

# The Role of Masculinity/Femininity, Values, and Occupational Value Affordances in Shaping Young Men's and Women's Occupational Choices

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Published online: 8 June 2011  
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**Abstract** Gender differences in occupational values have been well-established, yet little research has examined the predictive qualities of individual difference variables such as self-perceived masculinity/femininity on values and these constructs' predictive role in the traditionality and perceived value affordances of future occupations—or the values persons expect a job to fulfill. Undergraduates (185 males, 401 females) from the Eastern, Southern, and Midwestern United States reported their occupational values, self-perceived masculinity/femininity, expected occupations, and the perceived value affordances of these jobs. Results indicated significant relationships among self-perceived masculinity/femininity, value endorsements, and the perceptions of value affordances. Results also indicated some differences among the three subsamples as well as gender differences across subsamples. Also, value endorsements mediated the relationships between self-perceived masculinity/femininity and traditionality and self-perceived masculinity/femininity and perceived value affordances.

Thus, the values associated with jobs and personal value endorsements are important variables in career choice. The implications of these findings are discussed, and it is suggested that perceptions of occupational value affordances may be an entry point for intervention when trying to reduce occupational gender segregation.

**Keywords** Gender · Occupational values · Work values · Occupations · Masculinity · Femininity

## Introduction

The gender segregation of the workforce is of interest to many scholars, policy makers, and activists. In the year 2010, nearly 80% of jobs classified by the U. S. Bureau of Labor Statistics (2011) were performed predominantly by one gender. Such segregation is troubling because it perpetuates economic inequalities between the genders. Female-dominated occupations are paid less and are lower in status than male-dominated occupations (Lips 2003). Gender segregation may also constrain individuals' occupational choices because it leads males and females to select occupations based on their gender rather than their interests and aptitudes (Gottfredson 1981; Liben and Bigler 2002; Wood and Eagly 2002[cross-cultural data]). An understanding of the mechanisms that contribute to the gender-typing of occupational interests is necessary for understanding the gender segregation of the workforce and developing strategies to reduce segregation.

In this paper, we examine the role of occupational values in U.S. college students' occupational interests. Recent theoretical and empirical research by Weisgram et al. (2010) has suggested that gender differences in occupational values (e.g., females endorsing family values to a

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greater extent than males) may contribute to the societal gender segregation of occupations. Thus, we will examine the role of gender-typed values on characteristics of students' expected occupations including the gender traditionality of the jobs and the gender-typed values fulfilled by their expected occupations. We will focus on occupational values as a mediator between self-perceived masculinity/femininity and these job characteristics to further explore the connections among the societal gender roles, differential values endorsed by men and women in the United States, and gender-related characteristics of emerging adults' occupational interests. In the following literature review, empirical studies are derived from U.S. samples unless otherwise noted.

Numerous theories of career development and occupational choices have been proposed (e.g., Super 1957; Holland 1959), yet the Eccles et al. (1983) model of achievement-related choices is unique in focusing on how several gender-related factors, including gender roles and values, may play a role in the gender-typed occupational interests individuals have (Eccles et al. 1999). A complete examination of all of the constructs addressed in this model is beyond the scope of this paper, rather we focus on one of the primary constructs outlined by Eccles—values. In subsequent work, Eccles and colleagues broadened their original construct of subjective task value to include occupational values such as desiring a job that helps others, allows one to earn a high salary, or have time with his or her family (Eccles et al. 1999; Frome et al. 2008). The model posits that the values endorsed by males and females are directly influenced by the differential gender role expectations placed on these individuals by socializing agents. These values, in turn, affect the course choices, selection of college major, and occupational choices that men and women make. Here, we will explore gender differences in occupational values and their proposed relations to the gender roles that individuals hold as assessed by examining individuals' self-perceived masculinity/femininity. We will also explore how these values shape the gender traditionality of college students' expected occupations and the values perceived to be fulfilled by that job.

The prioritization of occupational values such as high salary, flexible hours, or intellectual stimulation varies greatly among individuals. Numerous researchers have established the central role of occupational values in shaping individuals' occupational choices and work behaviors (Brown 2002; Frieze et al. 2006; Hartung et al. 2010). 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 et al. 2001). Thus, a "match" between one's endorsement of occupational values and the perception that

one's desired occupation affords those values may be a necessary component for choosing occupations (Morgan et al. 2001).

It may be that gender segregation of occupations results from gender differences in occupational values that guide individuals' gender-typed occupational interests. Marini and colleagues (Marini et al. 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 differentially impact men's and women's career interests and choices based on the value affordances (i.e., the values persons expect a job to fulfill) of the occupations they choose (see also Rosenberg 1957; Weisgram et al. 2010). In addition, Brown et al. (1997) suggest that differences in values between and within genders may impact the traditionality of individuals' occupational interests.

Gender differences in occupational values are pervasive and have been relatively consistent over time (Marini et al. 1996; Ng and Sears 2010 [Canada]). Marini et al. (1996) reported that gender holds more importance in explaining occupational values than other demographic characteristics (e.g., race, parental education, maternal employment). Gender differences in occupational values have been well documented on many different value dimensions (see Konrad et al. 2000 for a meta-analysis). Men have been found to prefer jobs in which they have high salaries, power or influence over others, opportunities for advancement or achievement, risk-taking and challenging tasks, a high level of responsibility, and a high level of prestige (Abu-Saad and Isralowitz 1997 [Israel]; Eccles 1994; Elizur 1994 [Israel]). In contrast, women have been found to prefer jobs that allow them to work with others, help others, develop their knowledge or skills and spend time with their family (Abu-Saad and Isralowitz 1997 [Israel]; Bridges 1989; Eccles 1994). Although individual differences exist, these gender differences in adults' occupational values are consistent throughout the vocational literature. Much research has been devoted to the presence of gender differences, but little research has explored the factors that contribute to them (Hartung et al. 2010; Duffy et al. 2009).

We believe that individuals' self-perceptions of masculinity and femininity may contribute to gender differences in occupational values. The Eccles et al. (1983) model posits that cultural gender stereotypes and gender role expectations influence individuals' self-schemas, long-term and short-term goals, and, importantly, endorsement of values. In the United States, as well as other nations, the masculine gender role includes traits such as dominant, independent, assertive, and strong (see Williams and Best 1990 for cross-cultural data). Furthermore, expectations of serving as a provider for one's family, being successful in one's vocation, and seeking high status positions are associated with the masculine gender role (Good and

Sherrod 2004; Williams and Best 1990). Although historical trends have seen changes in the masculine gender role in the past few decades as the two areas of influence (i.e., within the home and outside of the home) begin to blend and men begin to take on multiple roles to a greater extent (e.g., breadwinner, devoted father, etc.; see Risman and Johnson-Sumerford 1998), Diekmann and Eagly (2000), among others, suggest that the core components of masculinity have remained unchanged (Bereska 2003; Lueptow et al. 2001). As a result of the societal gender role expectations, men (and perhaps also women) who are high in masculinity may be more likely to desire jobs that are high in salary and have influence over others. Thus, we predict that individuals high in masculinity (both men and women) would endorse money and power occupational values to a greater degree than individuals low in masculinity.

In contrast, the feminine gender role includes traits such as warm, sympathetic, sensitive, and soft-spoken. There are also expectations of serving as a nurturer, maintaining positive social relationships with others, and serving in submissive roles (Williams and Best 1990). Again, although the feminine gender role has changed in recent decades to include multiple roles such as employee, mother, and caretaker of elderly parents, the essence of the feminine gender role is, perhaps, unchanged as pressures to combine work with being the primary caregiver for children increase (Mason and Goulden 2004) and negative evaluations of women with masculine attributes in the workplace remain (Ayman et al. 2009 [Canada]). As a result of the feminine gender role, women (and perhaps men) high in femininity may be more likely to desire jobs that allow them time to spend with their families and children, allow them to help others, and allow them to avoid leadership roles and authority over others. Thus, we predict that individuals high in femininity would endorse family and altruistic values to a greater extent than individuals low in femininity. In addition, individuals high in femininity would endorse power values to a lesser extent than individuals low in femininity.

The Eccles et al. (1983) model predicts that self-perceived masculinity/femininity as well as gender-typed occupational values serve as significant predictors of occupational interests and choices. Here, we posit that these predictors extend to gender-typed characteristics of individuals' chosen occupation, most notably the traditionality of the occupations they expect to hold when entering the workforce and the values perceived to be fulfilled by those jobs. Following Leaper and Van (2008), we conceptualize the traditionality of occupations in terms of the number of men or women that occupy the occupations. Research with male college students has shown that masculinity serves as a significant predictor of the traditionality of men's college major (Leaper and Van 2008; Tokar and Jome 1998) with men who report being

higher in masculinity more likely to have chosen traditional majors than their peers and men lower in masculinity more likely to have nontraditional occupations than their peers. Interestingly, these relations were mediated by factors such as occupational interests. Although self-perceived masculinity/femininity may be a component of the traditionality of job choices, we believe that occupational values may serve as a significant mediator of this relationship.

In the present study, we used regression analyses to test the prediction that the endorsement of money and power values will positively predict higher traditionality of men's expected occupations and negatively predict the traditionality of women's expected occupations. We also expect that the endorsement of family and altruistic values will be positively related to the traditionality of women's expected occupations and negatively related to the traditionality of men's expected occupations. Because of the central role of occupational values in career choices (see Eccles et al. 1983; Weisgram et al. 2010), we also predict that values may mediate the relationship between masculinity and femininity and traditionality found in previous research (Leaper and Van 2008; Tokar and Jome 1998).

Additionally, we expect that individuals' self-perceived masculinity/femininity and value endorsements would be predictive of the values that they believe their future occupations will fulfill in the same pattern as the endorsement of values outlined above. We believe that the endorsement of values may mediate the relationship between self-perceived masculinity/femininity and perceived value affordances. Specifically, we hypothesize that personal endorsement of each value would significantly predict their perception that the occupation they expect to attain affords that particular value (Mortimer and Lorence 1979). Throughout much of the present study, we examined the predictive relationships among variables using regression analyses and mediation analyses for men and women separately to better understand the potential unique career development processes that exist for men versus women. The specific hypotheses for this study include:

- H1: Self-perceived masculinity/femininity will be predictive of the endorsement of occupational values with masculinity positively predicting endorsement of money and power values and femininity positively predicting endorsement of family and altruistic values and negatively predicting endorsement of power values.
- H2: Self-perceived masculinity/femininity will predict the traditionality of males' and females' expected occupation with masculinity being a positive predictor of the traditionality of males' occupations and femininity being a negative predictor. Among females, masculinity will be a negative predictor and femininity will be a positive predictor of traditionality.

- H3: The endorsement of gender-typed occupational values will mediate the relationship between masculinity/femininity and traditionality described in H2. The endorsement of money and power values will positively predict traditionality for males and negatively predict the traditionality of women's expected occupations. The reverse pattern will be found for the endorsement of family values and altruistic values.
- H4: Self-perceived masculinity/femininity will predict value affordances of expected occupations with masculinity being a significant predictor of one's expected occupation affording money and power values and femininity being a significant predictor of one's expected occupation affording family and altruistic values.
- H5: The endorsement of values will mediate the relationship between self-perceived masculinity/femininity and perceived value affordances. Specifically, the personal endorsement of each value will significantly predict the perception of the expected occupation affording that value. In addition, the endorsement of money and power values will be predictive of expecting one's occupation to afford both of these values, but not family and altruistic values. The endorsement of family and altruistic values will be predictive of expecting one's occupation to afford both of these values, but not money and power values.

## Method

### Participants

Participants include 586 college students (185 males, 401 females) ranging in age from 18 to 29 ( $M=19.6$ ). Two individuals who were over the age of 29 were excluded from the dataset as they may be in a different developmental period than the young adults represented in the sample. Participants were primarily European American ( $N=529$ ), although African American ( $N=16$ ), Hispanic American ( $N=14$ ), Asian American ( $N=8$ ), and other ethnicities ( $N=15$ ) were also included (4 students did not report their ethnicity). The race and gender of the participants is reflective of the classes and subject pools from which they were recruited. Students were recruited from psychology classes at one of three universities (described in detail below): (a) a mid-sized regional public university in the Midwest, (b) a mid-sized private university in the East, or (c) a small private university in the South. Participants were asked to participate in a survey study about personality and career trajectories and interests. Data for this study was collected in Spring 2007.

Students from the mid-sized regional public university in the Midwest ( $N=304$ ) included 71% females and 29% males; 95% of the sample was European American, reflective of the region in which the university lies. The median familial income (combined estimated income for both parents) for this subsample was approximately \$80,000. Students from the mid-sized private university in the East ( $N=194$ ) included 71% females and 29% males; 90% of the sample was European American. The median familial income for this subsample was approximately \$110,000. Students from the small private university in the South ( $N=88$ ) included 54% females, 46% males; 78% of the sample was European American. The median familial income for this subsample was approximately \$140,000. A one-way ANOVA performed to test for significant differences in familial income among subsamples revealed a significant main effect for subsample,  $F(2, 717)=54.22$ ,  $p<.001$ ; post hoc analyses determined there were significant differences among all three subsamples.

### Overview of the Procedure

As part of a larger study of career trajectories and interests, participants completed (in the following order) demographic information, a measure of self-perceived masculinity/femininity, and a measure of occupational values. In addition, participants were asked to indicate the title of the job they expect to have upon graduation and the perceived value affordances of the expected occupation. Each participant consented to participation and completed the survey in groups in a written format.

### Measures

*Self-perceived Masculinity/Femininity.* To assess masculinity and femininity, participants completed the 54 item Bem Sex Role Inventory (Bem 1974). The measure contains 18 masculine items (e.g., self-reliant, athletic, assertive), 18 feminine items (e.g., cheerful, tender, sympathetic), and 18 neutral items (e.g., truthful, sincere, helpful). Participants were asked to indicate how truly the items describe themselves on a scale of 1 (Never or almost never true) to 7 (Always or almost always true). There has been controversy surrounding the use of the BSRI as a broad measure of masculinity and femininity, rather than merely a self-perception measure of individuals' instrumentality and expressivity levels (see Spence 1984 for discussion). However, the BSRI remains widely recognized and used for assessing self-perceived masculinity and femininity, and has consistently shown good reliability, validity, and predictive power (Choi and Fuqua 2003; see Robinson et al. 1991 for review). The reliability for our study for each construct was acceptable, as determined by Cronbach alphas

( $\alpha_{\text{masculine}} = .82$ ;  $\alpha_{\text{feminine}} = .77$ ), and they were similar to Bem's two original normative samples's Cronbach's alphas ( $\alpha_{\text{masculine}} = .86$  for both normative samples, and  $\alpha_{\text{feminine}} = .80$  and  $.82$ ).

**Occupational Values.** The 16-item Occupational Values Scale developed by Weisgram and Bigler (2006) was used to assess personal endorsement of four values: money, power, family, and altruism. This scale was specifically created as a brief measure that targets these four values that typically demonstrate gender differences. Participants were asked to indicate the degree to which they desired a job that afforded the particular value on a scale of 1 (Not at all) to 4 (Very much). Sample items include: “allows me to earn a great deal of money,” “gives me control over an organization or group,” “allows me to take time off when I become a parent,” and “allows me to aid the needy.” Composite scores were computed by averaging scores for each of the four subscales on the measure. Reliability on all subscales was slightly lower than that of the normative sample (Cronbach  $\alpha$ 's  $>.80$ ) but were at an acceptable level:  $\alpha_{\text{money}} = .90$ ,  $\alpha_{\text{power}} = .77$ ,  $\alpha_{\text{family}} = .76$ ,  $\alpha_{\text{altruism}} = .83$ . Detailed information including structure detection factor structures and information about the normative sample can be found in Weisgram and Bigler (2006).

**Perceived Value Affordances of Expected Career.** Participants were asked an open-ended question to indicate the title of what they “expect [their] primary occupation will be.” Following, participants were asked to rate the degree to which they perceived this job to afford the four values described above on a scale ranging from 1 (Not at all) to 5 (A lot). Specifically, participants were asked: “How much money do people who are [the occupation you chose in Question 1] make?” “How much do people who are [occupation you chose in Question 1] help people?” “How much time do people who are [occupation you chose in Question 1] have to spend with their families?” and “How much power do people who are [occupation you chose in Question 1] have over others?”.

The Bureau of Labor Statistics O\*Net database contains information about values fulfilled by occupations in the United States as rated by a small sample of expert raters (occupational analysts and Industrial/Organizational psychology graduate students) rather than individuals within the professions or aspiring to be in the profession (see Rounds et al. 2008). We compared results from students' perceptions of the values afforded by their expected jobs to those values as rated and coded by experts in the O\*Net database (note, family values was not assessed by O\*Net raters) In a sample of 50 men and 50 women randomly selected from the larger sample for this study, there was high correspondence between *students'* ratings of

values perceived to be afforded by their expected occupations and *experts'* ratings in the O\*Net database for two of the three constructs (i.e., money/compensation, altruism/social service) that are represented in both studies,  $r = .57$  and  $.60$ , respectively. The construct of power/authority had a nonsignificant correlation perhaps due to different conceptualizations of the variables—in the present study we conceptualized the variable as the job having “power over others” and in the O\*Net database the variable was conceptualized as the employee “giv[ing] directions and instructions to others.”

After examining this data, we concluded that overall, students' *perceptions* of the value affordances of their expected jobs may be more important in determining the relationships between endorsed values and the values inherent in one's chosen career than the actual value affordance of the job (which may or may not match their perceptions). Students' perceptions are the only source of information that they have upon which to make a judgment—they likely may not have access to all of the information about their chosen occupation—and thus their decisions are based on the available information in memory which may or may not be accurate.

**Traditionality of Expected Careers.** The traditionality of each participant's expected career was determined using the United States Bureau of Labor Statistics (2005; see link for complete table: <ftp://ftp.bls.gov/pub/special.requests/lfaa2005/pdf/cpsaat11.pdf>). Specifically, the percentage of workers of the participant's gender employed in each occupation was used to represent the traditionality of each participant's expected careers. For example, women who reported expecting to become a teacher would have received a code of 73 (indicating high level of traditionality) based on the census report indicating that 73% of elementary school teachers are female. Men who reported expecting to become a teacher would be assigned a score of 27 (indicating a low level of traditionality). Interrater reliabilities were conducted for a sample of 100 participants and found to be very high,  $r = .89$ .

## Results

Data analysis was a three-step process. First, we conducted preliminary analyses in which we examined gender and subsample differences in each of the constructs assessed with each subsample defined as a sample recruited from each of the three universities (small, private university; midsized, private university; midsized, public university). Second, we examined the intercorrelations among all of the constructs assessed to identify significant relationships.

Lastly, we tested each of our primary hypotheses using multiple hierarchical regression analyses.

#### Gender and Subsample Differences in Constructs Assessed

As preliminary analyses, gender and subsample differences were examined among all dependent variables using a MANOVA. The results of this analysis indicated a significant interaction between gender and subsample, Wilk's lambda = .91,  $F(22, 1034)=2.15$ ,  $p=.002$ . The interaction was present on the variables of endorsement of altruistic values and the traditionality of one's expected occupation. For the endorsement of altruistic values, simple effects analyses indicated that gender differences were present for the midsized public and midsized private universities,  $F(1, 290)=4.92$ ,  $p=.03$  and  $F(1, 192)=14.92$ ,  $p<.001$ , respectively, but not the small private university,  $F(1, 85)=1.24$ ,  $p=.27$ . In the two groups with significant differences, females endorsed altruistic values to a greater extent than males. For the traditionality of the expected occupation, simple effects analyses again indicated that gender differences were present for the midsized public and midsized private universities,  $F(1, 286)=41.47$ ,  $p<.001$  and  $F(1, 181)=70.16$ ,  $p<.001$ , respectively, but not the small private university,  $F(1, 85)=.01$ ,  $p=.94$ . In the two groups with significant differences, males had less traditional expected future occupations than females.

In the overall MANOVA analysis, a main effect of subsample was also found, Wilk's lambda = .89,  $F(22, 1034)=2.73$ ,  $p<.001$ . Subsample differences were present on the endorsement of money and family variables and on the expectation that their future job will fulfill money, family, and altruistic values. Simple effects analyses indicated that students attending either of the private universities endorsed money values to a greater degree than students who attended the public university and students at the small private university expected their future occupation to make more money than students at the other universities. Also, students at the midsized private and midsized public university endorsed family values to a greater degree than students enrolled at the small, private university. Each of the subsamples differed from one another in terms of how much they perceived their expected job to fulfill family values with the midsized private university having the highest rating and the small private university having the lowest ratings. Lastly, students at the midsized public and private universities expected that their jobs would help others to a greater extent than students at the small private university. Because the tests of the primary analyses are done at the individual/participant level through regressions and the differences found between subsamples are small, the analyses are collapsed across subsamples in further

analyses and subsample was used as a covariate throughout all analyses. In future analyses, subsample is coded as two dummy variables. The first dummy variable (*Midsized-Public U*) is coded "1" for the mid-sized public university and "0" otherwise; the second dummy variable (*Small-Private U*) is coded "1" for the small private university and "0" otherwise. Thus, the mid-sized private university serves as a baseline and is coded "0" for Midsized-Public U and "0" for Small-Private U.

In the overall MANOVA analysis, a significant main effect of gender was also indicated, Wilk's lambda = .75,  $F(11, 517)=15.88$ ,  $p<.001$ . Significant gender differences were present on all of the dependent variables with the exception of endorsement of power values and the perception that one's future occupation will fulfill power values. An examination of the means indicated that males scored significantly higher than females on masculinity and females scored significantly higher than males on femininity. Also, males endorsed money values to a greater extent than females whereas females endorsed altruistic and family values to a greater extent than males—although it should be noted that the endorsement of all values was high across all groups with mean scores above 3 on a scale of 4. The expected occupation for males was less traditional than that of females. Also, males perceived their expected occupation to afford money values more and family and altruistic values less than females did. Means and standard deviations for all dependent variables are presented in Table 1.

#### Intercorrelations Among Variables

The intercorrelations among all of the assessed constructs were examined for men and women separately (see Table 2). For both males and females, significant correlations were found between their reported levels of masculinity and the endorsement of power and the expectation that one's job will afford power values. Also, individuals' endorsement of money values was correlated with their endorsement of power values. Additionally, significant correlations were also found between males' and females' femininity and their endorsement of family values. Finally, altruistic values were positively correlated with masculinity, femininity, endorsement of power and family values for both men and women. Interestingly, for women, the traditionality of their expected job was also positively correlated with their endorsement of altruistic values, but this relation was not found to be significant for males. However, for both males and females, the traditionality of their expected job was significantly correlated with their expected job being high in family time, with the direction of the relation being positive for females and negative for males.

**Table 1** Means (and standard deviations) for outcome variables by gender and subsample

Variable	Males (N= 178)				Females (N=355)			
	Midsize, Private (N=57)	Small, Private (N=39)	Midsize, Public (N=82)	Combined	Midsize, Private (N=123)	Small, Private (N=45)	Midsize, Public (N=187)	Combined
Masculinity	5.19 (.71)	5.16 (.58)	5.13 (.76)	5.14 (.70) *	4.74 (.69)	4.71 (.71)	4.78 (.61)	4.76 (.65) *
Femininity	4.51 (.58)	4.54 (.59)	4.57 (.54)	4.55 (.56) *	5.06 (.62)	4.95 (.56)	5.09 (.54)	5.08 (.57) *
Endorse Money Values	3.31 (.66) <sup>a</sup>	3.43 (.71) <sup>a</sup>	3.05 (.75) <sup>b</sup>	3.21 (.73) *	3.22 (.82) <sup>a</sup>	3.13 (.88) <sup>a</sup>	3.09 (.67) <sup>b</sup>	3.14 (.75) *
Endorse Power Values	2.99 (.68)	3.17 (.65)	2.99 (.59)	3.02 (.65)	2.98 (.61)	2.96 (.62)	2.89 (.63)	2.92 (.63)
Endorse Family Values	3.25 (.64) <sup>a</sup>	3.10 (.71) <sup>b</sup>	3.28 (.57) <sup>a</sup>	3.24 (.62) *	3.65 (.52) <sup>a</sup>	3.39 (.54) <sup>b</sup>	3.54 (.49) <sup>a</sup>	3.56 (.52) *
Endorse Altruistic Values	3.20 (.73)	3.42 (.61)	3.38 (.56)	3.33 (.63) *	3.54 (.46) <sup>a</sup>	3.29 (.66) <sup>b</sup>	3.51 (.51) <sup>a</sup>	3.50 (.52) *
Traditionality of Expected Job	43.0 (23.2)	51.5 (19.1)	47.4 (25.2)	47.0 (23.3) *	67.9 (16.4) <sup>a</sup>	51.5 (19.3) <sup>b</sup>	65.6 (21.3) <sup>a</sup>	65.0 (20.1) *
Expect Job High in Money	2.63 (.77) <sup>a</sup>	3.00 (.76) <sup>b</sup>	2.57 (.80) <sup>a</sup>	2.68 (.80) *	2.41 (.90) <sup>a</sup>	2.54 (1.14) <sup>b</sup>	2.47 (.71) <sup>a</sup>	2.45 (.83) *
Expect Job High in Power	2.39 (.88)	2.31 (.83)	2.32 (.90)	2.34 (.87)	2.48 (.88)	2.47 (.89)	2.33 (.85)	2.39 (.85)
Expect Job High in Family Time	2.68 (.69) <sup>a</sup>	2.23 (.81) <sup>b</sup>	2.50 (.72) <sup>c</sup>	2.49 (.74) *	2.89 (.68) <sup>a</sup>	2.33 (.83) <sup>b</sup>	2.73 (.64) <sup>c</sup>	2.73 (.69) *
Expect Job High in Altruism	3.09 (1.02) <sup>a</sup>	2.66 (1.01) <sup>b</sup>	2.99 (1.05) <sup>a</sup>	2.95 (1.03) *	3.40 (.84) <sup>a</sup>	2.70 (1.11) <sup>b</sup>	3.35 (.84) <sup>a</sup>	3.29 (.88) *

The Midsize, Private university is located in New Jersey; the small, private university is located in Virginia, and the Midsize, Public university is located in Wisconsin. Masculinity and femininity scores range from 1 (Never or almost never true for me) to 7 (Always or almost always true for me). Value endorsements range and expectations of future job value affordances range from 1 (*low*) to 4 (*high*). Traditionality scores range from 0 (indicating 100% of opposite gender individuals do this job) to 100 (indicating that 100% of same gender individuals do this job.). \*Indicates that significant main effects of gender across subsamples; subscripts indicate significant subsample differences within gender.

All of the correlations were found to be in the directions expected, but were relatively weak in strength. The relationship between the two independent variables used in the regression and mediation analyses (masculinity and femininity) was very low (−.01 for females, .07 for males), thus eliminating any concerns of multicollinearity between subscales in these analyses. The strongest correlation coefficient was a .44, found between endorsement of money values and expecting a job high in money for males. In addition, the correlation between masculinity and power was moderately strong for both males ( $r=.33$ ) and females ( $r=.36$ ).

Tests of Primary Hypotheses

H1: Self-perceived masculinity and femininity will be predictive of the endorsement of occupational values

Multiple linear regressions were performed to determine whether masculinity and femininity predict the endorsement of occupational values differentially for men and women. Separate regressions were conducted for each occupational value. For each regression, the value under consideration served as the dependent variable, subsample variables served as covariates, and masculinity and femi-

**Table 2** Summary of intercorrelations on the outcome variables as a function of gender

Measure	1	2	3	4	5	6	7	8	9	10	11
1. Masculinity	–	.07	.07	.33*	.16*	−.01	.03	.12	.17*	.02	.12
2. Femininity	−.01	–	−.13	−.05	.23*	.15*	−.01	.00	−.04	.07	.00
3. Endorse Money Values	.08	.06	–	.33*	−.13	.12	.04	.44*	.08	.07	.00
4. Endorse Power Values	.36*	.03	.41*	–	.23*	−.01	.13	.26*	.34*	−.11	.14
5. Endorse Altruistic Values	.13*	.36*	.04	.24*	–	.19*	−.11	.02	.11	.04	.32*
6. Endorse Family Values	−.07	.25*	.25*	.12*	.19*	–	−.16*	−.05	−.07	.29*	.15*
7. Traditionality of Expected Job	−.13*	.11*	.10*	−.14*	.13*	.05	–	.21*	.23*	−.40*	−.22*
8. Expect Job High in Money	.13*	.07	.32*	.24*	.05	.01	−.27*	–	.29*	−.27*	.00
9. Expect Job High in Power	.12*	.10*	.09	.22*	.10	−.02	.02	.14*	–	−.08	.25*
10. Expect Job High in Family Time	−.07	.06	−.05	−.15*	−.02	.17*	.22*	−.39*	−.00	–	.31*
11. Expect Job High in Altruism	.02	.17**	−.08	−.01	.34*	.09	.32*	−.03	.32*	.25*	–

Intercorrelations for Males are represented above the diagonal and the intercorrelations for Females are represented below the diagonal. \* $p<.05$ ; \*\* $p<.01$ .

ninity served as predictor variables as well as the gender x masculinity and gender x femininity interactions. Beta values, standard errors, and standardized betas for regressions are presented in Table 3.

Supporting the hypothesis (H1), the regression models predicting endorsement of *money* and *power* values indicated that masculinity was a positive predictor of the constructs. For the endorsement of *family* values, femininity was a significant predictor as predicted. Lastly, for the endorsement of *altruistic* values, masculinity and femininity were both significant predictors.

H2: Masculinity and femininity will predict the traditionality of males' and females' expected occupation

A linear regression was performed to determine whether masculinity and femininity predict the traditionality of men's and women's expected occupations. The traditionality of the expected job served as the dependent variable and masculinity and femininity served as predictor variables as well as the gender x masculinity and gender x femininity interactions; subsample variables again served as covariates. Beta values, standard errors, and standardized betas for regressions are also presented in Table 3. Results indicated a significant interaction between gender and femininity. Separate regressions were then conducted for men and women. Among women (but not men), masculinity was a negative predictor and femininity was a positive predictor of the traditionality of one's expected job as

**Table 3** Regressions predicting the endorsement of occupational values (Hypothesis 1) and the traditionality of the expected occupation (Hypothesis 2)

Endorsing Money Values	Overall Model $R^2=.02$ ( $N=573$ , $p=.03$ )	<i>B</i>	<i>SE (B)</i>	$\beta$	<i>t</i>	<i>p</i>
<i>(Midsized-Public U)</i>		-.16	.07	-.11	-2.40	.02*
<i>(Small-Private U)</i>		.02	.10	.01	.214	.83
<i>Masculinity</i>		.15	.07	.14	2.20	.03*
<i>Femininity</i>		-.07	.08	-.06	-.86	.39
<i>Gender x Masc.</i>		-.09	.08	-.29	-1.26	.21
<i>Gender x Fem.</i>		.10	.08	.31	1.21	.23
Endorsing Power Values	$R^2=.13$ ( $N=573$ , $p<.001$ )					
<i>(Midsized-Public U)</i>		-.09	.05	-.08	-1.74	.08
<i>(Small-Private U)</i>		.08	.07	.05	1.04	.30
<i>Masculinity</i>		.34	.05	.38	6.38	.00*
<i>Femininity</i>		-.02	.06	-.02	-.28	.78
<i>Gender x Masc.</i>		-.02	.06	-.06	-.28	.78
<i>Gender x Fem.</i>		.03	.06	.11	.45	.65
Endorsing Family Values	$R^2 = .11$ ( $N=573$ , $p<.001$ )					
<i>(Midsized-Public U)</i>		-.06	.05	-.06	-1.27	.21
<i>(Small-Private U)</i>		-.20	.07	-.13	-2.91	.00*
<i>Masculinity</i>		-.03	.05	-.03	-.54	.59
<i>Femininity</i>		.16	.06	.17	2.76	.01*
<i>Gender x Masc.</i>		-.02	.05	-.08	-.39	.70
<i>Gender x Fem.</i>		.06	.06	.26	1.05	.30
Endorsing Altruistic Values	$R^2 = .13$ ( $N=573$ , $p<.001$ )					
<i>(Midsized-Public U)</i>		.03	.05	.03	.63	.53
<i>(Small-Private U)</i>		-.03	.07	-.02	-.50	.62
<i>Masculinity</i>		.15	.05	.18	3.06	.00*
<i>Femininity</i>		.26	.06	.28	4.48	.00*
<i>Gender x Masc.</i>		-.05	.05	-.18	-.85	.40
<i>Gender x Fem.</i>		.06	.06	.25	1.03	.30
Traditionality of Future Job	$R^2 = .15$ ( $N=558$ , $p<.001$ )					
<i>(Midsized-Public U)</i>		.26	1.99	.01	.13	.89
<i>(Small-Private U)</i>		-6.22	2.75	-.10	-2.26	.02*
<i>Masculinity</i>		-.14	1.92	.00	-.07	.94
<i>Femininity</i>		-2.31	2.29	-.06	-1.01	.31
<i>Gender x Masc.</i>		-3.14	2.14	-.32	-1.47	.14
<i>Gender x Fem.</i>		6.56	2.29	.70	2.87	.00*

The Midsize, Private university is located in New Jersey; the small, private university is located in Virginia, and the Midsized, Public university is located in Wisconsin. Outcome variables are in plain text; predictors of those outcomes are in italics below the outcome they are predicting. \*  $p<.05$ .



predicted in the hypothesis (H2). There were no significant predictors of traditionality among men.

H3: The endorsement of gender-typed occupational values will mediate the relationship between masculinity/femininity and traditionality described in H2.

To examine whether value endorsements can serve as mediators of the relationship between masculinity and femininity and traditionality of women's expected occupations, we previously examined the predictive relations between self-perceived masculinity/femininity and value endorsements (H1) and self-perceived masculinity/femininity and traditionality (H2). To test whether the relationship between self-perceived masculinity/femininity and traditionality could be mediated with the four value endorsements (money, power, family, altruistic values), bootstrapping analyses were employed using methods outlined by Preacher and Hayes (2008). This relatively new methodology is now recommended over the causal steps approach outlined by Baron and Kenny (1986) because the causal steps approach has been found to be low in power and that it does not quantitatively test the indirect effects of the mediators (Hayes 2009). Also, a Sobel (1982) test is often used in conjunction with Baron and Kenny's (1986) methodology, but the Sobel test cannot account for multiple mediators, is less powerful than newer methods, assumes normality of the sampling distribution of the indirect effects, and is no longer recommended as a test of mediation (Hayes 2009). Bootstrapping can alleviate some of these limitations. In this analysis, bootstrapping samples of 5,000 were used to compute the estimates described using the SPSS macros created by Preacher and Hayes for analyses with multiple mediators (see Preacher's website [www.quantpsy.org](http://www.quantpsy.org) for access to the macros and scripts and further information). Two analyses were conducted for females (the direct effects of self-perceived masculinity/femininity and traditionality were not significant for males and thus they were excluded from the analyses): (a) the first analysis used *masculinity* as an independent variable and the subsample dummy variables as a covariate and (b) the second analysis used *femininity* as an independent variable and the subsample dummy variables as a covariate.

The bootstrap results indicated that the total effect of *masculinity* on traditionality was significant,  $c = -4.05$ ,  $t(366) = -2.64$ ,  $p = .01$ , but the direct effect was not significant,  $c' = -3.18$ ,  $t(366) = -1.94$ ,  $p = .06$ , indicating that the endorsement of occupational values mediated the relationship among females supporting the hypothesis (H3). An examination of specific indirect effects indicated that endorsing altruistic values mediated the relationships between masculinity and traditionality of the expected jobs with a point estimate (*ab* paths) of .47 and bias corrected and accelerated confidence intervals (95%) of .04 to 1.38.

The second bootstrap analysis indicated that the total effect of *femininity* on traditionality was significant,  $c = 4.23$ ,  $t(366) = 1.98$ ,  $p = .05$ , but the direct effect was not significant,  $c' = 1.46$ ,  $t(366) = .77$ ,  $p = .47$ , indicating that the value endorsements also mediated this relationship as predicted. An analysis of the specific indirect effects revealed that the endorsement of altruistic values was a significant mediator of itself with a point estimate of 1.34 and bias and accelerated confidence intervals of .12 to 3.12.

H4: Self-perceived masculinity/femininity will predict value affordances of expected occupations.

Multiple linear regressions were performed to determine whether masculinity and femininity predict the value affordances of expected occupations for men and women. Separate regressions were conducted for each value affordance. For each regression, the value under consideration served as the dependent variable and masculinity and femininity served as predictor variables as well as the gender x masculinity and gender x femininity interactions with the subsample variables included in the model as covariates. Beta values, standard errors, and standardized betas for regressions are presented in Table 4.

As predicted by the hypothesis (H4), for the expectation that one's future occupation fulfills *money* and *power* values, masculinity served as a positive predictor. For the expectation that one's future occupation affords *family* values, the overall model was significant, but there were no individual predictors. For the expectation that one's future occupation fulfills *altruistic* values, masculinity served as a positive predictor and there was also a significant gender x femininity interaction. Separate regressions were conducted for men and women to explore this interaction. Results indicated that among women (but not men), femininity was a positive predictor of the construct.

H5: The endorsement of values will mediate the relationship between self-perceived masculinity/femininity and perceived value affordances.

To examine whether value endorsements can serve as a mediator of a relationship between self-perceived masculinity/femininity and perceived value affordances of men's and women's expected occupations, we previously, independently examined the predictive relations between self-perceived masculinity/femininity and value endorsements (H1) and self-perceived masculinity/femininity and value affordances (H4). To test for mediation, bootstrapping mediation analyses were conducted with masculinity or femininity as independent variables (depending on which constructs showed a significant predictive relationship with perceived values affordances in H4); the value endorsements (endorsing money, power, family, and altruistic

**Table 4** Regressions predicting the expectation that one's future job will afford specific values (Hypothesis 4)

Expect Job High in Money	Overall Model $R^2 = .04$ ( $N=562$ , $p = .001$ )	<i>B</i>	<i>SE (B)</i>	$\beta$	<i>t</i>	<i>p</i>
<i>(Midsized-Public U)</i>		.01	.08	.00	.10	.92
<i>(Small-Private U)</i>		.24	.11	.11	2.27	.02*
<i>Masculinity</i>		.19	.07	.16	2.54	.01*
<i>Femininity</i>		.06	.09	.04	.63	.53
<i>Gender x Masc.</i>		-.05	.08	-.15	-.64	.52
<i>Gender x Fem.</i>		.02	.09	.06	.22	.82
Expect Job High in Power	$R^2 = .03$ ( $N=571$ , $p = .006$ )					
<i>(Midsized-Public U)</i>		-.12	.08	-.07	-1.53	.13
<i>(Small-Private U)</i>		-.03	.11	-.01	-.31	.75
<i>Masculinity</i>		.26	.08	.21	3.29	.00*
<i>Femininity</i>		-.01	.09	-.01	-.13	.90
<i>Gender x Masc.</i>		-.11	.09	-.30	-1.33	.18
<i>Gender x Fem.</i>		.14	.09	.40	1.54	.12
Expect Job High in Family Time	$R^2 = .08$ ( $N=569$ , $p < .001$ )					
<i>(Midsized-Public U)</i>		-.16	.06	-.11	-2.47	.01*
<i>(Small-Private U)</i>		-.49	.09	-.24	-5.40	.00*
<i>Masculinity</i>		-.03	.06	-.03	-.49	.62
<i>Femininity</i>		.04	.08	.03	.51	.61
<i>Gender x Masc.</i>		-.02	.07	-.07	-.31	.76
<i>Gender x Fem.</i>		.05	.07	.17	.69	.49
Expect Job High in Altruism	$R^2 = .09$ ( $N=569$ , $p < .001$ )					
<i>(Midsized-Public U)</i>		-.08	.08	-.04	-.97	.33
<i>(Small-Private U)</i>		-.55	.12	-.21	-4.64	.00*
<i>Masculinity</i>		.19	.08	.14	2.29	.02*
<i>Femininity</i>		.00	.10	.00	.00	1.00
<i>Gender x Masc.</i>		-.17	.09	-.42	-1.88	.06
<i>Gender x Fem.</i>		.23	.10	.60	2.38	.02*

The Midsize, Private university is located in New Jersey; the small, private university is located in Virginia, and the Midsized, Public university is located in Wisconsin. Outcome variables are in plain text; predictors of those outcomes are in italics below the outcome they are predicting. \*  $p < .05$ .

values) as mediators; and the subsample dummy variables as covariates. Separate analyses were conducted for each dependent variable. For each bootstrap analysis, 5,000 samples were used. Point estimates and confidence intervals for the indirect effects are presented in Table 5.

*Future Job Fulfills Money Values.* For the perception that one's future job fulfills *money* values, masculinity served as the independent variable (and subsample as a covariate); males and females were examined in the same analysis due to the lack of interaction between gender and masculinity and femininity in the above regression analyses (H4). Bootstrap analysis results indicated that the total effect (masculinity  $\rightarrow$  perceiving future job as high in salary) was significant,  $c = .19$ ,  $t(551) = 3.88$ ,  $p < .001$ , and that the direct effect remained significant but reduced,  $c' = .11$ ,  $t(551) = 2.13$ ,  $p = .03$ , indicating that the value endorsements

partially mediated the relationship among both males and females. The total indirect effects indicated that the value endorsements—as a group—were significant mediators supporting the hypothesis (H5) and an analysis of specific effects indicated that the endorsement of money and power values were significant mediators that had positive predictive relationships to the dependent variable.

*Future Job Fulfills Power Values.* For the perception that one's future job fulfills *power* values, the bootstrap model predicting the construct was the same as the previous analysis examining money values among both males and females combined. Masculinity served as the independent variable (with subsample variables a covariates) and the value endorsements (endorsing money, power, family, and altruistic values) served as mediators. The results of the bootstrap analysis indicated mediation of the relationship

**Table 5** Bootstrap mediation analyses by dependent variable as predicted by self-perceived masculinity/femininity with value endorsements as mediators

DV	IV	Total indirect effects		Specific effect: endorse money		Specific effect: endorse power		Specific effect: endorse family		Specific effect: endorse altruism	
		PE	CI	PE	CI	PE	CI	PE	CI	PE	CI
		Low High		Low High		Low High		Low High		Low High	
Expect Job High in Money	Masc.	.09*	.03 .15	.05*	.01 .07	.04*	.01 .08	-.01 -.04	.00 .00	.00	-.02 .01
Expect Job High in Power	Masc.	.13*	.08 .19	.00	-.01 .01	.11*	.07 .17	-.01 -.03	.01 .01	.01	-.01 .03
Expect Job High in Family	Masc.	-.08*	-.12 -.04	.00	-.02 .00	-.05*	-.08 -.01	.03*	.01 .06	.00	-.01 .01
	Fem.	.07*	.02 .12	.00	.00 .01	.00	-.01 .02	.07*	.04 .11	-.01	-.05 .03
Expect Job High in Altruism	Masc.	.03	-.03 .09	-.01	-.04 .00	.01	-.04 .05	-.01	.00 .05	.04	.00 .09
Expect Job High in Altruism (Males)	Fem.	.16*	.05 .31	.03	-.01 .11	-.01	-.08 .02	.03	-.01 .12	.12*	.04 .24
Expect Job High in Altruism (Females)	Fem.	.17*	.09 .26	-.01	-.04 .01	.00	-.02 .01	.01	-.03 .06	.17*	.11 .26

Total Indirect Effects=mediators—as a group—mediate the relationship between the independent variable and dependent variable. Specific Effects=individual mediators that mediate the relationship. PE=Point Estimates (*ab* path coefficients). CI=95% bias and accelerated confidence intervals. Subsample variables (dummy coded) served as a covariate in each analysis (Preacher and Hayes 2008). \**p*<.05.

between masculinity and perceiving one’s job to fulfill power values with a significant total effect, *c*=.16, *t*(560)=2.90, *p*=.004, but a nonsignificant direct effect, *c*'=.03, *t*(560)=.47, *p*=.64. The total indirect effects were significant indicating that—as a group—the value endorsements mediated the relationship as predicted. An analysis of specific indirect effects indicated that the endorsement of power values served as a significant mediator and a positive predictor of the dependent variable.

*Future Job Fulfills Family Values.* For the expectation that one’s job fulfills *family* values, the overall model described above was significant (H4), but there were no individual predictors. Nevertheless, a mediation model was examined to determine if the model that included the value endorsements served as indirect effects in predicting the construct (see Hayes 2009). Masculinity and femininity were both examined as independent variables in separate analyses (with males and females combined due to the lack of interaction between gender masculinity and femininity). Results of the bootstrap mediation analysis found that the total effect of *masculinity* on expecting family values was significant, *c*'=-.08, *t*(558)=-1.92, *p*=.05, but the direct effect was not significant when mediators were considered, *c*'=-.004, *t*(558)=.004, *p*=.93. The total indirect effects were significant as well as the specific effects of endorsing power values (a negative predictor) and family values (a positive predictor).

Bootstrap mediation analyses also indicated that the total effect of *femininity* on expecting one’s job to fulfill family values was significant, *c*'=.11, *t*(558)=2.42, *p*=.02, but, again, the direct effect was not significant when mediators

were considered, *c*'=.05, *t*(558)=.96, *p*=.34. Here, the total indirect effects were significant and the endorsement of family values was a significant mediator of the relationship between femininity and expecting one’s job to allow for time with one’s family.

*Future Job Fulfills Altruistic Values.* For the expectation that one’s job fulfills *altruistic* values, the overall model described above was significant (H4), and masculinity served as a positive predictor and a gender x femininity interaction was also present. To explore whether value endorsements mediate the relationship between masculinity and the expectation that one’s future job fulfills altruistic values, bootstrap mediation analyses were conducted for males and females combined with subsample variables as covariates. In contrast to the hypothesis (H5), among men and women, there were no significant total effects, direct effects, or indirect effects in the bootstrap mediation model in which *masculinity* predicted the perception that one’s job fulfills altruistic values and value endorsements were a mediator.

Due to the interaction between gender and femininity in predicting the value affordance of altruism (H4), separate analyses were performed for males and females to test for differentiation in the mediation models where altruism affordance was a dependant measure, femininity was an independent variable, and the endorsement of the four values (money, power, family, altruism) were mediators (with subsample variables as covariates). Among males, femininity was not a significant predictor of the dependent variable, *c*'=.00, *t*(180)=.01, *p*=.98. However, significant total indirect effects and specific effects of the endorsement of altruistic values were found indicating that the value

endorsements—as a group—served as significant mediators and specifically, the endorsement of altruistic values, significantly mediated the weak relationship that was present (see also Hayes 2009). Among women, the relationship between femininity and altruism affordances was significant as indicated by the total effect,  $c=.26$ ,  $t(377)=3.29$ ,  $p=.001$ , and but the direct effect was not significant when mediators were entered into the model,  $c'=.06$ ,  $t(377)=.72$ ,  $p=.47$ . As predicted by H5, the total indirect effects indicated that the value endorsements—as a group—mediated the relationship between femininity and the perception that one's job helps peoples and specific indirect effects indicated that valuing altruism mediated the relationship.

## Discussion

Gender differences in career choices are apparent in the gender segregation of the workforce, perhaps as a result of differences in the occupational values that men and women endorse. Although much research has examined the extent of gender differences in values, little research has examined factors that predict these differences and how these values may differentially predict occupational choices for men and women. This study examined the contributing role of masculinity and femininity to these gender differences and also the roles of these constructs in predicting the traditionality and value affordances of college students' expected future careers.

We used a large sample from varying regions and types of higher education institutions to increase external validity of the study, allowing for more confidence in the ability to generalize the findings to a U.S. college population. Additionally, having three sizable subsamples within the overall sample allows for investigation into whether differences in the study variables exist by subsample. Thus, as a preliminary step, we examined whether gender and subsample differences in each of the constructs assessed were present. Although subsample differences were not the primary focus of the study, we did find some interesting differences in the endorsement of values and the expectation that one's job fulfills each value with students from the small private university often differing from students at the two larger schools. This finding likely is indicative of the type of students each school attracts and enrolls. Indeed, the students from each of the schools did significantly differ on some demographic variables—namely familial income—with students from the small, private university having the highest familial income and students from the mid-sized

public university having the lowest familial income; information that might be considered by professionals providing career counseling for young adults at similar institutions. However, the patterns of findings were predominantly similar across subsamples, regardless of institution type.

In terms of gender differences across samples, as expected, we found that men were higher in masculinity than women and women were higher in femininity than men. Although an individual may be considered psychologically androgynous—possessing both masculine and feminine traits—gender differences in these two constructs are strong and consistent (see Ritter 2004 [United Kingdom]). Gender differences were also found in the traditionality of students' expected occupations with males' occupational choices being less traditional than females' despite the fact that women are more likely to have nontraditional occupations than males as they move into traditionally masculine fields. We believe that this finding reflects the great percentage of males choosing education (18% of sample) and psychology (7% of sample)—two female dominated fields—due to their recruitment from introductory psychology classes, a required course for those majors. Excluding these students, we found that males and females both generally chose occupations dominated by their own gender.

Consistent with our hypotheses and previous work (Konrad et al. 2000; Weisgram et al. 2010), females endorsed family and altruistic values significantly more than males and males endorsed money values to a greater extent than females. Interestingly, there were no gender differences in endorsement of power values (see also Weisgram et al. 2010) although the means demonstrate the expected pattern of men endorsing these values more than women. Weisgram et al. (2010) suggest that this pattern may be a result of females taking on traditionally masculine values whereas males are not taking on traditionally feminine values. In addition, females expected their future occupation to allow them to spend time with their family and help others to a greater extent than males—a finding that is reflective of their own personal endorsement of family and altruistic values and demonstrates a link between the endorsement of values and the (perceived) value affordances of individuals' career choices. Similarly, males expected their future occupation to have a high salary to a greater extent than females.

Previous work has concentrated on investigating gender differences in occupational values (see Konrad et al. 2000 for a meta-analysis). Here, we extend this previous work by exploring the predictive relationship of individuals' self-perceived masculinity/femininity in the endorsement of gender-typed occupational values. Indeed, correlational

analyses showed a relatively strong relationship between masculinity and power for both males and females as well as a link between femininity and altruism among females. In regression analyses, as expected, we found that among men and women, masculinity was a significant predictor of endorsing money and power values and femininity was a significant predictor of family values. Also, masculinity and femininity were both significant predictors of endorsing altruistic values, perhaps because students recognize that to aid the needy and help others they may need to express masculine traits like being assertive, strong, and defending others as well as feminine traits such as compassion, sensitivity, and nurturance.

We next examined the role of self-perceived masculinity/femininity in the traditionality of students' expected future occupations. Among women, femininity positively predicted traditionality and masculinity negatively predicted traditionality. That is, consistent with gender role expectations, the more feminine and less masculine a woman perceives herself to be, the more traditional her expected future occupation is.

Importantly, we examined whether values mediate the relationship between self-perceived masculinity/femininity and traditionality that was found among women. This data indicates that the values adults endorse are important factors in the traditionality of occupational choices and may contribute to the gender segregation of occupations. When masculinity and femininity and value endorsements were considered in the bootstrap mediation model predicting the traditionality of occupations, the predictive value of self-perceived masculinity/femininity was mediated. Thus, values seem to be a larger contributing factor to the traditionality of occupational choices than self-perceived masculinity/femininity.

Lastly, we investigated the predictive nature of self-perceived masculinity/femininity in the perceived value affordances of students' future occupations. We found that among both men and women, masculinity was a predictor of perceiving one's future occupation as high in salary and influence over others perhaps due to the traits that the masculine gender role encompasses (e.g., dominant, provider, strong). In addition, among men and women masculinity was a positive predictor and among women (but not men), femininity was a positive predictor of perceiving one's future occupation as altruistic perhaps due to the components of empathy, nurturing, and helping that are part of the feminine gender role—components that may be especially salient to females (Williams and Best 1990).

The endorsement of occupational values played an important role in mediating the relationships found between self-perceived masculinity/femininity and perceived value

affordances of expected jobs. Consistent with previous research and our hypotheses, endorsement of each value (except for one model that included altruism) predicted the perception of individuals' future occupations to afford the corresponding value—partially or completely mediating the relationships found between self-perceived masculinity/femininity and value affordances. For example, individuals who indicated high levels of money values expected their future jobs to have high salaries. Importantly, links were also found among the endorsement of values and some non-congruent value affordances (see Frieze et al. 2006; Lips and Lawson 2009; Weisgram et al. 2010). Endorsing power values was a positive predictor of the expectation that one's future job will have a high salary. Lastly, students who would like a job that has influence over others (endorse power values) expect their future occupation to allow them to do so, but also expect that they will have less time with their family.

Unfortunately, very few jobs are able to satisfy all values—have a high salary, allow much time with children and have flexible schedules, have influence over others, help others and society, and have many other desirable value affordances. The data presented here demonstrate that young adults may be prioritizing values and establishing links between masculine values (e.g., money and power) and not between masculine and feminine values (e.g., money and altruism; power and family; money and family). Male and female college students may be planning their future careers with an eye toward their future family roles. Men, particularly those high in masculinity, may value careers that offer support for their future breadwinner role. However, feminine women may be primarily planning to raise children and may have greater interest in occupations that offer family time flexibility. One dimension that needs further research is the complex nature of masculinity and femininity. Some research suggests that masculinity in particular may be a multidimensional construct and future research may be able to tease apart these dimensions (Choi and Fuqua 2003).

The gender segregation of occupations may also be impacted in that the masculine jobs that are dominated by men may afford the values that are endorsed more by men than by women (and vice versa), making reducing gender segregation of occupations a difficult challenge for our society. However, changing perceptions of value affordances of male- and female-dominated jobs may be leading more people into cross-gender-typed occupations. For example, the change in perception of psychology from a strictly scientific field (as perceived in the behaviorist era) to a helping field (as the importance of clinical and counseling psychology has risen) may be a factor in the surge of women into the field of psychology (see Harton and Lyons 2003). Women earned 36% of bachelor degrees in psychology in 1950 compared to

77% in 2008 (National Center for Education Statistics 2009). In addition, Weisgram and Bigler (2006) found that girls who were convinced that math and science were helping fields after an intervention program in which they learned about science careers were more interested in the field than their peers.

However, it is also possible that the genders that occupy the careers shape perceptions of value affordances as social role theory might suggest (Eagly 1987). This *social role theory* argues that after consistently seeing men and women in different social roles, individuals seek an explanation for these gender differences. Consequently, individuals search for either perceived or actual gender differences in physical, psychological, cognitive, or other characteristics to explain the gender segregation (Cejka and Eagly 1999). In their work, Weisgram et al. (2010) found that novel jobs depicted with all female workers were judged to be higher in affording family values than the identical jobs depicting male workers. Also, with the sharp increase of women in to the field of psychology, many psychologists were concerned that the field would be perceived as lower in status and pay would decline as a consequence; an American Psychological Association Task Force recently investigated this hypothesis finding that it was not the case (Pion et al. 1996). Thus, reducing gender segregation of occupations may involve breaking barriers that prevent women from entering fields, changing perceptions of the values fulfilled by gender-typed jobs (and perhaps the actual values afforded by such occupations such as implementing policies that allow for more family time in scientific careers), and generally breaking down gender stereotypes associated with occupations—a topic that deserves a considerable amount of future research.

Importantly, the data presented in this study extend previous research examining relationships among gender beliefs, occupational values, traditionality of career choices, and the characteristics of career choices for men and women. The data suggest that the values that men and women hold may be a key component of their gender-typed occupational choices and that these values may be influenced by individuals' gender role orientations and the differential role expectations society has for men and for women. In addition, this work has demonstrated the complexity occupational values and how values may be linked when predicting the characteristics of young adults' future jobs.

Many new and interesting results emerged from this study. And although the size and geographic diversity of the sample is a strength, in order to generalize these findings even more, a more diverse sample is needed. Although this sample was drawn from three universities in the United States with different student characteristics, there was a lack of minority students in the overall sample. A more representative sample would be important because

African American occupational values may differ from those of European Americans (Hartung et al. 2010; Lee 1984; Ng and Sears 2010). Furthermore, African American women are more likely to be classified as masculine or androgynous than white women and African American men and women are less polarized on the BSRI than are white men and women (Harris 1996). These differences in self-perceived masculinity/femininity and occupational values may have an interesting impact on the relationship between gender and value affordances. Future studies should include a more diverse sample in terms of ethnicity and also in terms of workforce status (e.g., college students, young individuals entering the workforce directly from secondary school, etc.). In addition, examining international samples of early adults to investigate cross-cultural gender differences in value endorsements and differences in perceptions of value affordances is needed.

A college-aged sample offered a unique look at occupational values in the developmental period when students are planning and working toward their expected careers. However, students may not yet be capable of accurately defining the value affordances of their expected careers or their perceptions may be biased by their interest and own value endorsements. For example, a student who endorses money values may perceive their desired job as high in pay than someone who does not endorse money values or someone who is not interested in the job. It is also possible that stated expectations and aspirations may change before these students enter the workforce. A longitudinal design would help to clarify some of these issues.

Although it has been widely established that men and women report different occupational values, this study extends previous work by showing that within group individual differences are also important in predicting college students' own values and, in turn, the value affordances of their expected occupations. Seemingly, it is what college students value in jobs that predicts the type of job to which they aspire, in so much as it affords them such qualities. Thus, when men and women hold nontraditional occupational values (e.g. men valuing family time and women valuing high salaries), they are also able to cross gender barriers when choosing future occupations. As the segregation of men and women in the workplace continues, it is important to consider that emphasizing different value affordances may make jobs more appealing across the genders.

**Acknowledgement** This study was funded, in part, by Monmouth University's Grant in Aid of Creativity. The authors would like to thank Ryan Laswell, Sara Rae, Lauren Kaniewski, and Amanda Grunwald of UWSP, Deanna Stango (graduate) and Brittney Austin, Erin Barrett, Jenna DeLozier, Lina Jaramillo, and Maria Mereos (undergraduates) of Monmouth University; and for their assistance in collecting and entering the data and bibliographic assistance.

## References

- Abu-Saad, I., & Isralowitz, R. E. (1997). Gender as a determinant of work values among university students in Israel. *The Journal of Social Psychology, 137*, 749–763. doi:10.1080/00224549709595496.
- Ayman, R., Korabik, K., & Morris, S. (2009). Is transformational leadership always perceived as effective? Male subordinates' devaluation of female transformational leaders. *Journal of Applied Social Psychology, 39*, 852–879. doi:10.1111/j.1559-1816.2009.00463.x.
- Baron, R., & Kenny, D. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173–1182. doi:10.1037/0022-3514.51.6.1173.
- Bem, S. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology, 42*, 155–162. doi:10.1037/h0036215.
- Bereska, T. (2003). The changing boys' world in the 20th century: Reality and 'fiction'. *The Journal of Men's Studies, 11*, 157–174. doi:10.3149/jms.1102.157.
- Bridges, J. (1989). Sex differences in occupational values. *Sex Roles, 20*, 205–211. doi:10.1007/BF00287992.
- Brown, D. (2002). The role of work and cultural values in occupational choice, satisfaction, and success: A theoretical statement. *Journal of Counseling & Development, 80*, 48–56.
- Brown, M. T., Eisenberg, A. I., & Sawilowsky, S. S. (1997). Traditionality and the discriminating effect of expectations of occupational success and occupational values for women within math-oriented fields. *Journal of Vocational Behavior, 50*, 418–431. doi:10.1006/jvbe.1996.1545.
- Bureau of Labor Statistics. (2005). Household Data Annual Averages. Table 11: Employed persons by detailed occupation, sex, race, and Hispanic origin. Retrieved from <http://www.bls.gov/cps/cpsaat11.pdf>
- Bureau of Labor Statistics. (2011). *Employed persons by detailed occupation, sex, race, and Hispanic or Latino ethnicity*. Retrieved from <http://www.bls.gov/cps/cpsaat11.pdf>.
- Cejka, M. A., & Eagly, A. H. (1999). Gender-stereotypic images of occupations correspond to the sex segregation of employment. *Personality and Social Psychology Bulletin, 25*, 413–423. doi:10.1177/0146167299025004002.
- Choi, N., & Fuqua, D. F. (2003). The structure of the bem sex role inventory: A summary report of 23 validation studies. *Educational and Psychological Measurement, 63*, 872–887. doi:10.1177/0013164403258235.
- Diekmann, A., & Eagly, A. (2000). Stereotypes as dynamic constructs: Women and men of the past, present, and future. *Personality and Social Psychology Bulletin, 26*, 1171–1188. doi:10.1177/0146167200262001.
- Duffy, R. D., Borges, N. J., & Hartung, P. J. (2009). Personality, vocational interests, and work values of medical students. *Journal of Career Assessment, 17*, 189–200. doi:10.1177/1069072708329035.
- Eagly, A. H. (1987). *Sex differences in social behavior: A social-role interpretation*. Hillsdale: Lawrence Erlbaum Associates.
- Eccles, J. S. (1994). Understanding women's educational and occupational choices: Applying the Eccles et al. model of achievement-related choices. *Psychology of Women Quarterly, 18*, 585–609. doi:10.1111/j.1471-6402.1994.tb01049.x.
- Eccles, J., Barber, B., & Jozefowicz, D. (1999). Linking gender to educational, occupational, and recreational choices: Applying the Eccles et al. model of achievement-related choices. In W. B. Swann, J. H. Langlois, & L. A. Gilbert (Eds.), *Sexism and stereotypes in modern society: The gender science of Janet Taylor Spence* (pp. 153–192). Washington: American Psychological Association. doi:10.1037/10277-007.
- Eccles, J. S., Adler, T. F., Futterman, R., Goff, S. B., Kaczala, C. M., Meece, J. L., et al. (1983). Expectancies, values, and academic behaviors. In J. T. Spence (Ed.), *Achievement and achievement motives* (pp. 75–146). San Francisco: W. H. Freeman.
- Elizur, D. (1994). Gender and work values: A comparative analysis. *Journal of Social Psychology, 134*, 201–212.
- Frieze, I. H., Olson, J. E., Murrell, A. J., & Selvan, M. S. (2006). Work values and their effect on work behavior and work outcomes in female and male managers. *Sex Roles, 54*, 83–93. doi:10.1007/s11199-006-8871-z.
- Frome, P., Alfeld, C., Eccles, J., & Barber, B. (2008). Is the desire for a family-flexible job keeping young women out of male-dominated occupations? In H. M. G. Watt & J. S. Eccles (Eds.), *Gender and occupational outcomes: Longitudinal assessments of individual, social, and cultural influences* (pp. 195–214). Washington: American Psychological Association. doi:10.1037/11706-007.
- Good, G., & Sherrod, N. (2004). The psychology of men and masculinity: Research status and future directions. In R. Unger (Ed.), *Handbook of the psychology of women and gender* (pp. 201–214). Hoboken: Wiley.
- Gottfredson, L. S. (1981). Circumscription and compromise: A developmental theory of occupational aspirations. *Journal of Counseling Psychology, 28*, 545–579. doi:10.1037/0022-0167.28.6.545.
- Harris, A. C. (1996). African American and Anglo-American gender identities: An empirical study. *Journal of Black Psychology, 22*, 182–194. doi:10.1177/00957984960222004.
- Harton, H. C., & Lyons, P. C. (2003). Gender, empathy, and the choice of the psychology major. *Teaching of Psychology, 30*, 19–24. doi:10.1207/S15328023TOP3001\_03.
- Hartung, P. J., Fouad, N. A., Leong, F. L., & Hardin, E. E. (2010). Individualism–collectivism: Links to occupational plans and work values. *Journal of Career Assessment, 18*, 34–45. doi:10.1177/1069072709340526.
- Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs, 76*, 408–420. doi:10.1080/03637750903310360.
- Holland, J. (1959). A theory of vocational choice. *Journal of Counseling Psychology, 6*, 35–45. doi:10.1037/h0040767.
- Konrad, A. M., Ritchie, J. E., Lieb, P., & Corrigan, E. (2000). Sex differences and similarities in job attribute preferences: A meta-analysis. *Psychological Bulletin, 126*, 593–641. doi:10.1037/0033-2909.126.4.593.
- Leaper, C., & Van, S. R. (2008). Masculinity ideology, covert sexism, and perceived gender typicality in relation to young men's academic motivation and choices in college. *Psychology of Men and Masculinity, 9*, 139–153. doi:10.1037/1524-9220.9.3.139.
- Lee, C. C. (1984). Work values of rural Black, White, and Native American adolescents: Implications for contemporary rural school counselors. *Counseling and Values, 28*, 63–71.
- Liben, L. S., & Bigler, R. S. (2002). The developmental course of gender differentiation: Conceptualizing, measuring, and evaluating constructs and pathways. *Monographs of the Society for Research in Child Development, 67*, (2, Serial No. 269). doi: 10.1111/1540-5834.t01-1-00187
- Lips, H. M. (2003). The gender pay gap: Concrete indicator of women's progress toward equality. *Analyses of Social Issues and Public Policy, 3*, 87–109. doi:10.1111/j.1530-2415.2003.00016.x.
- Lips, H., & Lawson, K. (2009). Work values, gender, and expectations about work commitment and pay: Laying the groundwork for the “motherhood penalty”? *Sex Roles, 61*, 667–676. doi:10.1007/s11199-009-9670-0.

- Lueptow, L., Garovich-Szabo, L., & Lueptow, M. (2001). Social change and the persistence of sex typing: 1974–1997. *Social Forces*, *80*, 1–36. doi:10.1353/sof.2001.0077.
- Marini, M. M., Fan, P., Finley, E., & Beutel, A. M. (1996). Gender and job values. *Sociology of Education*, *69*, 49–65. doi:10.2307/2112723.
- Mason, M., & Goulden, M. (2004). Marriage and baby blues: Redefining gender equity in the academy. *Annals of the American Academy of Political and Social Science*, *596*, 86–103. doi:10.1177/0002716204268744.
- Morgan, C., Isaac, J. D., & Sansone, C. (2001). The role of interest in understanding the career choices of female and male college students. *Sex Roles*, *44*, 295–320. doi:10.1023/A:1010929600004.
- Mortimer, J. T., & Lorence, J. (1979). Work experience and occupational value socialization: A longitudinal study. *American Journal of Sociology*, *84*, 1361–1385.
- National Center for Education Statistics (2009). Bachelor's degrees conferred by degree-granting institutions, by sex, race/ethnicity, and field of study: 2007–08. Retrieved from [http://nces.ed.gov/programs/digest/d09/tables/dt09\\_286.asp](http://nces.ed.gov/programs/digest/d09/tables/dt09_286.asp).
- Ng, E. W., & Sears, G. J. (2010). What women and ethnic minorities want. Work values and labor market confidence: A self-determination perspective. *The International Journal of Human Resource Management*, *21*, 676–698. doi:10.1080/09585191003658847.
- Pion, G. M., Mednick, M. T., Astin, H. S., Hall, C. C., Kenkel, M. B., Keita, G. P., et al. (1996). The shifting gender composition of psychology: Trends and implications for the discipline. *American Psychologist*, *51*, 509–528.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, *40*, 879–891. doi:10.3758/BRM.40.3.879.
- Risman, B., & Johnson-Sumerford, D. (1998). Doing it fairly: A study of postgender marriages. *Journal of Marriage & the Family*, *60*, 23–40. doi:10.2307/353439.
- Ritter, D. (2004). Gender role orientation and performance on stereotypically feminine and masculine cognitive tasks. *Sex Roles*, *50*, 583–591. doi:10.1023/B:SERS.0000023077.91248.f7.
- Robinson, J., Shaver, P., Wrightsman, L., & Andrews, F. M. (1991). *Measures of personality and social psychological attitudes*. San Diego: Academic Press.
- Rosenberg, M. (1957). *Occupations and values*. Glencoe: Free Press.
- Rounds, J., Armstrong, P. I., Liao, H., Lewis, P., & Rivkin, D. (2008). Second Generation Occupational Interest Profiles for the O\*NET System. Technical Report for the U.S. Department of Labor. Retrieved from [http://www.onetcenter.org/dl\\_files/SecondOIP\\_Summary.pdf](http://www.onetcenter.org/dl_files/SecondOIP_Summary.pdf)
- Sobel, M. E. (1982). Direct and indirect effects in linear structural equation models. *Sociological Methods and Research*, *16*, 155–176.
- Spence, J. T. (1984). Gender identity and implications for concepts of masculinity and femininity. In T. B. Sonderegger (Ed.), *Nebraska symposium on motivation: Psychology and gender* (pp. 59–96). Lincoln, NE: University of Nebraska Press.
- Super, D. E. (1957). *The psychology of careers*. New York: Harper.
- Tokar, D. M., & Jome, L. M. (1998). Masculinity, vocational interests, and career choice traditionality: Evidence for a fully mediated model. *Journal of Counseling Psychology*, *45*, 424–435. doi:10.1037/0022-0167.45.4.424.
- Weisgram, E. S., & Bigler, R. S. (2006). Girls and science careers: The role of altruistic values and attitudes about specific tasks. *Journal of Applied Developmental Psychology*, *27*, 326–348. doi:10.1016/j.appdev.2006.04.004.
- Weisgram, E. S., Bigler, R. S., & Liben, L. S. (2010). Gender, values, and occupational interests among children, adolescents, and adults. *Child Development*, *81*, 778–796. doi:10.1111/j.1467-8624.2010.01433.x.
- Williams, J., & Best, D. (1990). *Measuring sex stereotypes: A multinational study* (Rev. ed.). Thousand Oaks: Sage Publications, Inc.
- Wood, W., & Eagly, A. (2002). A cross-cultural analysis of the behavior of women and men: Implications for the origins of sex differences. *Psychological Bulletin*, *128*, 699–727. doi:10.1037/0033-2909.128.5.699.