Gender-role stereotyping and career aspirations: A comparison of gifted early adolescent boys and girls

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Gender-Role Stereotyping and Career Aspirations:

A Comparison of Gifted Early Adolescent Boys and Girls

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Abstract

This study examined the career aspirations of gifted early adolescent boys and girls utilizing a career aspirations measure that differentiated between the careers that were still being considered by each student versus those that had been ruled out. Careers were classified by sex type (male dominated, female dominated, or balanced), education required (high school degree, college degree, graduate degree), and prestige associated with the career. Assessments of gender-related personality attributes, achievement motivation, and attitudes toward the rights and roles of women also were administered to provide information on the correlates of career aspirations among gifted early adolescent students (examined separately by gender). Results showed that girls were interested in a significantly greater number of careers (i.e., had ruled out fewer occupations than boys). Girls also showed greater gender-role flexibility in their career aspirations than their male counterparts. Boys aspired to careers that were significantly higher in education required and prestige level than girls. The strength and direction of the relationships between career aspirations and gender-related personality attributes and achievement motivation varied by gender. Results are discussed in terms of their implications for understanding the differing career development needs of gifted early adolescent boys and girls.

Given the underrepresentation of women in high-status, high-pay occupations (e.g., medicine, engineering, the natural sciences, law), there has been considerable interest in understanding how gifted young women come to choose their vocations. Certainly, in the past, there was much less choice for women in the vocational domain. Factors such as overt sexism and discrimination limited the educational opportunities that were available to women, women's access to male-dominated careers, and the freedom to choose a combination of a career and family (Kerr, 1995). In Terman's landmark study of gifted individuals, 50% of the women whom researchers followed at age 44 had not pursued a full-time career (Terman & Oden, 1959).

As we enter the 21st century, many of the barriers to vocational choice among women have been reduced. In particular, there is greater acceptance of women pursuing male-dominated careers and greater choice in childcare options. Concomitantly, there has been a consistent increase in female participation in traditionally male-dominated fields over the past few decades (U.S. Department of Labor, 1998). And yet, evidence shows that young men entering careers in math and the sciences continue to greatly outnumber young women. In 1996, for example, women earned 26.7% of master's degrees in computer science, 17.2% of master's degrees in engineering, and 32.2% of master's degrees in the physical sciences and science technologies (U.S. Department of Education, 2000). Similar underrepresentation has been documented at the bachelor's level, where women earned 27.5% of degrees in computer science, 16.1% of degrees in engineering, and 36% of degrees in the physical sciences and science technologies. Notably, virtually all high-pay, high-prestige careers continued to be male dominated.

Many have hypothesized that the underrepresentation of women in high-pay, high-status professions is related to the continued gender-role stereotyping of careers. Children learn from a young age that, for example, secretaries are female, while business executives are male (Berk, 2000). Examples of men in positions of power and women in supportive roles

The Journal of Secondary Gifted Education, Vol. XIII, No. 3, Spring 2002, pp. 96–107.

abound in children's books, movies, television programming, and children's actual life experiences. Many researchers have noted that limited exposure to women in nontraditional careers may limit the occupational aspirations of gifted girls who have the potential to pursue education leading to a prestigious career, but may not perceive it as being within their realm of options (see, in particular, Kerr, 1995).

Recent research examining differences in career aspirations among gifted boys and girls is relatively limited. Those studies that do exist, however, suggest that strong adherence to gender-role stereotypes in career aspirations may be diminishing among gifted girls. Leung, Conoley, and Scheel (1994) suggested that the "social and cultural changes occurring the past two decades have gradually and successfully resulted in some changes in women's attitudes about careers" (p. 302). For example, a 1988 study conducted by Kerr and Colangelo found that business had replaced education as the top choice of college majors for gifted girls. Additionally, Reis, Callahan, and Goldsmith (1996) found the top four career choices for gifted early adolescent males and females to be identical (i.e., doctor, scientist, lawyer, and business owner), although they were ranked differently for boys and girls.

It appears from the literature that the increased similarity in the career aspirations of gifted boys and girls is attributable to girls becoming more interested in male-dominated occupations, rather than vice versa. For example, Leung, Conoley, and Scheel (1994), who retrospectively examined the career aspirations of gifted high school juniors and seniors, found that, although the boys in their study were more likely to have considered only traditionally masculine occupations, girls had considered both feminine and masculine career options. They found no differences between gifted boys and girls in the prestige level of career aspirations. Similarly, Dunnell and Bakken (1991) found that 9th- and 12th-grade gifted females were significantly more likely than same-aged gifted males to choose occupations that were nontraditional for their gender. Consistent with this finding, it has been noted by several researchers that there is greater pressure for boys than for girls to adhere to traditional gender-role stereotyped behavior (e.g., Massad, 1981). This appears to be related to the fact that masculine behaviors, preferences, and interests are socially valued (Galambos, Almeida, & Petersen, 1990). Certainly, with regard to careers, those that are the highest in earning potential and prestige are male-dominated. Thus, it makes sense that talented young women would be more attracted to male dominated careers than their male counterparts would be to female-dominated careers.

Overview of the Current Study

The primary purpose of the current investigation was to further examine gender-role stereotyping in the career aspirations of gifted boys and girls. The study focused on students in the early adolescent years because, according to Gottfredson's (1981) theory of circumscription and compromise, by the time youngsters reach early adolescence, they have ruled out a number of potential occupations that they believe are inconsistent with their gender role, their social class, or their intellectual potential. Thus, the typical early adolescent is likely to have narrowed his or her career options, but not actually selected a career. This narrowing process is important because, according to Gottfredson, once certain types of careers have been eliminated, they are not likely to be considered in the future. The aim of this investigation was to learn more about the types of careers (in terms of sex-typing, education required, and prestige level) that were still in the pool of options for gifted early adolescent boys and girls. The measure of career aspirations that was selected was designed to examine specifically those options that were still being considered in contrast to those that had been ruled out.

Examples of men in positions of power and women in supportive roles abound in children's books, movies, television programming, and children's actual life experiences

Three other variables with theoretical links to both career aspirations and gender-role stereotyping also were examined: (1) gender-related personality attributes (i.e., self-perceptions of instrumental and expressive traits); (2) attitudes toward the rights and roles of women, and; (3) achievement motivation. The purpose of including these variables was to examine the broader context of gender-related attitudes and attributes among the partici-

pants and to examine the relationships between these variables and career aspirations. Previous research with gifted high school girls (Fleming & Hollinger, 1979) and with unselected high school and college students (Spence & Helmreich, 1978) has shown significant positive correlations between educational and occupational aspirations and both students' self-perceptions of instrumental traits (stereotypically male characteristics such as assertiveness, confidence, and independence) and achievement motivation. Expressive traits (stereotypically female characteristics such as kindness, gentleness, and understanding) and attitudes toward the rights and roles of women have shown weaker relationships with career aspirations (e.g., Raffaele Mendez, 2000; Spence & Helmreich, 1978). No previous studies, however, have examined these relationships for gifted early adolescent boys and girls.

In particular, there is greater acceptance of women pursuing male-dominated careers and greater choice in childcare options.

The intention of this study was to understand the nature of the relationships between career aspirations and each of the other variables (i.e., gender-related personality attributes, achievement motivation, and attitudes toward the rights and roles of women) specifically for a group of gifted early adolescent students. These relationships were examined separately for boys and girls in order to determine if they differed by gender.

Research Questions

Five major research questions were addressed in this study.

1. Do gifted early adolescent boys and girls differ in the sex typing, education level, and prestige associated with the careers to which they aspire?
2. Do gifted early adolescent boys and girls differ with regard to gender-related personality attributes?
3. Do gifted early adolescent boys and girls differ in their attitudes toward the rights and roles of women?
4. Do gifted early adolescent boys and girls differ in achievement motivation?
5. What are the relationships (examined separately for girls and boys) between the sex typing, education level, and prestige level of career aspirations and (a) gender-related personality attributes, (b) attitudes toward the rights and roles of women, and (c) achievement motivation?

Method

Participants

Participants were 227 students (132 girls, 95 boys) in grades 6–8 who had been selected to participate in a program for gifted students. They ranged in age from 11 to 14, with a mean age of 12.8 years. All students attended one of two schools in a suburban district just outside a large southwestern city. At the time of data collection, 166 girls and 196 boys were enrolled in the gifted program in the two schools where data was collected. Thus, of the 362 students who were eligible to participate, 227 (63%) agreed to participate, received parental permission, were present on the day of data collection, and provided complete data on all of the measures. The majority of participants (n = 199) were Caucasian. Minority groups were minimally represented with 28 minority participants in the sample. Two were African American, 7 were Hispanic, 13 were Asian, and 6 identified themselves as belonging to another ethnic group. Most of the students were from families of middle to upper socioeconomic status.

To identify students for its gifted program, the district from which students were recruited used indices of intellectual ability, achievement, motivation, and creativity. The specific measures used to identify students were the SRA Achievement Series (the Educational Abilities Score was used to assess ability), a student interview, and the Scales for Rating the Behavioral Characteristics of Students (Learning and Motivation subscales only, Renzulli & Hartman, 1971). Students were required to earn 14 points or greater on a matrix involving these different components in order to be admitted into the program. The only exception to this process occurred for students who earned a score of 130 or greater on the Educational Abilities Scale of the SRA and an SRA achievement composite score at or above the 95th percentile. These students automatically qualified for the program. Most students were

identified for the gifted program in the early elementary school years.

Measures

Parent questionnaire. A 17-item parent questionnaire designed specifically for this study was used to gather information on ethnic background, whether the child had been identified for a gifted or special education program in another school district, current household composition, educational levels of parents, occupations of parents (which were used to calculate socioeconomic status and the degree to which the mother's occupation would be considered traditional), and the age and gender of siblings. Occupational status scores for mothers and fathers were calculated using the Duncan Revised Socioeconomic Index of Occupational Status (Stevens & Featherman, 1981). The child's socioeconomic status (SES) score was recorded as the higher of the two parents' occupational status scores. The degree to which a mother's occupation would be considered traditional was calculated using census information regarding the percentage of female workers employed in various occupations (U.S. Bureau of the Census, 1992). Occupations were coded as follows: (a) traditional = 70% or more female workers; (b) neutral = 30–69% female workers, and; (c) nontraditional = 29% or less female workers (Brooks, Holahan, & Galligan, 1985).

Revised Occupational Checklist (OCL-R). The career aspirations measure used in this study was a revision of the Occupational Checklist (OCL; Brooks, Holahan, & Galligan, 1985). The OCL, which utilized 1980 census data (U.S. Department of Commerce, 1980), measured student interest in careers that were traditional, neutral, and nontraditional for women. The original OCL included 60 occupations: 20 traditionally female occupations (defined as occupations in which 70% or more of workers in 1980 were female), 20 neutral (occupations in which 30–69% of workers in 1980 were female), and 20 traditionally male (occupations in which 29% or less of the workers in 1980 were female). The OCL was revised by the first author (OCL-R; Raffaele Mendez, 2000) based on 1992 data (U.S. Bureau of the Census, 1992). All other aspects of the measure, including number of items, directions for completing the measure, and scoring, were the same as described by Brooks, Holahan, and Galligan. The major difference was that the occupations included in the female-dominated, neutral, and male-dominated categories were based on percentages from 1992 data.

Occupations listed on the OCL-R required varying levels of education (i.e., high school diploma, master's degree) and were easily recognizable to adolescents. In addition, occupations were selected to approximate the percentages of persons employed in each of Holland's six work environments (i.e., Realistic, Investigative, Social, Conventional, Enterprising, Artistic). Students were given instructions to check either "Might Choose" or "Would Not Choose" for each occupation listed. For scoring purposes, occupations were assigned the following values: 1 = traditional (female dominated), 2 = neutral (neither male nor female dominated), and 3 = nontraditional (male dominated). Sex Type scores were calculated by summing the assigned values for all of the items checked "Might Choose" and dividing by the number of items checked "Might Choose." Higher scores were associated with more male-dominated career aspirations, while lower scores represented more female-dominated career aspirations. The authors reported two-week, test-retest reliability by item agreement to be 85% for a group of 30 middle school girls and 86% for a group of 25 high school girls (Brooks, Holahan, & Galligan, 1985).

. . . strong adherence to gender-role stereotypes in career aspirations may be diminishing among gifted girls.

The Education Level score was calculated by first assigning each occupation one of the following values: 1 = occupations generally requiring a high school degree or less; 2 = occupations generally requiring at least a college degree, but less than a graduate degree; 3 = occupations generally requiring at least a graduate degree. In the same manner as Sex Type was calculated, the Education Level score was calculated by summing the assigned values for all the items checked "Might Choose" and then dividing by the number of items checked "Might Choose."

The Prestige score was calculated in the same manner. Rankings of prestige were assigned to each of the occupations using the Duncan Revised

Socioeconomic Index of Occupational Status (Stevens & Featherman, 1981). For each occupation listed on the OCL-R, the first author looked up the occupation in the index and noted the prestige score associated with that occupation. This index includes three possible scores for each occupation. For this investigation, the MSEI2, which is preferred and recommended by the authors of the index, was used. The lowest Prestige score on the OCL-R was 18.06 (restaurant cook) and the highest was 87.14 (surgeon).

Results of this investigation showed that, among the careers listed, girls perceived a wider range of options open to them than boys.

Personal Attributes Questionnaire (PAQ). The PAQ (Spence & Helmreich, 1978) was used to assess students' self-perceptions of desirable instrumental (i.e., stereotypically masculine) and expressive (i.e., stereotypically feminine) characteristics. Originally designed for use with high school and college students, the version of the PAQ used in this study was a revision of the short form of the PAQ designed for use with children and younger adolescents. It contains three scales of eight items each: (1) a *Masculinity* (M) scale (measuring self-perceptions of instrumental characteristics that are considered desirable for both genders), (2) a *Femininity* (F) scale (measuring self-perceptions of expressive characteristics that are considered desirable for both genders), and (3) a *Masculinity-Femininity* (M-F) scale (measuring self-perceptions of a combination of instrumental and expressive characteristics that are considered more desirable in one gender than the other). (Note: While the M-F scale was given to students to maintain the format of the scale, it was not analyzed due to a lack of theoretical relevance in the current study.) For each item, students rate themselves on a scale of 0 (*not at all like me*) to 4 (*very much like me*). Items on the M and M-F scale are scored in "masculine direction" (i.e., the extreme "masculine" response is scored a 4), while items on the F scale are scored in the "feminine direction" (i.e., the extreme "feminine" response is scored a 4). Spence and Helmreich (1978) reported reliability coefficients (Cronbach's alpha) of .85 for the M scale, .82 for the F scale, and .78 for the M-F scale for the short form of the PAQ.

Attitudes Toward Women Scale for Adolescents (AWSA). The AWSA (Galambos, Peterson, Richards, & Gitelson, 1985) is a measure for adolescents based on Spence and Helmreich's (1974) Attitudes Toward Women Scale (AWS). It contains 12 items assessing adolescent attitudes toward the rights and roles of women in contemporary society. Students indicate on a scale of 0 to 3 how much they agree with each item. Total scores are calculated by summing the responses to each item (items 3, 5, 7, 9, and 12 are reverse-scored) and then dividing by 12 to retain the item metric. Higher scores are associated with more liberal attitudes toward the rights and roles of women. The authors reported the average reliability coefficient (Cronbach's alpha) to be .72 for girls and .78 for boys. Test-retest reliability over a one-to-two-year period ranged from .46 to .73.

Work and Family Orientation Questionnaire (WOFO). The WOFO (Spence & Helmreich, 1978) was used to assess achievement motivation. This instrument, which also utilizes self-report, employs a format similar to that of the PAQ. The measure contains four scales: (1) Work (six items measuring a desire to work hard and do a good job), (2) Mastery (eight items measuring a desire for intellectual challenge and for meeting one's own internal standards of excellence), (3) Competitiveness (five items measuring a desire to outperform others), and (4) Personal Unconcern (four items measuring lack of concern about the reactions of others to one's success—or an absence of fear of success). Higher scores are associated with higher achievement motivation. Spence and Helmreich reported reliability coefficients (Cronbach's alpha) ranging from the low-.60s to the mid-.70s for the Work, Mastery, and Competitiveness scales of the WOFO. For this investigation, the Work, Mastery, and Competitiveness scales were utilized in their original form, but an Expanded Personal Unconcern scale (Raffaele Mendez, 2000) was used in place of the original Personal Unconcern scale. The original scale had been omitted from other investigations because of reported findings of low reliability coefficients (e.g., Adams, Priest, & Prince, 1985). The Expanded Personal Unconcern scale, which was designed by the first author based on a

review of the fear of success literature, contained the original four items plus an additional eight items designed to assess the same construct as the original scale. Using a sample of 209 early adolescent girls, Raffaele Mendez (2000) reported inter-item reliability of .83 for the 12-item scale, which compares favorably to reliability coefficients of around .50 for the original 4-item scale (see Adams, Priest, & Prince, 1985; Spence & Helmreich, 1978).

Data Collection

Participants were recruited through a short presentation regarding the nature of the study that was given by the first author during one of their classes. It was explained to students that the purpose of the study was to gain information about how middle school students think and feel about themselves, their school experiences, and their futures. Those students expressing an interest in participating were given a letter requesting parental permission to participate with both an attached permission slip and a parent questionnaire. Students were asked to return the permission slip and parent questionnaire in a sealed envelope to their teacher within one week.

The assessments were given to all participants in the classes through which they were recruited. Participants were given one class period (i.e., 50 minutes) to complete the measures (which were provided to all students in the same order in one stapled packet). The measures were ordered as follows: (1) PAQ, (2) WOFO, (3) OCL-R, and (4) AWSA. Measures were not counterbalanced because order effects were not expected. However, the AWSA was placed last in the packet because it contained items that would be most likely to evoke an emotional response. All students were able to complete the measures within the given time period.

Results

To determine the similarity between groups (i.e., girls vs. boys), analyses of all demographic variables were conducted. Univariate *F* tests were performed on all continuous variables, while chi-square analyses were performed on all noncontinuous variables. Using $p < .05$ as the alpha level, results showed no significant differences between groups with regard to age, grade, race, SES, father's occupational status, degree to which mother's employment would be considered "traditional," sibling position, or living arrangement (e.g., with both biological parents, with mother and stepfather, etc.). Significant differences did emerge between groups, however, on mother's occupational status, $F(1,188) = 5.04$, $p < .03$. Girls had mothers with higher occupational statuses than boys ($M = 40.93$ for mothers of girls vs. $M = 32.54$ for mothers of boys) based on the Duncan Revised Socioeconomic Index of Occupational Status (Stevens & Featherman, 1981).

. . . girls also were interested in careers that required considerable education and were high in prestige, although not to quite the same degree as boys.

In order to determine if significant differences existed between girls and boys on the dependent variables, a multivariate analysis of variance (MANOVA) was conducted using gender as the independent variable. The 11 dependent measures were as follows: the number of occupations marked "Might Choose" on the OCL-R; the Sex Type, Education Level, and Prestige scores from the OCL-R; the Masculinity and Femininity scores from the PAQ; the overall score from the AWSA; and the Work, Mastery, Competitiveness, and Expanded Personal Unconcern scores from the WOFO. Table 1 shows the means and standard deviations for each of the dependent variables by group. It also lists the *F* values, probabilities associated with the *F* values (*p*), and effect sizes (*d*) for the comparison of the two groups on each variable. Pearson product moment correlations between the OCL-R and each of the other dependent measures were calculated, as well. These are presented by group in Table 2.

Because results showed the omnibus *F* value of the MANOVA to be significant, $F(10, 216) = 29.66$, $p < .0001$, post hoc t-tests using the Tukey Method were conducted to further examine the specific variables on which the groups differed. Results of the post-hoc Tukey tests are reported for each of the four measures below.

Revised Occupational Checklist. Several differences emerged between groups on the OCL-R. First, girls expressed interest in (i.e., indicated they "Might Choose") a significantly greater

Table 1

Comparison of Males and Females on the OCL-R, PAQ, AWSA , and WOFO

	Female		Male		Comparison of Groups		
Variable	*M*	*SD*	*M*	*SD*	*F*	*p*	*d*
OCL-R							
Number of Occupations Marked "Might Choose"	22.28	9.44	18.53	8.31	9.64	.0021	.41
Sex Type	2.06	0.25	2.47	0.18	176.81	.0001	1.83
Education Level	1.89	0.25	1.99	0.23	10.11	.0017	.41
Prestige	59.66	6.31	62.29	6.12	9.85	.0019	.42
PAQ							
Masculinity (M)	22.23	4.10	21.87	4.54	0.39	.5321	.08
Femininity (F)	25.24	4.14	21.65	4.80	36.29	.0001	.81
AWSA	2.64	0.28	2.18	0.51	73.75	.0001	1.17
WOFO							
Work	20.89	3.41	20.36	3.26	1.38	.2421	.16
Mastery	20.05	4.99	20.20	5.44	0.05	.8247	.03
Competitiveness	13.39	3.77	14.69	3.54	7.00	.0087	.35
Expanded Personal Unconcern	13.89	7.63	14.38	8.12	0.22	.6410	.06

Note. Female n = 132; Male n = 95; OCL-R = Occupational Checklist–Revised; PAQ = Personal Attributes Questionnaire; AWSA = Attitudes Toward Women Scale for Adolescents; WOFO = Work and Family Orientation Questionnaire.

number of occupations than boys, $F(1, 225) = 9.64$, $p < .0021$. Girls expressed interest in a mean of 22.28 of the 60 occupations, whereas boys expressed interest in a mean of 18.53 of the 60 occupations. Second, boys scored significantly higher on Sex Type, indicating that they were more likely than girls to choose occupations that are male dominated, $F(1, 225) = 176.81$, $p < .0001$. Boys also scored significantly higher on both Education Level, $F(1, 225) = 10.11$, $p < .0017$ and Prestige, $F(1, 225) = 9.85$, $p < .0019$ indicating that the careers boys in which were interested were significantly higher in both education required and prestige than careers selected by girls.

Personality Attributes Questionnaire. On the PAQ, no significant differences emerged between girls and boys on the Masculinity (M) scale, $F(1, 225) = 0.39$, $p < .5321$. However, girls scored significantly higher than boys on the Femininity (F) scale, $F(1, 225) = 36.29$, $p < .0001$. This indicates that, while boys and girls perceived themselves as possessing similar levels of instrumental characteristics, girls perceived themselves as possessing significantly higher levels of expressive characteristics.

Attitudes Toward Women Scale for Adolescents. On the AWSA, girls scored significantly higher than boys, $F(1, 225) = 73.75$, $p < .0001$, suggesting that girls held significantly more liberal attitudes than boys toward the rights and roles of women in society.

Work and Family Orientation Scale. On the WOFO, only one significant difference emerged between boys and girls. Boys scored significantly higher on the Competitiveness scale than girls, $F(1, 225) = 7.00$, $p < .0087$. No significant differences were found on any of the other three scales on this measure: the Work scale, $F(1, 225) = 1.38$, $p < .2421$; the Mastery scale, $F(1, 225) = 0.05$, $p < .8247$; or the Expanded Personal Unconcern scale, $F(1,225) = 0.22$, $p < .6410$. These findings indicate that, while boys were found to be significantly more competitive than girls, the two sexes were similar in their desire to work hard, do a good job, and master those tasks they undertake. They also did not show differences with regard to the fear that academic success would diminish their social standing (i.e., fear of success).

Correlations between the OCL-R and other dependent measures. Pearson product moment correlation coefficients also were examined to determine how career aspirations (as measured by the OCL-R) were related to the other constructs. Results were examined for girls and boys separately to ascertain if there were any differences in the relationships among the variables based on gender. Only those correlations that were in the moderate (.3) to high (.5 or above) range (Cohen, 1992) are reported below, although all correlations between the three scales of the OCL-R and the other variables are listed in Table 2.

For girls, there was a moderate positive correlation between the OCL-R Sex Type score and the PAQ M scale ($r = .37$). Additionally, the Mastery scale of the WOFO showed moderate positive correlations with all three scales of the OCL-R ($r = .45$ for Sex Type, $r = .40$ for Education Level, and $r = .40$ for Prestige). The Work scale of the WOFO also showed a mod-

Table 2

Pearson Product Moment Correlations Between the OCL-R and the PAQ, WOFO, and AWSA (by Gender)

Measure	*PAQ*		*WOFO-R*				*AWSA*
OCL-R	*Male*	*Female*	*Work*	*Mastery*	*Competitiveness*	*EPU*	
Sex Type							
Girls	.37	-.02	.26	.45	.26	-.10	.13
Boys	.02	-.35	-.14	.04	.08	-.13	-.03
Ed Level							
Girls	.19	.13	.29	.40	.18	-.09	.10
Boys	-.02	.09	.14	.19	.00	-.15	.15
Prestige							
Girls	.18	.09	.32	.40	.13	-.07	.01
Boys	-.04	.05	.17	.17	-.01	-.17	.16

Note. EPU = Expanded Personal Unconcern Scale; OCL-R = Occupational Checklist–Revised; PAQ = Personal Attributes Questionnaire; AWSA = Attitudes Toward Women Scale for Adolescents; WOFO = Work and Family Orientation Questionnaire.

erate positive correlation with the OCL-R Prestige score (r = .32). The remainder of the scales (e.g., PAQ F, WOFO Competitiveness and Expanded Personal Unconcern, AWSA) showed low-level correlations with the three scales of the OCL-R.

The correlational findings for boys were somewhat different. Only one moderate to strong correlation was found among the scales. The OCL-R Sex Type score showed a moderate negative correlation with the PAQ F scale (r = -.35). All other correlations between the OCL-R scales and the PAQ, AWSA, and WOFO were lower than .20.

Discussion

Results of this investigation illuminated some important differences between gifted early adolescent boys and girls with regard to gender-role stereotyping and career aspirations. Overall, these results are consistent with previous research (e.g., Dunnell & Backen, 1991; Leung, Conoley, & Scheel, 1994) indicating that gifted girls show more gender-role flexibility in their career aspirations than do their male counterparts. Specific findings regarding career aspirations and their relationships to gender roles and achievement motivation—which differ by sex—are discussed below.

Career Aspirations

Results of this investigation showed that, among the careers listed, girls perceived a wider range of options open to them than boys. It is likely that girls perceived male-dominated, female-dominated, and balanced careers (e.g., makeup artist, doctor, social worker, college professor, veterinarian) to be within their realm of options, while boys perceived mostly male-dominated and balanced careers to be among their "appropriate" choices (e.g., forest ranger, professional athlete, marine scientist, mechanical engineer). Mean scores for Sex Type of the OCL-R would support this hypothesis. Girls scored significantly lower than boys on this particular scale. Looking at the mean scores (M = 2.06 for girls vs. 2.47 for boys), it seems that boys' choices were focused more on the male-dominated and balanced careers, while the mean score for girls was closer to the middle of the scale. The very strong effect size of 1.83 indicates how differently girls and boys responded to this scale.

Boys had significantly higher Education Level and Prestige scores compared to girls on the OCL-R. These findings, however, must be interpreted carefully. Looking at the mean scores for boys (M = 1.99 for Education Level and 62.29 for Prestige), it would seem that boys were attracted not only to male-dominated careers, but in particular, to male-dominated careers that

require considerable education and are high in prestige (e.g., surgeon, judge). The mean scores for girls (M = 1.88 for Education Level and 59.66 for Prestige), while significantly lower from a statistical perspective, might not be considered very different from a practical perspective. Indeed, the effect sizes of .41 for Education Level and .42 for Prestige are in the small to medium range (Cohen, 1992). Findings are best interpreted as indicating that girls also were interested in careers that required considerable education and were high in prestige, although not to quite the same degree as boys. Girls' overall scores were likely pulled down by the fact that they expressed greater interest than boys in more female-dominated professions like elementary school teacher and registered nurse (which are lower in education required and prestige than many male-dominated professions).

. . . attitudes toward the rights and roles of women in society have little to do with the types of careers to which gifted early adolescents aspire.

Gender Roles

The boys and girls in this study were quite similar in their perceptions of the degree to which they possess masculine (or instrumental) traits such as independence, assertiveness, and self-confidence. However, girls perceived themselves as possessing significantly higher levels of feminine traits, such as kindness, caring, and understanding than boys. These findings are somewhat different from those reported for the general population, where results typically show that boys score higher on Masculinity than girls and girls score higher on Femininity than boys (e.g., Bem, 1974; Hall & Halberstadt, 1980). They are, however, consistent with previous research on gifted girls, which has shown these girls to score significantly higher on Masculinity (and similarly on Femininity) when compared to their nongifted peers (e.g., Raffaele Mendez, 2000). Boys in this study also were less liberal toward the rights and roles of women than were girls, a finding that is consistent with findings in the general population (e.g., Galambos, Petersen, Richards, & Gitelson, 1985).

Gender Roles and Career Aspirations

Interestingly, what tended to predict sex type of careers for both boys and girls was the level of self-perceived *opposite-sex* characteristics. For girls, the correlation between the Femininity scale of the PAQ and Sex Type score was .02 (see Table 2), indicating that there was almost no relationship between these two variables. Thus, it cannot be concluded that girls who perceive themselves as possessing higher levels of feminine traits are attracted to more female-dominated careers. In actuality, for girls, self-perceptions of femininity are independent of sex type of the careers to which they aspire. However, self-perceptions of masculinity are moderately correlated (r = .37) with sex typing of career aspirations. In other words, girls who perceive themselves as possessing higher levels of instrumental traits are more likely to aspire to careers that are male dominated. Thus, for girls, self-perceptions of masculinity are more predictive of the sex type of the careers to which they aspire than are self-perceptions of femininity. The reverse was found for boys. Boys who perceived themselves as possessing higher levels of stereotypically feminine traits were more attracted to female-dominated careers, as shown by the negative correlation (r = -.35) between the Femininity scale of the PAQ and the Sex Type scores. Additionally, as opposed to the findings for girls, self-perceptions of masculinity showed a zero-order correlation (r = .02) with the sex typing of boys' career aspirations. Thus, for boys, self-perceptions of femininity are more predictive of the sex type of the careers to which they aspire than are self-perceptions of masculinity.

These findings demonstrate the important role that self-perceptions of opposite-sex gender-related personality attributes play in students' career aspirations. It appears that, in general, girls are more attracted to female-dominated careers than boys, while boys are more attracted to male-dominated careers than girls. Holding strong self-perceptions of feminine personality attributes does not appear to make a girl more likely to aspire to a career in teaching, nursing, and other traditionally female careers. However, when a student perceives in him- or herself a tendency to display personality attributes that are characteristic of the opposite sex, there is a greater likelihood that those attributes will be reflected in career aspirations that are more typical of the opposite sex.

This may be because the student sees those opposite-sex characteristics as more salient because they are different from what would be expected. Thus, a boy who has a strong sense of being kind and understanding may be pulled toward a career in the helping professions, whereas many girls would be pulled toward those careers simply because they are female dominated and consistent with expectations.

Consistent with previous work conducted by Spence and Helmreich (1978), attitudes toward the rights and roles of women showed low correlations with sex typing of career aspirations both for boys (r = -.02) and girls (r = .13). This indicates that attitudes toward the rights and roles of women in society have little to do with the types of careers to which gifted early adolescents aspire. It might be hypothesized that this relationship would be stronger for girls than for boys given that girls with less liberal attitudes might choose more traditional roles. In actuality, however, this study showed that gifted girls were very liberal in their attitudes (M = 2.63 on a scale of 0 to 3) with little variability in responses (SD = 0.28). Thus, even if a relationship existed between attitudes toward women and career aspirations among girls, it would have been difficult to detect it in this study because of the restriction of range among girls' scores.

Achievement Motivation

Few differences emerged between boys and girls in achievement motivation in this study. The failure to find a significant difference on the Expanded Personal Unconcern scale (measuring lack of concern about the reactions of others to one's success—or an absence of fear of success) is notable in that many of those writing about gifted girls have posited that this population of girls is particularly vulnerable to the perception that academic and social success are incompatible (e.g., Kerr, 1995; Reis, 1987). In this investigation, girls showed the same desire for hard work and meeting one's own internal standards of excellence as boys, but appeared no more likely than boys to be concerned that this would negatively impact their social standing. The only scale on which boys and girls differed was the Competitiveness scale, on which boys scored significantly higher than girls, indicating a greater desire than girls to outperform others. This finding is consistent with research indicating that boys are more likely to value competition, while girls are more likely to value connectedness and cooperation (e.g., Berk, 2000), although, with an effect size of .35, it was not a particularly strong finding.

Achievement Motivation and Career Aspirations

The relationships that emerged between achievement motivation and career aspirations differed by gender. Results showed that girls who perceived themselves as harder working and more internally motivated were more likely to aspire to careers that are male dominated, require more education, and/or are higher in prestige. In contrast, boys' career aspirations appeared largely unrelated to their self-perceived achievement motivation. This finding may reflect a tendency for most gifted boys to aspire to prestigious, male-dominated occupations requiring high levels of education regardless of how strong they perceive their achievement motivation to be. Among girls, however, those who aspire to the most prestigious careers appear to be those who perceive themselves as higher in achievement motivation. It may be that among girls, high career aspirations are not necessarily expected, and it is the hardest working girls who are most likely to aspire to nontraditional careers for women.

Among girls, however, those who aspire to the most prestigious careers appear to be those who perceive themselves as higher in achievement motivation.

Conclusions

Overall, results of this study show that gifted early adolescent boys continue to aspire to careers that are higher in education required and prestige than their female counterparts. This appears to be due mainly to the fact that boys limit their aspirations to those careers that are male dominated (and high in prestige), while girls express interest in a wider range of careers that includes both male- and female-dominated options. It is notable that girls who perceive themselves as possessing higher levels of instrumental (or stereotypically masculine) personality traits and are higher in achievement motivation are more likely than

those who see themselves as low on these traits to keep male-dominated occupations within their pool of future career options. These correlational findings highlight the fact that there are particular traits that educators can nurture in girls (e.g., assertiveness, confidence, mastery orientation) that are related to the development of nontraditional occupational interests.

The findings for boys lead to somewhat different conclusions. Although it may seem positive that boys are attracted to occupations that require high levels of education and are high in prestige, the question arises if some boys might be missing out on rewarding vocational opportunities because they have ruled them out based on their sex type. Results indicate that boys who see themselves as having more expressive traits (e.g., kindness, understanding) are less likely than boys with fewer expressive traits to have ruled out occupations simply because they are nontraditional for their gender. Recognition of the problems associated with the limited development of expressive traits among boys is just beginning to emerge (see Pollack, 1998), but clearly this is an area that merits further investigation.

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