stereotypically male) activities. Participants were assigned to female, male, or neutral conditions depending on the study and were primed either subliminally (i.e. flashing words for 80 ms in front of participants) or more explicitly (i.e. asking about participant's gender and whether she lived in a co-ed or single-sex environment). The researchers found that participation in a female-gender priming condition, as opposed to those in a

male-gender priming or neutral condition (depending on the study), resulted in the female participants expressing greater preference for arts-related activities.

Another researcher, Oswald (2008) conducted a similar study assessing the impact of gender priming. Again, female participants' gender was made salient, this time through a questionnaire that assessed gender identification. The participants whose gender was made salient expressed significantly more preference for and confidence in their ability to succeed in stereotypically feminine occupations (e.g. nurse, teacher), in comparison to those participants who did not complete the gender priming questionnaire.

The results of Oswald's (2008) and Steele and Ambady's (2006) studies suggest several factors that may be contributing to the differential vocational choices made by women. Gender priming, which can take place in many forms, can influence the degree to which women feel confident in their ability to do well in various jobs and express preferences for certain jobs over others. Self-efficacy, or the amount of confidence a person feels in her or himself to perform particular tasks, could therefore be related to the choices women make about careers. In fact, researchers have shown that people are likely to eliminate occupations from consideration if they feel they will not be successful in them. In a study of children ages 11 to 15, females demonstrated greater self-efficacy for traditionally feminine occupations while males reported greater self-efficacy for traditionally masculine occupations (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001). A concept related to self-efficacy, stereotype threat, will be discussed next.

Stereotype Threat

Many occupations and tasks have been traditionally considered more suitable for females or more suitable for males. In addition, stereotypes regarding the abilities of, for example, women and men in math-related activities exist. Specifically, a common stereotype is that women perform worse on math-related tasks than do men. Some researchers have examined the role that stereotypes such as this play in the actual performance of women and men

on various tasks. Essentially, stereotype threat could be considered a form of priming, in that it primes women to consider actual or perceived gender differences in these areas. Stereotype threat predicts that women will perform worse on certain tasks when they are made aware of related stereotypes (Nguyen & Ryan, 2008). Indeed, women have been found to perform worse than men on math-related activities when they are told that a task (i.e. a test) can detect gender differences, but this does not hold true when women are told that a task is gender-fair (Halpern, Benbow, Geary, Gur, Hyde, & Gernsbache, 2007). Self-efficacy beliefs clearly have the power to impact performance.

Biological Preparedness

Alexander (2003) has argued that biological preparedness for gender roles may combine with social learning to funnel women and men into traditional gender roles. Specifically, she studied children's preferences for certain toys and proposed that female and male children may be disposed to choose different toys due to evolved differences in visual processing. Early human females often performed tasks such as childcare and gathering food.

These early tasks may have contributed to modern females' stronger ability, in comparison to males, in facial expression processing and a greater sensitivity to the features of objects. Males often have greater spatial ability than females, which may have developed due to the tasks of early males, such as hunting.

Children may, according to Alexander (2003), be predisposed by biological influences to choose certain toys over others. For example, girls are often drawn to dolls or 'warm-colored objects', which may reflect the greater abilities of females in facial expression processing and greater sensitivity to the features of objects, such as colors. Boys, on the other hand, often play with balls or trucks, which would necessarily involve motion and allow them to utilize their spatial abilities. As can be seen, this theory emphasizes the potential biological influences of gender roles, as opposed to the socialization methods discussed earlier. Both are likely to have

influences in the development and maintenance of gender roles. Gender roles, in turn, are likely to impact the vocational choices made by women and men.

Gender Differences in Ability

A widely-held assumption is that women and men actually differ in their abilities and that this contributes to the differential vocational choices made by women and men. Men, for example, are believed by many to possess greater abilities in math and science than women. Then, it is often assumed that differences in abilities at least partially account for the underrepresentation of women in science, engineering, and mathematics. However, researchers have not found empirical support for the assumed differences in abilities or differences in other characteristics (e.g. self-esteem) (Hyde, 2005; Maccoby & Jacklin, 1974; Spelke, 2005). Hyde (2005) proposed a ‘gender similarities hypothesis’ which suggested that women and men are similar on most psychological variables.

Attitudes toward Women and Career Choice

Thus far, a wide variety of potential explanations for gender differences in vocational interests and career choice have been described. Various theories, such as the socioanalytic model of personality (Hogan & Roberts, 2000) and Gottfredson’s theory of circumscription and compromise (1981) have been proposed to account for internal and external factors influencing career choice. The socioanalytic model of personality assumes that factors within and outside of the individual affect interests and choices. For example, an individual’s personality and self-efficacy beliefs, as well as societal messages regarding appropriate gender roles, may influence the career choice the individual ultimately makes (Hogan & Roberts, 2000). Gottfredson theorized that, as part of the normal career development process, women and men make decisions about careers that are and are not suitable or attainable for them and eliminate options as a result of these decisions. Gender is influential in this process, contributing to the careers individuals feel are appropriate for them. Specifically, people possess ‘occupational images’ about careers, which

are generalizations about specific careers. Related to gender, women and men form occupational images that provide information about the femininity or masculinity of careers (Gottfredson, 1981).

Personality and Vocational Interests

Research related to personality traits and RIASEC interests (Holland, 1959; 1997) have led to the consideration of attitudes toward women and their impact on career choice. Sullivan and Hansen (2004) explored correlations between the RIASEC types and the lower-order personality traits of the Big Five personality factors. The Big Five model of personality conceptualizes personality through the use of five trait dimensions: 1) Extraversion, 2) Agreeableness, 3) Neuroticism, 4) Openness, and 5) Conscientiousness (Goldberg, 1990; John & Srivastava, 1999; McCrae & Costa, 1997). Significant findings included a negative correlation between Openness to Feelings and the Investigative type and a positive relationship between Extraversion and the Social type. Larson, Rottinghaus, and Borgen (2002) found significant relationships between Openness and the Investigative, Artistic, and Social types; Agreeableness and the Social type; Conscientiousness and the Conventional and Enterprising types; and Neuroticism and the Enterprising type.

Conformity to Traditional Masculine Norms and Men's Vocational Interests.

Related research has involved exploration of traditional masculine norms in men and traditionally masculine vocational interests. Tokar and Jome (1998) demonstrated that men in more traditionally masculine jobs endorsed more anti-feminine norms and that, furthermore, men who endorsed more anti-feminine attitudes showed greater interest on the Things end of the Things-People dimension and less interest in the Artistic, Enterprising, and Social Holland RIASEC types. Mahalik, Perry, Coonerty-Femiano, Catraio and Land (2006) presented similar findings. Men who more strongly endorsed traditional masculine norms were more likely to have interests

in Holland's Realistic and Enterprising areas than in the other areas. These findings suggest that attitudes toward women may be related to vocational interests.

Religious Fundamentalism

In 1966, Allport expressed a paradox that he, at the time, wished to explore. He noted that religious traditions often advocate and practice 'brotherhood' while simultaneously being associated with prejudice. In his own words, '...there is something about religion that makes for prejudice, and something about it that unmakes prejudice' (p. 447). Since then, researchers have studied the relationship between religiosity and prejudice. Through this process, many constructs have been proposed to potentially account for this link, such as immature and mature religion, extrinsic and intrinsic orientation, and low quest orientation and high quest orientation (Altemeyer & Hunsberger, 1992; Allport, 1966; Batson, 1976; Herek, 1987; Mavor, Louis, & Laythe, 2011). Religious fundamentalism and right-wing authoritarianism have also arisen as prominent players. As will be seen in the following sections, religious fundamentalism is often associated with beliefs in traditional gender roles and conservative gender attitudes. Therefore, it is possible that this construct may relate to traditionalism of career choice for women and men.

Various definitions of religious fundamentalism have been described by researchers (Emerson & Hartman, 2006). Popular definitions often root fundamentalism in modernity or describe specific characteristics of fundamentalism. A definition proposed by Antoun (2001) and highlighted by Emerson and Hartman, is as follows: 'a religiously based cognitive and affective orientation to the world characterized by protest against change and the ideological orientation of modernism' (p. 130). The connection between fundamentalism and modernity will be discussed in the next section concerning the rise of fundamentalism. Altemeyer and Hunsberger (1992)

provided a more detailed definition featuring common characteristics of fundamentalism:

The belief that there is one set of religious teachings that clearly contains the fundamental, basic, intrinsic, essential, inerrant truth about humanity and deity; that this essential truth is fundamentally opposed by forces of evil which must be vigorously fought; that this truth must be followed today according to the fundamental, unchangeable practices of the past; and that those who believe and follow these fundamental teachings have a special relationship with the deity. (p. 118)

Almond, Sivan, and Appleby (1995) highlighted common characteristics of fundamentalist groups. Some (i.e. Iannaccone, 1997) have pointed out that Almond and colleagues' list may not be perfect, given that some groups typically labelled as fundamentalist do not display all of the characteristics, while other groups that are not typically labelled as fundamentalist do, in fact, display all of the characteristics. However, the list of characteristics may still be helpful in elucidating the construct of religious fundamentalism. Specifically, Almond and colleagues divided the nine characteristics of fundamentalist groups into two categories, Ideological and Organizational. The Ideological characteristics are: 1) reactivity to the marginalization of religion, 2) selectivity (chooses aspects of religious tradition to defend, particularly those that separate the group from mainstream society), 3) dualistic worldview, 4) absolutism and inerrancy, and 5) millennialism and messianism. The Organizational characteristics are: 1) elect, chosen membership (members are called or set aside for a special purpose), 2) sharp boundaries (between members and non-members), 3) authoritarian organization (often organized around leaders who may be said to be chosen by the deity), and 4) behavioral requirements.

The term 'fundamentalism' was first used to describe a Protestant religious group in the United States that existed from approximately 1870 to 1925 (Emerson & Hartman, 2006). This group, along with present-day fundamentalist groups, was formed largely as a reaction against movements within Protestantism to modernize the religion. In contrast to present-day groups,

however, this group primarily directed its attention at other Protestant groups, rather than what it saw as a more secular society. The story of this group illustrates common themes behind the formation of present-day fundamentalist groups. Many researchers maintain that fundamentalism cannot be understood outside of the context of modernity, since it is seen as a direct response to modernization and the secularization of society (Emerson & Hartman, 2006). Fundamentalist groups have been found in countries in Africa, the Middle East, North America, Latin America, and Asia and exist within a variety of major religions, including Judaism, Islam, Christianity, and Buddhism, among others (Emerson & Hartman, 2006).

Researchers have studied religious fundamentalism and its connection to prejudice, which in turn may be connected to the ways in which people perceive careers and their ultimate decisions about which careers they believe are suitable for them as women or men. In addition, the connection between religious fundamentalism and another construct, right-wing authoritarianism, has been explored. Right-wing authoritarianism, along with being connected to fundamentalism, has also been found to be associated with prejudice. In the next section, this construct will be described in order to prepare for a more thorough discussion of the relation of these two constructs to prejudice.

Right-Wing Authoritarianism

Right-wing authoritarianism has been described as a “syndrome” (Altemeyer & Hunsberger, 1992, p. 114). A common means of defining or describing the construct is through discussion of its three components as espoused by Altemeyer (2006): 1) authoritarian submission, 2) authoritarian aggression, and 3) conventionalism. Authoritarian submission refers to a willingness to submit to authorities deemed legitimate. Authoritarian aggression is defined as hostility or aggression toward those viewed as deviating from some established norm. Finally, conventionalism can be viewed as adherence to societal norms as

perceived by the individual and, in addition, a strong belief that others should adhere to these norms as well.

Those high in right-wing authoritarianism, or authoritarians, tend to be relatively prejudiced. This will be discussed in more detail in the next section. Other characteristics of authoritarians have been studied and described as well. Authoritarians tend to report religious training in childhood that taught or led them to submit to authority, show hostility to outsiders, and follow relatively strict behavioral rules (Altemeyer, 1988). Authoritarians also tend to be relatively punitive and to believe in physical punishment of children. They have a tendency to use double standards frequently in their differential reaction to, for example, the actions of right-wing or left-wing governments, often favoring an action of a right-wing government that they would disapprove of in a left-wing government (Altemeyer, 1988). Finally, authoritarians may often view themselves as individualists, in spite of their strict adherence to set norms, and be self-righteous, in spite of being as likely to lie and cheat as others (Altemeyer, 1988).

Altemeyer (2003) suggested that ‘fundamentalism seems to be the way right-wing authoritarians respond to the religious impulse’ (p. 18). He has devised scales to measure both religious fundamentalism and right-wing authoritarianism (Religious Fundamentalism Scale, 1992, 2004; Right-Wing Authoritarianism Scale, 1996, 2006) and states in this 2003 article that correlations between these scales typically fall in the .70s. It would appear that the two constructs share some relationship, given the relatively high level of correlation between them.

Hathcoat and Barnes (2010) attempted to explain the relationship between the two constructs in terms of partial mediation. Specifically, they hypothesized a mediation relationship in which beliefs in ‘certain and simple’ (p. 73) knowledge and an all-knowing authority were derived from religious fundamentalism and are then partially responsible for the maintenance of authoritarianism. 227 participants completed the Revised Religious Fundamentalism Scale

(Altemeyer, 2004), the Right-Wing Authoritarianism Scale (Altemeyer, 1996), and the Epistemic Belief Inventory (Schraw, Bendixen, & Dunkle, 2002). These researchers found support for their partial mediation hypothesis and, therefore, their proposition regarding the relationship between religious fundamentalism and right-wing authoritarianism (Hathcoat & Barnes, 2010).

Religious Fundamentalism, Right-Wing Authoritarianism, and Prejudice

Religious fundamentalism and right-wing authoritarianism emerged as constructs meant to partially explain the relationship between religiosity and prejudice (Mavor, Louis, & Laythe, 2011). As can be seen from the descriptions provided above, these are distinct constructs. However, as was demonstrated by Altemeyer (2003), the correlation between these two constructs is fairly high. In addition, both have been found to at least partially account for the relationship between religiosity and prejudice (Altemeyer & Hunsberger, 1992; Johnson, Rowatt, Barnard-Brak, Patock-Peckham, LaBouff, & Carlisle, 2011; Mavor, Louis, & Laythe, 2011). The present study will address the potential link between prejudice rooted in these constructs and participants' perceptions of the femininity and masculinity of the RIASEC types (Holland, 1959; 1997). Perceptions of careers may influence the degree to which we believe we (as women or men) are suitable for these careers.

Altemeyer's Religious Fundamentalism Scale (1992, 2004) and Right-Wing Authoritarianism Scale (2006) have been frequently utilized to assess the relationship between the constructs and prejudice. Jonathan (2008) used these scales with a sample of 96 students to determine the effect of the constructs on prejudice against homosexual people. Of these participants, approximately half identified themselves as Christian, either Catholic or Protestant, while the other half identified their religious affiliation as Judaism, Islam, or 'other'. This researcher found that higher levels of religious fundamentalism and right-wing authoritarianism each predicted more negative attitudes toward homosexual people. Hunsberger (1996) reported findings with a sample of non-Christian individuals (Muslims, Hindus, and Jews), which strongly

resembled Jonathan's findings with a group of Christian and non-Christian participants. Hunsberger found that participants in the three non-Christian groups who were higher in religious fundamentalism and right-wing authoritarianism showed more negative attitudes toward homosexual people. Schwartz & Lindley (2005) found a similar connection between religious fundamentalism and homophobia. A 2009 (Whitley) meta-analysis examined all relevant literature and reported a consistent positive relationship between religious fundamentalism and homonegativity. Other forms of prejudice, such as racial or ethnic prejudice, have been studied as well. Rowatt and Franklin (2004), for example, demonstrated a positive relationship between right-wing authoritarianism and implicit racial prejudice. Furthermore, in a 2010 meta-analysis, Hall, Matz, and Wood found that religious fundamentalism holds a consistent positive relationship with racial prejudice. The relationship between religious fundamentalism, right-wing authoritarianism, and sexism or traditional beliefs about women have also been examined.

Emerson and Hartman (2006) highlighted the 'consistent finding...that fundamentalists are strong traditionalists on matters of family and gender relations. Patriarchal families, with distinct and separate roles for males and females, are core components of fundamentalist beliefs and practices across religions and continents' (p. 135). Several writers have discussed the connection between adherence to traditional gender norms and religious fundamentalism in particular (i.e. Bendroth, 1999; Riesebrodt, 1993 [1990]). Indeed, opposition to changes in acceptable sexual activity, gender norms, and family structures have been rallying points for many fundamentalists and have spurred political action (Emerson & Hartman, 2006). Fundamentalists may be more likely than those who are lower in religious fundamentalism to believe in and adhere to, for example, traditional gender norms, which may in turn influence their likelihood of selecting careers they perceive as being unsuitable for their gender.

Hunsberger, Owusu, and Duck (1999) conducted a cross-cultural study of students in Canada and Ghana, reporting findings that, in both countries, religious fundamentalism and right-wing authoritarianism were associated with traditional or sexist attitudes toward women. Higher levels of religious fundamentalism and right-wing authoritarianism went along with more traditional and sexist attitudes toward women. In addition, Sheldon and Parent (2002) found a positive correlation between religious fundamentalism and both old-fashioned and modern sexism, while Nagoshi, Adams, Terrell, Hill, Brzuzy, and Nagoshi (2008) found a similar positive correlation between religious fundamentalism and hostile and benevolent sexism.

Given the well-established link between, in particular, religious fundamentalism and prejudice, some researchers have turned their attention to potential explanations for this link. Cognitive style and various cognitive patterns, such as personal need for structure, preference for consistency, and need for closure, have been examined as potential mediators in the relationship between religious fundamentalism and prejudice. Specifically, researchers have hypothesized that religious fundamentalists possess certain cognitive tendencies that make them more likely to hold prejudicial views. Religious fundamentalists may differ in the complexity and process of their thought (Hill, Terrell, Cohen, & Nagoshi, 2010; Hunsberger, Alisat, Pancer, & Pratt, 1996) and be more likely to engage in convergent cognition that seeks to confirm prior teachings and attempts to reinterpret new information through the lenses of those teachings.

On the other hand, those who are lower in religious fundamentalism may be more likely to engage in divergent cognition, in which new information that challenges prior teachings or old ways of thinking is not automatically rejected and may, in fact, lead to the formation of new or 'divergent' beliefs. For example, religious fundamentalists who have been taught that homosexuality is a sin may feel threatened by the presence or progress of homosexual people and may respond with homophobia that denigrates homosexual people and removes some challenges

to religious teachings, as they are able to dismiss homosexual people as a definitive ‘other’ and are less motivated to critically consider the explicit and implicit prejudicial messages about homosexual people in their culture (Hill, Terrell, Cohen, & Nagoshi, 2010).

In addition, Pek and Leong (2003) found that need for closure was positively associated with hostile sexism, while Brandt and Reyna (2010) cited closed-mindedness, a facet of need for closure, as a significant mediator of the relationship between religious fundamentalism and the derogation of homosexual people. Other researchers focused on a term they labelled ‘personal need for structure’ and found that this construct holds a positive relationship with a greater likelihood of endorsing beliefs that ethnic prejudice and discrimination are unavoidable (Hodson & Esses, 2005) and with a greater likelihood of endorsing stereotypical gender traits (Neuberg & Newsom, 2003). In general, it would seem that cognitive rigidity and a desire to maintain prior beliefs potentially contribute to the link between religious fundamentalism and prejudice.

In spite of recent progress, sex segregation in the workforce continues, with women and men entering certain occupations in differential numbers. As structural barriers to women’s progress have been removed, researchers have begun to explore other mechanisms that may serve to maintain this segregation. Vocational interests have emerged as significant factors in the career decision-making process and significant differences between women and men in this construct have been found.

A variety of psychological traits and factors may be considered as we begin to explore the causes of these vocational interest gender differences. The development of vocational interests may be influenced by the careers an individual allows her or himself to consider. Those who endorse sexist beliefs and traditional attitudes toward women may be more likely to restrict themselves to career choices that seem fitting for their gender. Religious fundamentalism and

right-wing authoritarianism, taken together to represent conservativeness and rigidity of belief,

may be associated with traditional beliefs about gender roles and an unwillingness to seriously consider careers that appear to fall outside of traditional roles for a particular gender. In addition, those who hold sexist beliefs, or are authoritarian and fundamentalist, may evaluate the “non-traditional” career choices of others negatively.

The Present Study

Women have made significant gains in the workforce and society has made efforts to remove structural barriers that once impeded the progress and full employment of women. However, disparities still exist in the employment of women and men, with women still underrepresented in traditionally masculine fields. Significant gender differences in vocational interests have been found, but there is more work to be done to identify and understand the factors that maintain these differences. A number of psychological factors have been considered and studied for their potential role in the maintenance of these gender differences. This study focused on the connections between gender-related psychological factors and vocational constructs. In particular, it explored the relationship between the perceived gender of an employee in an occupation and the perceptions of that occupation. In order to gain a more nuanced understanding of the relationship, other factors, including attitudes toward women, religious fundamentalism, and right-wing authoritarianism were evaluated. The following section details the main research questions and hypotheses for this study.

- 1) Do individuals differ in their perceptions of the femininity and masculinity of the RIASEC types depending on whether they are exposed to female or male names in job descriptions related to the RIASEC types?

Participants in this study were asked to complete a card sort activity in which they matched adjectives from the Bem Sex Role Inventory (Bem, 1974) to job descriptions expressing the 6 RIASEC types (Holland, 1959, 1997) and featuring either female or male names. All

participants were exposed to 6 descriptions, one for each of the 6 RIASEC types. All participants were also exposed to 3 descriptions featuring female names and 3 descriptions featuring male names. There were 2 conditions, however, in which the order of female and male names across the 6 RIASEC types were varied.

An important question in this study has to do with the participants' perceptions of the femininity and masculinity of the RIASEC types as determined by their matching of feminine or masculine traits to job descriptions expressing different RIASEC types. This question is exploratory in nature. There are a variety of potential outcomes, which will be discussed next.

Perceptions of the femininity and masculinity of the RIASEC types may be mitigated by gender context. Some RIASEC types, such as Social and Realistic, often demonstrate robust gender differences. In addition, the descriptions of the RIASEC types often include characteristics that may be considered traditionally feminine or masculine. Women often demonstrate significantly more Social interests than men and the Social RIASEC type emphasizes traits that are typically considered more feminine than masculine. The Realistic type, on the other hand, may be seen as more traditionally masculine and men often exhibit significantly more Realistic interests than women (Su et al., 2009).

So, for example, if it is found that there were no significant differences in the perceptions of femininity and masculinity between certain RIASEC types, such as Social and Realistic, and across gender contexts (female or male names), it may be that the participants attempted to assign feminine traits to descriptions featuring female names or masculine traits to descriptions featuring male names, regardless of the RIASEC type featured. In this case, perception of the RIASEC types differed when gender was made salient and the gender of the person in an occupation, not RIASEC type, was the stronger influence on the perceptions of femininity and masculinity. Specifically, it was hypothesized that nontraditional combinations of RIASEC type and gender

(e.g. Realistic description with female name) would produce the smallest differences in assignment of feminine and masculine traits between RIASEC types.

- 2) How are right-wing authoritarianism and religious fundamentalism related to the perceptions of the femininity and masculinity of the RIASEC types?

As has been previously discussed, right-wing authoritarianism and religious fundamentalism are associated with prejudice and could relate to rigid, traditional beliefs about appropriate roles for women and men. These variables are correlated with each other (Altemeyer, 2003) and were considered, in this study, to reflect a more general, underlying construct of “conservativeness”. It is possible that these two constructs, taken together, could partially account for the perceptions of femininity and masculinity of the RIASEC types. Religious fundamentalism and right-wing authoritarianism were tested as covariates in the present study.

Religious fundamentalism was measured by the Revised Religious Fundamentalism Scale (R-RFS; Altemeyer&Hunsberger, 2004). Right-wing authoritarianism was measured by the Right-Wing Authoritarianism Scale (Altemeyer, 2006). Scores on these scales may be considered separately or together (total mean score) in analyses. It was hypothesized that religious fundamentalism and right-wing authoritarianism would be found to account for a significant portion of the variance in perceptions of femininity and masculinity of the RIASEC types.

- 3) How are attitudes toward women related to the perceptions of the femininity and masculinity of the RIASEC types?

Emerson and Hartman (2006) have noted the tendency for religious fundamentalists to be “strong traditionalists” (p. 135) when it comes to gender role beliefs and expectations. Other researchers have found significant correlations between religious fundamentalism and right-wing authoritarianism and sexist attitudes toward women (Hunsberger, Owusu, and Duck, 1999; Nagoshi, Adams, Terrell, Hill, Brzuzy, and Nagoshi, 2008; Sheldon and Parent, 2002). In this

study, religious fundamentalism was measured by the Revised Religious Fundamentalism Scale (Altemeyer&Hunsberger, 2004) and right-wing authoritarianism was measured by the Right-Wing Authoritarianism Scale (Altemeyer, 2006). Sexist attitudes were measured by the Modern Sexism Scale (Swim, Aikin, Hall, & Hunter, 1995) and the Ambivalent Sexism Inventory (Glick & Fiske, 1996). A total mean score on the measures was used to represent the endorsement of sexist attitudes demonstrated by each participant. It was hypothesized in this study that right-wing authoritarianism and religious fundamentalism would be significantly and positively related to sexist attitudes toward women. In addition, it was hypothesized that right-wing authoritarianism and religious fundamentalism, combined with attitudes toward women, would be better predictors of perceptions of the femininity and masculinity of the RIASEC types than attitudes toward women are alone.

CHAPTER 3. METHOD

Participants

Participants were 334 students from a large, Midwestern university. Participants were recruited from undergraduate psychology courses and received course credit for their participation. 216 (64.7%) of the participants identified as female and 118 (35.3%) identified as male. Age of participants ranged from 18 to 51 years. The mean age of the sample was 19.78 years ($SD = 3.11$). Most of the participants, 187 (56.0%), were freshmen, 78 (23.4%) were sophomores, 46 (13.8%) were juniors, 21 (6.3%) were seniors, and 1 (.30%) was a graduate student. One participant (.30%) did not report her or his class. The majority of the sample (84.1%) identified as European American. 3.3% identified as Hispanic American, 3.0% identified as African American, 2.4% identified as Asian American, and .30% identified as Native American. 6.9% of participants reported their ethnicity as 'Other'.

Measures

Demographic Questionnaire

Participants completed a 1-page questionnaire asking for demographic and basic career choice information. The questionnaire asked for each participant's name, university ID number, NetID, age, major program of study, current grade point average (GPA), gender, year in school, and ethnicity/cultural identity. In addition, the participants were asked to report how satisfied they are with their current major (very satisfied, satisfied, somewhat satisfied, or not satisfied), 3 careers they are considering, and which of those 3 careers they are most interested in pursuing (Appendix A).

Occupation-Adjective Matching Card Sort

The card sort activity used was developed for a previous study in which similar hypotheses were tested (Bergner, 2013). This activity allowed for study of the influence the gender of the person in a career has on perceptions of that career. Participants received a set of six

occupational descriptions, with each description detailing job tasks related to one of the six Holland types (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional; Holland, 1959; 1997) and using either a female or male name for the person in the job described.

Descriptions in each condition were identical aside from the use of a female or male name.

Descriptions seen differed based on the condition to which each participant was randomly assigned. Participants placed in the first condition received the following six descriptions: 1) Realistic tasks- male name, 2) Investigative tasks- female name, 3) Artistic tasks- male name, 4) Social tasks- female name, 5) Enterprising tasks- male name, and 6) Conventional tasks- female name. Participants in the second condition received the following six descriptions: 1) Realistic tasks- female name, 2) Investigative tasks- male name, 3) Artistic tasks- female name, 4) Social tasks- male name, 5) Enterprising tasks- female name, and 6) Conventional tasks- male name (see Appendix B for complete list of occupational descriptions in each condition). As can be seen, this set-up allowed for all participants to be exposed to descriptions featuring female and male names, in contrast to the above-mentioned study in which some participants viewed only descriptions with female names and others only descriptions with male names (Bergner, 2014).

Participants were also given a set of 60 cards. Each card featured a trait from the BSRI (Bem, 1974; see Appendix C for BSRI items). Twenty cards contained traditionally feminine traits, twenty cards contained traditionally masculine traits, and the remaining twenty cards contained socially desirable, gender neutral traits. Finally, participants had received an answer sheet on which they were asked to record their occupation-adjective matches. After receiving the occupational descriptions and the set of 60 cards, participants were given the following instructions: ‘Included with this answer sheet is a box containing a set of 60 adjectives. Divide the adjectives into six groups of ten cards that best describe the individuals who work in each of the

six occupations described below. Each card has a code on it. Please write the code for each adjective you choose for each occupation in one of the boxes, using each card only one time.'

The average gender rating of each RIASEC type served as dependent variables in analyses, to be discussed in more detail later. Dummy coding was used to determine how many BSRI feminine and masculine adjectives were assigned to the 6 job descriptions in the conditions representing the 6 RIASEC types. Adjectives from the masculine subscale of the BSRI were given '1's and those from the feminine subscale were given '-1's. Means for each of the RIASEC types were calculated to give the gender ratings. The more negative a mean for a RIASEC type, the more feminine the type was rated. More positive means indicate a type rated as more masculine.

Bem Sex Role Inventory

The Bem Sex Role Inventory (BSRI; Bem, 1974), developed to measure femininity and masculinity, includes three subscales. The Femininity subscale is composed of 20 traits considered socially desirable, in the United States, for women. The Masculinity subscale is composed of 20 traits considered desirable for men. The Social Desirability subscale consists of 20 traits considered desirable but not particularly associated with one gender. People with large differences in scores for the Femininity and Masculinity subscales could be said to be sex-typed. Those who obtained more equal scores for these two subscales could be said to be androgynous.

Judges helped determine the desirability of traits for women, men, or people in general. Bem began with 200 traits and asked them to rate whether each trait was more desirable for a woman or man in American society. Traits seen as more desirable for women were used to construct the Femininity subscale. Traits seen as more desirable for men were used to construct the Masculinity subscale. Another 200 traits, meant to be socially desirable but not particularly feminine or masculine in nature, were given to the judges for rating. The judges then rated these traits on their femininity, masculinity, and social desirability. The traits used to construct the

Social Desirability subscale were judged to be no more feminine than masculine, and vice versa.

The BSRI's three subscales contain a total of 60 items, with 20 each (see Appendix C for a complete list of BSRI items). Items are rated on a 7-point (1 [*never or almost never true*] to 7 [*almost always true*]) Likert-type scale on the basis of the degree to which the person believes the trait describes her or himself. Four scores can be calculated: 1) Femininity score, 2) Masculinity score, 3) Social Desirability score, and 4) Androgyny score.

In order to gain psychometric information for the BSRI, Bem administered the inventory to 917 undergraduate students at two different colleges. For the four scale scores discussed above, internal consistency ranged from $\alpha = .70$ to $\alpha = .86$. The Femininity and Masculinity subscales were significantly and positively correlated with the Social Desirability subscale (r range from .19 to .38). The Androgyny subscale did not significantly correlate with the Social Desirability subscale (r range .04 to .08). Test-retest reliability for the four subscales was adequate and ranged from $\alpha = .89$ to $\alpha = .93$.

Validity of the BSRI was assessed through comparison of BSRI scores to scores on popular measures of sex roles at the time. The BSRI subscales were moderately correlated with the Masculinity-Femininity scales of the California Personality Inventory (CPI; Gough, 1956). No significant correlations were found between the BSRI subscales and the Guilford-Zimmerman Temperament Survey (GZTS; Guilford & Zimmerman, 1949). Bem believed that the BSRI was accessing a facet of sex roles that the other measures of the day did not access, which could explain the lack of strong correlations between the BSRI and these other measures.

Attitudes Toward Women

Attitudes toward women were measured using the Ambivalent Sexism Inventory (ASI; Glick & Fiske, 1996) and the Modern Sexism Scale (MSS; Swim, Aikin, Hall, & Hunter, 1995). For each participant, an average score on items from these measures were used to represent the extent of sexist or traditional attitudes expressed (see Appendix F for a

complete list of ASI and MSS items).

The ASI was developed to be a self-report measure of ambivalent attitudes toward women. Glick and Fiske define ambivalent Sexism as “simultaneously holding two sets of related sexist beliefs: hostile and benevolent sexism” (p. 494). Therefore, the ASI is composed of two subscales: Hostile Sexism and Benevolent Sexism. Each subscale contains 11 items rated on a 5-point Likert scale (0= strongly disagree, 1= disagree somewhat, 2= disagree slightly, 3= agree slightly, 4= agree somewhat, and 5= agree strongly). Six items are reverse-scored.

The Hostile Sexism subscale accesses attitudes toward women that reflect the traditional definition of prejudice against women. A sample item is “Women seek to gain power by getting control over men”. The Benevolent Sexism subscale addresses attitudes toward women that reflect beliefs in traditional gender roles. These attitudes are subjectively positive in tone and may elicit typically prosocial behavior, such as intimacy-seeking. A sample item is “A good woman should be set on a pedestal by her man” (Glick & Fiske, 1996).

Glick and Fiske (1996) provided data to support the psychometric soundness of their measure. Across six samples, reliability was established, with alpha coefficients between .73 (Benevolent Sexism in one sample) and .92 (Hostile Sexism and total ASI score in one sample) found. The authors provided evidence of convergent validity through comparison of ASI total and subscale scores with scores on a variety of related measures, including the Attitudes Toward Women scale (AWS; Spence & Helmreich, 1972), the Rape Myth Acceptance Scale (Burt, 1980), and the Modern Sexism Scale and the Old-Fashioned Sexism Scale (Swim, Aikin, Hall, & Hunter, 1995). They found significant positive correlations between the ASI subscales and total scores and the measures of sexism listed above. In addition, they found that this correlation was largely accounted for by correlations between the Hostile Sexism subscale and the other measures. This supported their belief that the ASI’s Benevolent Sexism subscale accesses a construct not addressed by the

other measures (Glick & Fiske, 1996). To further establish the validity of the ASI, the authors presented evidence demonstrating a significant positive relationship between the Benevolent Sexism subscale scores and favorable attitudes toward women. There was a significant negative relationship between the Hostile Sexism subscale scores and favorable attitudes toward women.

Swim et al. (1995) made a distinction, in their work, between traditional and more modern definitions of sexism. They presented evidence that, although people are less likely to endorse explicitly sexist attitudes than they were in the past, sex discrimination continues to exist (Biernat & Wortman, 1991; Rowe, 1990). Therefore, they discussed differences “old-fashioned”, direct, explicit sexism and “modern”, more indirect, and more implicit sexism. Their instrument included two scales, one to address old-fashioned sexism and the other to address modern sexism.

The authors adapted their items from items previously created for a similar scale on modern racism (Sears, 1988). The old-fashioned sexism scale contained items designed to reflect support of treating women and men differently, approval of traditional gender roles, and the endorsement of stereotypes about women’s abilities. A sample item from this scale is “Women are generally not as smart as men”. There are 5 old-fashioned sexism items. The modern sexism scale contained items designed to reflect resentment toward the demands of women, denial of continued discrimination, and antagonistic feelings about “special favors” accorded to women. A sample item from this scale is “Society has reached the point where women and men have equal opportunities for advancement” (Swim et al., 1995). There are 8 modern sexism items. The items are rated on a 5-point Likert scale (1= strong agree, 5= strongly disagree). Responses for the items from each scale are averaged to obtain a general score for each scale.

Swim et al. (1995) conducted two studies in order to demonstrate the validity of their measure. In the first study, they examined the factor structure of the old-fashioned and modern

sexism scales and sex differences in response to the scales' items. Confirmatory factor analyses determined that a two-factor solution fit data better than a one-factor solution, supporting the construct validity of the old-fashioned and modern sexism scales. The authors also explored the relationship of individualistic and egalitarian values to modern sexism and the perception of sex segregation in the workforce. Stronger individualistic beliefs and weaker egalitarian beliefs were associated with higher sexism scores. Finally, higher scores on the Modern Sexism scale correlated with overestimations of the numbers of women in traditionally male-dominated occupations.

The authors' second study (Swim et al., 1995) was undertaken with the goal of replicating the results of the first study and to provide further evidence of the instrument's construct validity. Additions to this study from the first involved questions asked of the participants related to sex segregation in the workplace and phone interviews with some participants in which they were asked about their preferences for a female or male candidate in a local election. Again, results of this study confirmed the authors' two-factor solution, which provides support for their two sexism scales. Modern Sexism scale scores were more predictive of preference for the male candidate, in the local election, over the female candidate, than were Old-Fashioned Sexism scale scores. Finally, higher scores on the Modern Sexism scale were associated with a greater likelihood of citing biological differences as a prime cause of sex segregation in the workforce (Swim et al., 1995).

Religious Fundamentalism and Right-Wing Authoritarianism. In order to assess right-wing authoritarianism and religious fundamentalism, measures of right-wing authoritarianism and religious fundamentalism authored by Altemeyer (2006) and Altemeyer and Hunsberger (2004), respectively, were administered to all participants. These measures, called the Revised Religious Fundamentalism Scale (R-RFS) and the Right-Wing Authoritarianism Scale (RWAS),

will be discussed in further detail below (see Appendix G for a complete list of R-RFS and RWAS items).

Altemeyer and Hunsberger presented the first version of their Religious Fundamentalism Scale (RFS) in 1992, with the purpose of assessing religious fundamentalism, defined as:

The belief that there is one set of religious teachings that clearly contains the fundamental, basic, intrinsic, essential, inerrant truth about humanity and deity; that this essential truth is fundamentally opposed by forces of evil which must be vigorously fought; that this truth must be followed today according to the fundamental, unchangeable practices of the past; and that those who believe and follow these fundamental teachings have a special relationship with the deity. (Altemeyer&Hunsberger, 1992; p. 118)

This original scale had 20 items and possessed generally good psychometric properties. However, the authors later determined that the original scale did not fully capture some aspects of the above definition, while putting too much focus on other aspects. They also acknowledged some researchers' desire for a shorter measure of religious fundamentalism. Therefore, in their revised scale, they attempted to restore balance to the content of items while reducing the number of items (Altemeyer&Hunsberger, 2004).

The authors tested a number of "candidate items" with hundreds of students and parents associated with two different universities. They eventually reduced the number of candidate items to 20 and began studying the items to select those that provided the most topical breadth and a scale balanced against response sets. Their goal was to reduce the number of items from the original scale without sacrificing too much psychometric soundness. The final R-RFS contains 12 items. The authors noted that 4 of the original RFS items remained unaltered in the R-RFS, 5 are revisions of original RFS items, and the remaining 3 are new. Items are rated on a scale including:

-4= very strongly disagree, -3= strongly disagree, -2= moderately disagree, -1= slightly disagree, 0= neutral, 1= slightly agree, 2= moderately agree, 3= strongly agree, and 4= very strongly agree. If one finds that she or he agrees with one part of an item more than another, she or he is asked to combine their responses (e.g. a -4 and a 1 would be combined to produce a response of 3). Some items are reverse-scored (Altemeyer&Hunsberger, 2004).

The R-RFS maintains the strong reliability of the original RFS, with alpha coefficients of .91 in the tested student sample for both measures and alpha coefficients of .93, for the original scale, and .92, for the revised scale, in the parent sample. The R-RFS demonstrates similar and strong validity, as evidenced by its correlations with related constructs such as right-wing authoritarianism (.79 for students, .72 for parents), dogmatism (.75 for students, .70 for parents), and religious ethnocentrism (.71 for students, .73 for parents). The authors conclude that the revised version of the scale has good psychometric properties that, coupled with its practical advantages, make it a good choice (Altemeyer&Hunsberger, 2004).

Altemeyer has also worked to develop a measure of a construct he calls “right-wing authoritarianism”. He defines the construct in terms of its 3 components: 1) authoritarian submission, 2) authoritarian aggression, and 3) conventionalism. Authoritarian submission refers to a willingness to submit to authorities deemed legitimate. Authoritarian aggression is defined as hostility or aggression toward those seen as deviating from a norm. Conventionalism is viewed as adherence to societal norms as perceived by the person and a belief that others should also adhere to these norms (Altemeyer, 2006).

The most current version of the RWAS contains 22 items addressing these components of right-wing authoritarianism. Items are rated on a scale identical to that of the R-RFS (Altemeyer&Hunsberger, 2004) and some items are reverse-scored. The RWAS utilizes the same rating procedure in which those completing the scale are asked to combine their responses to reflect differences in agreement with various parts of an item (Altemeyer, 2006).

Altemeyer provides evidence for the validity of his scale through separate discussion of constructs and phenomena related to each of right-wing authoritarianism's 3 components. High scorers on the RWAS are more likely than lower scorers to endorse, for example, obedience to authority and law and to report trust in specific authority figures (e.g. Richard Nixon, George W. Bush), demonstrating the scale's relevance to authoritarian submission. For authoritarian aggression, Altemeyer reports that high scorers on the RWAS are more likely than lower scorers to support lengthy prison time for those convicted of crimes. Coverage of the third component, conventionalism, was evidenced by the greater likelihood of high RWAS scorers to be extremely orthodox members of their religion, when compared to lower RWAS scorers.

In addition, Altemeyer describes "feedback-conformity experiments" (2006; p. 28) that provide further validity evidence for the scale. In these experiments, participants complete the RWAS and then are told, by the researcher, what the average response was for each item. Participants are then asked to complete the scale again. High RWAS scorers adjust their answers to more closely match the average approximately twice as much as low RWAS scorers do. Finally, Altemeyer reports internal consistency of alpha coefficient= .90 for the RWAS as a whole (2006).

Procedures

This study consisted of two parts, one in which participants completed activities and questionnaires in person with the help of research assistants and another in which participants completed questionnaires online. Participants signed up for a timeslot on the Department of Psychology's web-based SONA System and reported to the designated office at this time. Research assistants described the study procedures to the participants and provided them with an informed consent document to review. If participants agreed to take part in the study, they began by completing a demographic questionnaire that asked for their age, gender, race and ethnicity,

year in school, and current major. As a measure of their occupational goals, they were asked to list three occupations they are considering for the future and to designate which of these three occupations is currently of primary interest to them. At this point participants, randomly assigned to one of the two conditions (described in detail in the ‘Measures’ section of this paper), completed the occupation-adjective matching card sort. Upon completion of the card sort, participants were reminded that they would receive, in approximately one week, an email containing a link to complete the online portion of the study. In addition, they were reminded that they would receive additional course credit for completion of the online portion.

One week after completion of the in-person portion of the study, participants received the email containing the link to a site on which they may complete the remaining measures. Participants completed the Ambivalent Sexism Inventory (ASI), Modern Sexism Scale (MSS), Revised Religious Fundamentalism Scale (R-RFS), and the Right-Wing Authoritarianism Scale (RWA). They then saw a debriefing page thanking them for their participation and providing contact information for the researchers and basic career-related resources on campus.

Data Preparation

Tabachnik and Fidell (2007) outlined screening procedures for research data and data was prepared according to these guidelines. This consisted of the removal of cases with an incomplete data set, the identification of outliers, and the examination of the data in regards to the assumptions for the planned analyses. 374 people completed the first, in-lab portion of the study. 8 (.02%) of these were not included in analyses because they did not complete the second, online portion. 366 participants completed both parts of the study. Of these, 25 (.07%) were not included in analyses due to too much missing data. 15 additional participants were cut from analyses because of random responding or because they were identified as outliers. The final sample used for analyses in this study consisted of 334 participants (216 females and 118 males).

Data Analyses

Means and standard deviations were calculated for all variables in this study (see Tables 4 and 5). Correlational data for all variables is found in Table 6. 60 Pearson's chi-squared tests (χ^2) were done in order to evaluate potential significant differences in how participants sorted the BSRI adjectives to the RIASEC type job descriptions by condition. Pearson's chi-square can be used to determine whether or not there is a relationship between two categorical variables. Observed frequencies for categories are compared to frequencies expected by chance. A significant chi-squared test indicates that there is a significant relationship between the two variables (Field, 2009). Specifically, these tests allowed for determination of whether or not participants differed by condition in how they matched each BSRI adjective to the job descriptions. In order to control for the family-wise error rate, the Bonferroni correction was applied and the *p*-value for significance had to be less than .001. Three BSRI adjectives were significant at this level.

Multivariate analysis of variance (MANOVA) and multivariate analysis of covariance (MANCOVA) were used to consider the research questions detailed earlier. MANOVA was used to evaluate sex differences and differences by condition (female or male names in job descriptions) in perceptions of the femininity and masculinity of the RIASEC types. MANCOVA was used to evaluate the contributions of religious fundamentalism, right-wing authoritarianism, attitudes toward women, judgments of feminine and masculine traits, gender identity, and RIASEC interests on sex differences and the differences by condition in the perceptions of the femininity and masculinity of the RIASEC types.

MANOVA is used to test for significant differences between group means in cases when there are multiple dependent variables. MANOVA prevents the inflation of the familywise error rate that would grow if analyses of variance (ANOVAs) were conducted for each dependent variable separately. MANOVA gives information about the relationships between dependent

variables and about potential differences for the dependent variables along a number of dimensions (Field, 2009).

There are a number of assumptions made when using MANOVAs. These statistical assumptions are: 1) statistically independent observations, 2) homogeneity of covariance matrices, 3) multivariate normality of the dependent variables, and 4) dependent variables measured on at least an interval scale. Levene's test was used as an initial check of the equality of variances between groups. In order to meet this assumption, the results should not be significant for any of the dependent variables. In this analysis, 5 of the 6 dependent variables (the average gender ratings of the RIASEC types) were non-significant. The average gender rating of the Realistic type was significant, $p > 0.05$. Box's test was then used to test the covariance matrices between groups. For this test, the assumption is met if the matrices are the same and the result is non-significant (Field, 2009). Box's test was significant, $p > 0.05$. However, Box's test is known to be a sensitive test of the homogeneity of variance-covariance matrices (Tabachnick & Fidell, 2007). It should be noted that data in this study was grouped and the sample size was large enough to ensure that the assumption of multivariate normality of the dependent variables was met. However, researchers are urged to use the Pillai-Bartlett statistic (Pillai's trace) to evaluate multivariate significant when this assumption has been violated (Olson, 1976; 1979), and Pillai's trace was utilized in this study.

MANCOVAs require that the assumptions of MANOVAs are met, along with two additional assumptions. MANCOVA calculates variance in the dependent variables that is due to the covariates. Therefore, the two additional assumptions for MANCOVA are: 1) independence of the covariate and treatment effect and 2) homogeneity of regression slopes (Field, 2009). An ANOVA will be utilized to test for significant differences between the 2 conditions for each covariate, which will allow for testing of the independence of the covariate. Sex, with 2 levels

(female or male), and condition, with 2 levels (female or male names in job descriptions) were the independent variables in this study.

The average gender rating of each RIASEC type served as dependent variables. Dummy coding was used to determine how many BSRI feminine and masculine adjectives were assigned by participants to the 6 job descriptions in the conditions representing the 6 RIASEC types. Adjectives from the masculine subscale of the BSRI were given '1's, while those from the feminine subscale were given '-1's. Means for each of the 6 RIASEC types were then calculated to give the gender ratings. Given the coding used, the more negative a mean for a RIASEC type, the more feminine the type was rated, while more positive means indicate a RIASEC type rated as more masculine by participants. Specific analyses for each research question will be discussed below.

In order to answer the first research question, "Do individuals differ in their perceptions of the femininity and masculinity of the RIASEC types depending on whether they are exposed to female or male names in job descriptions related to the RIASEC types?", the results of a MANOVA were examined. For the MANOVA, the independent variables were sex and condition, while the dependent variables were the average gender ratings of the RIASEC types. The *F*-statistic for this analysis was significant ($p \leq .05$) and, therefore, post hoc test results were examined to gain more information about the nature of the differences in how participants perceived the femininity and masculinity of the RIASEC types.

To address the second research question, "How are right-wing authoritarianism and religious fundamentalism related to the perceptions of the femininity and masculinity of the RIASEC types?", a MANCOVA was done with sex and condition as the independent variables, right-wing authoritarianism as the covariate, and the average gender rating of each RIASEC types as the dependent variables. Another MANCOVA was then done that replaced right-wing authoritarianism with religious fundamentalism as the covariate. For each of these analyses, the *F*-

statistic for the covariate was examined and found to be non-significant in both cases.

The third research question, “How are attitudes toward women related to the perceptions of the femininity and masculinity of the RIASEC types?”, was addressed through the use of a MANCOVA. Sex and condition were again the independent variables and the average gender ratings of the RIASEC types were the dependent variables. This was done to determine if right-wing authoritarianism and religious fundamentalism, combined with attitudes toward women, function as significant predictors of perceptions of the femininity and masculinity of the RIASEC types, above and beyond attitudes toward women alone. Analyses were not significant for attitudes toward women in this study.

CHAPTER 4. RESULTS

Perceptions of the Femininity and Masculinity of the RIASEC Types

Influence of Gender and Experimental Condition

The first research question, “Do individuals differ in their perceptions of the femininity and masculinity of the RIASEC types depending on whether they are exposed to female or male names in job descriptions related to the RIASEC types?”, was addressed through a MANOVA (results found in Table 7). Sex (2 levels) and condition (2 levels) were the independent variables, while the gender ratings of the RIASEC types were the dependent variables. The F -statistic for Pillai’s trace was significant for sex, Pillai’s trace = .045, $F(6, 325) = 2.54, p \leq .05$. The F -statistic for Pillai’s trace was also statistically significant for condition, Pillai’s trace = .178, $F(6, 325) = 11.73, p \leq .001$. The F -statistic was not statistically significant for the sex by condition interaction.

Each independent variable (sex and condition) had 2 levels and tests of between-subjects effects for the dependent variables and means for both sexes and conditions were examined. This was done in order to determine the precise nature of the significant effects of sex and condition. For sex, between-subjects effects were statistically significant for Investigative and Enterprising at the $p \leq .05$ level, with small effect sizes for each (Investigative $\eta^2 = .023$; Enterprising $\eta^2 = .012$). Results were not statistically significant for the other RIASEC types (Realistic, Artistic, Social, and Conventional). For the Investigative type, the average gender rating of female participants was 2.61, while the average gender rating of male participants was 1.66. Female participants rated the Investigative type as significantly more masculine than did male participants. For the Enterprising type, the average gender rating of female participants was 3.24, while the average gender rating of male participants was 4.03. Male participants rated the Enterprising type as being more masculine than did female participants.

For condition, between-subjects effects were statistically significant for Realistic, Artistic, Social, and Conventional at the $p \leq .001$ level. Furthermore, the effect for Investigative was statistically significant at the $p \leq .05$ level. Effect sizes were small (Realistic $\eta^2 = .039$; Investigative $\eta^2 = .019$; Artistic $\eta^2 = .057$; Social $\eta^2 = .042$; and Conventional $\eta^2 = .059$). Results were not statistically significant for the Enterprising type.

For the Realistic type, the average gender rating of condition 1 participants was 4.02 and the average gender rating of condition 2 participants was 2.69. Condition 1 participants viewed a Realistic job description with a male name and condition 2 participants viewed a Realistic job description with a female name. Therefore, participants who read a Realistic job description with a male name perceived the Realistic type as more masculine than did participants who read a Realistic job description with a female name, although both groups rated the type as masculine rather than feminine.

For the Investigative type, the average gender rating of condition 1 participants was 1.70 and the average gender rating of condition 2 participants was 2.57. In this case, condition 1 participants saw an Investigative job description with a female name and condition 2 participants saw one with a male name. These results therefore show that participants who were exposed to an Investigative job description featuring a male name rated the type as more masculine than did participants who viewed a job description with a female name. Again, however, both groups rated the type as masculine rather than feminine.

For the Artistic type, the average gender rating of condition 1 participants was -.348, while the average gender rating of condition 2 participants was -1.72. Condition 1 participants saw a job description with a male name and condition 2 participants saw a job description with a female name. Therefore, participants who viewed an Artistic job description with a female name rated the

Artistic type as significantly more feminine than did those who saw a male name, but both groups rated the type as feminine rather than masculine.

For the Social type, the average gender rating of condition 1 participants was -7.51 and the average gender rating of condition 2 participants was -6.56. Condition 1 participants viewed a job description with a female name and condition 2 participants viewed a job description with a male name. According to these results, participants who viewed a Social job description with a female name rated the type as more feminine than did participants who viewed the same job description with a male name. Again, both groups rated the Social type as feminine rather than masculine.

For the Conventional type, the average gender rating of condition 1 participants -1.81 and the average gender rating of condition 2 participants was -.297. Condition 1 participants read a job description with a female name and condition 2 participants read a job description with a male name. Therefore, participants who viewed a job description with a female name perceived the Conventional type as significantly more feminine than participants who saw a job description with a male name, but both groups rated the type as feminine rather than masculine.

Influence of Right-Wing Authoritarianism and Religious Fundamentalism

The second research question, “How are right-wing authoritarianism and religious fundamentalism related to the perceptions of the femininity and masculinity of the RIASEC types?” was addressed through 2MANCOVAS. First, a MANCOVA (results found in Table 7) was done to determine whether right-wing authoritarianism would account for a significant amount of the variance in perceptions of the femininity and masculinity of the RIASEC types. This MANCOVA utilized the same independent variables (sex and condition) and dependent variables (average gender ratings of the RIASEC types) as the previously discussed MANOVA, but with the measure of right-wing authoritarianism included as a covariate.

With the inclusion of right-wing authoritarianism as a covariate, sex remained statistically significant, Pillai's trace = .045, $F(6, 324) = 2.56$, $p \leq .05$. Condition also remained statistically significant, Pillai's trace = .176, $F(6, 324) = 11.52$, $p \leq .001$. The interaction of condition and sex remained non-significant. It was hypothesized that right-wing authoritarianism would account for a significant portion of the variance in perceptions of the RIASEC types. However, this covariate did not have a statistically significant effect in this analysis, which suggests that right-wing authoritarianism does not differentially impact perceptions of femininity and masculinity across the 6 RIASEC types.

The second MANCOVA (results found in Table 7) examined the effect of the second covariate, religious fundamentalism, on participants' perceptions of the RIASEC types. Sex and condition again served as independent variables. With the inclusion of religious fundamentalism as a covariate, condition remained statistically significant, Pillai's trace = .176, $F(6, 324) = 11.56$, $p \leq .001$. Sex also remained statistically significant, Pillai's trace = .043, $F(6, 324) = 2.43$, $p \leq .05$. The interaction of condition and the effect of sex remained non-significant. As with right-wing authoritarianism, it was hypothesized that religious fundamentalism would account for a significant portion of the variance in perceptions of the RIASEC types. This analysis showed that religious fundamentalism, contrary to the hypothesis, did not significantly account for perceptions. Religious fundamentalism, then, does not appear to differentially impact perceptions of femininity and masculinity across the RIASEC types.

Influence of Attitudes Toward Women

The third research question, "How are attitudes toward women related to the perceptions of the femininity and masculinity of the RIASEC types?" was addressed through a MANCOVA (results found in Table 7). Sex and condition were the independent variables and the RIASEC types' gender ratings were dependent variables. Right-wing authoritarianism, religious

fundamentalism, and attitudes toward women were included as covariates. Attitudes toward women were represented by participants' average scores on the Modern Sexism Scale and the Ambivalent Sexism Inventory. Average scores for these two scales were included as two separate covariates.

Sex remained statistically significant with the inclusion of these covariates, Pillai's trace = .040, $F(6, 321) = 2.23, p \leq .05$. Condition was also still statistically significant, Pillai's trace = .177, $F(6, 321) = 11.53, p \leq .001$. The interaction of condition and sex remained non-significant. While it was hypothesized that attitudes toward women would account for a significant portion of the variance in perceptions of the femininity and masculinity of the RIASEC types, analyses demonstrated that scores on the Modern Sexism Scale and Ambivalent Sexism inventory did not have a significant effect on the dependent variables. This suggests that there were no differential effects of attitudes toward women across the RIASEC types.

Assignment of BSRI Adjectives to RIASEC Type

Pearson's chi-squared tests were then used to look at the proportions for each BSRI adjective matched with the six job descriptions representing the RIASEC types. 60 chi-squared tests were done in order to compare each of the 60 BSRI adjectives in turn to condition (results found in Tables 1, 2, and 3). According to these analyses, the following BSRI adjectives displayed statistically significant differences in RIASEC assignment across conditions: Feminine $\chi^2(5) = 186.64, p \leq .001$, Masculine $\chi^2(5) = 103.64, p \leq .001$, and Warm $\chi^2(5) = 24.04, p \leq .001$. In order to determine the specific significant differences for these 3 adjectives, differences in proportions were reviewed for each RIASEC type, which will be discussed below.

For Feminine, statistically significant differences were found for all 6 RIASEC types. For the 12 participants who sorted Feminine to the Realistic job description, 16.7% were in the first condition, in which a male name was found in the description, and 83.3% were in the

second condition, in which a female name was found in the description. For the 26 participants who sorted Feminine to the Investigative job description, 96.2% were in the first condition (female name), while 3.8% were in the second condition (male name). 14.8% of the 122 participants who sorted this adjective to the Artistic job description were in the first condition (male name). Meanwhile, 85.2% of participants who sorted this adjective to the Artistic job description were in the second condition (female name). For the 93 participants who matched Feminine to the Social job description, 87.1% were in the first condition (female name), while 12.9% were in the second condition (male name). For the 29 participants who sorted Feminine to the Enterprising job description, 6.9% were in the first condition (male name), and 93.1% were in the second condition (female name). Finally, for the 50 participants who matched this adjective to the Conventional job description, 86.0% were in the first condition (female name), while 14.0% were in the second condition (male name).

For Masculine, also significantly related to condition, statistically significant differences were found for the Realistic, Investigative, Enterprising, and Conventional RIASEC types. For the 189 participants who matched Masculine to the Realistic job description, 68.3% were in the first condition, which featured a male name in the description, and 31.7% were in the second condition, with a female name in the description. Of the 58 participants who sorted Masculine to the Investigative job description, 5.2% were in the first condition (female name) and 94.8% were in the second condition (male name). For the 43 participants who matched Masculine to the Enterprising job description, 72.1% were in the first condition (male name) and 27.9% were in the second condition (female name). Finally, of the 33 participants who matched Masculine to the Conventional job description, 12.1% were in the first condition (female name) and 87.9% were in the second condition (male name).

Warm was the third adjective significantly related to condition. There were statistically significant differences found for the Artistic, Social, and Conventional RIASEC types. For those

50 participants who matched Warm to the Artistic job description, 28.0% were in the first condition, with a male name in the description, and 72.0% were in the second condition, with a female name in the same description. For the 164 participants who sorted Warm to the Social job description, 59.1% were in the first condition (female name) and 40.9% were in the second condition (male name). Of those 28 participants who matched Warm to the Conventional job description, 75.0% were in the first condition (female name) and 25.0% were in the second condition (male name).

CHAPTER 5. DISCUSSION

Although overt sexism and structural barriers to the advancement of women in the workplace have decreased over time, stark differences still remain in the representation of women and men in various careers. Women tend to be overrepresented in traditionally feminine occupations that also tend to be lower in pay and prestige, while men tend to be overrepresented in traditionally masculine careers with greater pay and prestige. Given these continued differences, the present study sought to examine potential remaining barriers to women's advancement and to more balanced representation of women and men in all careers. Specifically, this study examined perceptions of the femininity and masculinity of the RIASEC types, with the assumption that gendered views of occupations may impact individual decision-making related to careers. Results demonstrated that perceptions of the RIASEC types may be shifted somewhat by the gender of the person portrayed in representative careers. Given the importance of gender as a social and psychological construct (Egan & Perry, 2001; Bussey & Bandura, 1999), these findings may be used to better assist individuals as they make career-related decisions.

RIASEC and Perceptions of Femininity and Masculinity

This study's results suggest, to some extent, that individuals consistently view the 6 RIASEC types as either feminine or masculine. For example, participants in both conditions consistently perceived the Social type as more feminine and the Realistic type as more masculine. However, this study also demonstrated that shifts in the perceptions of the femininity and masculinity of some of the RIASEC types are possible when individuals are exposed to women or men in representative jobs. Significant results were found for condition, meaning that participants' views of how feminine or masculine a RIASEC type is did shift somewhat based on whether or not they saw a woman's or a man's name in the representative job description. For example, participants who viewed a Realistic job description with a female name perceived the

type as less masculine than participants who view the same job description with a male name, but participants in both conditions consistently rated the type as masculine overall.

Statistically significant results were found for all RIASEC types except for Enterprising. In other words, Enterprising was the only type in which participants did not differ, by condition and by the gender of the person portrayed in the job, in their perceptions of the femininity and masculinity of the type. This may be due to the particular BSRI adjectives that were typically assigned to this type. Overall, Enterprising was rated as masculine rather than feminine by participants in both conditions. Certain BSRI masculine adjectives, such as ‘Acts as a leader’ and Dominant were frequently assigned to the Enterprising type. However, it is possible that statistically significant differences were not found by condition for this type because of societal shifts in how leadership is viewed. For example, it may be that leadership is no longer viewed as solely the domain of men and that women who enter leadership positions are not necessarily viewed as masculine rather than feminine. On the other hand, this may not be true for women who enter other traditionally masculine fields, such as those representative of the Realistic RIASEC type, where significant differences by condition were found. It is also interesting to note that significant differences between women and men in Enterprising interests have not been consistently found, while this is not the case for the other types (Su, Rounds, & Armstrong, 2009), which may lend additional support to the notion that different factors are currently at play with the Enterprising type.

Pearson’s chi-squared tests (χ^2) provided more information about the differences in how BSRI adjectives were assigned to RIASEC types based on the gender of the person in the description. The MANOVA revealed that there were overall effects of condition in assignment of BSRI adjectives, while the Pearson’s chi-squared tests demonstrated that there were certain

adjectives that yielded the largest, most consistent effects. After the Bonferroni correction, BSRI adjectives (Feminine, Masculine, and Warm) were found to be significantly related to condition. Participants typically assigned Feminine to job descriptions with a female name and Masculine to job descriptions with a male name, which likely reflects a reluctance to assign Feminine to males and Masculine to females. Warm, a feminine BSRI adjective, was regularly assigned to job descriptions with female names. Other BSRI adjectives, such as the masculine Athletic, $\chi^2(5) = 16.60, p \leq .005$, were regularly applied to types that emerged as masculine in the participants' perceptions (in this case, the Realistic type), but even more so for job descriptions already perceived to be masculine and with male names (as opposed to female names).

Therefore, the Pearson's chi-squared analyses reveal a larger pattern also supported by the significant results for condition of the MANOVA. Participants regularly assigned feminine adjectives to RIASEC types they already perceived as feminine and masculine adjectives to types they perceived as masculine. The gender of the person portrayed in the career shifted their perceptions somewhat, but did not result in reversals of perceptions (e.g. viewing the Realistic type as feminine when a female name was in the job description).

As was noted earlier, this study did not find significant differential effects of right-wing authoritarianism, religious fundamentalism, and attitudes toward women across RIASEC types. In other words, participants did not differ in their assignment of feminine or masculine BSRI adjectives to the RIASEC types based on their level of right-wing authoritarianism and religious fundamentalism and their attitudes toward women. Although there may in fact be a link between, for example, religious fundamentalism and prejudice, including sexism, it is likely that predicted effects were not found in this study due to the structure of the study itself.

In order for these covariates to have produced statistically significant effects on

perceptions of the femininity and masculinity of the RIASEC types, there would have had to be differential effects of each variable across the types. For example, people who displayed higher levels of religious fundamentalism would have had to respond differently, or in a more sexist manner, to one RIASEC type and not another. The forced-choice paradigm inherent to this study, in which participants were required to assign all 60 BSRI adjectives to a job description, may have not allowed differences in sexist perceptions of the RIASEC types to emerge.

A previous study, Bergner (2013), also examined the perceptions of the femininity and masculinity of the RIASEC types through the matching of BSRI adjectives to job descriptions representative of the RIASEC types. Bergner's study, however, utilized three conditions in which participants viewed 1) female names in all job descriptions, 2) male names in all job descriptions, or 3) gender neutral job descriptions. The present study, as has been discussed, added a second layer to the variables studied and utilized two conditions in which all participants were exposed to job descriptions with female and male names, but differed in the particular descriptions they read with either female or male names.

The findings of this study differ somewhat from the findings of Bergner's (2013) study. Bergner found that gender, but not condition, had a significant impact on participants' ratings of the femininity and masculinity of the RIASEC types, while the present study found significant results for both. Bergner's results suggested that perceptions of the RIASEC types differed somewhat depending on the gender of the individual assigning adjectives to the RIASEC types, but the overall pattern was consistent in the face of changes in the gender of the people believed to be working in various jobs. Participants rated certain RIASEC types as masculine (e.g. Realistic) and others as feminine (e.g. Social) when comparing same-gender targets across the six Holland types. That is, when comparing men in Realistic jobs to men in Social jobs, or women in Realistic jobs to women in Social jobs, the ratings of masculinity and femininity were stable. In the present study, however, when women and men were compared to each other across the six

RIASEC types, there were some shifts in the perceived masculinity and femininity of the RIASEC types depending on the gender of the person in the RIASEC occupational description.

The present study's results demonstrate an overall pattern of how participants rate the femininity and masculinity of the RIASEC types that is consistent with previous research. Irrespective of the gender of the individual working in an occupation, some Holland types are viewed as more masculine and others are viewed as more feminine. Some differences emerged when participants were exposed to female or male names in the job descriptions. In other words, it is possible to shift someone's view of how masculine or feminine jobs representative of a certain type are to a certain degree (e.g. view the Realistic type as less masculine when a woman is seen working in the job). However, the magnitude of these changes was not sufficient to fundamentally shift the perception of a job from feminine to masculine (or vice versa). Stereotyped beliefs about occupations are likely to influence general perceptions of the femininity and masculinity of careers, while the gender of the individual in a career can influence how strongly the stereotyped beliefs are maintained in any given situation. Realistic occupations may be viewed as being somewhat less masculine when a woman is used as the example of an individual working in that type of job, but Realistic jobs are still viewed as being the most masculine of the six RIASEC types. Similarly, Social occupations may be viewed as being somewhat less feminine when a man is used as the example of an individual working in that type of job, but Social jobs are still viewed as being the most feminine of the six RIASEC types.

Implications for Career Counseling Models and Practice

Despite differences in the degree to which participants rated a RIASEC type as feminine or masculine based on the gender of the person portrayed in the job, participants in this study perceived the RIASEC types, in general, in expected ways. The Realistic and Investigative types were perceived as more masculine, while the Artistic, Social, and Conventional types were

perceived as more feminine. Reliable differences in vocational interests between women and men have also been found along these lines, with women demonstrating more interest in Artistic, Social, and Conventional tasks and men showing more interest in Realistic and Investigative types (Su, Rounds, & Armstrong, 2009).

The results of this study confirm that individuals tend to perceive careers of various types (e.g. Realistic or Social) as more feminine or more masculine in nature. These perceptions may shift somewhat based on the examples the individual is exposed to in her or his daily life. For example, someone exposed to many women working in Realistic jobs may develop perceptions of Realistic jobs that are less strongly masculine than another person who sees only men working in Realistic jobs. Therefore, it is important for counselors working with clients on career-related issues to evaluate the perceptions their clients have of various careers they are considering (or not considering). Discussion of the examples of workers and the role gender and other variables may play in their decision-making could be helpful as clients navigate this process.

Other research has begun to examine the role that gender of career role models may play in the vocational choices individuals make and their likelihood of remaining and succeeding in a gender non-traditional career (e.g. women in STEM [science, technology, engineering, and mathematics] fields). For example, Young and colleagues (2013) determined, through the use of the Implicit Association Task, that women who viewed female professors as positive role models more strongly identified with science and perceived science as being more feminine than masculine. Lockwood (2006) discussed the importance of same-gender role models for women in particular and suggested that women may especially benefit from same-gender role models due to the negative gender-related stereotypes they face in gender non-traditional careers.

The findings of the present study, which suggest that perceptions of the femininity and masculinity of careers may be influenced by the gender of the person depicted in the career, relate

strongly to these earlier role model studies. Furthermore, these results highlight the potential importance of the ways in which individuals may eliminate careers from their consideration on the basis of how appropriate they feel each career is for someone of their gender. Gottfredson's (1981) theory of circumscription and compromise may be especially relevant to these concerns.

Limitations and Future Directions

In some ways, the sample used in this study may not be fully representative of the population at large, which constitutes a limitation of the study. For example, the majority (84.1%) of the studied identified as European American and all were college students. This is clearly not representative of the general population and limits the ability to examine the impact of certain demographic characteristics, such as race or ethnicity, on the variables of interest in this study. 64.7% of the sample identified as female, which could also limit the generalizability of the study's results. Furthermore, as has been discussed, this study may have been limited, due to the procedure and measures, in its ability to properly assess the effects of the covariates: right-wing authoritarianism, religious fundamentalism, and attitudes toward women.

An additional limitation of this study relates to the materials participants were given in order to determine their perceptions of the femininity and masculinity of the RIASEC types. All participants viewed the same set of job descriptions, differing only in the gender of the person portrayed in the description. Therefore, this study featured only one exemplar of each RIASEC type (i.e. only one job description representing each RIASEC type). This somewhat limits the generalizability of the results found.

This study found that participant sex had a significant effect on the participants' ratings of the femininity and masculinity of some of the RIASEC types. In other words, women and men differed in how they perceived some RIASEC types. Specifically, differences were found in how women and men perceived the Investigative and Enterprising types. Female participants rated the

Investigative type as significantly more masculine than did male participants. Male participants, on the other hand, rated the Enterprising type as significantly more masculine than did female participants. These differences may have been due to characteristics of this particular sample, but may also prove to be a productive line of future research.

Statistically significant effects of right-wing authoritarianism and religious fundamentalism on perceptions of the RIASEC types were not found. However, given that research has demonstrated a strong link between these constructs and prejudice of various types (Altemeyer&Hunsberger, 1992), it may still be possible that they impact how individuals view, express interest in, or evaluate the presence of others (i.e. women or men) in careers representative of the RIASEC types. Therefore, future research may include further attempts to learn about the impact of religious fundamentalism and right-wing authoritarianism in this area.

Summary and Conclusions

The present study examined perceptions of the femininity and masculinity of the RIASEC types and to determine the extent to which the gender of the person portrayed in an occupation, religious fundamentalism, right-wing authoritarianism, and attitudes toward women impact perceptions. Results demonstrated that participants tended to view some of the RIASEC types as more feminine or masculine, but that perceptions did differ as a result of participants' exposure to female or male names in the job description. Association of a female name with a RIASEC type often seen as masculine decreased the extent to which this type was rated as masculine by the participants in this study. Association of a male name with a RIASEC type often seen as feminine decreased the extent to which the type was rated as feminine by participants. Covariates did not show a significant impact on perceptions of the RIASEC types in this study, but further examination of these variables, such as religious fundamentalism and right-wing authoritarianism, may represent productive lines of future research.

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Table 1. Proportions and Pearson's Chi-Square (χ^2) Results for Masculine BSRI Adjectives by Condition.

Adjective	Condition	R	I	A	S	E	C	χ^2	<i>p</i>
Self-reliant	1	0.44	0.20	0.15	0.00	0.03	0.18	4.64	.462
	2	0.42	0.19	0.15	0.02	0.02	0.19		
Defends own beliefs	1	0.09	0.41	0.27	0.02	0.08	0.12	4.34	.502
	2	0.07	0.49	0.23	0.03	0.10	0.08		
Independent	1	0.36	0.19	0.19	0.01	0.05	0.21	2.70	.747
	2	0.43	0.14	0.15	0.01	0.05	0.22		
Athletic	1	0.85	0.01	0.01	0.01	0.11	0.02	16.60	.005
	2	0.78	0.05	0.02	0.03	0.06	0.07		
Assertive	1	0.21	0.24	0.02	0.01	0.43	0.10	6.54	.257
	2	0.20	0.16	0.03	0.02	0.51	0.08		
Strong personality	1	0.11	0.16	0.21	0.02	0.47	0.02	1.79	.878
	2	0.11	0.13	0.20	0.04	0.49	0.03		
Forceful	1	0.41	0.13	0.03	0.01	0.36	0.07	11.52	.042
	2	0.27	0.19	0.01	0.01	0.41	0.11		
Analytical	1	0.10	0.50	0.01	0.00	0.02	0.37	4.68	.456
	2	0.07	0.51	0.01	0.01	0.00	0.40		
Leadership ability	1	0.13	0.10	0.01	0.05	0.71	0.01	9.91	.078
	2	0.17	0.02	0.01	0.04	0.76	0.01		
Willing to take risks	1	0.12	0.22	0.37	0.00	0.25	0.04	9.63	.086
	2	0.14	0.32	0.29	0.01	0.18	0.06		

Notes. 1 = Realistic job- Male name, Investigative job- Female name, Artistic job- Male name, Social job- Female name, Enterprising job- Male name, Conventional job- Female name; 2 = Realistic job- Female name; Investigative job- Male name, Artistic job- Female name, Social job- Male name, Enterprising job- Female name, Conventional job- Male name

Table 1. (Continued).

Adjective	Condition	R	I	A	S	E	C	χ^2	<i>p</i>
Makes decisions easily	1	0.24	0.11	0.06	0.01	0.37	0.20	3.81	.577
	2	0.19	0.14	0.06	0.02	0.42	0.17		
Self-sufficient	1	0.39	0.19	0.11	0.02	0.04	0.25	3.75	.586
	2	0.33	0.20	0.12	0.01	0.03	0.31		
Dominant	1	0.20	0.17	0.02	0.02	0.56	0.03	6.85	.232
	2	0.20	0.17	0.02	0.01	0.51	0.09		
Masculine	1	0.76	0.02	0.01	0.01	0.18	0.02	103.64	.000
	2	0.37	0.34	0.00	0.03	0.07	0.18		
Willing to take a stand	1	0.18	0.26	0.14	0.03	0.35	0.05	5.48	.361
	2	0.19	0.25	0.09	0.07	0.34	0.06		
Aggressive	1	0.36	0.17	0.04	0.01	0.36	0.07	5.45	.364
	2	0.32	0.19	0.02	0.02	0.33	0.12		
Acts as a leader	1	0.10	0.05	0.01	0.03	0.78	0.02	8.27	.142
	2	0.13	0.03	0.00	0.08	0.73	0.03		
Individualistic	1	0.28	0.11	0.48	0.00	0.02	0.12	7.19	.207
	2	0.19	0.13	0.46	0.01	0.02	0.19		
Competitive	1	0.13	0.32	0.08	0.00	0.36	0.11	9.07	.106
	2	0.10	0.44	0.11	0.01	0.25	0.09		
Ambitious	1	0.08	0.38	0.21	0.01	0.24	0.08	2.36	.797
	2	0.13	0.35	0.19	0.01	0.23	0.10		

Table 2. Proportions and Pearson's Chi-Square (χ^2) Results for Feminine BSRI Adjectives by Condition.

Adjective	Condition	R	I	A	S	E	C	χ^2	<i>p</i>
Yielding	1	0.16	0.25	0.06	0.04	0.08	0.42	2.44	.785
	2	0.17	0.31	0.06	0.04	0.06	0.36		
Cheerful	1	0.07	0.09	0.24	0.21	0.27	0.11	3.58	.611
	2	0.09	0.09	0.29	0.17	0.29	0.07		
Shy	1	0.21	0.19	0.09	0.01	0.01	0.50	3.10	.685
	2	0.23	0.14	0.13	0.01	0.00	0.49		
Affectionate	1	0.05	0.04	0.15	0.57	0.08	0.10	6.50	.260
	2	0.08	0.05	0.19	0.52	0.11	0.04		
Flatterable	1	0.10	0.15	0.27	0.05	0.19	0.23	15.34	.009
	2	0.15	0.12	0.27	0.08	0.29	0.10		
Loyal	1	0.22	0.15	0.05	0.05	0.26	0.27	14.21	.014
	2	0.22	0.11	0.04	0.16	0.17	0.30		
Feminine	1	0.01	0.15	0.11	0.47	0.01	0.25	186.64	.000
	2	0.06	0.01	0.65	0.07	0.17	0.04		
Sympathetic	1	0.04	0.07	0.07	0.71	0.06	0.07	3.98	.552
	2	0.03	0.03	0.08	0.71	0.09	0.07		
Sensitive to others' needs	1	0.02	0.04	0.10	0.68	0.14	0.02	3.81	.576
	2	0.06	0.04	0.09	0.62	0.16	0.02		
Understanding	1	0.05	0.14	0.07	0.52	0.14	0.08	2.26	.812
	2	0.04	0.10	0.05	0.57	0.16	0.08		

Notes. 1 = Realistic job- Male name, Investigative job- Female name, Artistic job- Male name, Social job- Female name, Enterprising job- Male name, Conventional job- Female name;

2 = Realistic job- Female name; Investigative job- Male name, Artistic job- Female name, Social job- Male name, Enterprising job- Female name, Conventional job- Male name

Table 2. (Continued).

	Condition	R	I	A	S	E	C	χ^2	<i>p</i>
Compassionate	1	0.02	0.08	0.19	0.64	0.03	0.05	8.16	.147
	2	0.06	0.06	0.21	0.58	0.07	0.03		
Eager to soothe hurt feelings	1	0.01	0.01	0.05	0.85	0.07	0.02	5.64	.343
	2	0.02	0.04	0.03	0.82	0.06	0.04		
Soft-spoken	1	0.12	0.12	0.11	0.12	0.02	0.49	7.79	.168
	2	0.16	0.13	0.16	0.12	0.00	0.43		
Warm	1	0.06	0.06	0.08	0.57	0.11	0.12	24.04	.000
	2	0.09	0.06	0.23	0.42	0.17	0.04		
Tender	1	0.06	0.06	0.13	0.54	0.08	0.12	4.69	.455
	2	0.10	0.08	0.18	0.44	0.07	0.13		
Gullible	1	0.12	0.17	0.17	0.09	0.07	0.37	13.70	.018
	2	0.20	0.17	0.27	0.05	0.06	0.24		
Childlike	1	0.08	0.05	0.63	0.09	0.04	0.11	3.45	.630
	2	0.09	0.08	0.61	0.10	0.02	0.09		
Does not use harsh language	1	0.04	0.14	0.05	0.50	0.12	0.16	9.48	.091
	2	0.07	0.06	0.07	0.49	0.18	0.14		
Loves children	1	0.02	0.05	0.07	0.73	0.06	0.08	13.61	.018
	2	0.08	0.03	0.14	0.65	0.06	0.04		
Gentle	1	0.05	0.07	0.08	0.51	0.04	0.26	12.23	.032
	2	0.10	0.05	0.15	0.52	0.05	0.13		

Table 3. Proportions and Pearson's Chi-Square (χ^2) Results for Gender Neutral BSRI Adjectives by Condition.

Adjective	Condition	R	I	A	S	E	C	χ^2	<i>p</i>
Helpful	1	0.20	0.18	0.01	0.29	0.19	0.13	6.11	.296
	2	0.15	0.15	0.15	0.02	0.40	0.11		
Moody	1	0.16	0.15	0.44	0.01	0.03	0.22	10.00	.075
	2	0.19	0.19	0.30	0.01	0.09	0.23		
Conscientious	1	0.10	0.26	0.09	0.08	0.07	0.39	13.60	.018
	2	0.22	0.27	0.07	0.12	0.07	0.24		
Theatrical	1	0.01	0.09	0.82	0.02	0.04	0.03	6.75	.240
	2	0.04	0.08	0.74	0.04	0.06	0.05		
Happy	1	0.10	0.12	0.39	0.11	0.20	0.08	4.37	.498
	2	0.14	0.06	0.43	0.09	0.20	0.08		
Unpredictable	1	0.12	0.16	0.66	0.01	0.01	0.05	13.14	.022
	2	0.11	0.19	0.53	0.01	0.04	0.12		
Reliable	1	0.30	0.19	0.02	0.04	0.13	0.33	17.30	.004
	2	0.28	0.07	0.01	0.09	0.12	0.44		
Jealous	1	0.10	0.25	0.23	0.00	0.07	0.34	14.11	.015
	2	0.15	0.30	0.09	0.01	0.08	0.36		
Truthful	1	0.10	0.37	0.03	0.12	0.15	0.23	9.88	.079
	2	0.08	0.29	0.03	0.23	0.10	0.26		
Secretive	1	0.08	0.22	0.09	0.07	0.04	0.47	5.95	.311
	2	0.06	0.28	0.10	0.12	0.06	0.39		

Notes. 1 = Realistic job- Male name, Investigative job- Female name, Artistic job- Male name, Social job- Female name, Enterprising job- Male name, Conventional job- Female name; 2 = Realistic job- Female name; Investigative job- Male name, Artistic job- Female name, Social job- Male name, Enterprising job- Female name, Conventional job- Male name

Table 3. (Continued).

	Condition	R	I	A	S	E	C	χ^2	<i>p</i>
Sincere	1	0.03	0.16	0.08	0.43	0.16	0.14	8.34	.138
	2	0.06	0.08	0.06	0.53	0.14	0.12		
Conceited	1	0.10	0.28	0.20	0.01	0.20	0.22	14.53	.013
	2	0.12	0.38	0.08	0.03	0.14	0.26		
Likeable	1	0.13	0.13	0.17	0.17	0.34	0.06	9.28	.099
	2	0.11	0.06	0.14	0.20	0.37	0.12		
Solemn	1	0.26	0.14	0.10	0.02	0.06	0.42	15.46	.009
	2	0.18	0.23	0.04	0.02	0.02	0.51		
Friendly	1	0.07	0.09	0.13	0.25	0.35	0.11	7.16	.209
	2	0.10	0.05	0.15	0.31	0.33	0.06		
Inefficient	1	0.14	0.13	0.49	0.04	0.04	0.15	17.90	.003
	2	0.09	0.24	0.36	0.02	0.02	0.27		
Adaptable	1	0.27	0.27	0.17	0.05	0.12	0.12	3.81	.577
	2	0.34	0.22	0.17	0.03	0.11	0.13		
Unsystematic	1	0.13	0.11	0.59	0.04	0.05	0.07	6.33	.275
	2	0.08	0.15	0.56	0.09	0.06	0.06		
Tactful	1	0.20	0.29	0.05	0.04	0.15	0.28	3.44	.633
	2	0.27	0.24	0.04	0.05	0.11	0.30		
Conventional	1	0.31	0.21	0.04	0.01	0.10	0.34	12.83	.025
	2	0.23	0.21	0.02	0.00	0.04	0.49		

Table 4. Means by Condition and Gender of Participants.

	Condition 1 ^a		Condition 2 ^b	
	M ^c	F	M	F
RIASEC gender rating				
Realistic	4.18	3.86	2.57	2.80
Investigative	1.25	2.15	2.06	3.07
Artistic	-0.35	-0.35	-1.86	-1.59
Social	-7.35	-7.67	-6.44	-6.67
Enterprising	4.13	3.68	3.94	2.80
Conventional	-1.98	-1.63	-0.27	-0.32
Right-wing authoritarianism ^d	74.50	77.07	81.14	76.77
Religious fundamentalism ^e	44.35	54.44	53.95	54.14
Attitudes Towards Women				
ASI	3.41	3.18	3.48	3.29
MSS	2.59	2.19	2.53	2.27

^aCondition 1 = Realistic job- Male name, Investigative job- Female name, Artistic job-Male name, Social job- Female name, Enterprising job- Male name, Conventional job- Female name

^bCondition 2= Realistic job- Female name; Investigative job- Male name, Artistic job-Female name, Social job- Male name, Enterprising job- Female name, Conventional job- Male name

^c 'M' and 'F' beneath Condition 1 and Condition 2 refer to the sex of the participants, Male or Female

^d Range of possible scores for the RWAS is 20 to 180

^e Range of possible scores for the R-RFS is 12 to 108

Table 5. Standard Deviations by Condition and Gender of Participants.

	Condition 1 ^a		Condition 2 ^b	
	M ^c	F	M	F
RIASEC gender rating				
Realistic	2.55	3.22	3.21	3.46
Investigative	2.91	3.20	2.81	2.94
Artistic	2.77	2.41	2.91	2.78
Social	1.94	1.77	2.61	2.40
Enterprising	3.32	3.54	3.19	3.66
Conventional	2.92	3.09	2.98	2.54
Right-wing authoritarianism	27.39	26.70	26.67	30.65
Religious fundamentalism	22.53	23.39	23.64	22.95
Attitudes Towards Women				
ASI	0.67	0.72	0.62	0.60
MSS	0.52	0.46	0.47	0.50

^a Condition 1 = Realistic job- Male name, Investigative job- Female name, Artistic job-Male name, Social job- Female name, Enterprising job- Male name, Conventional job- Female name

^b Condition 2= Realistic job- Female name; Investigative job- Male name, Artistic job-Female name, Social job- Male name, Enterprising job- Female name, Conventional job- Male name

^c ‘M’ and ‘F’ beneath Condition 1 and Condition 2 refer to the sex of the participants, Male or Female.

Table 6. Correlation Matrix.

	1	2	3	4	5	6	7	8	9	10
RIASEC gender rating										
1. Realistic	1.00									
2. Investigative	-0.19	1.00								
3. Artistic	-0.15	-0.28	1.00							
4. Social	-0.09	-0.18	-0.21	1.00						
5. Enterprising	-0.32	-0.25	-0.17	-0.15	1.00					
6. Conventional	-0.31	-0.17	-0.10	-0.06	-0.29	1.00				
7. Right-wing authoritarianism	0.06	0.03	-0.08	0.06	-0.09	0.05	1.00			
8. Religious fundamentalism	0.05	0.03	-0.04	0.00	-0.07	0.04	0.72	1.00		
Attitudes Towards Women										
9. ASI	-0.02	0.02	-0.11	0.14	0.01	0.02	0.43	0.23	1.00	
10. MSS	0.00	-0.05	-0.12	0.14	0.06	0.00	0.41	0.19	0.53	1.00

Table 7. MANCOVA Results for Masculinity and Femininity of the RIASEC Types.

MANCOVA Model and Covariates	Multivariate <i>F</i>	η^2	<i>p</i>
1. No covariates			
Sex	2.54	.045	.020
Condition	11.73	.178	.000
Sex x Condition	.294	.005	.940
2. Right-wing authoritarianism			
Sex	2.56	.045	.019
Condition	11.52	.176	.000
Sex x Condition	.310	.006	.931
Right-wing authoritarianism	1.07	.019	.382
3. Religious fundamentalism			
Sex	2.43	.043	.026
Condition	11.56	.176	.000
Sex x Condition	.317	.006	.928
Religious fundamentalism	.456	.008	.841
4. Attitudes toward women			
Sex	2.23	.040	.040
Condition	11.53	.177	.000
Sex x Condition	.389	.007	.886
ASI	.820	.015	.555
MSS	.735	.014	.622

APPENDIX A. DEMOGRAPHIC QUESTIONNAIRE

Perceptions of Work Environments

Demographic Information

Name (print): _____

University ID number:
(middle 9 digits) _____

NetID: _____

Age: _____

Major Program of Study: _____

<i>How satisfied are you with your current major?</i>	Very Satisfied	Satisfied	Somewhat Satisfied	Not Satisfied
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Current GPA: _____

Gender: Female Male

Year in School: Freshman Sophomore Junior Senior

Ethnic/cultural identity: African American Asian American Hispanic American

Native American White/European American

Other: _____

Three careers you have considered: 1. _____

2. _____

3. _____

Which of these careers are you most interested in pursuing at this point? _____

APPENDIX B. OCCUPATIONAL DESCRIPTIONS

Condition #1

Realistic Occupational Description

Michael works in a job where he performs hands-on activities that involve precise movements and measurements. He monitors specific areas and people to make sure that there are no problems with the operation of equipment, but he does not often work directly with others. He is often on his feet throughout the day. Michael's job involves mechanical and technical abilities, and his work often requires the use of tools and operation of machines. He is involved in both indoor and outdoor work activities.

Investigative Occupational Description

Ashley works in a job where she gathers information and designs experiments to test theories in order to develop new knowledge in her field. Her job involves looking for trends and patterns in the data she collects. Ashley's work activities involve publishing the findings of her research as well as evaluating the research of others. Her job requires critical thinking and the ability to figure out problems mentally. She uses objective data to solve problems rather than using feelings or the social environment.

Artistic Occupational Description

Matthew works in a job where he creates original works of art. He designs and creates materials to meet his personal standards as well as the standards of clients and managers. He attempts to integrate various elements in order to produce certain effects in his artwork, such as illustration of ideas, emotions, or moods. Matthew generates new ideas and develops plans for his art based on these ideas. He uses artistic ability and creative competencies in his work and does not engage in clerical activities.

Social Occupational Description

Brittany works in a job where she counsels and advises individuals. She teaches important life skills to individuals and groups and uses a variety of methods to instruct them. She evaluates the progress of the individuals and groups, and she works collaboratively with others to develop educational programs to help meet their needs. Brittany's job does not involve the use of tools and machines, but rather she uses interpersonal skills and the ability to communicate effectively to carry out her work.

Enterprising Occupational Description

Andrew works in a job where he directs the activities of employees. He works to establish relationships with business customers and makes recommendations to customers based on the needs they communicate. Andrew is also involved in training of staff and in the hiring of personnel. He often networks within communities to attract new business and does not work

behind the scenes doing research. His job requires skills in leadership and the ability to effectively make decisions.

Conventional Occupational Description

Emily works in a job where she prepares and manages extensive databases of information. She files documents and keeps records of customer accounts. Much of her work is performed on a computer, and her job requires clerical abilities and skills in attention to detail. Emily works with data rather than ideas, and she works to detect errors in data to verify the accuracy and validity of the data. Her job also involves preparing tables and graphs of the data.

Condition #2

Realistic Occupational Description

Jessica works in a job where she performs hands-on activities that involve precise movements and measurements. She monitors specific areas and people to make sure that there are no problems with the operation of equipment, but she does not often work directly with others. She is often on her feet throughout the day. Jessica's job involves mechanical and technical abilities, and her work often requires the use of tools and operation of machines. She is involved in both indoor and outdoor work activities.

Investigative Occupational Description

Christopher works in a job where he gathers information and designs experiments to test theories in order to develop new knowledge in his field. His job involves looking for trends and patterns in the data he collects. Christopher's work activities involve publishing the findings of his research as well as evaluating the research of others. His job requires critical thinking and the ability to figure out problems mentally. He uses objective data to solve problems rather than using feelings or the social environment.

Artistic Occupational Description

Samantha works in a job where she creates original works of art. She designs and creates materials to meet her personal standards as well as the standards of clients and managers. She attempts to integrate various elements in order to produce certain effects in her artwork, such as illustration of ideas, emotions, or moods. Samantha generates new ideas and develops plans for her art based on these ideas. She uses artistic ability and creative competencies in her work and does not engage in clerical activities.

Social Occupational Description

Joshua works in a job where he counsels and advises individuals. He teaches important life skills to individuals and groups and uses a variety of methods to instruct them. He evaluates the progress of the individuals and groups, and he works collaboratively with others to develop educational programs to help meet their needs. Joshua's job does not involve the use of tools and

machines, but rather he uses interpersonal skills and the ability to communicate effectively to carry out his work.

Enterprising Occupational Description

Sarah works in a job where she directs the activities of employees. She works to establish relationships with business customers and makes recommendations to customers based on the needs they communicate. Sarah is also involved in training of staff and in the hiring of personnel. She often networks within communities to attract new business and does not work behind the scenes doing research. Her job requires skills in leadership and the ability to effectively make decisions.

Conventional Occupational Description

Brandon works in a job where he prepares and manages extensive databases of information. He files documents and keeps records of customer accounts. Much of his work is performed on a computer, and his job requires clerical abilities and skills in attention to detail. Brandon works with data rather than ideas, and he works to detect errors in data to verify the accuracy and validity of the data. His job also involves preparing tables and graphs of the data.

APPENDIX C. BEM SEX ROLE INVENTORY

Please indicate how well each of the following characteristics describes you. The scale ranges from 1 (“Never or almost never true”) to 7 (“Almost always true”).

Self-reliant
Yielding
Helpful
Defends own beliefs
Cheerful
Moody
Independent
Shy
Conscientious
Athletic
Affectionate
Theatrical
Assertive
Flatterable
Happy
Strong personality
Loyal
Unpredictable
Forceful
Feminine
Reliable
Analytical
Sympathetic
Jealous
Leadership ability
Sensitive to others' needs
Truthful
Willing to take risks
Understanding
Secretive
Makes decisions easily
Compassionate
Sincere
Self-sufficient
Eager to soothe hurt feelings
Conceited
Dominant
Soft spoken
Likable
Masculine

Warm
Solemn
Willing to take a stand
Tender
Friendly
Aggressive
Gullible
Inefficient
Acts as a leader
Childlike
Adaptable
Individualistic
Does not use harsh language
Unsystematic
Competitive
Loves children
Tactful
Ambitious
Gentle
Conventional

APPENDIX D. AMBIVALENT SEXISM INVENTORY AND MODERN SEXISM SCALE

Ambivalent Sexism Inventory

Below is a series of statements concerning men and women and their relationships in contemporary society. Please indicate the degree to which you agree or disagree with each statement using the following scale: Disagree strongly, Disagree somewhat, Disagree slightly, Agree slightly, Agree somewhat, Agree strongly.

Item
1: No matter how accomplished he is, a man is not truly complete as a person unless he has the love of a woman.
2: Many women are actually seeking special favors, such as hiring policies that favor them over men, under the guise of asking for "equality."
3: In a disaster, women ought not necessarily to be rescued before men.
4: Most women interpret innocent remarks or acts as being sexist.
5: Women are too easily offended.
6: People are often truly happy in life without being romantically involved with a member of the other sex.
7: Feminists are not seeking for women to have more power than men.
8: Many women have a quality of purity that few men possess.
9: Women should be cherished and protected by men.
10: Most women fail to appreciate fully all that men do for them.
11: Women seek to gain power by getting control over men.
12: Every man ought to have a woman whom he adores.
13: Men are complete without women.
14: Women exaggerate problems they have at work.
15: Once a woman gets a man to commit to her, she usually tries to put him on a tight leash.
16: When women lose to men in a fair competition, they typically complain about being discriminated against.

17: A good woman should be set on a pedestal by her man.
18: There are actually very few women who get a kick out of teasing men by seeming sexually available and then refusing male advances.
19: Women, compared to men, tend to have a superior moral sensibility.
20: Men should be willing to sacrifice their own well being in order to provide financially for the women in their lives.
21: Feminists are making entirely reasonable demands of men.
22: Women, as compared to men, tend to have a more refined sense of culture and good taste.

Modern Sexism Scale

Please indicate the degree to which you agree or disagree with each statement using the following scale: Strongly agree, Agree, Neutral, Disagree, Strongly disagree.

Item
1: Women are generally not as smart as men.
2: I would be equally comfortable having a woman as a boss as a man.
3: It is more important to encourage boys than to encourage girls to participate in athletics.
4: Women are just as capable of thinking logically as men.
5: When both parents are employed and their child gets sick at school, the school should call the mother rather than the father.
6: Discrimination against women is no longer a problem in the United States.
7: Women often miss out on good jobs due to sexual discrimination.
8: It is rare to see women treated in a sexist manner on television.
9: On average, people in our society treat husbands and wives equally.
10: Society has reached the point where women and men have equal opportunities for advancement.
11: It is easy to understand the anger of women's groups in America.

12: It is easy to understand why women's groups are still concerned about societal limitations of women's opportunities.

13: Over the past few years, the government and news media have been showing more concern about the treatment of women than is warranted by women's actual experiences.

APPENDIX E. REVISED RELIGIOUS FUNDAMENTALISM SCALE AND RIGHT-WING AUTHORITARIANISM SCALE

Revised Religious Fundamentalism Scale

This survey is part of an investigation of general public opinion concerning a variety of social issues. You will probably find that you agree with some of the statements and disagree with others, to varying extents. Please indicate your reaction to each statement by using the following rating scale: -4= Very strongly disagree, -3= Strongly disagree, -2= Moderately disagree, -1= Slightly disagree, 0= Neutral, 1= Slightly agree, 2= Moderately agree, 3= Strongly agree, and 4= Very strongly agree. You may find that you sometimes have different reactions to different parts of a statement. For example, you might very strongly disagree (“-4”) with one idea in a statement, but slightly agree (“1”) with another idea in the same item. When this happens, please combine your reactions and write down how you feel on balance (a “-3” in this case).

Item
1: God has given humanity a complete, unfailing guide to happiness and salvation, which must be totally followed.
2: No single book of religious teachings contains all the intrinsic, fundamental truths about life.
3: The basic cause of evil in this world is Satan, who is still constantly and ferociously fighting against God.
4: It is more important to be a good person than to believe in God and the right religion.
5: There is a particular set of religious teachings in this world that are so true, you can't go any "deeper" because they are the basic, bedrock message that God has given humanity.
6: When you get right down to it, there are basically only two kinds of people in the world: the Righteous, who will be rewarded by God; and the rest, who will not.
7: Scriptures may contain general truths, but they should NOT be considered completely, literally true from beginning to end.
8: To lead the best, most meaningful life, one must belong to the one, fundamentally true religion.
9: "Satan" is just the name people give to their own bad impulses. There really is <i>no such thing</i> as a diabolical "Prince of Darkness" who tempts us.
10: Whenever science and sacred scripture conflict, <i>science</i> is probably right.
11: The fundamentals of God's religion should never be tampered with, or compromised with others' beliefs.

12: *All* of the religions in the world have flaws and wrong teachings. There is *no* perfectly true, right religion.

Right-Wing Authoritarianism Scale

This survey is part of an investigation of general public opinion concerning a variety of social issues. You will probably find that you agree with some of the statements, and disagree with others, to varying extents. Please indicate your reaction to each statement by using the following rating scale: -4= Very strongly disagree, -3= Strongly disagree, -2= Moderately disagree, -1= Slightly disagree, 0= Neutral, 1= Slightly agree, 2= Moderately agree, 3= Strongly agree, and 4= Very strongly agree. You may find that you sometimes have different reactions to different parts of a statement. For example, you might very strongly disagree (“-4”) with one idea in a statement, but slightly agree (“1”) with another idea in the same item. When this happens, please combine your reactions and write down how you feel on balance (a “-3” in this case).

Item
1: The established authorities generally turn out to be right about things, while the radicals and protestors are usually just “loud mouths” showing off their ignorance.
2: Women should have to promise to obey their husbands when they get married.
3: Our country desperately needs a mighty leader who will do what has to be done to destroy the radical new ways and sinfulness that are ruining us.
4: Gays and lesbians are just as healthy and moral as anybody else.
5: It is always better to trust the judgment of the proper authorities in government and religion than to listen to the noisy rabble-rousers in our society who are trying to create doubt in people’s minds.
6: Atheists and others who have rebelled against established religions are no doubt every bit as good and virtuous as those who attend church regularly.
7: The only way our country can get through the crisis ahead is to get back to our traditional values, put some tough leaders in power, and silence the troublemakers spreading bad ideas.
8: There is absolutely nothing wrong with nudist camps.
9: Our country <u>needs</u> free thinkers who have the courage to defy traditional ways, even if this upsets many people.
10: Our country will be destroyed someday if we do not smash the perversions eating away at our moral fiber and traditional beliefs.
11: Everyone should have their own lifestyle, religious beliefs, and sexual preferences, even if it makes them different from everyone else.

12: The “old-fashioned ways” and the “old-fashioned values” still show the best way to live.
13: You have to admire those who challenged the law and the majority’s view by protesting for women’s abortion rights, for animal rights, or to abolish school prayer.
14: What our country really needs is a strong, determined leader who will crush evil, and take us back to our true path.
15: Some of the best people in our country are those who are challenging our government, criticizing religion, and ignoring the “normal way things are supposed to be done.”
16: God’s laws about abortion, pornography and marriage must be strictly followed before it is too late, and those who break them must be strongly punished.
17: There are many radical, immoral people in our country today, who are trying to ruin it for their own godless purposes, whom the authorities should put out of action.
18: A “woman’s place” should be wherever she wants to be. The days when women are submissive to their husbands and social conventions belong strictly in the past.
19: Our country will be great if we honor the ways of our forefathers, do what the authorities tell us to do, and get rid of the “rotten apples” who are ruining everything.
20: There is no “ONE right way” to live life; everybody has to create their <u>own</u> way.
21: Homosexuals and feminists should be praised for being brave enough to defy “traditional family values.”
22: This country would work a lot better if certain groups of troublemakers would just shut up and accept their group’s traditional place in society.

APPENDIX F. INFORMED CONSENT DOCUMENT**INFORMED CONSENT DOCUMENT**

Title of Study: Perceptions of Work Environments

Investigators: Megan Callahan, B.A.
Patrick Ian Armstrong, Ph.D., Caitlin Anderson, B.A.

This is a research study being conducted by the Identity Development Laboratory, Department of Psychology, Iowa State University. Please take your time in deciding if you would like to participate. Please feel free to ask questions at any time. As indicated in your course syllabus, participation in experiments is one option for earning experimental credit.

INTRODUCTION

The purpose of this study is to learn more about occupations and the career choices people make. This study will examine perceptions of different occupations and different work environments. You are being invited to participate in this study because you are currently enrolled as a student at Iowa State University.

DESCRIPTION OF PROCEDURES

If you agree to participate in this study, your total participation will last for 90 minutes or less. If you agree to participate, you will be asked to complete a brief survey of demographic, personality, interest, and opinion measures as well as a card-sorting activity in the lab today. In about one week, you will then be sent a link to complete an addition perception and attitude survey online. You will receive 2 SONA credits for completing all parts of the study.

RISKS

While participating in this study you may experience the following risks: There are no known physical, legal, pain, or privacy risks in this study. This study may be inconvenient due to the estimated ninety minutes or less needed to complete the assessments. Although unlikely, there is also the potential for minimal psychological and emotional discomfort as you complete the vocational and personality assessments. Completing these assessments may bring up questions for you about career exploration, career decision-making, or your personality. To minimize these risks, you will receive contact information for career exploration and counseling services in case you would like to seek out these services. You may end your participation at any time. You may skip any question that you do not wish to answer or that makes you feel uncomfortable.

BENEFITS

If you decide to participate in this study there will be no direct benefit to you. It is hoped that the information gained in this study will benefit society by contributing to the understanding of

vocational and personality assessments and to the understanding of career choices. In addition, this information may provide career counselors with increased knowledge of the assessments they use in helping people make career-related decisions. Ultimately, the information gained in this study could benefit clients in career counseling.

COSTS AND COMPENSATION

You will not have any costs associated with participation in this study. You will receive two SONA credits as compensation for your time to complete the card-sorting activity and survey questions. If you complete only the first (in-lab) portion of the study, you will earn one SONA credit.

PARTICIPANT RIGHTS

Your participation in this study is completely voluntary and you may refuse to participate or leave the study at any time. If you decide not to participate in this study or to leave the study early, it will not result in any penalty or loss of benefits to which you are otherwise entitled. To earn research credit for your course, there are alternatives to completing the study that are described in your course syllabus.

CONFIDENTIALITY

Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies, auditing departments of Iowa State University, and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis. These records may contain private information.

To ensure confidentiality to the extent permitted by law, the following measures will be taken. Participants will be assigned a unique code. Participant's name and student number will be removed once this code is assigned and data has been entered. Only the faculty member and research assistants on this project will have access to the data. The data will be stored in locked offices and labs. Raw data will be stored for five years after the results are published and then will be destroyed. Your individual answers will be combined with those obtained from other participants and reported as a group. If the results are published, your identity will remain confidential.

QUESTIONS OR PROBLEMS

You are encouraged to ask questions at any time during this study.

- For further information about your participation in the study contact Patrick Armstrong, Ph.D., at 515-294-8788, pia@iastate.edu.

- If you have questions about the rights of research subjects or research-related injury, please contact the IRB administrator, 515-294-4566, IRB@iastate.edu, or Director, 515-294-3115, Office for Responsible Research, Iowa State University, Ames, Iowa 50011.

PARTICIPANT SIGNATURE

Your signature indicates that you voluntarily agree to participate in this study, that the study has been explained to you, that you have been given the time to read the document, and that your questions have been satisfactorily answered. All personal information will be kept confidential. You will receive a copy of the written informed consent prior to your participation in the study.

Participant's Name (printed): _____

Participant's Student Number: _____

(Participant's Signature)

(Date)