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Gender, Values, and the Formation of Occupational Goals

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**Gender, Values, and the Formation
of Occupational Goals**

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Dissertation

Presented to the Faculty of the Graduate School of

The University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

Doctor of Philosophy

The University of Texas at Austin

May 2006

Acknowledgments

I wish to thank a number of people for their contributions to this work. First, I am very grateful for the guidance of Rebecca Bigler who has served as both a mentor and a role model to me. I also thank Jacqueline Woolley, Judith Langlois, William Swann, Jr., and Tasha Beretvas for their insights and suggestions concerning this study. Many thanks are also extended to Steven Witt, Jamie Garcia, and Amy Weisgram Engstrom for their willingness to be a part of this study and also to the participants who took part in these studies. I am also appreciative of the undergraduate students in the Gender and Racial Attitudes Lab who assisted in data collection, data entry, and recruitment of subjects, especially Lindsey Fivecoat, Ashley Smith, Masha Sharf, Fran Aucna-Neely, Desiree Sorenson, Marissa Contreras, Lisa Newhouse, John Goosey, and Camille Garvin.

And finally, I would like to thank my family and friends for their support with special thanks to my husband, Chris, for his insights and suggestions, proofreading and editing, and most of all his friendship and love.

Gender, Values, and the Formation of Occupational Goals

Publication No. _____

Erica S. Weisgram, Ph.D.

The University of Texas at Austin, 2006

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Despite the trend toward greater gender equality in the workforce, gender segregation of occupations is still prevalent. In the year 2000, for example, 80 percent of all jobs classified by the U. S. Census Bureau employed predominately one sex. Gender stereotyping has been hypothesized to play a direct role in occupational segregation via differential treatment by parents, teachers, etc. (Stockard & McGee, 1990). Sex differences in occupational values have also been posited to play an important role (Eccles, 1987). The primary purpose of the present studies was to explore the roles of gender cognitions and values in children's and adults' occupational interest using correlational and experimental designs.

In Study 1, I investigated individuals' occupational values, gender stereotypes, and occupational interests using a cross-sectional design. Specifically, children (ages 6 to 18) and adults completed surveys assessing their (a) endorsement of occupational values (b) gender stereotyping of occupations, and (c) interest in masculine and feminine

occupations. Results indicated significant sex differences in individuals' occupational interests with males indicating higher levels of interest in masculine occupations than females and females indicating higher levels of interest in feminine occupations than males. In addition, regression analyses determined that values are important predictors of occupational interest.

In Study 2, I examined the *causal* role of gender stereotyping and values in shaping individuals' occupational interest via an experimental design. Specifically, replicating and extending Liben, Bigler, and Krogh's (2001) novel job paradigm, children (ages 5 to 10) and adults were exposed to eight novel jobs. Four jobs depicted female workers and four jobs depicted male workers. Within each gender category, each job was characterized by one of four values: family, altruism, money, or power. Results indicated that children and adults were significantly more interested in jobs depicted with same-sex models than jobs depicted with opposite sex models. Results also indicated that among adults, males were significantly more interested in jobs that afford money and power values than females. The results of these studies are likely to have important implications for theoretical models of vocational development and the design of programs aimed at reducing sex-typing of children's occupational interests.

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CHAPTER ONE:

INTRODUCTION AND LITERATURE REVIEW

During the 1960s and 1970s, women entered the U. S. workforce in large numbers. The number of working women increased 65 percent between 1960 and 2000 (Census Bureau, 2005). Although women are now participating in the workforce at high rates, *gender segregation* of occupations, or the tendency of occupations to be dominated by one gender, remains prevalent. In the year 2000, 80 percent of jobs classified by the U. S. Census Bureau were performed predominantly by one sex. For example, women dominate fields such as nursing (88% women), education (81% women), and child care (95% women), whereas men dominate fields such as engineering (90% men), computer programming (88% men), and physical science (78% men). Cejka and Eagly (1999) report that 53% of all employed women would have to change their occupation in order to eliminate gender segregation in the workforce.

The gender segregation of the workforce is of interest to many scholars, policy makers, and activists. Some authors have argued that such segregation is troubling because it perpetuates economical inequalities between the sexes. Female-dominated occupations are paid less and are lower in status than male-dominated occupations (Betz & Fitzgerald, 1987; Lips, 2003). Others worry that such segregation serves to constrain individuals' occupational choices because it leads males and females to select occupations based on their sex rather than their interests and aptitudes. Importantly, an

understanding of the mechanisms that contribute to the sex-typing of children's and adults' occupational interests is necessary for understanding the gender segregation of the workforce and developing strategies to reduce segregation.

The origins of gender segregation may lie in children's sex-typed occupational interests. Research has shown that even young children tend to express interest in occupations that are dominated by same-sex individuals. This trend continues into adolescence and adulthood, albeit to a lesser extent. Although research exploring children's interests and goals has been conducted by a number of researchers (e.g., Gregg & Dobson, 1980; Liben, Bigler, & Krogh, 2001), there is a limited understanding of the mechanisms that directly shape children's occupational interests and goals.

A wide variety of theoretical perspectives on the formation of occupational goals have been proposed within the fields of education, vocational guidance, educational psychology, social psychology, and developmental psychology (e.g., Eccles, 1987; Gottfredson, 1981; Super, 1995). Because my primary interest is in the gender segregation of occupations, I have restricted my focus to theories concerning the roles of two variables: gender-related cognitions (e.g., schemas, stereotypes) and occupational values (e.g., altruistic or money values). Some researchers (e.g., Bandura & Bussey, 2004; Farmer, 1985) have argued that gender segregation of occupations is the result of authority figures', and children's own, endorsement of gender-related beliefs and stereotypes. There is, however, little clear empirical evidence that these cognitions play a *casual* role in shaping occupational goals. An alternative and innovative perspective is that sex differences in occupational values produce sex differences in occupational

interests. Specifically, women are thought to value altruism more than men and, as a consequence, to be more interested in social and helping fields, whereas men are thought to value money and power more than women, and thus to aspire to high-status, high-paying fields. Whether sex differences in occupational values are evident in childhood, and if so, the role they play in producing gender differentiation of occupational interests remains unknown. The primary purpose of the two studies described here is, therefore, to investigate the roles of gender cognitions and occupational values in shaping children's occupational interests and goals.

In the following review of the relevant literature, I first present research on sex-typing in children's occupational interests and discuss the role of gender cognitions in shaping children's occupational interests. Next, I review research on occupational values and the role that values may play in individuals' occupational interests. Finally, I conclude with a brief description of the procedures and measures used in the studies described here and a discussion of the specific research hypotheses generated from previous research.

Children's Sex-typed Occupational Interests

A great deal of research indicates that children have sex-typed occupational interests. That is, girls typically rate themselves as more interested in stereotypically feminine than masculine occupations; boys show the reverse pattern. Sex-typed occupational choices have been found among preschool children (Papalia & Tennent, 1975; Vondracek & Kirchner, 1974), kindergarten children (Gregg & Dobson, 1980; Karre, 1976; Konle & Piliavin, 1976; Schlossberg & Goodman, 1972), elementary school

children (Gregg & Dobson, 1980; Helwig, 1998; Kriedberg, Butcher, & White, 1978; Looft, 1971; Schlossberg & Goodman, 1972; Scheresky, 1976; Sellers, Satcher, & Comas, 1999), middle school children (Liben & Bigler, 2002), and high school adolescents (Ji, Lapan, & Tate, 2004). Research has suggested, for example, that young girls' occupational interests often focus on the jobs of nurse and teacher, whereas young boys' occupational interests often focus on the jobs of scientist, fireman, and professional athlete (Liben & Bigler, 2002; Looft, 1971; Trice & Rush, 1995). Although some research indicates that sex-typing of occupational choices decreases with age (e.g., Sandberg, Ehrhardt, Mellins, Ince, & Meyer-Bahlburg, 1987), other research has indicated that sex-typing of occupations may increase with age, especially among boys (e.g., Helwig, 1988).

Interestingly, research by Looft (1971) and Hoult and Smith (1978) has also indicated that elementary school boys express interest in a greater range of occupations than girls (see Gregg & Dobson, 1980 and O'Keefe & Hyde, 1983 for exceptions). U. S. Census data indicates that in adulthood, men work in a much wider range of occupations than women. Indeed, there are many more masculine sex-typed jobs than feminine sex-typed jobs in contemporary American culture. This inequality means that females who endorse gender stereotypes make occupational selections from a much narrower range of options than males who endorse gender stereotypes.

Gender Cognitions and Children's Sex-Typed Occupational Interests

Within the developmental and social psychological literatures, research has focused on the role of gender-related cognitions in shaping individuals' occupational

interests. Most notably, researchers have examined the direct effects of perceptions of gender segregation within the workforce and also the effects of gender stereotypes in shaping children's occupational interests. In the following sections, I describe the possible effects of perceptions of gender segregation and of gender stereotypes on children's occupational interests.

Perceptions of Gender Segregation of the Workforce

Researchers of gender development suggest that children form gender schemas, or mental representations of gender-related information (e.g., Martin & Halverson, 1981) based on their exposure to gender-related information in the environment. Consistent with this notion, there is some evidence that manipulating gender-related information in the environment can affect children's and adults' interest in and judgments of occupations. Specifically, researchers have manipulated the perceived proportion of men or women in an occupation. In their work with college students, Collins, Reardon, and Waters (1980) manipulated students' perceptions of the proportion of women in the field of law. Results indicated that male college students were less interested in the field when the perceived proportion of women was increased. In a similar study with high school students, Heilman (1979) indicated that when the projected proportion of women in a male-dominated field was .50, males were less interested and females were more interested in the occupation than when the projected proportion of women in the male-dominated field was .10.

To directly determine whether the portrayal of occupations held predominantly by one gender affects children's occupational interests, research has examined children's

responses to novel or fake jobs that are depicted with either male or female workers. For example, Plost and Rosen (1974) demonstrated that eighth grade children who were exposed to males and females in unfamiliar jobs (i.e., Systems Analyst, Computer Software Designer) showed greater interest in the job modeled by a same-sex worker than the same job modeled by an opposite-sex worker, regardless of the actual occupation depicted. Girls were especially likely to choose the occupation modeled by a same-sex worker rather than an opposite-sex worker.

In addition, research by Liben, Bigler, and Krogh (2001) suggests that witnessing gender segregation of occupations may affect children's judgments of occupations. In their work, they presented children (ages 6 and 11) with illustrations of 6 novel jobs (e.g., nose, milliner) and 6 fake jobs (e.g., tenic, limner) depicted with either male or female workers, counterbalancing each job by gender of the worker. The results indicated that older children rated novel jobs depicted with male workers as higher in status than the same job depicted with female workers. However, there were no effects of sex of worker on children's interest in the occupations. Additional research using this paradigm is needed to further explore the causal effects of gender segregation on children's occupational interests.

In addition to affecting occupational goals and judgments, Eagly (1987) posited that witnessing gender segregation of occupations in the environment shapes the construction of gender stereotypes. This *social role theory* argues that after consistently seeing men and women in different social roles, individuals seek an explanation for these sex differences. Consequently, individuals search for either perceived or actual sex

differences in physical, psychological, or cognitive characteristics to explain the gender segregation (Cejka & Eagly, 1999). In this way, gender stereotypes about occupations are formed. For example, an individual may notice that physical science is a male-dominated field, and consequently decide that being a successful scientist requires cognitive characteristics perceived to be typical of males rather than females, such as analytic and mathematical skills. Thus, through this process, the job of “scientist” is deemed appropriate for only males who typically possess the characteristics needed to become a successful scientist.

Research by Eagly and her colleagues (Cejka & Eagly, 1999; Eagly & Steffen, 1984) has provided some empirical support for social role theory. In their work, Eagly and Steffen (1984) found that adults perceived homemakers (both women and men) as possessing more communal characteristics than employees and employees (both men and women) as possessing more agentic characteristics than homemakers. Because more women than men are engaged in homemaking roles, individuals are likely to perceive success in homemaking roles as *requiring* the communal characteristics that are typically associated with women. Because more men than women are employed outside the home, individuals are likely to perceive success in the workplace as *requiring* the agentic characteristics that are typically associated with men. Thus, gender stereotypes about homemaking and employment are shaped by the gender segregation of these occupations. Although social role theory has been examined in a variety of contexts within the social psychology literature, developmental research is needed to determine whether children’s

perceptions of the distribution of men and women into social roles play a causal role in the development of gender stereotypes and sex-typed occupational goals.

Gender Stereotypes of Occupations

Many researchers in developmental psychology have posited that gender stereotypes shape children's occupational interests. Gender stereotypes are shared beliefs about the characteristics of males and females. Research has demonstrated that children show high levels of endorsement of occupational gender stereotypes by age five (e.g., Shepard & Hess, 1975; Stroehrer, 1994). Work by Kuhn, Nash, and Bruckner (1978), for example, demonstrated some gender stereotyping of adult roles in two- and three-year-old children. Although gender stereotyping of occupations continues through adolescence, the degree of gender stereotyping had been found to decline with age (Archer, 1984; Franken, 1983; Garrett, Ein, & Tremaine, 1977; O'Keefe & Hyde, 1983; Shepard & Hess, 1975; see Signorella, Bigler, & Liben, 1993).

Constructivist theories of gender development. Several constructivist theories of gender differentiation have been proposed to explain the development of children's sex-typed attitudes and interests in terms of gender schemas and stereotypes. Constructivist perspectives view the child as an active participant in his or her development of gender stereotypes and sex-typed interests rather than a passive recipient of gendered information (Liben & Bigler, 2002). According to constructivist theories, children develop schemata of gender-related information that include information about others and the self. These schemas form the basis for gender stereotypes and guide children's behavior, activities, and occupational interests and goals. In the following sections, I

describe the basic tenets of two major theories of gender differentiation and apply each theory to understanding sex differences in children's occupational interests.

Martin and Halverson's gender schema theory. The role of gender-related cognitions in the formation of gender stereotypes and sex-typed occupational goals is described by gender schema theory. According to this theory, gender is a social category that is perceptually salient (e.g., long and short hair, secondary sex characteristics) and stable over time. According to gender schema theory (Martin & Halverson, 1981; Martin, Ruble, & Szkrybalo, 2002), it is these characteristics of gender as a social category that lead to the formation of gender-related cognitions, or gender schemas. Thus, gender schemas form in response to the categorization of individuals as well as input from the environment. Children acquire gender schemas through both direct teaching by parents, teachers, and peers and through indirect teaching by socializers' emphasizing gender categories (Bigler, 1995; Gelman, Taylor, & Nguyen, 2004), offering stereotype-consistent toys (Eisenberg, Wolchik, Hernandez, & Pasternak, 1985), and rewarding stereotype-consistent behaviors (Bussey & Bandura, 1999; Fagot & Hagan, 1991; Langlois & Downs, 1980).

Gender schema theory argues that children form two types of gender schemas: an "ingroup/outgroup schema" and an "own-sex schema." Specifically, children first form an "ingroup/outgroup schema" containing information about which attributes and behaviors are "appropriate" for each gender category (Martin & Halverson, 1981). That is, children are thought to develop beliefs about which roles, occupations, interests, and values are appropriate for males and which are appropriate for females. It is hypothesized

that children then acquire a more detailed “own-sex schema” that incorporates information exclusive to their own gender. Thus, girls, for example, will have more knowledge of occupations that are perceived as appropriate for girls and less knowledge of occupations that are perceived as appropriate for boys.

Research has demonstrated that children often behave in ways consistent with their gender schemas. Specifically, children prefer toys that are labeled for their own gender and even discontinue play with attractive toys when they are labeled for the other sex (Martin, Eisenbud, & Rose, 1995). Thus, gender schema theory predicts that children should prefer occupations that are labeled for their own gender and lose interest in desirable occupations when they are labeled for the other sex.

Liben and Bigler’s attitudinal pathway model. The role of gender-related cognitions in the formation of gender stereotypes and sex-typed occupational goals is also described by Liben and Bigler’s (2002) attitudinal pathway model. In their model, Liben and Bigler extend Martin and Halverson’s (1981) gender schema theory by focusing on *individual differences* in children’s attention to gender, endorsement of gender stereotypes, and personal interests. Specifically, Liben and Bigler posit three *decision filters* that guide children’s decision to engage with a novel object, person, or event (OPE): (a) a *gender salience filter* (“Do I use gender schemata to make decisions?”), (b) a *gender schema filter* (“Who do I believe this OPE is for?”), and (c) an *interest filter* (“Is the OPE of interest to me?”).

In this model, when a child who does not use gender schemata to make decisions encounters a new object person or event (OPE), he or she will immediately determine

whether he or she is interested in the stimulus using the interest filter. A child who does use gender schemata to make decisions will first determine whether he or she endorses stereotypes of the specific OPE encountered. Children who endorse stereotypes of that OPE respond differently than those who do not. For example, if a child does not endorse a gender stereotype of the OPE, he or she will use the interest filter directly to determine if he or she will pursue an interest. If the child believes the OPE is appropriate for one gender, then he or she will determine if it matches with his or her gender using the gender schema filter. If the OPE is inconsistent with the child's gender, he or she will avoid it. If the OPE is consistent with the child's gender, he or she will then use the interest filter to determine personal interest.

The attitudinal pathway model provides an explanation for how cultural beliefs and stereotypes about occupations can affect children's personal occupational interests. If this model is correct, children may filter out occupations that may be interesting to them or for which they may have an aptitude, merely because they do not match their belief about which gender should perform that occupation. For example, if a girl endorses the stereotype that only men can be firefighters, she will first determine whether the occupation is appropriate for her gender using the gender schema filter. If the occupation is inconsistent with her sex (i.e., "for boys"), she will not consider the occupation as a possible vocational role. If the occupation is consistent with her sex (i.e., "for girls"), she will use the interest filter to determine whether she has an interest in the specific occupation. Thus, children who endorse gender stereotypes about particular occupations

are unlikely to consider these occupations as possible vocational roles, even though they may have an aptitude for the role.

In summary, Liben and Bigler's (2002) *attitudinal pathway model* asserts that children's gender schemas and stereotypes will, under some circumstances, shape their interests. According to each of these theories, gender segregation of occupations is both a cause and a consequence of occupational gender stereotyping.

Alternative Theoretical Perspectives

Some researchers claim that egalitarian gender attitudes may be a necessary, but not *sufficient* condition for children's and adults' non-sex-typed occupational interests (Liben & Bigler, 2002; Weisgram & Bigler, 2005a). Specifically, they suggest that witnessing one's own sex performing an occupation does not guarantee one would be interested in that occupation. Similarly, endorsing egalitarian attitudes toward cross-sex-typed occupations (e.g., "both men and women should be nurses") does not guarantee one would be interested in that occupation.

Recent research supports the contention that knowledge of children's gender cognitions may be inadequate for predicting their occupational interest. For example, in their recent work, Weisgram and Bigler (2005a) reported that many girls endorsed highly egalitarian views of science, yet demonstrated relatively low levels of interest in science. Work by Stroehrer (1994) and Gregg and Dobson (1980) also demonstrated that many children endorse egalitarian beliefs toward occupations, and simultaneously show sex-typed patterns of occupational interests.

Intervention programs that experimentally manipulate children's gender stereotypes have also demonstrated a lack of a relationship between gender stereotypes and their own interests. Specifically, a recent meta-analysis by Weisgram and Bigler (2002b) has found that interventions aimed at reducing children's sex-typing of occupations and activities are somewhat effective at increasing children's egalitarian attitudes toward occupations and activities ($d = .28$), but are not effective at increasing children's interest in counterstereotypic occupations and activities ($d = .08$). Interestingly, Weisgram and Bigler (2005a) found that girls who participated in a math and science intervention program showed a significant *decrease* in egalitarian attitudes toward women in science as a result of the program and yet a small *increase* in their interest in science.

Lightbody and Durndell (1998) suggest that the discrepancy between attitudes and interests may be a result of a discrepancy between the collective self and personal self. Specifically, the authors note that persons may have egalitarian attitudes toward counterstereotypic occupations or activities, yet fail to be personally interested in those occupations. Lightbody and Durndell refer to this incongruity between attitudes and interests as "we can, I can't." It is perhaps more accurately labeled "we can, but I don't want to."

Although children, at the group level, are characterized by both gender stereotyping and sex-typed interests, any possible causal relation between the two may operate in the *reverse* direction than proposed by Martin and Halverson's gender schema theory (1981) and Liben and Bigler's attitudinal pathway model (2002). As noted

previously, Eagly's social role theory posits that gender stereotypes are a result, rather than a cause, of the gender segregation of occupations. In addition, Liben and Bigler's (2002) personal pathway model posits that gender stereotypes may be a result (rather than the cause) of children's sex-typed occupational interests. That is, children may claim that those occupations that are personally appealing are appropriate for their gender and claim that those occupations that are personally unappealing are appropriate for the other gender. Thus, the mechanisms that shape children's occupational interest are complex and unclear.

Summary

A large body of literature has demonstrated the presence of sex-typing in children's occupational interests and goals. Many researchers have attributed the sex-typing of occupational interests to children's knowledge of gender segregation and endorsement of cultural gender stereotypes. For example, constructivist theories of gender differentiation such as Martin and Halverson's (1981) gender schema theory and Liben and Bigler's (2002) attitudinal pathway model predict that gender schemata play an important role in producing sex differences in occupational interests and, as a consequence, gender segregation of occupations. Although some research indicates that this explanation may have some merit, there is little empirical evidence that witnessing gender segregation and endorsing gender stereotypes *cause* sex differences in occupational aspirations. Furthermore, some models suggest that gender stereotypes are a result, rather than a cause, of sex-typed occupational interest. I argue that sex differences

in individuals' occupational values may also produce sex-typing of children's occupational interests.

Values and Children's Sex-Typed Occupational Interests

An alternative explanation for the gender segregation of occupations is that sex differences in occupational values guide individuals' sex-typed occupational interests. Early research by Rosenberg (1957) was the first to suggest that sex differences in occupational values lead to sex differences in occupational choices. This hypothesis is reflected in research being conducted forty years later. In recent work, Marini and colleagues (Marini, Fan, Finley, & Beutel, 1996) suggest that in addition to gender differences in work-family roles (i.e., choosing not to enter the workplace), gender differences in values are likely to impact men's and women's career interests and choices. Brown (2002) notes that individuals with different value systems, such as those from different cultures or genders, will likely choose occupations at differential rates. In addition, Brown, Eisenberg, and Sawilowsky (1997) suggests that differences in values between and within genders may impact the traditionality of individuals' occupational interests. Thus, the gender segregation of the workforce may be explained by sex differences in occupational values (Herzog, 1982; Weisgram & Bigler, 2005a).

Definitions and Overview

In the vocational literature, occupational values have often been conceptualized as the rewards or important qualities that are desired from and experienced in work (Brown, 2002; Knoop, 1991; Schulenberg, Vondrack, & Kim, 1993). These values are often defined in terms of *extrinsic rewards* (i.e., those obtained in exchange for performing the

work) such as pay, security, and status and *intrinsic rewards* (i.e., those obtained by performing the work itself) such as creativity, skill development, knowledge acquisition (McFalls & Gallagher, 1979; Saleh, Taye, & Sievert, 1975). Other researchers have focused on the specific value dimensions that individuals endorse (Marini et al., 1996), including security, prestige, salary, altruism, interaction with others, power and family (Anderson & Bosworth, 1971; Schulenberg et al., 1993; Marini et al., 1996; Weisgram & Bigler, 2005a).

Importantly, Dose (1997) makes a conceptual distinction between work-related values and work-related attitudes. She argues that attitudes are domain-specific because they are linked to a specific situation or workplace, whereas values are domain-general because they are universally applied throughout the individual's work-related life. Marini et al. (1996) also argued for the generality of values noting that "they transcend specific situations and are ordered in a hierarchy of importance" (p. 50). From this viewpoint, values are believed to be closely related to individuals' personality attributes (Holland, 1976), work-related cognitions (Knoop, 1991), and motivation (Dose, 1997). In addition, values are significant factors in work-related choices (Brown & Crace, 1996; Eccles, 1987; Elizur, Borg, Hunt, & Beck, 1991).

Numerous researchers in the field of vocational psychology have established the central role of occupational values in individuals' occupational choices (Brown, 2002; Eccles, 1987; Elizur et al., 1991; Ginzberg, Ginsburg, Axelrad, Herman, 1951; Marini & Brinton, 1984; Mortimer, Pimentel, Ryu, Nash, & Lee, 1996; Mortimer & Lorence, 1979; Rosenberg, 1957; Super, 1957; Super, 1995; Williams, 1972). Specifically, relationships

have been consistently demonstrated between work values and occupational preferences (Rosenberg, 1957; Williams, 1972). For example, Fretz (1972) found significant differences in the work values endorsed by students in the fields of education, law, medicine, engineering, and business.

In addition, longitudinal research has demonstrated that occupational values are stable over time and shape future occupational choices both directly and indirectly (Marini & Brinton, 1984; Mortimer & Lorence, 1979). In their work, Marini et al. (1996) note that occupational choices are often made on the basis of maximizing job qualities that are consistent with one's occupational values and minimizing job qualities that are least enjoyable (see also Morgan, Isaac, & Sansone, 2001). Thus, the values endorsed by the individual and the perceived value affordance of an occupation jointly impact occupational interests and goals. Research has also found that individuals' occupational values affect their perceptions of the work environment (Meyer, Irving, & Allen, 1998; Young & Parker, 1999) and job satisfaction (Kalleberg, 1977; Knoop, 1991).

Many scholars suggest that occupational values are shaped through socialization processes (e.g., Krau, 1987). Consistent with this notion, research has demonstrated that occupational values are linked to a number of different constructs. For example, research has shown cultural differences in values across a number of Western and non-Western countries (Abboushi, 1990; Abu-Saad & Ibralowitz, 1997; Adler & Brayfied, 1997; Bae & Chung, 1997; Cheung & Sherling, 1999; Elizur, 2001; Farh, Leong, & Law, 1998; Lebo, Harrington, & Tillman, 1995; Nakamishi & Mikawa, 1995; Ros, Schwartz, & Surkiss, 1999). In addition, research has demonstrated relationships between values and

military status (Saleh, Toyne, & Sievert, 1975), religion (Buetel & Mariani, 1995; Greeley, 1975), political orientation (McFalls, Jones, Gallagher, & Rivera, 1985), educational status (Lindsay & Knox, 1984), race (Leong & Tata, 1990) and age (Carter, Gushue, & Weitzman, 1994).

Development of Occupational Values

Although the research on the development of occupational values is limited, researchers suggest that occupational values form during childhood and adolescence (Johnson, 2002). Research has consistently shown that adolescents highly value money (Lee, 1984), security (Lee, 1984; Thomas, 1986; Thomas & Shields, 1987), and family time (Ovadia, 2001). In addition, a number of studies have demonstrated that older children and adolescents place little value on power relative to other values (Weisgram & Bigler, 2005; Thomas & Shields, 1987; Thomas, 1986).

Although some studies have reported similarities between age groups in the endorsement of occupational values, many cross-sectional studies have reported age differences in the degree of value endorsement (e.g., Krau, 1987; Post-Kammer, 1987). Specifically, work by Post-Kammer (1987) and Krau (1987) has found that older adolescents endorse intrinsic values such as creativity, altruism, and intellectual stimulation to a greater degree than younger adolescents, perhaps due to the role exploration or work experience. Research on elementary school children's occupational values is notably absent, demonstrating the need for research in this area.

Longitudinal studies with adolescents have examined the development of adolescents' values and their correlates. Research by Lindsay and Knox (1984) and

Madill et al. (2000) has demonstrated that adolescents' values are relatively stable over time. Mortimer et al. (1996) reported that adolescents' values are initially variable and become more stable over time. In addition, Mortimer et al. (1996) showed that values have a greater impact on occupational aspirations as children move from early adolescence to adulthood (Mortimer et al., 1996). Again, the development of young children's values has not been examined in the vocational literature.

The most consistent pattern to emerge from the literature on older children's and adolescents' occupational values is that individuals in these age groups show a high level of endorsement of many values simultaneously (Johnson, 2001; Schulenberg & Vondracek, 1993; Thomas & Shields, 1987; Weisgram & Bigler, 2005a). Johnson (2002) suggests that this pattern of value endorsement reflects an idealization of the work world because the number of values that adolescents endorse is likely greater than the number of values a single occupation affords. For example, an adolescent may indicate that he or she would like a job that helps people, allows time to be spent with family, makes a lot of money, and has influence over others. In reality, very few occupations afford all four of these values. In a longitudinal examination of this pattern of value endorsement, Johnson (2001) found that the proportion of individuals rating many values as "very important" declined with time and that individuals often retained their high endorsement of select occupational values but not others. Johnson (2001; 2002) believes that the transition to the workforce leads to a more realistic perspective of the values desired in and afforded by occupations. Little is known, however, about occupational values among pre-adolescent children, and whether this pattern of findings would extend to children.

Sex differences in Occupational Values

Gender is perhaps the most potent predictor of individuals' occupational values. Sex differences in occupational values are pervasive in both the adult and adolescent vocational literature and have been found to be relatively consistent over time (Marini et al., 1996; Leuptow, 1980; Herzog, 1982). Marini et al. (1996) reported that gender explains more variance in occupational values than race, parental education, maternal employment, community of origin, religion, and year of assessment.

In the adult literature, sex differences in occupational values have been documented in a large number of research studies on many different value dimensions. Specifically, research by Lindsay and Knox (1984) has demonstrated that females endorse intrinsic rewards significantly more than males, whereas males endorse extrinsic rewards significantly more than females. In addition, men have been found to prefer jobs in which they have high salaries (Abu-Saad & Ibralowitz, 1997; Brenner & Tomkiewicz, 1979; Eccles, 1999; Elizur, 2001;), power or influence over others (Brenner & Tomkiewicz, 1979), opportunities for advancement or achievement (Abu-Saad & Ibralowitz, 1997), risk-taking and challenging tasks (Brenner & Tomkiewicz, 1979; Eccles, 1999), a high level of responsibility (Elizur, 2001), and a high level of prestige (Abu-Saad & Ibralowitz, 1997; Eccles, 1999). In contrast, women have been found to prefer jobs that allow them to work with others (Abu-Saad & Ibralowitz, 1997; Elizur, 2001), help others (Abu-Saad & Ibralowitz, 1997; Bridges, 1989; Eccles, 1999; Finley, Fan, Marini, & Buetel, 1993), develop their knowledge or skills (Brenner & Tomkiewicz, 1979), and spend time with their family (Bridges, 1989; Eccles, 1999). Although

individual differences exist, these gender differences in adults' occupational values are fairly consistent throughout the vocational literature.

Sex differences have also been found in adolescents' occupational values. Specifically, research with high school students has demonstrated that boys endorse the values of money (Herzog, 1982; Leuptow, 1980; Marini et al., 1996), prestige (Herzog, 1982; Lueptow, 1980), leisure (Marini et al., 1996), achievement/advancement (Herzog, 1982), risk-taking (Leuptow, 1980), and power/influence (Lueptow, 1980) to a greater extent than girls. Research with high school students has also found that girls endorse the values of working with others (Herzog, 1982; Johnson, 2001; Lueptow, 1980; Marini et al., 1996; Schulenberg & Vondracek, 1993), helping others (Herzog, 1982; Johnson, 2001; Lueptow, 1980; Marini et al., 1996; Schulenberg & Vondracek, 1993), development of skills (Lueptow, 1980), and creativity/self-expression (Lueptow, 1980) to a greater extent than boys. In work with junior high students (grades 7 to 9), Schulenberg and Vondraeck (1993) found that girls scored higher than boys on the Human-Personal subscale of their values measure. Research by Leong and Tata (1990) and Weisgram and Bigler (2005a) with 4th to 6th grade students found that girls valued altruism significantly more than boys. Studies that examined the occupational values of younger children and early adolescents have not been conducted. Thus, it is yet unknown at what age sex differences in occupational values first emerge.

Evidence Supporting the Occupational Values Hypothesis

A large body of research suggests that women tend to choose occupations that they perceive as compatible with their endorsement of family and altruistic values (e.g.,

nursing, education, and child care), whereas men tend to choose occupations that they perceive as compatible with their endorsement of monetary and power values (e.g., engineering, computer programming, and physical science; e.g., Morgan, Isaac, & Sansone, 2001; Mortimer et al., 1996). In their work, Morgan, Isaac, and Sansone (2001) asked undergraduate students to indicate their chosen major and the supporting reasons for their choice. Interestingly, they found that women were more likely to spontaneously report “people-oriented reasons” and men were more likely to spontaneously report “extrinsic reward reasons.” In addition, they found that undergraduate students perceive medicine and physical sciences to be higher paid than education/social work and perceive physical science to involve working with others less than medicine and education/social work. Thus, it was not surprising that men were more likely to choose a major in physical science than women.

Consistent with this notion, Harton and Lyons (2003) recently examined the relationship between gender and choice of psychology as a college major. They found that having an interest in altruistic occupations mediated the relationship between individuals’ gender and selection of psychology as a major among college students. Harton and Lyons suggest that the reason for the dramatic increase in the number of women in psychology is a shift in the *perception* of the field from a scientific discipline to a altruistic profession.

Recent longitudinal research by Eccles and her colleagues (Frome, Alfeld-Liro, Eccles, 2003; Vida & Eccles, 2003) has also demonstrated that values play a role in occupational choices. In a recent study of women’s occupational aspirations, Frome,

Alfeld-Liro, and Eccles (2003) found that high-levels of traditionalism in gender and work-family attitudes, along with negative feelings about math and physical science, predicted change in young women's occupational aspirations from male-dominated fields to female-dominated fields. The authors conclude that many young women are deterred from math and physical science careers because of their family-oriented values.

Research by Eccles (Vida & Eccles, 2003) has also demonstrated that values play a role in adults' choice of scientific careers. In their work, Vida and Eccles (2003) demonstrated that valuing working with people negatively predicted choosing a math or physical science major at age 20 among both men and women. The same value orientation also negatively predicted being in a math, engineering, or physical science occupation at age 25. Interestingly, valuing working with people positively predicted having a major in biology at age 20 and having a career in biology at age 25. As previously discussed and replicated in Vida and Eccles's research, women tend to be significantly more people-oriented than men. This research may help to account for the fact that women are greatly underrepresented in the areas of math, engineering, and physical science, but approximately equally represented in the areas of medicine and biology (Census Bureau, 2000) and that adolescent girls are less interested in physics and more interested in biological sciences than boys (Jones & Kirk, 1990).

One important limitation of the existing research on the role of occupational values in producing gender segregation of the work force is that it is unable to speak to the causal relations among constructs. Recently, Weisgram and Bigler (2005a) tested the *causal* impact of values on children's occupational interests within the domain of math

and science. Specifically, as part of an intervention program aimed at increasing girls' interest in math and science, middle-school girls heard presentations that either emphasized the altruistic aspects of math and science careers or control presentations that did not emphasize altruism. The experimental manipulation was, at the group level, unsuccessful in altering girls' belief about the altruistic value of science. However, it was found that those girls who increased their belief in the altruistic nature of math and science as a result of attending the program also increased in their interest in math and science. In addition, it was found that belief in the altruistic value of math and science (corresponding to occupational values) was the sole predictor of girls' science interest when science self-efficacy, utility, and gender stereotyping were also considered. These findings indicate that values may be important in children's occupational interests, although further experimental research on the relationship between the two constructs is necessary.

Alternative Explanations

Researchers in the vocational literature have posited that occupational values shape individuals' occupational choices and that sex differences in occupational values may lead to sex-typed occupational interests and choices. As with egalitarian gender beliefs, it may be the case that occupational values are a necessary, but not sufficient condition, for predicting occupational interest. That is, it is possible that an individual may highly endorse altruistic values, yet demonstrate relatively low levels of interest in nursing. In addition, it may be possible that the direction of effect runs in *reverse*, with individuals' interest shaping their occupational values rather than occupational values

shaping interest. For example, a girl who is primarily interested in nursing may consequently come to endorse altruistic values. In fact, research by Mortimer and Lorence (1979) has shown that work experience stimulates changes in adults' work values over time. This effect may be consistent with the cognitive dissonance theory in social psychology. Specifically, individuals who are working in an altruistic occupations, but perhaps do not initially endorse altruistic values, may come to endorse altruistic values to reduce the dissonance between their value system and the everyday activities in their job. Although it is possible that occupational interests shape values, longitudinal research has suggested that occupational values of adolescents are predictive of individuals' future career choices (Marini & Brinton, 1984) and that the direction of effect runs from values to interest.

Summary

Occupational values are an important factor in individuals' occupational interests and choices. Occupational values appear to develop during childhood and adolescence, although few existing studies have examined occupational values among children. Across the adult and developmental literature on values, consistent sex differences in the endorsement of value dimensions have been found. In addition, research has demonstrated a relationship between sex differences in occupational values and individuals' later occupational interest and choices. Thus, it is possible that sex differences in occupational values may contribute to the gender segregation of occupations in our society. However, the causal relationships between occupational values and interests has not been directly established. Experimental research is needed to

determine whether occupational values play a direct, causal relationship in individuals' occupational interests and goals.

The Present Studies

Theoretical and empirical work within developmental psychology suggests that gender cognitions (e.g., stereotypes) may limit the range of occupations from which children choose. In addition, research in the vocational psychology literature suggests that values impact the occupations that individuals' choose. However, research assessing young children's occupational values and gender stereotypes in relation to age, gender, and occupational interests is limited. Also, experimental research exploring the *causal* relationships among these constructs is notably absent in both the developmental and vocational psychology literatures. The studies presented in this dissertation include an exploratory analysis of the relationships among age, gender stereotypes, values, and occupational interest (Study 1) and an experimental manipulation of factors expected to impact occupational interest (Study 2).

CHAPTER TWO:

STUDY 1

The goal of Study 1 was to examine the development of occupational values, gender attitudes, and occupational interests and their relation to individuals' age and gender. Previous research has examined sex differences in occupational values in older adolescents and adults, but research on young adolescents' values is limited and research on children's values is notably absent. Thus, an exploratory investigation of the development of individuals' occupational values and interests was needed. To do so, I assessed children's, adolescents', and adults' occupational values, interest in masculine and feminine occupations, and egalitarian attitudes toward occupations. Sex and age differences in these constructs were examined. In addition, I examined the roles of individuals' sex, age, and values in the prediction of occupational interests.

Hypotheses

In this study, group level differences and the relationships among individuals' egalitarian gender attitudes, occupational values, and occupational interests were examined. I predicted that gender differences would be found on measures of individuals' endorsement of egalitarian attitudes and the endorsement of value dimensions. Based on previous research in the field of gender role development (e.g., Liben & Bigler, 2002), I hypothesized that females would endorse egalitarian attitudes to a greater degree than males. Based on research in the field of vocational development (e.g., Marini et al. 1996), I expected males to endorse monetary and power values to a greater extent than females,

and females to endorse family and altruistic values to a greater extent than males. In addition, I hypothesized that there would be sex differences in interest in various occupations. Specifically, I predicted that males would be more interested in masculine occupations than women, whereas females would be more interested in feminine occupations than men.

In evaluating the prediction of occupational interest, I investigated a number of hypotheses. Specifically, I predicted that endorsing money and power values (male-typed values) would predict interest in masculine occupations for both genders. In addition, I expected the endorsement of family and altruistic values (female-typed values) to predict interest in feminine occupations.

With regard to developmental change, I expected the endorsement of egalitarian gender attitudes to increase from age 6 to adulthood. In addition, I predicted that adolescents (ages 12 to 17) would endorse each of the four occupational values at high levels, whereas adults would endorse of one or two values due to a decrease in idealization (Johnson, 2002). I predicted that the idealism that characterizes adolescents' values would also characterize children's occupational values.

Method

Participants

Participants included 80 children ages 5 to 10 (36 boys and 44 girls), 77 adolescents ages 11 to 18 (33 boys and 44 girls), and 136 adults (73 men and 63 women). Children were recruited from aftercare programs and private schools in Austin, Texas. Adolescents were recruited from private schools in Austin, Texas and St. Paul,

Minnesota. Adults were recruited from an introductory psychology course at the University of Texas at Austin. A description of the participants within each sample is presented in Table 1.

Overview of Procedure

Participants completed measures of: (a) occupational values, (b) interest in occupations, (c) egalitarian attitudes toward occupations, (d) demographic characteristics (see Appendix A for child measures and Appendix B for adolescent/adult measures). In addition, participants rated a series of occupations for the degree that they afford money, power, family, and altruistic values. Participants completed the value ratings first, followed by measures of occupational interest, gender stereotypes, and occupational values in that order. Children were tested individually by either the experimenter or a trained research assistant. Adolescents were asked by their teachers to complete the written measures in class. Adult participants completed the measures in group sessions as part of the undergraduate psychology recruitment pool.

Measures

Occupational values. To assess occupational values, the Occupational Values Scale developed by Weisgram and Bigler (2005a) was used for middle school and high school students. A modified version was used to assess elementary school children's occupational values. Both versions of the scale consist of 16 items measuring the endorsement of four gender-typed values: (a) altruism, (b) family, (c) money, and (d) power. Participants were asked to indicate how much they would like to have job that incorporates aspects of each of the values on a four point scale from "not at all" (1) to

“very much” (4). Endorsement of each of the values scales was computed by averaging responses to items within each subscale. Reliability analyses found scores on the scales to be reliable for each age group. For the child population, Cronbach alphas for each subscale ranged from .64 to .75. For the adolescent population, Cronbach alphas for each subscale ranged from .76 to .89. For the adult population, Cronbach alphas for each subscale ranged from .74 to .92.

Occupational interests. To assess occupational interests, participants indicated their interest in 40 occupations on a scale of “not at all” (1) to “very much” (4). The 40 items were selected from the 80 items on the long version of the OAT-PM (Occupational, Activity, and Trait Personal Measure, Liben & Bigler, 2002) because they were (a) familiar to children (as well as adolescents and adults) and (b) rated by an independent sample as jobs that afford money, power, family, and/or altruistic values.¹ Items for child, adolescents and adult scales were identical with the exception that “social worker” on the adolescent and adult scales was substituted for “cook in a restaurant” on the child scales. Interest in masculine and feminine occupations was computed by averaging responses of items for each type of occupation. Among children, Cronbach alphas for the masculine and feminine occupation subscales were .81 and .84, respectively. Among adolescents, Cronbach alphas for scores on the masculine and feminine occupation subscales were .81 and .84, respectively. Among adults, Cronbach alphas for scores on the masculine and feminine occupation subscales were .87 and .80, respectively.

Egalitarian attitudes toward occupations. To assess participants’ gender stereotyping of occupations, participants were asked “who should” perform the 40

occupations from the occupational interest measure. Response options included (a) “only men,” (b) “only women,” or (c) “both men and women.” The proportion of egalitarian responses (i.e., “both boys and girls”) was computed for each participant. Among children, Cronbach alphas for the masculine and feminine occupation subscales were .84 and .89, respectively. Among adolescents, Cronbach alphas for the masculine and feminine occupation subscales were .91 and .90, respectively. Among adults, Cronbach alphas for the masculine and feminine occupation subscales were .90 and .89, respectively.

Value ratings of occupations. To assess the degree to which participants perceive occupations to afford money, power, family, and altruistic values, participants were asked to indicate how much each of the 40 occupations appearing on the interest and egalitarian attitudes scale fulfills these values on a scale of (1) “not at all” to “4” very much/a lot.”

Results

Overview of Analyses

Data analysis was a two-step process. As a first step, analyses of variance were used to examine possible group differences in participants’ (1) endorsement of occupational values, (2) endorsement of egalitarian attitudes, (3) interest in occupations, and (4) perceptions of the values afforded by occupations. As a second step, hierarchical multiple regression analyses were used to examine predictors of participants’ interest in masculine and feminine occupations. Because the scales used to assess children’s occupational values and other constructs necessarily differ from those used with

adolescents and adults, separate analyses were conducted for the child, adolescent, and adult samples.

Occupational Values

To examine possible group differences in occupational values, a 2 (sex of participant: male, female) x 2 (age: younger, older) X 4 (type of value: money, power, family, altruism) mixed-effects ANOVA was performed for the child and adolescent samples (with age group determined by a median split) with type of value as a within-subjects variable. A 2 (sex of participant: male, female) x 4 (type of value: money, power, family, altruism) mixed-effects ANOVA was performed for the adult sample with type of value as a within-subjects variable.

Child sample. Results indicated a significant interaction between age group and type of value, $F(3, 225) = 2.97, p < .05$. Post hoc comparisons indicated that younger children endorsed power values to a significantly greater extent than older children. There were no significant age differences in the endorsement of money, family, and altruistic values. In addition, there were no other main effects or interactions. Table 2 presents means and standard deviations.

Adolescent sample. Results indicated a significant interaction between sex of participant and type of value, $F(3, 279) = 5.09, p < .05$. Post hoc comparisons indicated that females endorsed altruistic values to a significantly greater extent than males. There were no significant sex differences in the endorsement of money, power, and family values. In addition, there were no other main effects or interactions. Table 3 presents means and standard deviations.

Adult sample. Results indicated a significant interaction between sex of participant and type of value, $F(3, 402) = 8.33, p < .05$. Post hoc comparisons indicated that females endorse altruistic and family values to a significantly greater extent than males. There were no significant sex differences in the endorsement of money and power values. In addition, there were no other main effects or interactions. Table 4 presents means and standard deviations.

Occupational Interests

To examine possible group differences in occupational interests, a 2 (sex of participant: male, female) x 2 (age: younger, older) X 2 (interest subscale: masculine, feminine) mixed-effects ANOVA was performed for the child and adolescent samples with interest subscale as a within-subjects variable. A 2 (sex of participant: male, female) x 2 (interest subscale: masculine, feminine) mixed-effects ANOVA was performed for the adult sample with interest subscale as a within-subjects variable.

Child sample. Results indicated a significant interaction between sex of participant and interest subscale, $F(1, 76) = 63.65, p < .05$. Post hoc comparisons indicated that girls were significantly more interested than boys in feminine jobs. There were no significant sex differences in interest in masculine jobs. Results also indicated a significant interaction between age and interest subscale, $F(1, 76) = 10.24, p < .05$. Post hoc comparisons indicated that younger children were significantly more interested in feminine occupations than older children. There was no significant age difference in interest in masculine occupations. Table 2 presents means and standard deviations.

Adolescent sample. Results indicated a significant interaction between sex of participant and interest subscale, $F(1, 93) = 37.69, p < .05$. Post hoc comparisons indicated that males were significantly more interested in masculine occupations than females. There was no significant sex difference in adolescents' interest in feminine occupations. Results also indicated a significant main effect of age, $F(1, 93) = 4.50, p < .05$, with younger adolescents significantly more interested in both masculine and feminine jobs than older adolescents. Table 3 presents means and standard deviations.

Adult sample. Results indicated a significant interaction between sex of participant and interest subscale, $F(1, 134) = 196.25, p < .05$. Post hoc comparisons indicated that males were significantly more interested in masculine occupations than females, whereas females were significantly more interested in feminine occupations than males. Table 4 presents means and standard deviations.

Egalitarian Attitudes toward Occupations

To investigate group level differences in the endorsement of egalitarian attitudes toward occupations, a 2 (sex of participant: male, female) x 2 (age: younger, older) ANOVA was performed for the child and adolescent samples. For the adult sample, an independent samples *t*-test was performed comparing men's and women's endorsement of egalitarian attitudes.

Child sample. There were no significant main effects or interactions in children's endorsement of egalitarian attitudes, $p > .05$. See Table 2 for means and standard deviations.

Adolescent sample. A significant main effect of sex of participant was found, $F(1, 93) = 4.31, p < .05$, with females endorsing egalitarian attitudes to a greater degree than males. There were no other significant main effects of interactions, $p > .05$. See Table 3 for means and standard deviations.

Adult Sample. Results indicated a significant sex difference in adults' endorsement of egalitarian attitudes, $F(1, 134) = 4.43, p < .05$, with women endorsing egalitarian attitudes to a greater extent than men. See Table 4 for means and standard deviations.

Values Ratings of Occupations

To examine group differences in children's and adolescents' perceptions of values afforded by masculine and feminine occupations, a 2 (sex of participant: male, female) x 2 (age: younger, older) x 2 (type of job: masculine, feminine) mixed effects ANOVA was performed on each of the four value ratings (i.e., money, power, family, altruism) with type of job as a within-subjects variable. To examine group differences in adults' perceptions of values afforded by masculine and feminine occupations, a 2 (sex of participant: male, female) x 2 (type of job: masculine, feminine) mixed effects ANOVA was performed. In addition, the comparability of children's, adolescents', and adults' value ratings was examined.

Child sample. For the *money* ratings, results indicated a significant interaction between age and type of job, $F(1, 76) = 11.28, p < .05$. Post hoc comparisons indicated that older (but not younger) children perceived masculine jobs as significantly higher in salary than feminine jobs. Means and standard deviations are presented in Table 5.

For the *power* ratings, results indicated a significant main effect of type of job, $F(1, 76) = 12.44, p < .05$, with masculine occupations rated as significantly higher in power than feminine jobs. In addition, a significant main effect of age was found, $F(1, 76) = 12.92, p < .05$, with younger children rating all jobs as higher in power than older children. Means and standard deviations are presented in Table 5.

For the *family* ratings, results indicated a significant main effect of type of job, $F(1, 76) = 33.22, p < .05$, with feminine jobs rated as significantly higher in allowing for time with family than masculine jobs. There were no other significant main effects or interactions. Means and standard deviations are presented in Table 5.

For the *altruism* ratings, results indicated a significant interaction between age and type of job, $F(1, 76) = 8.65, p < .05$. Post hoc comparisons indicated that both younger and older children rated masculine jobs as significantly higher in altruism than feminine jobs, although this effect was more pronounced among older than younger children. Means and standard deviations are presented in Table 5.

Adolescent sample. For the *money* ratings, results indicated a significant main effect of type of job, $F(1, 93) = 431.69, p < .05$, with masculine jobs rated as affording money values significantly more than feminine jobs. Means and standard deviations are presented in Table 6.

For the *power* ratings, results indicated a significant main effect of type of job, $F(1, 93) = 253.85, p < .05$, with masculine jobs rated as affording power values significantly more than feminine jobs. Means and standard deviations are presented in Table 6.

For the *family* ratings, results indicated a significant interaction between sex of participant and type of job, $F(1, 93) = 6.91, p < .05$. Post hoc comparisons indicated that both males and female rated feminine jobs as significantly higher in family values than masculine jobs, although this effect was more pronounced among females than males as indicated by the mean ratings. Means and standard deviations are presented in Table 6.

For the *altruism* ratings, results indicated a significant main effect of type of job, $F(1, 93) = 106.44, p < .05$, with masculine jobs rated as affording altruistic values significantly more than feminine jobs. Means and standard deviations are presented in Table 6.

Adult sample. For the *money* ratings, results indicated a significant main effect of type of job, $F(1, 134) = 169.91, p < .05$, with masculine jobs rated as significantly higher in salary than feminine jobs. Means and standard deviations are presented in Table 7.

For the *power* ratings, results indicated a significant main effect of type of job, $F(1, 134) = 605.82, p < .05$, with masculine jobs rated as significantly higher in power than feminine jobs. A main effect of sex of participant was also found, $F(1, 134) = 7.40, p < .05$, with females rating both masculine and feminine jobs as higher in power than males. Means and standard deviations are presented in Table 7.

For the *family* ratings of masculine and feminine occupations, results indicated a significant main effect of type of job, $F(1, 134) = 370.45, p < .05$, feminine jobs rated as significantly higher in family than masculine jobs. Means and standard deviations are presented in Table 7.

For the *altruism* ratings of masculine and feminine occupations, results indicated a significant main effect of type of job, $F(1, 134) = 89.04, p < .05$, with masculine jobs rated as significantly higher in altruism than feminine jobs. A significant main effect for sex of participant was also found, $F(1, 134) = 7.79, p < .05$, with females perceiving both feminine and masculine occupations as higher in altruism than males. Means and standard deviations are presented in Table 7.

Value rating agreement among samples. To test whether there is agreement among children's, adolescents', and adults' ratings of the values afforded by occupations, zero-order correlations were computed for value ratings of occupations appearing on both child and adolescent measures. For example, the correlations between children's and adolescents', children's and adults', and adolescents' and adults' altruism ratings of the 39 occupations listed on both measures were computed. These analyses were repeated for participants' money, power, and family ratings. Correlations between children's and adolescents' average value ratings ranged from $r = .78$ to $r = .87$. Correlations between children's and adults' average value ratings ranged from $r = .74$ to $r = .87$. Correlations between adolescents' and adults' average value ratings ranged from $r = .95$ to $r = .99$. Thus, there was a high level of agreement in children's, adolescents', and adults' ratings of the degree to which jobs afford money, power, family, and altruistic values. Statistics describing adult ratings of each of the 40 occupations appear in Table 8.

I also examined whether the adult population from this study was in agreement with an comparable independent sample of adult raters.¹ Correlations of value ratings between these two populations ranged from $r = .96$ to $r = .99$. These data indicate that

there is a very high level so agreement among individuals' ratings of the value affordances of occupations and individual differences may be minimal.

Predictors of Interest in Masculine and Feminine Occupations

To examine the predictors of interest in masculine and feminine occupations, hierarchical multiple regression analyses were conducted with sex of participant (dummy coded), age (in years), and the endorsement of each of the four occupational values as predictor variables and interest in (a) masculine and (b) feminine occupations as the dependent variables. Specifically, for children and adolescents, sex and age were entered at the first step of the model and the endorsement of each of the occupational values was entered at the second step. The identical strategy was used to examine adults' interest with the exception that age was not used as a predictor variable. Tests of multicollinearity (i.e., tests of minimum tolerance) among constructs indicated that collinearity was at an acceptable level for each of the analyses.

Child sample. For *masculine* occupations, the overall model was significant in predicting children's interest, $F(6, 72) = 6.65, p < .05, R^2 = .36, \text{Adjusted } R^2 = .30$. Beta values, standard errors, and standardized betas for regressions predicting interest in masculine occupations are presented in Table 9. Sex of participant was a significant predictor of interest with boys demonstrating greater interest in masculine occupations than girls. In addition, power values positively predicted interest in masculine occupations. For *feminine* occupations, the overall model was significant in predicting children's interest, $F(6, 72) = 15.27, p < .05, R^2 = .56, \text{Adjusted } R^2 = .52$. Beta values, standard errors, and standardized betas for regressions predicting interest in feminine

occupations are presented in Table 10. Sex of participant was a significant predictor of interest, with girls demonstrating greater interest in feminine occupations than boys. In addition, altruistic values positively predicted interest. Power values and age negatively predicted interest.

Adolescent sample. For *masculine* occupations, the overall model was significant in predicting adolescents' interest, $F(6, 90) = 5.53, p < .05, R^2 = .27, \text{Adjusted } R^2 = .22$. Beta values, standard errors, and standardized betas for regressions predicting interest in masculine occupations are presented in Table 11. Sex of participant was the only significant predictor of interest with males demonstrating greater interest in masculine occupations than females. For *feminine* occupations, the overall model was significant in predicting adolescents' interest, $F(6, 90) = 2.20, p < .05, R^2 = .13, \text{Adjusted } R^2 = .07$. Beta values, standard errors, and standardized betas for regressions predicting interest in feminine occupations are presented in Table 12. Age was a negative predictor of interest in feminine occupations. In addition, power values negatively predicted interest.

Adult sample. For *masculine* occupations, the overall model was significant in predicting adults' interest, $F(5, 130) = 15.36, p < .05, R^2 = .37, \text{Adjusted } R^2 = .35$. Beta values, standard errors, and standardized betas for regressions predicting interest in masculine occupations are presented in Table 13. Sex of participant was a significant predictor of interest with men demonstrating greater interest in masculine occupations than women. In addition, altruistic values and power values positively predicted interest in masculine occupations. For *feminine* occupations, the overall model was significant in predicting adults' interest, $F(5, 130) = 13.73, p < .05, R^2 = .34, \text{Adjusted } R^2 = .32$. Beta

values, standard errors, and standardized betas for regressions predicting interest in feminine occupations are presented in Table 14. Sex of participant was a significant predictor of interest with women demonstrating greater interest in feminine occupations than men. In addition, altruistic values positively predicted interest. Power values negatively predicted interest. Family values were a marginal predictor of interest in feminine occupations ($p < .10$).

Discussion

The primary purpose of Study 1 was to examine the development of occupational values, gender stereotypes, and occupational interests and their relation to individuals' age, gender, and each other. To accomplish this goal, participants completed measures of occupational values, gender stereotypes, and occupational interests. In addition, participants rated occupations to examine the perceived value affordances of each job. Age and gender differences on each of the constructs were examined. In addition, predictors of interest in masculine and feminine occupations were investigated.

Contrary to my hypotheses, relatively few sex differences were found in children's and adolescents' occupational values. Instead, children and adolescents endorsed all values to a high degree. These data demonstrate the idealistic perspective that children and adolescents may hold about work (Johnson, 2001). For example, children and adolescents may believe that they would be able to have a job that allows them to help others, spend plenty of time with their family, have power and influence over others, and makes a great deal of money and thus, they reflect their desire for all of

these work-related rewards in their value endorsement. It is in adolescence that sex differences in values begin to emerge with females endorsing altruistic values more strongly than males.

Although adults' endorsement of all values was also high, sex differences in values consistent with the vocational psychology literature were present. Specifically, I found that women endorse altruistic and family values significantly more than men. In addition, the data suggest that men endorse money and power values slightly more than women. The data indicate that men's endorsement of altruistic and family values decreases from adolescence to adulthood. Perhaps in adulthood, as individuals are making occupational choices, men and women become less idealistic about the work rewards available to them and begin to prioritize values, thus leading to sex differences in value endorsement.

With respect to the occupational interest measure, I found a number of predicted sex differences in children's, adolescent's and adults' interest in masculine and feminine occupations. Specifically, the data indicated that among children and adults (but not adolescents), females were significantly more interested in feminine occupations than males. Among adolescents and adults (but not children), males were more interested in masculine occupations than females. However, an examination of the mean scores at the group level indicated that females in all age groups (including adolescents) were notably more interested in feminine occupations than males. In addition, mean scores indicated that males in all age groups (including children) were notably more interested in masculine occupations than females. These data is consistent with the developmental and

vocational psychology literatures and data illustrating the gender segregation of occupations.

In examining group level differences in interest in masculine and feminine occupations, it was found that younger children were significantly more interested in feminine occupations than older children. Also, younger adolescents were significantly more interested in both masculine and feminine occupations than older adolescents. In fact, the data indicate that interest in occupations generally decreases from childhood to adulthood. It is likely that as individuals begin to narrow their occupational interests, they become more interested in a single occupation and less interested in others, leading to relatively low levels of interest across broad classes of occupations (i.e., masculine, feminine).

The finding that females endorse more egalitarian occupational attitudes than males in adolescence and adulthood (but not childhood) could be indicative of a developmental trend. Specifically, the data indicate that children of both genders endorse egalitarian attitudes to a lesser extent than adolescents and adults possibly due to their limited cognitive abilities (Bigler & Liben, 1990). However, consistent with previous research (Liben & Bigler, 2002), females come to endorse egalitarian attitudes to a greater extent than males in adolescence and adulthood. It could be that females come to believe the high status masculine jobs should not be restricted to males but should be open to persons of both genders.

The value ratings of the masculine and feminine occupations were interesting and informative. Agreement among children's, adolescents', and adults' value ratings was

extremely high, indicating that these value perceptions of occupations are widely held and individual differences in these perceptions are minimal. Consistent with expectations, it was found that masculine jobs were perceived by older children, adolescents, and adults as affording money values and power values to a greater extent than feminine jobs. Feminine jobs were perceived by all participants as affording family values to a greater extent than masculine occupations. Interestingly, and contrary to expectations, masculine occupations were perceived by all participants as affording altruistic values to a greater extent than feminine occupations. Upon examining the masculine and feminine occupations, it was found that many of the masculine occupations are life-saving occupations (e.g., doctor, fire fighter, police officer) whereas none of the feminine occupations are life-saving occupations. This distinction may contribute to the altruism ratings of the masculine and feminine occupations.

Interestingly, the data indicate that females were more interested in feminine occupations than men even though they rated these jobs as lower in salary, lower in power, and lower in altruism than masculine occupations. It is possible that females' interest in these occupations stems from either a desire to enter into an occupation that lets one spend time with one's family or a desire to avoid occupations that have high levels of power, control, and responsibility.

The analyses that were most central to the prediction of the gender segregation of occupations examined the predictors of interest in masculine and feminine occupations among children, adolescents, and adults. With respect to masculine occupations, the endorsement of power values positively predicted interest among children and adults. In

addition, the endorsement of altruistic values positively predicted interest in masculine occupations among adults. Because men endorse power values and masculine jobs are perceived to afford power values, it is not surprising that the men are more interested in masculine jobs than women. In addition, because masculine jobs are perceived to afford altruistic values, it is not surprising that those individuals who endorse altruistic values (both men and women) are interested in masculine occupations.

With respect to feminine occupations, the endorsement of power values negatively predicted interest among children, adolescents, and adults. Thus, individuals who endorse power values are less interested in feminine occupations (perceived to afford power values less than masculine occupations) than individuals who do not endorse power values. In addition, results indicated that children who endorsed altruistic values were more interested in feminine occupations than children who do not endorse altruistic values. It should be noted that, although children perceived masculine occupations as affording altruistic values more than feminine occupations, the altruism ratings of feminine occupations was elevated relative to the money, power, and family ratings of feminine occupations.

Overall, results indicated sex differences are present in individuals' interest in occupations as well as attitudes toward occupations and occupational values. In addition, results indicated that values may play a role (albeit a limited one) in children, adolescents, and adults. However, there are a number of limitations to this study. First, it should be noted that the sex-typing of the occupation is often confounded with the values associated with the occupation. Thus, I am not able to discern whether males are more

interested in masculine occupations than females because these occupations are dominated by men (reflecting the gender segregation of occupations) or because these occupations afford male-typed values (e.g., money, power). Second, the correlational nature of the study does not allow for causal inferences. Thus, experimental research is necessary to determine whether the sex-typed occupational interests are the result of seeing same-sex workers in an occupation or sex differences in occupational values.

CHAPTER THREE:

STUDY 2

The goal of Study 2 was to investigate the roles of gender segregation and values in children's and adults' occupational interests and stereotypes using an experimental design. In an adaptation and extension of Liben, Bigler, & Krogh's (2001) novel job paradigm, children and adults were presented with eight fake or obscure occupations (e.g., benster, nose). Each job was depicted with either all male or all female workers (see Figure 1). In addition, descriptions of the jobs portrayed each as affording one of four occupational values (i.e., money, power, family, or altruism). Interest in, egalitarian attitudes toward, and value ratings of the novel occupation were assessed.

This experimental design allows for the investigation of competing hypotheses about the roles of gender segregation and occupational values. Girls, for example, were exposed to occupations that depict female workers *and* afford male-typed values (i.e., money and power), as well as occupations that depict male workers *and* afford female-typed values (i.e., family and altruism). Similarly, boys were exposed to occupations that depict male workers *and* afford female-typed values (i.e., family and altruism) and occupations that depict female workers and afford male-typed values (i.e., money and power).

Hypotheses

Across age groups, I predicted that participants would show higher levels of interest in novel occupations depicted with same-sex models than those depicted with

cross-sex models. In addition, based on research on gender differences in occupational values, I predicted that females would show higher levels of interest in novel occupations that afford family and altruistic values than males, whereas males would show higher levels of interest in novel occupations that afford money and power values than females. Also, I predicted that there would be an interaction between gender of worker and values depicted in the novel occupations. Specifically, I predicted that females would be most interested in occupations that depict female workers *and* afford either family or altruistic values, whereas males would be most interested in occupations that depict male workers *and* afford either monetary or power values. Conversely, females would be least interested in occupations that depict male workers *and* afford either monetary or power values, whereas males would be least interested in occupations that depict female workers *and* afford either family or altruistic values.

If the gender cognition hypothesis is correct (i.e., gender beliefs shape occupational interests), participants should be most interested in the occupation that depicts a same-sex worker, regardless of the sex-typing of the value affordances, when presented with these competing sex-typed job attributes. If the occupational values hypothesis is correct (i.e., values shape occupational interest), participants should be most interested in the occupation that affords the sex-typed value that matches their own gender, regardless of the sex of the worker depicted, when presented with these competing sex-typed job attributes.

Theories of vocational development suggest that there may be age-related changes in the roles of gender cognitions and values in individual's occupational interests (Eccles,

1987; Gottfredson, 1981). Theories of gender development also predict that children evaluate their interest in an occupation based on gender due to their high levels of gender stereotyping, whereas adults will evaluate their interest based on other factors (e.g., values) due to their more egalitarian attitudes toward occupations (Liben & Bigler, 2002). Based on these theories, I developed specific developmental hypotheses. Thus, I predicted that children would use the gender of the workers to determine their interest in the novel occupation, whereas adults would use the value afforded by the occupations to determine their interest in the novel occupation.

Study 2 also assessed children's and adults' egalitarian attitudes of the novel occupations to determine whether the perceived gender appropriateness or perceived value affordance of the occupation would lead to the formation of occupational gender stereotypes. Eagly's (1987) social role theory argues that the distribution of men and women into social roles can shape individuals' gender stereotypes. Thus, social role theory would predict that participants would show stereotypical responding to the occupations based on the gender of the workers depicted. However, it is also possible that individuals form stereotypes of occupations based on the values associated with the occupations. Thus, when individuals are presented with job depictions that run counter to sex-typed values (e.g., only women performing high-power jobs), they may be especially likely to indicate that both men and women should perform this job.

Method

Participants

Participants included 80 children ages 5 to 10 (40 boys and 40 girls). Previous research has demonstrated that children of these ages are sex-typed in their occupational interests and knowledgeable about occupations and gender stereotypes (Liben, Bigler, & Krogh, 2001). Children were recruited from an aftercare program in Austin, Texas. In addition, 80 undergraduates (40 men and 40 women) participated in the experiment. Adults were recruited from the Psychology classes in exchange for course credit. A description of the participants within age group is presented in Table 15.

Overview of Procedure

In this experiment, participants received a brief introduction to eight novel occupations that vary according to gender of workers depicted and values. Immediately following the overview, participants heard the description of each job a second time and completed measures of perception of values represented by, perception of gender of workers in, interest in, and stereotyping of the job. Participants had visual access to the novel job information when completing these measures. The complete job descriptions for each of the novel jobs appears in Appendix B.

Experimental Manipulation

To experimentally manipulate the perception of gender appropriateness² and values afforded by occupations, participants were presented with eight novel occupations that systematically vary on those components. In their work, Liben, Bigler, and Krogh (2001) created job descriptions and pictorial representations of (a) fake and (b) obscure occupations that are unfamiliar to children and adults. Of these occupations, eight were selected based on the ability to modify the job description to fit the four values of interest

in a manner that would be believable to children and adults. For each job presented, participants viewed a poster consisting of either 6 men or 6 women performing the occupation and hear a job description explaining the occupation and relating the occupation to one of four occupational values (e.g., “A *nose* is a person who tests perfume...A nose is a person who makes a lot of money.” See Appendix B for novel job descriptions). Thus, each participant encountered four jobs performed by females and four jobs performed by men. Within each gender category (i.e., gender of worker depicted), each job was characterized by one of four values: family, altruism, money, or power. The verbal presentation of each job was accompanied by a poster consisting of a job title, six pictorial representations of workers (either all male or all female), and a symbol of the value corresponding to the occupation (see Figure 1). Each of the eight novel jobs were counterbalanced across gender and value condition to ensure that posttest responding reflects only the experimental manipulation and not an effect of specific jobs.

During the training session, each participant was told by the experimenter that they would learn eight new occupations. Training began with a brief introduction to each of the occupations. After this introduction, participants were presented with each job for a second time (i.e., hear the job description and see the poster again). During this second presentation, participants responded to the measures (See Appendix C).

Measures

Knowledge of gender of worker. To ensure that participants were attending to the gender manipulation for each job, participants were asked about the gender of worker represented by each of the novel jobs. For example, for each job participants were asked:

“Who is usually a benster?” Response options included: “Men,” “Women,” “Both men and women.”

Perception of values afforded by occupations. To ensure that participants were attending to the values manipulation for each job, participants were asked to rate the degree to which each novel occupation afforded money, power, family, and altruistic values. For example, participants were asked: “How much money does a benster make?” “How much power does a benster have?” “How much time does a benster have to spend with his or her family?” and “How much helping does a benster do?” Response options included: “None,” “A little,” “Some,” and “A lot.”

Egalitarian attitudes toward novel occupations. To assess stereotyping of novel occupations, participants were asked: “Who should be a(n) _____?” Following Liben and Bigler (2002), response options included “only women,” “only men,” or “both men and women.”

Interest ratings of novel occupations. To assess interest in the novel occupations, participants were asked: “How much would you like to be a(n) _____?” Participants responded using a 4 point scale ranging from “not at all” (1) to “very much” (4) following the format of Liben and Bigler’s COAT-PM and OAT-PM measures.

Results

Knowledge of Gender of Worker

To check that I successfully manipulated children’s perceptions of the worker gender, I tallied the number of correct responses to the question: “Who usually is a _____?” Results indicated that children and adults correctly identified the gender of the

workers at a high rate (98% correct responses for children, 91% correct responses for adults). All participants who answered *incorrectly* responded that “both men and women” usually perform the occupation.

Perceptions of Values Afforded by Occupations

To check that I successfully manipulated children’s and adults’ perceptions of the values afforded by the novel occupations, a 2 (Gender of Worker: male, female) x 4 (manipulated value: money, power, family, altruism) ANOVA was conducted on each of the four value ratings of each job (i.e., money, power, family, altruism). See Table 16 for means and standard deviations.

Child sample. For ratings of *money*, there was a significant main effect of manipulated value, $F(3, 234) = 63.57, p < .05$. Contrasts indicated that jobs depicted as having a high salary were rated as significantly higher in affording money values than those jobs depicted as high in power, $F(1, 78) = 89.58, p < .05$, family, $F(1, 78) = 131.69, p < .05$, or altruism $F(1, 78) = 105.90, p < .05$.

For ratings of *power*, there was a significant effect of manipulated value, $F(3, 237) = 64.21, p < .05$. Contrasts indicated that jobs depicted as high in power were rated as significantly higher in affording power values than those jobs depicted as high in money $F(1, 78) = 94.02, p < .05$, family, $F(1, 79) = 129.40, p < .05$, or altruism, $F(1, 78) = 86.81, p < .05$.

For ratings of *family*, there was a significant effect of manipulated value, $F(3, 237) = 27.08, p < .05$. Contrasts indicated that jobs depicted as allowing one to spend time with family were rated as significantly higher in affording family values than those

jobs depicted as high in money $F(1, 79) = 210.25, p < .05$, power, $F(1, 78) = 213.46, p < .05$, or altruism, $F(1, 78) = 204.22, p < .05$.

For ratings of *altruism*, there was a significant effect of manipulated value, $F(3, 237) = 120.97, p < .05$. Contrasts indicated that jobs depicted as helping others were rated as significantly higher in affording altruistic values than jobs depicted as high in money, $F(1, 79) = 50.37, p < .05$, power, $F(1, 79) = 42.66$, or family, $F(1, 79) = 57.18, p < .05$.

Adult sample. For ratings of *money*, there was a significant main effect of manipulated value, $F(3, 237) = 400.90, p < .05$. Contrasts indicated that jobs depicted as having a high salary were rated as significantly higher in affording money values than those jobs depicted as high in power, $F(1, 79) = 580.29, p < .05$, family, $F(1, 79) = 1095.94, p < .05$, or altruism, $F(1, 79) = 865.18, p < .05$. In addition, contrasts indicated that jobs depicted as high in power were rated as significantly higher in affording money values than those jobs depicted as high in family, $F(1, 79) = 59.27, p < .05$, or altruism, $F(1, 79) = 45.55, p < .05$.

For ratings of *power*, there was a significant effect of manipulated value, $F(3, 237) = 297.94, p < .05$. Contrasts indicated that jobs depicted as having high levels of power over others were rated as significantly higher in affording power values than those jobs depicted as high in money, $F(1, 79) = 468.52, p < .05$, family, $F(1, 79) = 543.83, p < .05$, or altruism, $F(1, 79) = 726.12, p < .05$. In addition, contrasts indicated that jobs depicted as high in salary were rated as significantly higher in affording power values than those jobs depicted as high in family values, $F(1, 79) = 15.88, p < .05$, or altruistic values, $F(1, 79) = 18.17, p < .05$.

For ratings of *family*, there was a significant effect of manipulated value, $F(3, 237) = 358.27, p < .05$. Contrasts indicated that jobs depicted as allowing one to spend time with family were rated as significantly higher in affording family values than those jobs depicted as high in money, $F(1, 79) = 601.17, p < .05$, power, $F(1, 79) = 884.67, p < .05$, or altruism, $F(1, 79) = 448.86, p < .05$. In addition, contrasts indicated that jobs depicted as high in altruism were rated as significantly higher in affording family values than those jobs depicted as high in money, $F(1, 79) = 39.83, p < .05$, or power, $F(1, 79) = 29.20, p < .05$. In addition, a main effect of gender of workers was found, $F(1, 79) = 8.59, p < .05$. Jobs depicting female workers were rated as significantly higher in family values than jobs depicting male workers.

For ratings of *altruism*, there was a significant effect of manipulated value, $F(3, 237) = 124.17, p < .05$. Contrasts indicated that jobs depicted as helping others) were rated as significantly higher in affording altruistic values than jobs depicted as high in money, $F(1, 79) = 287.31, p < .05$, power, $F(1, 79) = 342.20, p < .05$, or family, $F(1, 79) = 195.58, p < .05$.

Egalitarian Attitudes toward Novel Occupations

For children, a 2 (sex of participant: male, female) x 2 (age: younger, older) x 2 (gender of workers: males, females) x 4 (manipulated value: money, power, family, altruism) mixed-effects ANOVA was performed on the proportion of children's egalitarian responses with gender of worker and manipulated value as within-subjects variables. For adults, a 2 (sex of participant: male, female) x 2 (gender of workers: males, females) x 4 (manipulated value: money, power, family, altruism) mixed-effects ANOVA

was performed on proportion of adults' egalitarian responses with gender of worker and manipulated value as within-subjects variables.

Child sample. Results indicated a significant main effect of gender of workers, $F(1, 79) = 10.43, p < .05$. Results indicated that children had significantly more egalitarian attitudes toward jobs depicted with male workers ($M = .53, SD = .41$) than female workers ($M = .44, SD = .38$).

Adult sample. Results indicated a significant main effect of gender of workers, $F(1, 79) = 12.70, p < .05$. Results indicated that adults had significantly more egalitarian attitudes toward jobs depicted with male workers ($M = .96, SD = .15$) than female workers ($M = .88, SD = .24$).

Interest in Novel Occupations

A 2 (sex of participant: male, female) x 2 (age: younger, older) x 2 (gender of workers: males, females) x 4 (manipulated value: money, power, family, altruism) mixed-effects ANOVA was performed on children's interest in novel occupations with gender of workers and manipulated value as within-subjects variables. A 2 (sex of participant: male, female) x 2 (gender of workers: males, females) x 4 (manipulated value: money, power, family, altruism) mixed effects ANOVA was performed on adults' interest in novel occupations with gender of workers and manipulated value as within-subjects variables. Means for both groups are presented in Table 17.

Child sample. Results indicated that there was a significant interaction between sex of participant and gender of workers, $F(1, 76) = 56.06, p < .05$. Contrasts indicated that boys were significantly more interested in jobs depicted with male workers than

girls. Girls were significantly more interested than boys in jobs depicted with female workers. Results also indicated a significant main effect for age with younger children being more interested in occupations than older children, $F(1, 76) = 6.17, p < .05$. There were no other significant main effects or interactions.

Adult sample. Results indicated that there was a significant interaction between sex of participant and the gender of workers depicted, $F(1, 78) = 17.43, p < .05$. Contrasts indicated that men were significantly more interested in jobs depicted with male workers than women. Women were significantly more interested in jobs depicted with female workers than men. Results also indicated a significant interaction between sex of participant and manipulated value, $F(3, 234) = 2.64, p < .05$. Contrasts indicated that men were significantly more interested than women in jobs depicted as high in money and power. There were no other significant main effects or interactions.

Discussion

The primary purpose of Study 2 was to determine whether witnessing gender segregation in the workforce and occupational values play a causal role in children's and adults' interest in occupations. To accomplish this goal, children were presented with novel jobs that varied in the gender of workers presented and the values afforded by the occupations. Children's and adults' value ratings of, egalitarian attitudes toward, and interest in occupations were examined.

Assessment of the knowledge of the gender of workers and the perceptions of values afforded by the occupations indicated that participants internalized the messages presented in the experiment. Specifically, 98% of children's and 91% adults' responses

correctly identified the gender of workers presented in the novel occupations. Of those responses that were incorrect, 100% indicated that “both men and women” should perform the occupation, perhaps reflecting the participants’ egalitarian attitudes toward all occupations rather than a lack of knowledge about the gender of workers depicted. This notion is supported by data from Study 1 that suggest that adults hold relatively high levels of egalitarian attitudes whereas children do not. The data also indicate that participants rate each occupation as affording the specific value it was depicted as affording significantly more than occupations that were not depicted as affording that value. For example, children and adults believe that jobs depicted as high in salary afford money values significantly more than jobs depicted as high in power, family, or altruism.

Interestingly, among adults, but not children, there were a number of links among the value ratings of occupations. Specifically, jobs depicted as high in power were rated as significantly higher in affording money values than jobs depicted as high in family and altruism. Jobs depicted as high in money were rated as significantly higher in affording power values than jobs depicted as high in family and altruism. Lastly, jobs depicted as high in altruism were depicted as significantly higher in affording family values than jobs depicted as high in money and power. Thus, it indicates that adults have developed the view that male-typed values (i.e., money and power) are linked to one another and female-typed values (i.e., altruism and family) are linked to one another. This data may reflect the contingencies among value ratings of occupations in the workforce.

The results also indicated that, among adults (but not children), there was a relationship between the gender of workers and the values afforded by the occupations.

Specifically, the data indicate that jobs depicted with female workers are perceived to afford more time with one's family than the identical jobs depicted with male workers. Data from Study 1 indicate that feminine jobs in the workforce are perceived by children, adolescents, and adults to allow one to spend more time with their family than masculine jobs. Thus, it seems that adults infer that jobs dominated by female workers are more family-oriented than jobs dominated by male workers. Contrary to Liben, Bigler, and Krogh's (2001) findings, the gender of the workers depicted did not affect children's (or adults') status ratings, namely ratings of money and power values. This may, however, be due to the fact that status was assessed somewhat differently by Liben et al. In their study, children judged occupations on the basis of importance, difficulty, and salary rather than salary and power.

In addition to the value ratings of the occupations, egalitarian attitudes toward the novel occupations were assessed. The results indicated that children and adults endorsed more egalitarian attitudes toward jobs depicted with male workers than the identical jobs depicted with female workers. Thus, these data suggest that individuals perceive jobs that are dominated by females as "only for females" and jobs that are dominated by males as "for both males and females." Perhaps because familiar feminine occupations are perceived to be lower in status (e.g., money and power) than masculine occupations, jobs performed by females are thus limited to females. Masculine occupations, perhaps perceived to be higher in status than feminine occupations, may be acceptable for both males and high-achieving females.

The analyses most central to my hypotheses concerned the effects of gender segregation and values with novel occupations on children's and adults' interest. Interestingly, both children and adults were significantly more interested in jobs that were depicted with same-sex workers than the identical jobs depicted with opposite-sex workers. It is possible that gender stereotypes, gender identification, or other mechanisms may mediate the relationship between witnessing gender segregation and developing an interest in sex-typed occupations. Further research is needed to explore the possible mechanism(s) that mediate this relationship.

Consistent with my hypotheses, I found that among adults, but not children, males were significantly more interested in jobs that were depicted as high in money and power than females. Thus, it appears that values play a causal role in adults' interest in occupations. Specifically, this data indicates that sex-typed occupational values may cause sex differences in occupational interests among adults. Further research is needed to examine the development of this causal relation during adolescence and childhood.

Overall, these findings suggest that both gender segregation and values play a causal role in individuals' occupational interests. However, it is important to note the limitations of this study. Although the experiment was designed to examine the role of each value individually, adults often linked power and money values and family and altruistic values in their perceptions of occupations. Perhaps examining combinations of values (e.g., jobs that are high in money and low in power, jobs that are high in altruism and low in money) would provide a clearer interpretation of the role of these values in occupational interests. In addition, this technique may provide a more accurate depiction

of the roles of multiple values in individuals' interest in familiar occupations. Similarly, although this experimental design provided a unique opportunity to examine the *causal* roles of complete gender segregation (i.e., entirely male-dominated vs. entirely female-dominated jobs) and individual sex-typed values (e.g., money and power), it may not be reflective of the complex and dynamic nature of the workforce.

CHAPTER FOUR:

GENERAL DISCUSSION

Gender segregation of occupations is pervasive in the United States. The roots of gender segregation may lie in children's sex-typed occupational interests. Researchers in developmental psychology posit that gender cognitions play a role in shaping occupational interests. Researches in vocational psychology focus on occupational values as a primary factor in the formation of occupational goals. In this dissertation, I examined the roles of these factors in shaping individuals' occupational interests using correlational and experimental designs.

Gender-related cognitions appear to play an important, a causal role in individuals' occupational interest. Consistent with research in the gender development literature (e.g., Liben & Bigler, 2002, Greg & Dobson, 1980), results from Study 1 indicated that males tended to be more interested in masculine occupations than females, whereas females tended to be more interested in feminine occupations than males across all ages (i.e., children, adolescents, and adults). In addition, results from Study 2 indicated that gender segregation of occupations plays a causal role in shaping children's and adults' interests in occupations. Specifically, children and adults were significantly more interested in jobs depicted with same-sex workers than the identical jobs depicted with opposite sex workers. These data suggest that individuals' gender cognitions have a significant impact on occupational interests and choices. Merely observing opposite workers in an occupation may prevent individuals' from developing or expressing an interest in that field.

Occupational values also play an important role in individuals' occupational interests. Specifically, there is some evidence to suggest that sex differences in occupational values may lead to sex-typed occupational interests among adults, but not children. Data from Study 1 indicated that sex differences in occupational values were present among adults. Women endorsed altruism and family values significantly more strongly than men, whereas men endorsed money and power values slightly more strongly than women. In addition, values differentially predicted individuals' interest in masculine and feminine occupations. For example, endorsing power values positively predicted interest in masculine occupations, but negatively predicted interest in feminine occupations. Data from Study 2 also indicated that values play a causal role in adults' (but not children's) interest in occupations. Specifically, men were significantly more interested in jobs depicted as affording money and power values than women. Thus, these studies suggest that sex differences in the endorsement of money and power values affect adults' interest in jobs perceived to afford these values.

These studies are among the first to examine occupational values in children and young adolescents. Consistent with research on older adolescents by Johnson (2002), the results indicate that children and young adolescents are idealistic in their endorsement of occupational values. Specifically, children and adolescents endorsed all occupational values to a high extent, indicating that they would be interested in a job that allowed them to (a) make a lot of money, (b) make the rules for others, (c) help the needy, and (d) spend plenty of time with their family. In adulthood, as individuals begin making occupational choices, individuals may realize that very few occupations afford all of those values, thus

they begin to prioritize their own occupational values. As a result, sex difference in occupational values may emerge.

It is important to acknowledge the limitations of this work. First, although I examined the roles of two important factors in shaping individuals' sex-typed occupational interest, gender cognitions and occupational values, other factors also shape individuals' occupational interests. Jacquelynne Eccles (1987) has posited that self-efficacy, parental socialization, utility value, aptitude, and affect play important roles in individuals' occupational choices. Furthermore, when considering occupational values, there are numerous additional values that could be considered, including self-expression, status, development of knowledge and skills, interactions with others, and security. The values that were examined in this work (i.e., money, power, family, altruism) were selected from the range of possible values on the basis of a demonstration of consistent sex differences and the ability of children to understand the value. Future research should examine the causal role of these values and other factors in shaping occupational interests.

Second, in these studies, values were examined in relative isolation from one another. Results from Study 2 indicated that adults link money and power values with one another and family and altruistic values with one another. In addition, as data from Study 1 suggested, each occupation is likely to afford a number of different occupational values. The interaction among values may have implications for occupational interests. For example, women may be interested in a job that allows them to help others, even when it does not make a lot of money. Men, in contrast, may be interested in a altruistic

job only if it is perceived to have a high salary. Future research and analyses should examine how these values interact when shaping occupational interests.

Lastly, the cross-sectional design of these studies limits the conclusions that can be drawn about the effects of children's gender cognitions and values on occupational choices in adulthood. Although research in the vocational psychology literature suggests that there is some stability in occupational interests from late adulthood to adolescence (e.g., Mortimer and Lorence, 1979), research examining the stability of children's occupational interests into adolescence and adulthood is absent. Children's occupational interests may be unrelated to their adult occupational choices. Nonetheless, the study of occupational interests may shed light on how children develop other sex-typed interests (e.g., activities preferences), and behaviors (e.g., toy play) in relevant domains. The stability of occupational interests throughout childhood should be examined in future studies. In addition, the roles of same-sex models and values (e.g., altruism, power) should be examined in other domains of children's development such as their academics and play preferences.

FOOTNOTES

¹ A study was conducted to determine the perception of value affordances of 80 familiar occupations. Specifically, 100 undergraduates (50 men and 50 women) were asked to rate the 80 occupations on Liben and Bigler's (2002) COAT and OAT measures for the degree to which they afford monetary, power, altruism, and family values (e.g., "How much does an airline pilot help others?"). Jobs that may have been unfamiliar to young adolescents (e.g., birth attendant, dermatologist, manicurist, probation officer) were eliminated from consideration. Jobs that were rated as high in affording money, power, family, and altruistic values (one standard deviation above the mean) were included on the scale.

² As in previous research (e.g., Liben, Bigler, and Krogh, 2001; Plost & Rosen, 1974), a direct manipulation of children's gender stereotypes for novel occupations will not be conducted due to the possibility of increasing children's stereotyping across the occupational domains. Instead, children will be presented with novel occupations depicting either all women or all men to manipulate their perception of the gender of workers in the job.

TABLES

Table 1

Descriptive Information by Age Group for Study 1

Age	Males		Females
	<i>Total N</i>	<i>Male N</i>	<i>Female N</i>
<i>Children</i>	80	36	44
5 yrs.	9	5	4
6 yrs.	13	5	8
7 yrs.	20	11	9
8 yrs.	12	6	6
9 yrs.	12	6	6
10 yrs.	14	5	9
<i>Adolescents</i>	97	43	54
11 yrs.	5	3	2
12 yrs.	5	2	3
13 yrs.	7	3	4
14 yrs.	0	0	0
15 yrs.	31	13	18
16 yrs.	38	17	21
17 yrs.	11	5	6
<i>Adults</i>	136	73	63

Table 2

Mean (and Standard Deviations) Endorsement of Occupational Values, Endorsement of Egalitarian Attitudes, and Interest in Masculine and Feminine Occupations among Children

Construct	Males (N = 36)			Females (N = 44)		
	Younger	Older	Combined	Younger	Older	Combined
Occupational Values						
<i>Money</i>	3.78 (.57)	3.81 (.43)	3.79 (.50)	3.46 (.60)	3.70 (.44)	3.58 (.53)
<i>Power</i>	3.40 (.95)	2.90 (.77)	3.17 (.90)	3.14 (.73)	2.99 (.57)	3.07 (.66)
<i>Family</i>	3.41 (.71)	3.57 (.44)	3.49 (.60)	3.55 (.62)	3.56 (.45)	3.55 (.53)
<i>Altruism</i>	3.59 (.59)	3.57 (.45)	3.58 (.52)	3.61 (.50)	3.62 (.45)	3.61 (.47)
Egalitarian Attitudes	20.5 (14.5)	22.7 (9.4)	21.5 (12.3)	21.0 (8.8)	3.5 (9.9)	22.2 (9.3)
Interest in Occupations						
<i>Masculine</i>	2.81 (.99)	1.84 (.51)	2.38 (.94)	2.31 (.70)	1.92 (.47)	2.12 (.62)
<i>Feminine</i>	2.65 (1.02)	1.33 (.29)	2.06 (1.02)	2.80 (.58)	2.19 (.54)	2.49 (.64)

Note: Value and Interest scales range from 1 to 4. Endorsement of egalitarian attitudes is assessed by tallying the number of “both men and women” responses (of a possible 40).

Table 3

Mean (and Standard Deviations) Endorsement of Occupational Values, Endorsement of Egalitarian Attitudes, and Interest in Masculine and Feminine Occupations among Adolescents

Construct	Males (N = 43)			Females (N = 54)		
	Younger	Older	Combined	Younger	Older	Combined
Occupational Values						
<i>Money</i>	3.49 (.71)	3.77 (.36)	3.63 (.57)	3.61 (.50)	3.53 (.61)	3.57 (.55)
<i>Power</i>	3.36 (.68)	3.39 (.52)	3.37 (.60)	3.20 (.73)	3.24 (.65)	3.22 (.68)
<i>Family</i>	3.63 (.51)	3.63 (.41)	3.63 (.46)	3.70 (.46)	3.64 (.52)	3.68 (.48)
<i>Altruism</i>	3.32 (.58)	3.20 (.64)	3.26 (.60)	3.60 (.45)	3.66 (.48)	3.63 (.46)
Egalitarian Attitudes	26.1 (12.2)	29.8 (7.9)	28.0 (10.3)	30.3 (9.9)	33.6 (7.3)	31.9 (8.8)
Interest in Occupations						
<i>Masculine</i>	2.14 (.56)	2.07 (.36)	2.11 (.46)	1.74 (.35)	1.68 (.28)	1.71 (.32)
<i>Feminine</i>	1.56 (.56)	1.32 (.33)	1.44 (.47)	1.70 (.37)	1.49 (.43)	1.59 (.44)

Note: Value and Interest scales range from 1 to 4. Endorsement of egalitarian attitudes is assessed by tallying the number of “both men and women” responses (of a possible 40).

Table 4

Mean (and Standard Deviations) Endorsement of Occupational Values, Endorsement of Egalitarian Attitudes, and Interest in Masculine and Feminine Occupations among Adults

Construct	Males (N = 73)	Females (N = 63)
Occupational Values		
<i>Money</i>	3.47 (.66)	3.38 (.62)
<i>Power</i>	3.25 (.58)	3.17 (.58)
<i>Family</i>	3.42 (.55)	3.73 (.39)
<i>Altruism</i>	3.46 (.54)	3.76 (.34)
Egalitarian Attitudes	30.5 (9.0)	33.6 (7.4)
Interest in Occupations		
<i>Masculine</i>	1.36 (.30)	1.78 (.41)
<i>Feminine</i>	2.06 (.39)	1.59 (.34)

Note: Value and Interest scales range from 1 to 4. Endorsement of egalitarian attitudes is assessed by tallying the number of “both men and women” responses (of a possible 40).

Table 5

Children’s Mean Value Ratings (and Standard Deviations) of Masculine and Feminine Occupations

<u>Construct</u>	<u>Males</u>		<u>Females</u>	
	<u>Younger</u>	<u>Older</u>	<u>Younger</u>	<u>Older</u>
Money Value Ratings				
<i>Masculine</i>	3.25 (.50)	3.05 (.31)	3.22 (.46)	3.03 (.35)
<i>Feminine</i>	3.09 (.55)	2.62 (.35)	3.13 (.56)	2.66 (.49)
Power Value Ratings				
<i>Masculine</i>	3.01 (.62)	2.56 (.44)	2.97 (.52)	2.64 (.42)
<i>Feminine</i>	2.86 (.69)	2.37 (.49)	2.89 (.60)	2.47 (.54)
Family Value Ratings				
<i>Masculine</i>	2.84 (.58)	2.48 (.58)	2.59 (.47)	2.58 (.35)
<i>Feminine</i>	2.92 (.71)	2.78 (.66)	2.87 (.45)	2.87 (.41)
Altruism Value Ratings				
<i>Masculine</i>	3.39 (.48)	3.10 (.43)	3.33 (.43)	3.04 (.35)
<i>Feminine</i>	3.23 (.62)	2.71 (.61)	3.19 (.51)	2.73 (.41)

Note: Value Rating scores range from 1 to 4.

Table 6

Adolescents' Mean Value Ratings (and Standard Deviations) of Masculine and Feminine Occupations

<u>Construct</u>	<u>Males</u>		<u>Females</u>	
	<u>Younger</u>	<u>Older</u>	<u>Younger</u>	<u>Older</u>
Money Value Ratings				
<i>Masculine</i>	2.93 (.33)	2.88 (.24)	2.84 (.29)	2.81 (.26)
<i>Feminine</i>	2.35 (.56)	2.18 (.44)	2.23 (.30)	2.13 (.40)
Power Value Ratings				
<i>Masculine</i>	2.80 (.24)	2.86 (.39)	2.91 (.39)	2.88(.38)
<i>Feminine</i>	2.30 (.37)	2.30 (.61)	2.34 (.61)	2.28 (.55)
Family Value Ratings				
<i>Masculine</i>	2.48 (.23)	2.67 (.36)	2.38 (.33)	2.52 (.33)
<i>Feminine</i>	2.83 (.34)	3.00 (.41)	2.78 (.38)	3.09 (.35)
Altruism Value Ratings				
<i>Masculine</i>	3.00 (.27)	3.01 (.39)	3.07 (.38)	3.08 (.41)
<i>Feminine</i>	2.70 (.29)	2.66 (.54)	2.77 (.46)	2.62 (.47)

Note: Value Rating scores range from 1 to 4.

Table 7

Adults' Mean Value Ratings (and Standard Deviations) of Masculine and Feminine Occupations

Construct	Males	Females
Money Value Ratings		
<i>Masculine</i>	2.71 (.21)	2.74 (.24)
<i>Feminine</i>	1.93 (.28)	1.97 (.28)
Power Value Ratings		
<i>Masculine</i>	2.70 (.32)	2.84 (.32)
<i>Feminine</i>	2.08 (.41)	2.28 (.45)
Family Value Ratings		
<i>Masculine</i>	2.51 (.30)	2.52 (.33)
<i>Feminine</i>	3.04 (.37)	3.09 (.44)
Altruism Value Ratings		
<i>Masculine</i>	3.03 (.30)	3.17 (.38)
<i>Feminine</i>	2.82 (.39)	3.01 (.39)

Note: Value Rating scores range from 1 to 4.

Table 8

Adults' Mean Value Ratings (and Standard Deviations) of Occupations Examined in Study 1

Job	Money	Power	Family	Altruism
<i>Masculine Jobs</i>				
airline pilot	3.25 (.69)	3.28 (.72)	1.81 (.72)	3.04 (.56)
architect	3.49 (.61)	2.96 (.72)	2.52 (.64)	3.01 (.63)
auto mechanic	2.20 (.62)	2.36 (.77)	2.85 (.54)	3.43 (.57)
band/orchestra leader	2.29 (.69)	3.24 (.70)	2.83 (.77)	2.52 (.74)
bus driver	1.51 (.50)	2.59 (.87)	2.93 (.75)	3.26 (.59)
chemist	3.20 (.62)	2.68 (.73)	2.20 (.74)	3.14 (.72)
computer builder	3.17 (.68)	2.49 (.74)	2.67 (.73)	3.04 (.77)
dentist	3.80 (.42)	3.28 (.67)	2.48 (.78)	3.75 (.44)
doctor	3.93 (.26)	3.59 (.59)	1.89 (.78)	3.93 (.25)
farmer	1.97 (.76)	2.16 (.82)	2.91 (.84)	3.25 (.68)
firefighter	2.19 (.64)	2.94 (.82)	2.23 (.73)	3.91 (.29)
football broadcaster	2.99 (.77)	2.15 (.78)	3.06 (.81)	2.11 (.75)
janitor	1.35 (.48)	1.60 (.58)	2.81 (.72)	3.07 (.74)
lawyer	3.88 (.37)	3.57 (.57)	1.96 (.74)	3.51 (.66)
parking lot attendant	1.39 (.50)	1.88 (.76)	3.29 (.68)	2.46 (.75)
police officer	2.45 (.65)	3.70 (.49)	2.18 (.70)	3.77 (.49)

Job (continued)	Money	Power	Family	Altruism
President of the US	3.72 (.50)	3.96 (.21)	1.78 (.81)	3.49 (.65)
professional athlete	3.93 (.31)	3.06 (.88)	1.92 (.79)	1.88 (.68)
refrigerator salesperson	1.79 (.59)	1.76 (.56)	3.15 (.65)	2.24 (.76)
scientist	3.10 (.66)	2.75 (.73)	2.16 (.74)	3.26 (.73)
shoe repairer	1.63 (.52)	1.79 (.62)	3.12 (.60)	3.00 (.62)
Supreme Court Judge	3.67 (.49)	3.95 (.22)	2.06 (.90)	3.21 (.81)
telephone installer	1.82 (.58)	1.87 (.57)	3.04 (.58)	2.88 (.71)
<i>Feminine Occupations</i>				
baby sitter/nanny	1.70 (.61)	2.69 (.99)	3.01 (.77)	3.56 (.54)
cheerleader	1.65 (.64)	1.90 (.79)	3.20 (.79)	1.89 (.76)
elementary school teacher	1.90 (.59)	3.20 (.80)	3.14 (.68)	3.85 (.42)
florist	1.73 (.55)	1.71 (.60)	3.31 (.65)	2.24 (.75)
hair stylist	2.10 (.72)	2.09 (.85)	3.22 (.68)	2.68 (.74)
jewelry maker	2.57 (.83)	1.91 (.70)	3.04 (.70)	2.11 (.67)
librarian	1.86 (.53)	2.18 (.69)	3.23 (.54)	3.13 (.71)
nurse	2.82 (.57)	2.73 (.72)	2.35 (.70)	3.85 (.36)
perfume salesperson	1.66 (.61)	1.66 (.59)	3.33 (.69)	2.02 (.80)
secretary	2.07 (.51)	2.05 (.59)	3.04 (.54)	3.11 (.65)
social worker	2.08 (.61)	2.47 (.85)	2.76 (.61)	3.66 (.62)

Job (continued)	Money	Power	Family	Altruism
supermarket clerk	1.51 (.52)	1.75 (.64)	3.27 (.58)	2.75 (.73)
telephone operator	1.68 (.52)	1.94 (.64)	2.99 (.63)	2.93 (.71)
<i>Neutral Occupations</i>				
artist	2.47 (.91)	2.32 (.93)	3.10 (.74)	2.37 (.75)
baker	1.97 (.55)	1.96 (.69)	3.00 (.63)	2.69 (.64)
elevator operator	1.40 (.49)	2.04 (.83)	3.19 (.69)	2.51 (.83)
writer	2.74 (.83)	2.51 (.83)	3.11 (.78)	2.44 (.75)

Note: Value Ratings range from 1 – 4.

Table 9

Predictors of Children's Interest in Masculine Occupations (N=80)

	B	SE	β	ΔR^2
Step 1				.24
Sex	-.156	.157	-.101	
Age	-.216*	.047	-.465	
Step 2				.12
Sex	-.136	.152	-.088	
Age	-.195*	.046	-.421	
Money	.099	.160	.067	
Power	.233*	.108	.222	
Family	.139	.143	.100	
Altruism	.246	.157	.155	

Table 10

Predictors of Children's Interest in Feminine Occupations (N=80)

	B	SE	β	ΔR^2
Step 1				.46
Sex	.553*	.146	.322	
Age	-.323*	.043	-.629	
Step 2				.10
Sex	.568*	.139	.330	
Age	-.298*	.042	-.581	
Money	.062	.146	.038	
Power	-.244*	.099	-.219	
Family	.098	.131	.064	
Altruism	.280*	.144	.160	

* $p < .05$

Table 11

Predictors of Adolescents' Interest in Masculine Occupations (N=97)

	B	SE	β	ΔR^2
Step 1				.22
Sex	-.391*	.079	-.451	
Age	-.032	.025	-.120	
Step 2				.05
Sex	-.413*	.084	-.477	
Age	-.029	.025	-.109	
Money	.122	.088	.145	
Power	.022	.074	.033	
Family	.056	.091	.061	
Altruism	.081	.078	.105	

* $p < .05$

Table 12

Predictors of Adolescents' Interest in Feminine Occupations (N=97)

	B	SE	β	ΔR^2
Step 1				.07
Sex	.160	.088	.181	
Age	-.054	.027	-.198	
Step 2				.06
Sex	.116	.094	.131	
Age	-.055*	.028	-.199	
Money	-.155	.098	-.197	
Power	-.164*	.082	-.241	
Family	.064	.101	.068	
Altruism	.070	.087	.089	

* $p < .05$

Table 13

Predictors of Adults' Interest in Masculine Occupations (N=136)

	B	SE	β	ΔR^2
Step 1				.30
Sex	-.476*	.063	-.546	
Step 2				.07
Sex	-.517*	.067	-.594	
Money	.095	.058	.140	
Power	.142*	.067	.180	
Family	.010	.068	.011	
Altruism	.168*	.075	.184	

* $p < .05$

Table 14

Predictors of Adults' Interest in Feminine Occupations (N=136)

	B	SE	β	ΔR^2
Step 1				.26
Sex	.417*	.061	.506	
Step 2				.09
Sex	.317*	.065	.384	
Money	-.002	.056	-.003	
Power	-.193*	.065	-.270	
Family	.123 [†]	.066	.150	
Altruism	.162	.073	.188	

* $p < .05$, [†] $p < .10$

Table 15

Descriptive Information by Age Group for Study 2

<u>Age Group</u>	<u>Total N</u>	<u>Males</u>	<u>Females</u>	<u>Mean Age</u>
<i>Children</i>	80	40	40	7.52(1.53)
<i>Younger</i>	40	20	20	6.25 (.74)
<i>Older</i>	40	20	20	8.80 (.91)
<i>Adult</i>	80	40	40	18.8(1.28)

Table 16

Mean Value Ratings (and Standard Deviations) by Gender of Worker (Male Workers v. Female Workers) and Manipulated Value (money, power, family, altruism) for Children and Adults in Study 2

	Male Workers				Female Workers			
	Money	Power	Family	Altruism	Money	Power	Family	Altruism
Children's Value Ratings								
<i>Money</i>	3.97 (.22)	3.11 (.93)	3.04 (.87)	3.05 (.95)	3.99 (.11)	3.13 (.91)	2.97 (.86)	3.05 (.88)
<i>Power</i>	3.00 (1.01)	3.96 (.19)	2.85 (.98)	2.86 (1.08)	2.99 (.91)	3.99 (.11)	2.79 (1.03)	2.96 (1.04)
<i>Family</i>	2.56 (.84)	2.70 (.88)	3.95 (.22)	2.70 (.88)	2.69 (.94)	2.49 (.89)	3.90 (.30)	2.55 (.94)
<i>Altruism</i>	3.25 (.92)	3.30 (.96)	3.26 (.87)	3.95 (.22)	3.48 (.76)	3.20 (.99)	3.25 (.92)	3.86 (.38)
Adults' Value Ratings								
<i>Money</i>	3.96 (.25)	2.73 (.50)	2.35 (.55)	2.35 (.55)	3.94 (.29)	2.76 (.58)	2.25 (.96)	2.34 (.69)
<i>Power</i>	2.30 (.75)	3.83 (.55)	1.96 (.72)	2.00 (.64)	2.01 (.77)	3.81 (.60)	2.26 (.74)	1.96 (.66)
<i>Family</i>	2.35 (.59)	2.39 (.51)	3.97 (.16)	2.67 (.57)	2.49 (.64)	2.48 (.57)	3.97 (.16)	2.80 (.61)
<i>Altruism</i>	2.34 (.78)	2.33 (.76)	2.52 (.83)	3.80 (.51)	2.30 (.84)	2.23 (.88)	2.49 (.80)	3.68 (.67)

Note: Scores range from 1(low) to 4 (high).

Table 17

Mean interest in novel occupations (and Standard Deviations) by Gender of Worker (Male Workers v. Female Workers) and Manipulated Value (money, power, family, altruism) for Children and Adults in Study 2

	<u>Male Workers</u>				<u>Female Workers</u>			
	Money	Power	Family	Altruism	Money	Power	Family	Altruism
Children's Interest								
<i>Boys (5-7)</i>	2.85 (1.23)	2.70 (1.22)	3.00 (1.34)	2.55 (1.23)	1.95 (1.15)	2.05 (1.23)	2.00 (1.34)	2.00 (1.12)
<i>Boys (8-10)</i>	2.55 (1.05)	2.15 (.99)	2.30 (.92)	2.00 (.92)	1.80 (.95)	1.40 (.60)	1.65 (.67)	1.50 (.69)
<i>Girls (5-7)</i>	2.45 (1.19)	1.85 (.99)	2.05 (1.00)	2.20 (.95)	2.85 (1.14)	2.55 (1.10)	2.55 (1.28)	2.65 (1.23)
<i>Girls (8-10)</i>	1.95 (1.05)	1.85 (.93)	2.05 (1.10)	2.05 (.83)	2.40 (1.19)	2.25 (1.02)	2.30 (.86)	2.45 (.89)
Adults' Interest								
<i>Men</i>	2.60 (.87)	2.10 (.98)	2.03 (.89)	1.65 (.77)	1.98 (.95)	1.90 (.84)	1.65 (.95)	1.55 (.75)
<i>Women</i>	1.88 (.91)	1.55 (.85)	1.60 (.84)	1.75 (.84)	1.93 (.92)	1.53 (.92)	1.70 (.85)	1.68 (.80)

Note: Scores range from 1(low) to 4 (high).

Figure 1: Example of Stimulus for Study 2



APPENDIX A:
Study 1 Measures

Interest Measure

WHAT I WANT TO BE

Here is a list of jobs that people can do. Please circle the number that shows how much you want to do each of these jobs.

HOW MUCH WOULD YOU WANT TO BE A(N):	Not at All 1	A Little 2	Some 3	Very Much 4
1. airline pilot	1	2	3	4
2. architect	1	2	3	4
3. artist	1	2	3	4
4. auto mechanic	1	2	3	4
5. baby sitter/nanny	1	2	3	4
6. baker	1	2	3	4
7. band/orchestra leader	1	2	3	4
8. bus driver	1	2	3	4
9. cheerleader	1	2	3	4
10. chemist	1	2	3	4
11. computer builder	1	2	3	4
12. dentist	1	2	3	4
13. doctor	1	2	3	4
14. elementary school teacher	1	2	3	4
15. elevator operator	1	2	3	4
16. farmer	1	2	3	4
17. firefighter	1	2	3	4
18. florist	1	2	3	4
19. football broadcaster	1	2	3	4
20. hair stylist	1	2	3	4
21. janitor	1	2	3	4
22. jewelry maker	1	2	3	4
23. lawyer	1	2	3	4
24. librarian	1	2	3	4
25. nurse	1	2	3	4
26. parking lot attendant	1	2	3	4
27. perfume salesperson	1	2	3	4
28. police officer	1	2	3	4
29. President of the US	1	2	3	4
30. professional athlete	1	2	3	4
31. refrigerator salesperson	1	2	3	4
32. scientist	1	2	3	4
33. secretary	1	2	3	4

34. shoe repairer	1	2	3	4
35. cook in a restaurant	1	2	3	4
36. supermarket clerk	1	2	3	4
37. Supreme Court Judge	1	2	3	4
38. telephone installer	1	2	3	4
39. telephone operator	1	2	3	4
40. writer	1	2	3	4

Gender Stereotyping (Egalitarian Attitude) Measure

WHO SHOULD DO THESE JOBS?

Here is a list of jobs people can do. We want you to tell us if you think each job should be done by men, by women, or by both men and women. There are no right or wrong answers. We just want to know who you think should do these jobs. If you think it should be done by only men, circle 1; if you think it should be done by only women, circle 2; if you think it should be done by both men and women, circle 3.

WHO SHOULD BE A(N):	Only Men 1	Only Women 2	Both 3
1. airline pilot	1	2	3
2. architect	1	2	3
3. artist	1	2	3
4. auto mechanic	1	2	3
5. baby sitter/nanny	1	2	3
6. baker	1	2	3
7. band/orchestra leader	1	2	3
8. bus driver	1	2	3
9. cheerleader	1	2	3
10. chemist	1	2	3
11. computer builder	1	2	3
12. dentist	1	2	3
13. doctor	1	2	3
14. elementary school teacher	1	2	3
15. elevator operator	1	2	3
16. farmer	1	2	3
17. firefighter	1	2	3
18. florist	1	2	3
19. football broadcaster	1	2	3
20. hair stylist	1	2	3
21. janitor	1	2	3
22. jewelry maker	1	2	3
23. lawyer	1	2	3
24. librarian	1	2	3
25. nurse	1	2	3
26. parking lot attendant	1	2	3
27. perfume salesperson	1	2	3
28. police officer	1	2	3
29. President of the US	1	2	3
30. professional athlete	1	2	3
31. refrigerator salesperson	1	2	3

32. scientist	1	2	3
33. secretary	1	2	3
34. shoe repairer	1	2	3
35. cook in a restaurant	1	2	3
36. supermarket clerk	1	2	3
37. Supreme Court Judge	1	2	3
38. telephone installer	1	2	3
39. telephone operator	1	2	3
40. writer	1	2	3

Occupational Values Scale for Children (ages 6-10)

People have all different types of jobs:

1. Some people have jobs that let them make the rules for other people.
Other people have jobs that do not let them make the rules for other people.

How much would you like a job that lets you make the rules for other people?

NOT AT ALL A LITTLE SOME A LOT

2. Some people have jobs that let them help other people.
Other people have jobs that do not let them help other people.

How much would you like a job that lets you help other people?

NOT AT ALL A LITTLE SOME A LOT

3. Some people have jobs that let them quit for a while when they have small children and then they can come back to work when the kids are big.
Other people have jobs that do not let them quit for a while when they have small children.

How much would you like a job that lets you quit for a while if you have kids?

NOT AT ALL A LITTLE SOME A LOT

4. Some people have jobs that let them earn enough money to buy a large house.
Other people have jobs that do not let them earn enough money to buy a large house.

How much would you like a job that lets you earn enough money to buy a large house?

NOT AT ALL A LITTLE SOME A LOT

5. Some people have jobs that let them make important decisions.
Other people have jobs that do not let them make important decisions.

How much would you like a job that lets you make important decisions?

NOT AT ALL A LITTLE SOME A LOT

6. Some people have jobs that let you take a day or two off of work to spend with their family.

Other people have jobs that do not let you take a day or two off of work to spend time with their family.

How much would you like a job that lets you go to work *and* have time with your family?

NOT AT ALL A LITTLE SOME A LOT

7. Some people have jobs that let them earn a great deal of money.

Other people have jobs that do not let them earn a great deal of money.

How much would you like a job that lets you earn a great deal of money?

NOT AT ALL A LITTLE SOME A LOT

8. Some people have jobs that help people who need it, like people who are sick, poor, and homeless.

Other people have jobs that do not help people who need it, like people who are sick, poor and homeless.

How much would you like a job that lets you help people who need it, like people who are sick, poor, and homeless?

NOT AT ALL A LITTLE SOME A LOT

9. Some people have jobs that let them go to work *and* have lots of time with their family.

Other people have jobs that do not let them have a job *and* have lots of time with their family.

How much would you like a job that lets you go to work *and* have lots of time with your family?

NOT AT ALL A LITTLE SOME A LOT

10. Some people have jobs that let them be in charge of other people.

Other people have jobs that do not let them be in charge of other people.

How much would you like a job that lets you be in charge?

NOT AT ALL A LITTLE SOME A LOT

11. Some people have jobs that help others feel better.
Other people have jobs that do not help others feel better.

How much would you like a job that helps others feel better?

NOT AT ALL A LITTLE SOME A LOT

12. Some people have jobs that let them earn more and more money each year.
Other people have jobs that do not let them earn more and more money each year.

How much would you like a job that lets you earn more and more money each year?

NOT AT ALL A LITTLE SOME A LOT

13. Some people have jobs that let them be helpful to others.
Other people have jobs that do not let them be helpful to others.

How much would you like a job that lets you be helpful to others?

NOT AT ALL A LITTLE SOME A LOT

14. Some people have jobs that let them be the boss.
Other people have jobs that do not let them be the boss.

How much would you like a job that lets you be the boss?

NOT AT ALL A LITTLE SOME A LOT

15. Some people have jobs that let them work part-time (only sometimes, like half-days) when they have young kids.

Other people have jobs that do not let them work part-time when they have young kids.

How much would you like a job that lets you work part-time when you have young kids?

NOT AT ALL A LITTLE SOME A LOT

16. Some people have jobs that let them take home a lot of money each week.
Other people have jobs that do not let them take home a lot of money each week.

How much would you like a job that lets you take home a lot of money each week?

NOT AT ALL A LITTLE SOME A LOT

Adolescent/Adult

Occupational Values Scale

I would like a job that:

	Not at All	Not Much	Some	Very Much
1. Gives me the opportunity to have control over an organization or group.	1	2	3	4
2. Gives me the opportunity to help other people.	1	2	3	4
3. Allows me to take time off when I become a parent.	1	2	3	4
4. Allows me to earn enough to buy a large house.	1	2	3	4
5. Gives me the opportunity to make important decisions.	1	2	3	4
6. Allows me to easily manage both a career and a family.	1	2	3	4
7. Allows me to earn a great deal of money.	1	2	3	4
8. Aids the needy.	1	2	3	4
9. Gives me plenty of time to spend with my family.	1	2	3	4
10. Gives me the opportunity to be in a high-responsibility job.	1	2	3	4
11. Contributes to the well-being of others.	1	2	3	4
12. Gives me the chance to earn big raises.	1	2	3	4
13. Allows me to be helpful to others.	1	2	3	4
14. Allows me to be in a position of power.	1	2	3	4
15. Allows me to work part-time (when my children are young).	1	2	3	4
16. Provides me with the opportunity to have a high income.	1	2	3	4

APPENDIX B:

Job Descriptions for Study 2

Job Descriptions

Benster: This is a person who studies deer. They collect information about where deer live, how much food they need, how to keep them off the highways, and how pollution might be hurting them.

Money: Bensters make a lot of money studying deer. Because they get special training to become experts on deer, they then get paid a lot of money to do their job. Remember: A benster is someone who makes a lot of money.

Altruism: Bensters help deer by keeping them healthy and keeping them safe.. Bensters also help people to stay safe when driving where deer live. Remember: A benster is someone who helps people.

Family: Bensters only work when deer are out so they have lots of time to spend with their children. Remember: A benster is someone who has plenty of time to spend with their family.

Power: Bensters have a lot of power because they train other deer specialists and tell them what to do. Bensters also make very important decisions and have a lot of responsibility. Remember: A benster is a job that has a lot of power.

Cartoner: This is a person who designs the packaging for products that you buy in stores. They create new and attractive shapes for packages for everything from shampoo to toys.

Money: Cartoners make a lot of money designing packages. Because there are so many companies that need packaging and lots of packages to be designed, cartoners make a lot of money. Remember: A Cartoner is someone who makes a lot of money.

Altruism: A cartoner helps people by designing packages that are easy to read and easy to carry. A cartoner also helps people by designing packaging that is safe for kids, babies, and pets to be around. Remember: A cartoner is someone who helps people.

Family: Many cartoners design packages from offices in their home so that they can spend time with their children. Remember: A cartoner is someone who has plenty of time to spend with their family.

Power: Cartoners have a lot of power because they tell the people that make the packaging what to do. Cartoners also make very important decisions and have a lot of responsibility. Remember: A cartoner is a job that has a lot of power.

Chandler: This is a person who makes and sells candles in a shop. They make many different types of candles and sell them to customers.

Money: Chandlers make a lot of money making and selling candles. Because each candle has to be made by hand with their expertise, chandlers get paid a lot of money. Remember: A chandler is someone who makes a lot of money.

Altruism: A chandler helps people to pick out candles to give as gifts. A chandler also helps people by selling people candles that they need in emergencies when the power goes out. Remember: A chandler is someone who helps people.

Family: Chandlers have their own shop and can make their own hours so that they can have plenty of time to spend with their children. Remember: A chandler is someone who has plenty of time to spend with their family.

Power: Chandlers have a lot of power because they tell shop workers what to do. Chandlers also make very important decisions and have a lot of responsibility. Remember: A chandler is someone who has a lot of power.

Clipster: This is a person who tests batteries to see how powerful they are and how long they will run. They figure out which type of batteries will work best in things like toys and flashlights.

Money: Clipsters make a lot of money testing batteries. Because there are so many batteries to be tested and clipsters are trained a lot for their job, clipsters get paid a lot of money. Remember: A clipster is someone who makes a lot of money.

Altruism: A clipster helps people by making sure that the batteries we all use are safe for us. A clipster also helps people by testing the batteries used in police cars, ambulances, and fire trucks to make sure that they can get to an emergency.

Remember: A clipster is someone who helps people.

Family: Clipsters have very flexible hours that allow them plenty of time to spend with their children. Remember: A clipster is someone who has plenty of time to spend with their family.

Power: Clipsters have a lot of power because they tell factory workers what to do. Clipsters also make very important decisions and have a lot of responsibility.

Remember: A clipster is someone who has a lot of power.

Ginner: This is a person who runs a cotton gin. They run cotton through a small machine to clean it so that it can be used to make cloth.

Money: Ginners make a lot of money running a cotton gin. Because ginners have to have a lot of training to learn how to run the cotton gin, ginners get paid a lot of money. Remember: A ginner is someone who makes a lot of money.

Altruism: A ginner helps people by making sure that there is enough cotton to make clothes for everyone. A ginner also helps poor and needy people by giving them the extra clothes from the gin. Remember: A ginner is someone who helps people.

Family: Ginners make their own schedules so that they have plenty of time to spend with their children during the day and on weekends. Remember: A ginner is someone who has plenty of time to spend with their family.

Power: Ginners have a lot of power because they get to tell clothes-makers what to do. Ginners also make very important decisions and have a lot of responsibilities. Remember: A ginner is someone who has a lot of power.

Milliner: This is a person who makes hats. They design hats, cut out the material and sew it together to make many different kinds of hats.

Money: Milliners make a lot of money making hats. Because milliners have to go through a lot of training to be good at their job, milliners get paid a lot of money. Remember: A milliner is someone who makes a lot of money.

Altruism: Milliners help people by making hats that look good on everyone. Milliners also help people by making hats for people who are sick and have lost their hair. This means that milliners get to help people feel beautiful and special even when they are feeling weak and sick. Remember: A milliner is someone who helps people.

Family: Milliners can make and design hats from their home so that they can spend time with their children. Remember: A milliner is someone who has plenty of time to spend with their family.

Power: Milliners have a lot of power because they can train others who want to be milliners and tell them what to do. Milliners also make very important decisions and have a lot of responsibilities. Remember: A milliner is someone who has a lot of power.

Nose: This is a person who tests perfume: They smell small bottles of liquid to see which ingredients produce the best-smelling perfumes.

Money: Noses make a lot of money testing perfume. Because noses have to have special talent for smelling perfumes and are experts, noses get paid a lot of money. Remember: A nose is someone who makes a lot of money.

Altruism: A nose helps people by showing them which perfumes smell best on them. A nose also helps people to pick out perfumes to give as gifts. Remember: A nose is someone who helps people.

Family: Noses have flexible schedules so that they can spend time with their children. Remember: A nose is someone who has plenty of time to spend with their family.

Power: Noses have a lot of power because they can tell the perfume makers what to do. Noses also make very important decisions and have a lot of responsibilities. Remember: A nose is someone who has a lot of power.

Tenic: This is a person who is in charge of creating handicapped parking places for city buildings and stores. They decide how many handicapped parking places there should be, where they should go, and supervise to make sure that the signs are put up correctly.

Money: Tenics make a lot of money creating handicapped parking places. Because tenics have to have a lot of special training and expertise to be good at their job, tenics get paid a lot of money. Remember: A tenic is someone who makes a lot of money.

Altruism: A tenic helps people who are handicapped by making sure they have places to park that are not too far from the store. A tenic also helps people who own stores make sure they can serve customers who are handicapped. Remember: A tenic is someone who helps people.

Family: A tenic works when children are in school so that they can spend time with their own children. Remember: A tenic is someone who has plenty of time to spend with their family.

Power: Tenics have a lot of power because they tell store owners what to do with their parking lots. Tenics also make many important decisions and have a lot of responsibility. Remember: A tenic is someone who has a lot of power.

APPENDIX C:
Sample Script for Novel Job Session in Study 2

Thank you for coming to talk with me today. This morning I am going to teach you about some jobs that you might not have heard of before. I'll first tell you about all the jobs, and then I'll ask you some questions about each job. OK?

The first job is a BENSTER. See the BENSTERS? (Female Bensters Shown)

BENSTER: This is a person who studies deer. They collect information about where deer live, how much food they need, how to keep them off the highways, and how pollution might be hurting them. Bensters help deer by keeping them healthy and keeping them safe. Bensters also help deer by feeding them and taking care of them. Remember: A *benster* is someone who *helps* others.

The next job is a CARTONER. See the CARTONERS? (Male Cartoners Shown)

CARTONER: This is a person who designs the packaging for products that you buy in stores. They create new and attractive shapes for packages for everything from shampoo to toys.

Many cartoners design packages from offices in their home so that they can spend time with their children. Remember: A *cartoner* is someone who has plenty of time to spend with their *family*.

The next job is a CHANDLER. See the CHANDLERS? (Female Chandlers Shown)

Chandler: This is a person who makes and sells candles in a shop. They make many different types of candles and sell them to customers.

Chandlers have a lot of power because they tell shop workers what to do. Chandlers also make very important decisions and have a lot of responsibility. Remember: A *chandler* is someone who has a lot of power.

The next job is a CLIPSTER. See the CLIPSTERS? (Male Clipsters Shown)

Clipster: This is a person who tests batteries to see how powerful they are and how long they will run. They figure out which type of batteries will work best in things like toys and flashlights. A clipster helps people by making sure that the batteries we all use are safe for us. A clipster also helps people by testing the batteries used in police cars, ambulances, and fire trucks to make sure that they can get to an emergency. Remember: A *clipster* is someone who helps others.

The next job is a GINNER. See the GINNERS? (Female Ginner Shown)

Ginner: This is a person who runs a cotton gin. They run cotton through a small machine to clean it so that it can be used to make cloth. Ginner make their own schedules so that they have plenty of time to spend with their children during the day and on weekends. Remember: A ginner is someone who has plenty of time to spend with their family.

The next job is a MILLINER. See the MILLINERS? (Male Milliners Shown)

Milliner: This is a person who makes hats. They design hats, cut out the material and sew it together to make many different kinds of hats. Milliners make a lot of money making hats. Because milliners have to go through special training to be good at their job, milliners get paid a lot of money. Remember: A milliner is someone who makes a lot of money.

The next job is a NOSE. See the NOSES? (Male Noses Shown)

Nose: This is a person who tests perfume: They smell small bottles of liquid to see which ingredients produce the best-smelling perfumes. Noses have a lot of *power* because they can tell the perfume makers what to do. Noses also make very important decisions and have a lot of responsibilities. Remember: A nose is someone who has a lot of power.

The last job is a TENIC. See the TENICS? (Female Tenics Shown)

Tenic: This is a person who is in charge of creating handicapped parking places for city buildings and stores. They decide how many handicapped parking places there should be, where they should go, and supervise to make sure that the signs are put up correctly. Tenics make a lot of money creating handicapped parking places. Because tenics have to have a lot of special training and expertise to be good at their job, tenics get paid a lot of money. Remember: A tenic is someone who makes a lot of money.

NOW I'M GOING TO ASK YOU SOME QUESTIONS ABOUT EACH OF THESE JOBS

I'LL TELL YOU ABOUT EACH JOB AGAIN TOO.

The first job is a BENSTER. See the BENSTERS? (Female Bensters Shown)

BENSTER: This is a person who studies deer. They collect information about where deer live, how much food they need, how to keep them off the highways, and how pollution might be hurting them. Bensters help deer by keeping them healthy and keeping them safe. Bensters also help deer by feeding them and taking care of them. Remember: A *benster* is someone who *helps* others.

None A little Some A lot

1. Who <i>usually</i> performs the job of a BENSTER?	Men	Women	Both
2. How much helping does a BENSTER do?	1	2	3
3. How much would you like to be a BENSTER?	1	2	3
4. Who should be a BENSTER? Only Men	Only	Women	Both
5. How much money does a BENSTER make?	1	2	3
6. How much power does a BENSTER have?	1	2	3
7. How much time does a BENSTER have to spend with his or her family?	1	2	3

The next job is a CARTONER. See the CARTONERS?

CARTONER: This is a person who designs the packaging for products that you buy in stores. They create new and attractive shapes for packages for everything from shampoo to toys.

Many cartoners design packages from offices in their home so that they can spend time with their children. Remember: A *cartoner* is someone who has plenty of time to spend with their *family*.

None A little Some A lot

1. Who <i>usually</i> performs the job of a CARTONER?	Men	Women	Both
2. How much time does a CARTONER have to spend with his or her family?	1	2	3
3. How much would you like to be a CARTONER?	1	2	3
4. Who should be a CARTONER? Only Men	Only	Women	Both
5. How much money does a CARTONER make?	1	2	3
6. How much power does a CARTONER have?	1	2	3
7. How much helping does a CARTONER do?	1	2	3

The next job is a CHANDLER. See the CHANDLERS?

Chandler: This is a person who makes and sells candles in a shop. They make many different types of candles and sell them to customers. Chandlers have a lot of power because they tell shop workers what to do. Chandlers also make very important decisions and have a lot of responsibility. Remember: A chandler is someone who has a lot of power.

	<u>None</u>	<u>A little</u>	<u>Some</u>	<u>A lot</u>
1. Who <i>usually</i> performs the job of a CHANDLER?	Men	Women	Both	
2. How much power does a CHANDLER have?	1	2	3	4
3. How much would you like to be a CHANDLER?	1	2	3	4
4. Who should be a CHANDLER?	Only Men	Only Women	Both	
5. How much money does a CHANDLER make?	1	2	3	4
6. How much time does a CHANDLER have to spend with his or her family?	1	2	3	4
7. How much helping does a CHANDLER do?	1	2	3	4

The next job is a CLIPSTER. See the CLIPSTERS?

Clipster: This is a person who tests batteries to see how powerful they are and how long they will run. They figure out which type of batteries will work best in things like toys and flashlights. A clipster helps people by making sure that the batteries we all use are safe for us. A clipster also helps people by testing the batteries used in police cars, ambulances, and fire trucks to make sure that they can get to an emergency. Remember: A clipster is someone who helps people.

	<u>None</u>	<u>A little</u>	<u>Some</u>	<u>A lot</u>
1. Who <i>usually</i> performs the job of a CLIPSTER?	Men	Women	Both	
2. How much helping does a CLIPSTER do?	1	2	3	4
3. How much would you like to be a CLIPSTER?	1	2	3	4
4. Who should be a CLIPSTER?	Only Men	Only Women	Both	
5. How much money does a CLIPSTER make?	1	2	3	4
6. How much time does a CLIPSTER have to spend with his or her family?	1	2	3	4
7. How much power does a CLIPSTER have?	1	2	3	4

The next job is a GINNER. See the GINNERS? (Female Ginnners Shown)

Ginner: This is a person who runs a cotton gin. They run cotton through a small machine to clean it so that it can be used to make cloth. Ginnners make their own schedules so that they have plenty of time to spend with their children during the day and on weekends. Remember: A ginner is someone who has plenty of time to spend with their family.

	<u>None A little Some A lot</u>			
	Men	Women	Both	
1. Who <i>usually</i> performs the job of a GINNER?				
2. How much time does a GINNER have to spend with his or her family?	1	2	3	4
3. How much would you like to be a GINNER?	1	2	3	4
4. Who should be a GINNER?	Only Men	Only Women	Both	
5. How much money does a GINNER make?	1	2	3	4
6. How much helping does a GINNER do?	1	2	3	4
7. How much power does a GINNER have?	1	2	3	4

The next job is a MILLINER. See the MILLINERS?

Milliner: This is a person who makes hats. They design hats, cut out the material and sew it together to make many different kinds of hats. Milliners make a lot of money making hats. Because milliners have to go through special training to be good at their job, milliners get paid a lot of money. Remember: A milliner is someone who makes a lot of money.

	<u>None A little Some A lot</u>			
	Men	Women	Both	
1. Who <i>usually</i> performs the job of a MILLINER?				
2. How much money does a MILLINER make?	1	2	3	4
3. How much would you like to be a MILLINER?	1	2	3	4
4. Who should be a MILLINER?	Only Men	Only Women	Both	
5. How much time does a MILLINER have to spend with his or her family?	1	2	3	4
6. How much helping does a MILLINER do?	1	2	3	4
7. How much power does a MILLINER have?	1	2	3	4

The next job is a NOSE. See the NOSES?

Nose: This is a person who tests perfume: They smell small bottles of liquid to see which ingredients produce the best-smelling perfumes. Noses have a lot of *power* because they can tell the perfume makers what to do. Noses also make very important decisions and have a lot of responsibilities. Remember: A nose is someone who has a lot of power.

	None A little Some A lot			
1. Who <i>usually</i> performs the job of a NOSE?	Men	Women	Both	
2. How much power does a NOSE have?	1	2	3	4
3. How much would you like to be a NOSE?	1	2	3	4
4. Who should be a NOSE?	Only Men	Only Women		Both
5. How much time does a NOSE have to spend with his or her family?	1	2	3	4
6. How much helping does a NOSE do?	1	2	3	4
7. How much money does a NOSE make?	1	2	3	4

The last job is a TENIC. See the TENICS?

Tenic: This is a person who is in charge of creating handicapped parking places for city buildings and stores. They decide how many handicapped parking places there should be, where they should go, and supervise to make sure that the signs are put up correctly. Tenics make a lot of money creating handicapped parking places. Because tenics have to have a lot of special training and expertise to be good at their job, tenics get paid a lot of money. Remember: A tenic is someone who makes a lot of money.

	None A little Some A lot			
1. Who <i>usually</i> performs the job of a TENIC?	Men	Women	Both	
2. How much money does a TENIC make?	1	2	3	4
3. How much would you like to be a TENIC?	1	2	3	4
4. Who should be a TENIC?	Only Men	Only Women		Both
5. How much time does a TENIC have to spend with his or her family?	1	2	3	4
6. How much helping does a TENIC do?	1	2	3	4
7. How much power does a TENIC have?	1	2	3	4

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