

Individual Differences in Children's Occupational Aspirations as a Function of Parental Traditionality

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Abstract The current study was designed to test the application of the social-cognitive theory of gender development in predicting the traditionality of children's occupational aspirations (Bussey and Bandura 1999). Of primary interest was the influence of children's efficacy for nontraditional tasks on their occupational aspirations. Participants were 150 children and their mothers from the southern United States. Mothers reported their gendered attitudes, their perception of their children's skills, and their family's division of paid and unpaid labor. Children reported their occupational aspirations and efficacy for traditional and nontraditional skills, occupations, and school topics. Mothers who reported nontraditional attitudes had children with nontraditional occupational aspirations. This association was mediated by children's efficacy for nontraditional tasks, indicating some support for the social-cognitive theory.

Keywords Occupational aspirations · Parental traditionality · Gender flexibility · Efficacy

Introduction

There are gender differences in children's behaviors and interests beginning in early childhood, and much research focuses on the antecedents and consequences of these differences (Beale 1994; Maccoby 1998). It is widely reported that children have detailed gender-role stereotype knowledge as well as strong gender-typed behaviors and

preferences for activities in middle childhood (Alfieri et al. 1996; Crouter et al. 2007; Katz and Ksiansnak 1994). Children, however, adhere to such gender roles with different intensities, and there is less research focusing on the development of individual differences in gender-role flexibility. Children's gender-role flexibility, a self-reported tolerance for others' cross gender-typed behaviors, along with some personal cross-gender-typed preferences and behaviors, has been associated with American and European parents' behaviors and attitudes (Fagot and Leinbach 1995; Fulcher et al. 2008; Gervai et al. 1995; Katz and Ksiansnak 1994). In particular, preschool children who have greater gender-role flexibility have parents who have less traditional attitudes, more egalitarian division of labor, and less gendered occupations (Fagot and Leinbach 1995; Fulcher et al. 2008). This study used constructs from the social-cognitive model to examine within-gender individual differences in preferences for future activities, particularly occupational aspirations in a sample of school-age children in the United States. The literature review that follows draws on research of American children and their families except where specifically noted.

Gender Flexibility in Middle Childhood

Youngsters in middle childhood differ from younger children in that they typically respond with more flexible attitudes when deciding acceptability for others' gendered behavior (Alfieri et al. 1996; Martin 1989). Yet their own behaviors, preferences, and perceived competencies remain stringently gender-typed. This dichotomy suggests that there is a need to investigate flexible attitudes concerning self and others as individual variables (Bigler 1997; Katz and Ksiansnak 1994; Liben and Bigler 2002). Consequently, in order to assess gender-role flexibility in middle child-

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hood, researchers must measure flexibility in children's self-concepts as well as their judgments about others.

Gender schema theory (Bem 1981) proposed that people create cognitive structures called schemas to organize and understand the world around them. One primary category is gender. Children create gender schemas as they develop gender identities and use these schemas to guide their behaviors (Martin et al. 2002). Children draw on gender schemas when deciding who to play with, what to play with, and what to wear, in addition to many other daily behaviors. Children actively construct these schemas from information gleaned from their environment. As children create categories for how each gender behaves, they may begin to include schema information into their self-concept as well, thereby limiting their behaviors to those they judge to be gender-appropriate.

The social-cognitive theory of gender development (Bussey and Bandura 1999) also suggests that children are active participants in the construction of their own gender knowledge, gleaning information pertaining to gender-roles from their environment while simultaneously selecting, impacting, and interpreting this environment. The social-cognitive theory asserts that children choose influential role models' behaviors as templates for their own behavior, not simply mimicking all those around them, but rather carefully selecting the models they emulate. Children choose behaviors to model by selectively attending to many characteristics of the role model, including the model's gender (Bussey and Bandura 1999).

According to the social-cognitive theory of gender development (Bussey and Bandura 1999), children's behaviors and preferences are also influenced by their perceived self-efficacy. Self-efficacy is the belief that desired outcomes can be produced by one's own behaviors. When children hold more perceived efficacy for a skill, they are more likely to select activities that involve that skill. Increased efficacy for a task is also associated with increased effort and perseverance that children put forth when attempting the task. In addition, children are more likely to prefer future occupations for which they feel more competent. Children develop perceived efficacy not only directly by succeeding at tasks, but, more importantly, through the observation of influential role models. When children observe a model behaving in an appealing way, they rehearse that behavior cognitively; these repeated rehearsals increase efficacy (Bussey and Bandura 1999).

Girls and boys report efficacy in different domains. As early as first grade, girls report more perceived competence in tasks that are culturally defined as feminine, like music or art, while boys report more perceived competence in tasks culturally defined as masculine, like sports (Eccles et al. 1993). Researchers acknowledge children vary in their efficacy for gendered tasks, but no research has tested a

specific process for the development of children's efficacy for nontraditional tasks and occupations. Perhaps, then, children who hold more efficacy in nontraditional domains have role models who behave in a manner that is less congruent to typical gender-roles.

Parental Influence

According to social cognitive theory (Bussey and Bandura 1999), parents may influence children's gender development in two ways: by serving as role models through their own gendered behaviors and by building children's efficacy for gendered skills. There is evidence that parents who have more liberal attitudes toward women and a more equal division of household labor have a differential impact on their children's gender-role development (Crouter et al. 2007; Fagot and Leinbach 1995). Fagot and Leinbach (1995) suggested that by preschool, children of less egalitarian parents are behaving in a gender stereotyped manner not only because of peer and media pressure, but also because gender roles have become an important component of their self-concept, thereby limiting their interests and behaviors. This difference may become important as children plan their futures. For instance, children of egalitarian parents may be able to shed gender roles as pressure decreases. Conversely, children with gender roles embedded in their self-concept may define their futures only within the boundaries of gender stereotypes.

In most families, women are responsible for the bulk of the household labor and childcare (Mannino and Deutsch 2007; Solomon et al. 2005). Additionally, research has revealed that preschool children's occupational aspirations were related to the traditionality of their parents' behaviors (Fulcher et al. 2008). Parents who reported a more traditional division of childcare labor had children who ranked occupations stereotypically appropriate for their gender as most appealing to them. On the other hand, parents who shared childcare duties more equally had children whose occupational aspirations were less stereotyped. It seems that children may use their parents' behaviors in the home as a template when constructing a vision of their future selves. Taking this into account along with the idea that some children's visions of their future selves may be more flexible than their current behaviors, it seems that children's occupational aspirations may be an appropriate measure of flexibility in middle childhood.

Parents may also respond differently to sons and daughters when gender-related skills are being taught. Parents are more likely to engage with boys and use more complex explanations when talking about science with children (Crowley et al. 2001; Tenenbaum and Leaper 2003). More attention during science activities could serve

to increase boys' efficacy for science. Additionally, when parents intrude on children's homework, children may feel less efficacy for skills being taught. In fact, the association between math stereotypes and girls' efficacy for math was mediated by parents' intrusions on girls' math homework (Bhanot and Jovanovic 2005). Mothers with more stereotyped beliefs were more likely to intrude on girls' math homework than on boys' (Lindberg et al. 2008). This differential treatment of sons and daughters helps build efficacy for traditional skills and may decrease efficacy for nontraditional skills.

Occupational Aspirations

Beginning in preschool, children report occupational aspirations that are often unrealistic, but usually consistent with their gender. By the age of six, children may limit their choices of occupations to those deemed appropriate to their gender (Gottfredson 1981). By middle childhood, gender is the most powerful predictor of children's occupational aspirations (Stockard and McGee 1990; Teig and Susskind 2008).

Only a few studies have examined children's nontraditional occupational choices (Fulcher et al. 2008; O'Brien and Fassinger 1993). O'Brien and Fassinger (1993) interviewed young women, who were high school seniors, about their career plans and aspirations. They found that female adolescents with more flexible gender-role attitudes and nontraditional perceptions of efficacy placed a higher value on career pursuits than did their more traditional female peers. Girls who aspired to occupations that are more nontraditional reported increased efficacy for math and for pursuing a career than those who had more traditional aspirations. The nontraditional careers chosen by girls with more flexible attitudes and greater self-efficacy were also more prestigious careers than those chosen by girls with more traditional attitudes and aspirations (O'Brien and Fassinger 1993). This indicates that, at least for adolescent females, flexible gender-role attitudes and efficacy in nontraditional areas are indeed associated with aspirations for nontraditional occupations.

Bandura and his colleagues (Bandura et al. 2001) proposed a model of children's career preferences that relies heavily on children's self-efficacy based on research that involved 11- to 15-year-old Italian boys and girls and their parents. This model suggests that children's occupational aspirations are influenced directly by their occupational efficacy only. However, parental aspirations influence children's academic and social efficacy, which in turn are associated with children's aspirations and occupational efficacy. When children report efficacy for certain skill sets, they aspire to occupations associated with these skills.

There is evidence from other researchers that support pieces of Bandura's model in children (Fredricks and Eccles

2002; Hill 2001). For example, Hill (2001) reported that parents' occupational expectations for their children were associated with their preschool children's pre-reading and pre-math skills. However, parents do hold differing beliefs about the academic competence of their sons and their daughters, reporting that their sons have more competence in math than do their daughters, even in the light of very small achievement differences (Fredricks and Eccles 2002; Hyde and Linn 2008; Spelke 2005). Jacobs and Eccles (1992) report that mothers who hold more traditional attitudes about gender also have more stereotyped perceptions of their children's competence, and their children, in turn, report increased efficacy for stereotyped skills. Hence, it may be argued that parents' expectations that their children are, or will be, capable of nontraditional tasks lead to increased efficacy that children hold for such tasks.

Bandura's model of career preferences also links parental expectations and aspirations to children's academic efficacy that in turn influences children's occupational efficacy and therefore, their preferences for careers. Indeed, American boys' and girls' reports of perceived competencies reflect their parents' biases (Fredrick and Eccles 2002; Helwig 1998). Although children are not reported to have differing math abilities as a function of gender, their self-efficacy beliefs are different according to their gender, where boys feel more competent in math than do girls in American and Asian samples (Lummis and Stevenson 1990).

Efficacy is important to adolescents' and young adults' career decision-making processes. Young people eliminate from their slate of options any career that they feel is beyond their capabilities (Brown et al. 1997). Youths who have perceived efficacy for a wider set of skills report more career options and more interests in possible careers. Unfortunately, many young people may limit their range of careers early because they feel little efficacy for nontraditional tasks, regardless of how appealing or rewarding these careers may be. Girls may be particularly at risk for not pursuing careers that rely on competence in math according to research conducted with a Canadian sample (Davey and Stoppard 1993). Boys place more value on occupations that emphasize making money and having power (Weisgram et al. 2010). These jobs may draw on skills for which boys are more likely to have increased efficacy, thereby shutting themselves out of jobs that emphasize the nurturance and flexibility which girls value more.

One important influence on children's development of career aspirations may be the traditionality of their parents. Parents offer children, both sons and daughters, gendered information about occupations in several ways: through the traditionality of their attitudes (Friedman et al. 2007), through the family tasks for which they are responsible (Fulcher et al. 2008; Helwig 1998; Weisner et al. 1994), and through the traditionality of their occupations (Riggo and Desrochers

2006). Children's attitudes about gender tend to mirror the attitudes of their parents (Friedman et al. 2007). Girls with more flexible gender-role attitudes tend to place a higher value on career pursuits and aspire to nontraditional careers more than their more traditional peers (O'Brien and Fassinger 1993). Girls whose mothers work have more prestigious occupational aspirations (Goldberg et al. 2008; Riggo and Desrochers 2006), particularly if mothers hold a more prestigious occupation (Castellino et al. 1998). Very little of the past research has investigated predictors of boys' nontraditional occupational aspirations. The current study was specifically designed to include boys.

As children begin to consider their future families and careers, parents who are less gender traditional may influence some children to develop nontraditional notions about financial and family responsibilities. It may be that children of egalitarian parents build efficacy in nontraditional areas through cognitive rehearsal of the tasks that they have observed their role models completing. In fact, when boys are asked to perform household tasks their fathers report as inappropriate for males, these boys approach the task with stress and apprehension (Bowes and Goodnow 1996). This suggests that these boys have built very little perceived efficacy for such a task. In fact, a British study found that men who were more responsible for household tasks in adolescence were more likely to be responsible for more household labor than men who did not do chores as adolescents (Anderson and Robson 2006). A path may exist where fathers who do household tasks have sons with higher efficacy for household tasks and, thus, divide labor more equally as adults. Where the model of children's preferences for future occupations proposed by Bandura and colleagues (2001) included parental influences on efficacy, the proposed model also includes parents' behaviors and gender-role attitudes.

Occupational Prestige and Gender

An inherent problem in researching children's gendered occupational aspirations is the confounding difference in levels of desirability for occupations that are male or female dominated. Measurements used to assess children's aspirations reflect this problem with the choices of masculine occupations being more appealing than feminine occupations. One widely used measure of children's occupational preferences, the Sex Role Learning Index (SERLI; Edelbrock and Sugawara 1978), requires children to rank adult activities according to their preferences. This measure is particularly problematic because the masculine activities tend to be associated with an occupation (fighting fires, cutting wood, using a stethoscope) while the feminine adult activities almost completely revolve around work done in the home (sewing, ironing, cooking). Only one of the adult feminine

activities can be easily interpreted as an occupational activity (teaching).

Researchers have addressed this problem (Liben and Bigler 2002) and created measures of occupational aspirations like the Children's Occupation Attitudes and Trait Scale (COAT) that requires children to respond to lists of masculine and feminine occupations. However, these assessments remain problematic because the included masculine occupations are considered to be more prestigious than the included feminine occupations. The researchers recognize this problem, but assert that the disparity in prestige is a reflection of society where highly prestigious jobs are dominated by male workers (Liben and Bigler 2002).

The Current Study

The current model investigated the role of self-efficacy as a link between parental behaviors and the traditionality of children's occupational aspirations in a sample of married mothers and their children from the southern United States. Using the current assessment tools with this model would be problematic because efficacy may be related simply to the prestige of occupational aspirations rather than the gender traditionality of occupational aspirations. It is important when testing the proposed model that the list of occupations offered to children is matched by prestige between the gendered groups. For this study modified measure was created to control for prestige differences. The predictability of children's nontraditional occupational aspirations from mothers' attitudes and behaviors as well as from children's reported efficacy was tested using a series of regressions. The full mediation model was tested using structural equation modeling.

Hypotheses

The research study, then, focused on motivational factors that underlie the association between parental behaviors and children's traditionality of occupational aspirations. There were several hypotheses:

1. Parents with nontraditional behaviors and attitudes would have children who report more nontraditional occupational aspirations than children of parents with traditional behaviors and attitudes.
2. Parents with nontraditional behaviors and attitudes would have children who report greater perceived efficacy for nontraditional tasks, nontraditional school topics and nontraditional occupations than would children of parents with traditional attitudes and behaviors.
3. Children's efficacy for nontraditional tasks, occupations, and school topics would be associated with their reports of nontraditional occupational aspirations, such

that children who feel increased efficacy for nontraditional tasks would also report more nontraditional occupational aspirations than children with more efficacy for traditional tasks.

4. The association between parental attitudes and behaviors and the traditionality of children's occupational aspirations would be mediated by children's efficacy for nontraditional tasks.

Method

Participants

Participants included 7- to 12-year-old children, including 76 boys and 74 girls as well as their 150 mothers. Families were recruited for participation via sign-up booths at summer camps, parent-teacher association meetings, sports events, and through word of mouth. Participants were recruited from urban and suburban neighborhoods in the southern United States.

Some characteristics of participating families are shown in Table 1. On average, children were 10 years of age and mothers were 42 years of age at the time of testing. Parents

in all families were married. Most parents were White, well-educated, and reported incomes that were above the national averages. Parents of boys and girls were similar to one another with no significant differences in demographic variables. Characteristics of participating children are also shown in Table 1.

Procedure

Private and public schools, camps, and after-school programs were approached for their cooperation as a recruitment site for the study. Most families provided contact information for the researcher at the recruitment site. Occasionally contact information was provided by the school or camp. One hundred sixty-four families were contacted via phone or e-mail about participating in the study. Eight families declined to participate; three families were unable to schedule a time, and two families decided not to participate during the interview. Altogether 151 families were interviewed. In one interviewed family, no parent completed the questionnaire and their information could not be used. In total, information from 150 families was analyzed. Interviews took place in the family's home and ranged from 45 to 75 min. Both mothers and children completed some measures not analyzed here. Mothers

Table 1 Demographic characteristics of participating families

	Boys (<i>N</i> =74)			Girls (<i>N</i> =76)		
	Mean	Percent	Standard Deviation	Mean	Percent	Standard Deviation
Mothers						
Age	42.1		4.73	42.1		4.15
Education ^a	4.2		.67	4.3		.72
Caucasian		96.0%			91.8%	
Fathers						
Age	43.4		5.48	44.8		5.96
Education ^a	4.2		.90	4.2		.82
Caucasian		94.7%			90.4%	
Children						
Age in months	119.2		15.7	119.3		21.58
Caucasian		96.0%			90.4%	
Weekly school hours	35.1		7.98	35.4		8.08
Public school		79.7%			67.1%	
Family						
Number of siblings	2.5		.83	2.3		.87
Household income ^b	8.4		1.26	8.4		1.41
Weekly work hours	69.9		23.09	69.7		20.88

No significant differences emerged between the genders.

^a Education: 1 = some high school, 2 = high school degree, 3 = some college, 4 = college degree, 5 = graduate degree

^b Income: 1 = <10 K, 2 = 10–20 K, 3 = 20–30 K, 4 = 30–40 K, 5 = 40–50 K, 6 = 50–60 K, 7 = 60–70 K, 8 = 70–80 k, 9 = >80 K

reported more details about their and their husbands' occupations and work day. Children responded to questions about their future family lives as part of a larger project.

Materials

Materials for Children

Traditionality of occupational aspirations To control for the confounding effects of occupational prestige, a list of masculine and feminine occupations matched on occupational prestige was created. First, an index of masculine and feminine occupations was created based on the data included in the Bureau of Labor Statistics (2001) Household Data Annual Averages. This index included 246 occupations with the percentage of female workers in each occupation. Occupations were categorized as masculine, feminine, or neutral according to the percentage of female workers. Occupations were classified as feminine (29.7% of total) if at least 65% of the workers were women. Occupations were classified as masculine (45.1% of total) if at least 65% of workers in this occupation were men. Remaining occupations (25.2% of total) were classified as neutral.

In addition, all of the occupations were given a traditionality score. This score was computed by taking the absolute value of the difference between the percentage of women workers and 50%. This score left neutral occupations with low scores, while higher scores indicated the occupation was primarily filled with workers of one gender or the other.

Each occupation was also assigned a prestige score as indicated by the Duncan Socioeconomic Index (Duncan S.E.I; Featherman and Stevens 1982). This scale is based on the occupations listed in Bureau of Labor Statistics (2001) Household Annual Averages and so easily translated to the current index. The Duncan S.E.I is a composite index of how prestigious an occupation is perceived to be; both income and education are considered. High scores on the prestige scale indicated that the occupation is considered more prestigious. Scores ranged from 89.57 (dentists) to 14.53 (sewing machine operators) with a mean prestige score of 37.64. When the occupations were classified by gender, there was no significant difference in prestige scores, $t(182) < 1$, *ns*, between masculine, $M = 34.70$, and feminine, $M = 35.60$, occupations. Prestige scores, however, were negatively correlated with traditionality scores, $r(245) = -.29$, $p < .001$, indicating that less prestigious jobs are more likely to have workers of one gender.

However, in the highest prestige jobs, women workers were underrepresented. Prestige scores were broken into eight categories that were grouped by increments of 10 points. The highest prestige category included occupations that scored between 81 and 90, while the lowest prestige

category included all occupations that had been assigned between 11 and 20. In the highest prestige category, there were no occupations that were classified as feminine.

The list of occupations for children to consider was narrowed by selecting one masculine and one feminine occupation from each of the prestige categories that most closely matched in traditionality (see specific statistics in Table 2). Because there were no feminine occupations in the highest prestige category, no occupations were chosen from this group. These final occupations then were closely matched not only on prestige but also for traditionality score. There was no significant difference in traditionality score between masculine occupations ($M = 38.03$, $SD = 10.95$) and feminine occupations ($M = 39.39$, $SD = 7.93$), $t(12) < 1$, *ns*. There was also no significant difference in the prestige value between masculine ($M = 45.09$, $SD = 22.95$) and feminine ($M = 45.26$, $SD = 21.24$) occupations, $t(12) < 1$, *ns*.

Children's preferences for future occupations were assessed using a Modified Sex Role Learning Index, (SERLI; Edelbrock and Sugawara 1978). This modified measure included the occupations specifically chosen for this study, but applied the procedures from the original SERLI. Children reported their preferences for specific jobs by responding to the picture cards of occupations created for this study. These careers included seven masculine (carpenter, garbage collector, firefighter, electrician, chemical technician, airline pilot, and architect) and seven feminine (childcare provider, cashier, teacher, secretary, speech therapist, librarian, and nurse) items. Children heard a brief description of what the occupation involves while looking at pictures of adults of their gender performing the occupations. Children chose the occupation which they would they most like to have. The chosen card was removed and children were asked to pick a preferred occupation from the remaining cards. These steps were repeated until only one card remained, essentially ranking the occupations.

The scoring of the Modified SERLI reflects the scoring of the SERLI (Edelbrock and Sugawara 1978) and was based on the order in which the traditional occupations are chosen and the probabilities of making those choices. Since seven of 14 items are traditional, the probability of the first choice being a traditional choice (P_a) is .50. This probability is changed every time a child chooses an occupation. If a child's first choice is nontraditional then $P_a = .538$ for the second choice. When chances of making a traditional choice are high, scores received for choosing a traditional occupation should be low because it may represent random choosing. However, when the probability of making a traditional choice is low, scores for traditional choices are higher. When the chance for choosing a traditional occupation is relatively high, the score given for a gender-typed choice should be low, since

Table 2 Mean traditionality and prestige scores for occupational choices

Occupation	Traditionality Score	Prestige Score
Female Dominated		
Childcare Providers	34.80	15.71
Cashiers	26.90	21.40
Secretaries	48.40	34.73
Nurses	43.10	46.40
Speech Therapists	42.10	59.94
Librarians	35.70	65.46
School Teachers	32.50	70.88
Average of Female Dominated	39.36	45.26
Male Dominated		
Garbage Collectors	44.20	17.24
Carpenter	48.30	22.58
Firefighter	47.30	32.83
Electricians	30.50	45.65
Chemical Technicians	22.90	50.04
Airline Pilots	46.50	67.55
Architects	26.50	79.72
Average of Male Dominated	38.03	45.09

such a choice does may not indicate any more than random choosing.

For the Modified SERLI, like the SERLI (Edelbrock and Sugawara 1978) the inverse of the sum of the probabilities of the gender-typed choices ($1/\sum P_a$) is used to assess preference for the traditional items. For each child, $1/\sum P_a$ is calculated for the traditionality of occupational rankings. This is compared to the distribution of possible rankings. Like in the original SERLI (Edelbrock and Sugawara 1978), scores were normalized and standardized and then scaled to give a distribution having a mean of 80 and a standard deviation of 20. Scores range from 18 to 142, with higher scores indicating more traditional preferences. Children's scores are derived from the traditionality of the order in which they chose occupations. An electronic tool was created to assist in scoring. Data entry assistants were required only to input the rank of children's preference for cross-gender preferences. The electronic tool computed and reported the score. This eliminated the need for individual scoring or referencing multi-page tables and decreased the chance of entry error.

Children's occupational efficacy The Children's Perceived Efficacy Scale (CPES) was used to assess children's efficacy for occupations, skills, and school topics. For each domain of efficacy (careers, skills, and school topics) children responded to a 5-point Likert scale (e.g., How good are you at reading?) which ranged from "bad" to "very good" with high scores indicating increased efficacy. The items were read aloud to the child, and the child responded verbally or pointed to a card indicating their response. Children were given a score for efficacy on traditional and nontraditional items in each

domain. Boys' efficacy scores for traditional areas and girls' efficacy for nontraditional areas included efficacy for masculine careers, skills, and school topics. On the other hand girls' efficacy scores for traditional areas and boys' efficacy scores for nontraditional areas included efficacy for feminine careers, skills, and school topics.

Efficacy for the occupations from the Modified SERLI was measured in a manner similar to those used in previous studies of career efficacy in children (Bussey and Bandura 1999). Children were shown drawings of adults of their gender engaged in each occupation. A general description of the job was given to the child, and the child responded to a question of their perceived efficacy (e.g. "What kind of electrician could you be when you grow up?"). Internal consistency as measured by Cronbach's alpha was .72 for the occupation subscale of the CPES. To measure children's efficacy for career skills, children reported how competent they are in 28 occupational skills. These 28 skills were rated as masculine or feminine by 20 undergraduate students. Fourteen of the skills were rated as masculine (problem solving, dealing with money); 14 of the listed skills were rated as feminine (taking care of people, listening). Internal consistency as measured by Cronbach's alpha was .72 for the skills subscale of the CPES. To measure children's efficacy for school topics, children reported their efficacy for three stereotypically masculine school topics (math, science, and sports) and three stereotypically feminine school topics (reading, art, and music). Internal consistency as measured by Cronbach's alpha was .87 for the school topic subscale of the CPES.

Materials for Mothers

Demographic Interview Mothers were asked to complete a demographic interview giving information about the ages and education levels of the parents. Mothers were also asked to give detailed information about their and their husbands' occupations.

Maternal Attitudes Mothers' attitudes surrounding children's gender-related behaviors were assessed using the Parent Ideas Questionnaire (PIQ; Gervai et al. 1995). This subscale consists of 18 statements that pertain to boys' and girls' gender-typed and cross-gender-typed behaviors which mothers rated from "strongly agree" to "strongly disagree". Scores range from 18 to 90, with higher scores reflecting more traditional attitudes. Internal consistency as measured by Cronbach's alpha was .81 for this measure.

The Mothers' Perceived Efficacy Scale (MPES) was used to quantify mothers' perceptions of their children's competence in occupations, school topics, and skills. These items were identical to items on the CPES to which children responded. Mothers were asked to indicate the likelihood that their children would hold the 14 aforementioned occupations or a similar occupation. Mothers endorsed each item on a 5-point Likert scale from "very likely" to "not at all likely." A score was given for both gender traditional occupations and gender nontraditional occupations with higher scores indicating a higher likelihood that children would hold such an occupation. Internal consistency as measured by Cronbach's alpha was .71 for the occupation subscale of the MPES.

Mothers were also asked to give their assessments of their child's competencies in the same school topics and career skills included on the CPES (e.g. problem solving, listening). Mothers endorsed their perception of their child's skill on a 5-point Likert scale from "unskilled" to "very strongly skilled." A score was given for both gender-type and cross-gender-type skills with higher scores indicating more maternal perceived competence. Internal consistency as measured by Cronbach's alpha was .87 for the skills subscale of the MPES.

Parental Behaviors: Work Characteristics Mothers' and fathers' occupations were given traditionality scores based on the percentage of people of their gender currently in that occupation according to the Bureau of Labor Statistics (2001). Therefore, high scores indicated a traditional occupation while low scores indicate a nontraditional career. Each parent's occupation was also assigned a prestige score as indicated by the Duncan S.E.I. scale (Featherman and Stevens 1982). High scores indicated increased prestige. Mothers also reported the number of

hours each parent spent at work on a typical week as well as each parents' income.

Parental Behaviors: Division of Household Labor Parents' division of labor, particularly childcare labor, was assessed using the childcare subscale of the Who Does What? (Cowan and Cowan 1990). Mothers reported what percentage of each of 20 child-care tasks they typically perform from 1 "I do it all" to 9 "my partner does it all". Internal consistency as measured by Cronbach's alpha was .85 for this measure. Descriptive statistics for mothers' measures can be found in Table 3.

Results

The first level analysis was to determine whether any of the demographic variables were associated with the independent or dependent variables. Demographic variables that were tested for associations with dependant variables include: the target child's age, parents' ages, parents' educational levels, parents' incomes, child's race, and parental race. Mother's educational level was associated with several of the mothers' measures. Mothers with a higher educational level also reported more prestigious, $r(147) = .37, p < .01$, and less traditional, $r(147) = -.26, p < .01$, occupations. The prestige, $r(142) = .27, p < .01$, and traditionality, $r(143) = -.20, p < .05$, of fathers' occupations were also associated with mothers' level of education. Mothers with higher educational levels reported less conservative attitudes about children's gendered behaviors, $r(147) = -.24, p < .01$. However, mother's educational levels were not associated with any of the child outcome measures.

Father's educational levels were also associated with several measures. For example, fathers with higher levels of education had more prestigious, $r(143) = .55, p < .01$, and less traditional, $r(144) = -.17, p < .05$, occupations. Mothers whose husbands had higher levels of education reported spending less time in paid labor, $r(147) = -.23, p < .01$. In addition, mothers whose husbands had higher levels of education thought it more likely that their children would pursue nontraditional occupations, $r(147) = -.19, p < .05$.

In addition, in families with higher household incomes fathers' occupations were more prestigious, $r(141) = .28, p < .01$ and less traditional, $r(142) = -.25, p < .01$. However, household income was not associated with any child outcome variables. Because mothers' and fathers' educational levels were associated with several independent and dependent variables, they were included in the subsequent analyses to control for the effects of covariance. Intercorrelations between parents' measures can be found in Table 4;

Table 3 Parents' and children's variables by targets' gender

Variables	Boys (<i>N</i> =74)		Girls (<i>N</i> =76)		<i>p</i>	Possible Range
	Mean	SD	Mean	SD		
Children's Measures						
CPES traditional skills ^a	3.83	.52	4.14	.44	.001	1–5
CPES nontraditional skills ^a	4.04	.47	3.75	.57	.001	1–5
CPES traditional topic ^a	4.26	.48	4.39	.55	.11	1–5
CPES nontraditional topic ^a	4.00	.57	4.14	.58	.15	1–5
CPES traditional occupations ^a	3.84	.63	3.87	.56	.76	1–5
CPES nontraditional occupations ^a	3.55	.61	3.47	.67	.41	1–5
Modified SERLI ^b	92.88	22.81	103.50	24.23	.006	18–142
Mothers Measures						
Parenting Ideas Questionnaire ^c	44.67	13.00	41.63	9.71	.11	18–90
MPES traditional occupations ^d	2.75	.61	2.95	.57	.04	1–5
MPES nontraditional occupations ^d	2.14	.62	2.05	.49	.32	1–5
MPES traditional skills ^d	3.93	.50	4.11	.41	.02	1–5
MPES nontraditional skills ^d	3.89	.52	3.75	.43	.07	1–5
Who Does What? childcare ^e	3.44	.90	3.41	1.11	.93	1–9
Family Work Measures						
Mothers' weekly work hours	22.73	19.81	22.74	18.82	.86	0–100
Mothers' occupational prestige ^f	44.19	24.00	47.79	23.92	.35	10–90
Mothers' occupational traditionality ^g	75.62	22.18	70.82	24.26	.16	0–100
Mothers' income ^h	3.39	3.16	3.53	3.19	.80	1–9
Fathers' weekly work hours	47.98	12.39	47.31	13.09	.99	0–100
Fathers' occupational prestige ^f	61.48	19.68	58.23	20.60	.52	10–90
Fathers' occupational traditionality ^g	64.68	20.30	58.39	23.44	.15	0–100
Fathers' income ^h	7.60	2.21	7.40	1.80	.51	1–9

^a High scores indicate increased efficacy

^b High scores indicate more traditional aspirations

^c High scores indicate more traditional attitudes

^d High scores indicate more perceived efficacy

^e 1 = she does it all, 5 = divided evenly, 9 = he does it all

^f Prestige: = Duncan S.E.I score, high scores reflect more prestige

^g Traditionality = Percent workers of same gender

^h Income: 1=<10 K, 2=10–20 K, 3=20–30 K, 4=30–40 K, 5=40–50 K, 6=50–60 K, 7=60–70 K, 8=70–80 K, 9=>80 K

intercorrelations between children's measures can be found in Table 5.

Participating Children's Gender

Although there was no specific hypothesis regarding gender, several differences emerged in both children's and mothers' responses according to the child's gender. Girls reported more efficacy for traditional skills than did boys, $F(1, 149)=16.01$, $p<.001$. On the other hand, boys reported more efficacy for nontraditional skills, $F(1, 149)=10.90$, $p=.001$. Hence, both boys and girls reported increased efficacy for feminine skills. Girls also reported more traditional occupational aspirations than did boys, $F(1, 149)=7.63$, $p=.006$.

Parents' behaviors did not vary as a function of child gender. However, the gender of the participating child was associated with the traditionality of mother's attitudes. Mothers reported their daughters to be more skilled at traditional tasks than were their sons, $F(1, 148)=5.94$, $p=.02$, and more likely to hold traditional occupations than their sons, $F(1, 148)=4.18$, $p=.04$. Because child's gender was associated with many maternal and child reports, it was entered as a covariate in further analyses.

Hypothesis 1

It was hypothesized that parents with nontraditional behaviors and attitudes would have children who report more nontraditional occupational aspirations. Regression models were created to assess the predictability of nontraditional occupational aspirations as a function of parental behaviors and attitudes. In each model the variables, child's gender as well as mother's and father's educational level, were entered in the first step of the model.

To test the influence of parental behaviors on children's modified SERLI score, parents' scores on the "Who Does What" mother's and father's occupational traditionality and prestige, the hours parents spent at work, and their income from paid labor were entered as a block in the second step. The addition of parental behavior variables did not significantly improve the model. Contrary to expectations, parents' behaviors were not associated with the traditionality of children's occupational aspirations.

To test the predictability of children's modified SERLI score as a function of maternal attitudes, traditional and nontraditional scores on the two subscales of the MPES

Table 4 Intercorrelations in parental measures

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1. Childcare	1													
Mothers														
2. Prestige	.33**	1												
3. Traditionality	-.33**	-.72**	1											
4. Hours	.40**	.68**	-.51**	1										
5. Income	.41**	.62**	-.57**	.80**	1									
Fathers														
6. Prestige	-.14	.10	-.09	-.22*	-.07	1								
7. Traditionality	-.09	-.05	-.07	-.08	-.15	-.07	1							
8. Hours	-.36**	-.24**	.17*	-.13	-.24**	.13	-.04	1						
9. Income	-.21*	-.18*	.07	-.41**	-.23**	.48**	-.07	.35**	1					
MPES														
10. Traditional Occupations	.05	-.03	-.02	.05	.02	-.21	-.02	-.11	-.14	1				
11. Nontraditional Occupations	.27**	.17*	-.20*	.21*	.14	-.09	.00	-.17*	-.24**	.26**	1			
12. Traditional Skills	-.04	-.02	.01	-.07	-.10	-.03	-.10	.11	.06	.17*	-.10	1		
13. Nontraditional Skills	-.08	.12	.01	.04	-.02	.03	-.05	.09	-.07	-.06	.24**	.51**	1	
14. PIQ	-.22**	-.27**	.25**	-.24**	-.20*	-.09	.19*	.06	.11	.15	.20*	.00	.05	1

**p*<.05

***p*<.01

(occupations and skills) and their average PIQ scores were entered as a block in the second step. The addition of the maternal attitude variables significantly improved the model over the model including only demographic variables, $\Delta r^2=.14$, *p*<.01. Table 6 displays the important statistics. Mothers with higher traditional occupation MPES scores and lower nontraditional occupation MPES scores had children with higher modified SERLI scores. Thus mothers who felt it was likely that their child would hold a nontraditional occupation had children with preferences for nontraditional occupations.

Hypothesis 2

It was hypothesized that parents with nontraditional behaviors and attitudes would have children who report greater perceived efficacy for nontraditional tasks and nontraditional occupations, and school topics. Regression models were created to assess the predictability of efficacy in nontraditional tasks, occupations, and school topics as a function of parental behaviors, and attitudes. The variables, child’s gender, as well as mother’s and father’s educational levels, were entered in the first step of each model.

Table 5 Intercorrelations of children’s measures

	1.	2.	3.	4.	5.	6.	7.
1. CPES Traditional Occupations	1						
2. CPES Nontraditional Occupations	.31**	1					
3. CPES Traditional Skills	.50**	.36**	1				
4. CPES Nontraditional Skills	.48**	.49**	.54**	1			
5. CPES Traditional Topics	.26**	.15	.36**	.24**	1		
6. CPES Nontraditional Topics	.30**	.37**	.40**	.29**	.24**	1	
7. Modified SERLI	.20*	-.20*	.14	-.07		.24**	.00

**p*<.05

***p*<.01

Table 6 Predicting the traditionality of children's occupational aspirations from maternal attitudes

Hypothesis	Modified SERLI Rankings	
	<i>B</i>	<i>t</i>
Attitudes		
MPES Traditional Occupations	.30	3.49**
MPES Nontraditional Occupations	-.19	-2.10*
MPES Traditional Skills	.12	1.17
MPES Nontraditional Skills	-.15	-1.46
PIQ	-.01	<1
Model 1 ^a		
<i>R</i> ²	.06	
<i>F</i>	2.77*	
Model 2 ^b		
Change in <i>R</i> ²	.14	
<i>F</i> for Change	4.69**	

^a Model 1 includes: target child gender, and mothers' and fathers' education.

^b Model 2 includes: target child gender, mothers' and fathers' education, and maternal attitude items.

**p*<.05

***p*<.01

To test the influence on children's CPES scores of parental behaviors, parents' scores on the "Who Does What", mother's and father's occupational traditionality and prestige, the hours parents spend at work, and their income from paid labor were entered as a block. The addition of parental behavior variables did not significantly improve the models predicting CPES scores for occupations or school topics. When predicting CPES scores for skills, parental behavior variables did not significantly improve the full model. However, mothers' occupational prestige did significantly predict CPES scores for skills both nontraditional, $\beta=.33$, $p<.05$, and traditional, $\beta=.31$, $p<.05$. Mothers with more prestigious jobs had children who reported increased efficacy for both traditional and nontraditional skills than did children whose mothers held less prestigious jobs.

In order to assess the predictability of CPES as a function of maternal attitudes, MPES scores and PIQ scores were entered as a block. The addition of the maternal attitude variables significantly improved the demographic model predicting CPES scores for nontraditional occupations, $\Delta r^2=.09$, $p<.05$, and for nontraditional school topics, $\Delta r^2=.10$, $p<.05$. Mothers with more nontraditional attitudes had children who reported increased efficacy for nontraditional occupations and school topics compared to children of mothers with more traditional attitudes.

Although the addition of maternal attitudes did not improve the demographic model that predicted CPES scores for traditional school topics, MPES scores for traditional skills were significant predictors in the full model, $\beta=.30$, $p<.01$. Mothers who reported their children to be more skilled in traditional tasks had children with increased efficacy for traditional school topics.

Hypothesis 3

It was hypothesized that children's efficacy for nontraditional occupations, skills, and school topics will be associated with their reports of nontraditional occupational aspirations, such that children with nontraditional increased efficacy will also report more nontraditional occupational aspirations. Regression models were created to predict modified SERLI scores from their CPES scores. Child's gender, as well as mother's and father's educational levels, were entered in the first step of the model. In the second step, CPES scores for occupations, skills, and school topics were entered as a block.

The addition of the CPES scores improved the demographic model, $\Delta r^2=.14$, $p<.01$. See Table 7 for specific statistics. As expected, children with increased efficacy for traditional occupations and traditional school topics also reported preference for traditional occupations. On the other hand, children with increased efficacy for nontraditional occupations ranked nontraditional occupations higher.

Table 7 Predicting the traditionality of children's occupational aspirations from children's perceived efficacy

Hypothesis	Modified SERLI Rankings	
	<i>B</i>	<i>t</i>
Efficacy		
CPES Traditional Occupations	.29	3.09**
CPES Nontraditional Occupations	-.24	-2.60*
CPES Traditional Skills	-.01	<1
CPES Nontraditional Skills	-.09	<1
CPES Traditional Topics	.20	2.37*
CPES Nontraditional Topics	-.04	<1
Model 1 ^a		
<i>R</i> ²	.04	
<i>F</i>	3.08	
Model 2 ^b		
Change in <i>R</i> ²	.14	
<i>F</i> for Change	4.08**	

^a Model 1 includes: target child gender, and mothers' and fathers' education

^b Model 2 includes: target child gender, mothers' and fathers' education, and perceived efficacy items.

**p*<.05

***p*<.01

Hypothesis 4

It was hypothesized that the association between parental behaviors, particularly parental division of childcare labor, and the traditionality of children's occupational aspirations would be mediated by children's efficacy for nontraditional skills, occupations, and school topics. The model was tested using structural equation modeling (SEM; Joreskog and Sorbom 1993) taking full advantage of the multi-method, multi-reporter design of this study. Structural equation modeling allowed for the combination of several measures of each construct into a single latent variable (e.g. children's self-report of efficacy in occupations, skills, and school topics). The creation of latent variables by combining predictors into statistically and conceptually related units reduced the total number of analyses and allowed the examination of several constructs while minimizing parameters. The structural equation model also allowed an investigation of paths of influence from parental factors through children's beliefs about their efficacy to the traditionality of children's occupational aspirations.

By comparing model fit with increasing estimation of parameters, the models tested the prediction of the latent variable, children's occupational efficacy, from the latent variables, maternal behaviors and maternal attitudes. The model tested the prediction by the latent variable, occupational efficacy, of the observed variable, traditionality of children's occupational aspirations. Finally, the model tested the path from parental variables through children's variables to children's occupational aspirations.

The initial model tested the prediction of the observed variable, children's modified SERLI score, from the latent variable, children's efficacy. This model did not achieve a good fit, $\chi^2=620.8$, $df=255$, with a GFI of .78. The estimation of additional parameters seemed likely to improve this model, even with the loss of degrees of freedom. The hypothesized model, which added the prediction of parental behavior to children's efficacy, did not significantly improve on the original model. However, the addition of maternal attitudes predicting children's efficacy did significantly improve the hypothesized model, $\chi^2=590.1$, $p<.05$. The best-fitting model was one which associated maternal attitudes with children's efficacy.

A model was created to determine whether a prediction of children's efficacy from maternal attitudes alone was a significant improvement on the original model. This model did significantly improve the model with the least loss of degrees of freedom, $\chi^2=590.8$, $p<.05$. This best-fitting model indicates that mothers with more traditional attitudes, particularly pertaining to occupations and their children's skills, have children with more efficacy in traditional domains and more traditional occupational aspirations. This model is represented in Fig. 1.

Gender and SEM model for the Modified SERLI In order to test the equality of the factorial relationships within the latent variables between the scores for male and female participants, configural and factorial models were created for both the maternal latent variables and the children's variables. The maternal configural model restricted to equality the regression weights between the observed variables associated with the latent variables: maternal behaviors and maternal attitudes for each group, $\chi^2=197$, $df=102$. The factorial model did not restrict the parameters across genders and was not significantly different from the configural model, $\chi^2=208$, $df=114$. This suggests that although there may have been mean differences in mothers' responses depending on the gender of their child, the factorial models created fit equally well for participants of each gender.

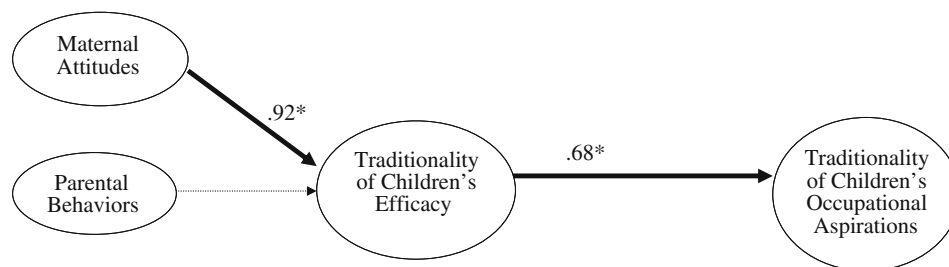
The same pattern emerged for the factorial and configural models constructed to test the factorial models associated with the children's latent variable, children's efficacy. The configural model, $\chi^2=97$, $df=82$, was not significantly different from the factorial model, $\chi^2=97$, $df=90$. There was no indication that these factorial models fit differently as a function of the participating children's gender.

In order to test the influence of the child's gender on the paths of influence, models were estimated that included the participating child's gender as an observed variable. Child's gender was added to the best-fitting model which included estimated parameters between children's efficacy to the modified SERLI, $\chi^2=569.3$, $df=274$. Estimating a parameter from gender to maternal behaviors did not improve the model. However, adding a parameter from gender to children's efficacy did significantly improve the model, $\chi^2=544.7$, $p<.05$. The model was also significantly improved with the addition of parameters from gender to maternal attitudes, $\chi^2=525.5$, $p<.05$, as well as to the Modified SERLI, $\chi^2=519.3$, $p<.05$. This indicates that gender of the child remains an important variable in the development of efficacy and occupational aspirations.

Discussion

The current study was designed to test the application of the social-cognitive theory of gender development to prediction of the traditionality of children's occupational aspirations. It was hypothesized that more nontraditional maternal variables, particularly the division of childcare, would be associated with children's nontraditional occupational aspirations. Parts of this hypothesis were supported. Mothers' behaviors and their reports of fathers' behaviors were not associated with children's occupational aspirations. However, mothers' attitudes were associated with children's

Fig. 1 Best-fitting model predicting children's occupational aspirations from maternal variables mediated by efficacy



Note: Dark arrows indicate the significant paths and dotted lines indicate tested but insignificant paths. Numbers represent standardized regression weights.

* $p < .05$

occupational aspirations. Mothers who thought it likely that their children would hold traditional occupations and not likely that they would hold nontraditional occupations had children with more traditional aspirations.

It was further hypothesized that mothers' nontraditional behaviors and attitudes would be associated with children's greater efficacy in nontraditional domains. This hypothesis received partial support as well. Again it was mothers' attitudes, not mothers' behaviors, that were predictive of children's efficacy. Mothers with more traditional attitudes had children with more efficacy in more traditional domains.

Thirdly, it was hypothesized that children with greater efficacy in nontraditional domains would also show more nontraditional occupational aspirations. This hypothesis was supported; children's efficacy was associated with the traditionality of their occupational aspirations. In short, children did select careers for which they felt more competent.

Finally, it was hypothesized that the relationship between nontraditional maternal behaviors and the traditionality of children's occupational aspirations would be mediated by children's efficacy for nontraditional skills, occupations, and topics. The results supported this view. It was, however, maternal attitudes that were associated with children's efficacy, not maternal behaviors. Mothers with more nontraditional attitudes had children with higher efficacy in nontraditional areas.

The social-cognitive theory of gender development was supported by the finding that maternal attitudes were predictive of children's efficacy. Parents' beliefs (Bussey and Bandura 1999) in their children's competence convey assurance to children that they are indeed capable of such tasks. There is evidence to suggest that parents' expectations of their children's success are associated with improved performances (Hill 2001). Thus, mothers' feelings about the likelihood of their children holding nontraditional jobs and their positive assessments of their children's nontraditional abilities may serve to convince children of their nontraditional abilities, thereby helping children build efficacy in nontraditional domains.

It is important to note that significant differences did emerge in efficacy as a function of gender. Girls felt more competent at traditional skills than did boys. Conversely, boys felt more efficacy for nontraditional skills than did girls. These results may be interpreted as an indication that boys have more flexible efficacy. However, both boys and girls reported increased efficacy for stereotypically feminine skills. Perhaps both boys and girls find stereotypically feminine tasks to be easier to accomplish than masculine tasks.

As anticipated by the social-cognitive theory, results showed that the association between maternal attitudes and children's occupational aspirations was mediated by children's efficacy. These results could have important implications for the social cognitive theory of gender development. This use of parental variables to explain individual differences in traditionality of children's occupational aspirations adds to the account of children's gender development. Children whose mothers think of their children's competencies as highly gendered may eliminate a number of nontraditional occupations from their slate of possibilities. It may be that children begin to make gendered choices about class selection and career preparation. It may also be that parents with traditional attitudes provide resources and support only for gender traditional occupations. The social-cognitive theory of gender development suggests that efficacy is built by observing how important models behave. These results suggest that maternal attitudes should be considered an important component of the social-cognitive theory of gender development, particularly its association with children's efficacy-building in middle childhood.

This model needs to be interpreted carefully. It is possible that children's attitudes and behaviors may influence mothers. For example, children's nontraditional behaviors and attitudes may have encouraged mothers to reconsider more traditional attitudes they previously held. Longitudinal data on mothers' attitudes and subsequent analysis of children's occupational aspirations would be needed to determine the direction of these effects.

It is also possible that a third unmeasured variable, such as children's true abilities, was influencing both parents and children. If children exhibit more skill in nontraditional or traditional tasks, then this might be reflected in both maternal assessments and children's efficacy. A study that included objective assessments of children's abilities at these tasks may help untangle these effects. Even a study with objective assessments, however, cannot control for the effects that maternal attitudes and efficacy may have had on these abilities.

However, an application of the social-cognitive model of gender development would suggest that mothers may have increased the likelihood that their children aspired to nontraditional occupations in two ways: by behaving in nontraditional ways and by holding nontraditional attitudes. In this sample, children seemed only to draw on mothers' attitudes and not behaviors when choosing occupations. Perhaps mothers' attitudes worked to influence children's aspirations by expressing confidence in their children. This expression of confidence built children's efficacy for, and thus their interest in and practice of, nontraditional skills.

The current study has several important limitations that need to be considered. The sample was restricted mainly to middle-class White families in which parents were married. This makes generalizing to a more representative population difficult. In addition, there were no data from fathers. Fathers' attitudes surely also help children build efficacy, and future studies should include information from fathers. Finally, some of the families were recruited using snowballing techniques; some of these families may be more similar and less representative than families recruited using other sampling techniques. Each of these limitations could have important implications for the interpretation of the results.

The results of this study add to the understanding of social-cognitive processes in gender development. Past research has found that children typically build efficacy for gender stereotyped tasks and activities because their important role models generally exemplify traditional choices. However, results of this study indicated that when children were exposed to more nontraditional attitudes, they reported increased efficacy for nontraditional tasks and felt more confident aspiring to nontraditional occupations. Therefore, children's efficacy is important to children's nontraditional as well as traditional behaviors and aspirations.

Importantly, in this middle childhood sample, this efficacy was primarily associated with mothers' assessments of their children's competence. Typically, social-cognitive processes are investigated by exploring the influence of the behaviors of children's important role models. Interestingly, the current study suggests that maternal nontraditional attitudes may have conveyed to children an assurance that they were indeed capable of

nontraditional tasks. Longitudinal studies are required to determine the direction of effects. When children feel confident in their ability to succeed in an occupation, they are more likely to aspire to that occupation. When children have efficacy in nontraditional domains, they may construct a vision of their future in which they are capable of a wider array of occupations. This study demonstrated that mothers' attitudes about children's competencies are important predictors of children's vision of their future self.

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References

- Alfieri, T., Ruble, D. N., & Higgins, E. T. (1996). Gender stereotypes during adolescence: Developmental changes and the transition to junior high school. *Developmental Psychology*, *32*, 1129–1137.
- Anderson, G., & Robson, K. (2006). Male adolescents' contributions to household labor as predictors of later-life participation in housework. *Journal of Men's Studies*, *14*, 1–12.
- Bandura, A., Barbaranelli, C., Caprara, G. V., & Pastorelli, C. (2001). Self-efficacy beliefs as shapers of children's aspirations and career trajectories. *Child Development*, *72*, 187–206.
- Beale, C. R. (1994). *Boys and girls: The development of gender roles*. New York: McGraw-Hill.
- Bem, S. L. (1981). Gender schema theory: A cognitive account of sex typing. *Psychological Review*, *88*, 354–364.
- Bhanot, R., & Jovanovic, J. (2005). Do parents' academic gender stereotypes influence whether they intrude on their children's homework? *Sex Roles*, *52*, 597–607.
- Bigler, R. S. (1997). Conceptual and methodological issues in the measurement of children's sex-typing. *Psychology of Women Quarterly*, *21*, 53–69.
- Bowes, J. M., & Goodnow, J. J. (1996). Work for home, school, or labor force: The nature and sources of changes in understanding. *Psychological Bulletin*, *119*, 300–321.
- Brown, M. T., Eisenberg, I. E., & Sawliowsky, S. S. (1997). Traditionality and the discriminating effect of expectations of occupational success and occupational values for women within the math-oriented fields. *Journal of Vocational Behavior*, *50*, 418–431.
- Bureau of Labor Statistics. (2001). 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>
- Bussey, K., & Bandura, A. (1999). Social cognitive theory of gender development and differentiation. *Psychological Review*, *106*, 676–713.
- Castellino, D. R., Lerner, J. V., Lerner, R. M., & von Eye, A. (1998). Maternal employment and education: Predictors of young adolescent career trajectories. *Applied Developmental Science*, *2*, 114–126.
- Cowan, C. P., & Cowan, P. A. (1990). Who does what? In J. Touliatos, B. F. Perlmutter, & M. A. Straus (Eds.), *Handbook of family measure techniques* (pp. 447–448). Beverly Hills: Sage.
- Crouter, A. C., Whiteman, S. D., McHale, S. M., & Osgood, D. W. (2007). Development of gender attitude traditionality across middle childhood and adolescence. *Child Development*, *78*, 911–926.

- Crowley, K., Callanan, M. A., Tenenbaum, H. R., & Allen, E. (2001). Parents explain more often to boys than to girls in shared scientific thinking. *Psychological Science, 12*, 258–262.
- Davey, F. H., & Stoppard, J. M. (1993). Some factors affecting the occupational expectations of female adolescents. *Journal of Vocational Behavior, 43*, 235–250.
- Eccles, J. S., Wigfield, A., Harold, R. D., & Blumenfeld, P. (1993). Age and gender differences in children's self- and task perceptions during elementary school. *Child Development, 64*, 830–847.
- Edelbrock, C., & Sugawara, A. I. (1978). Acquisition of sex-typed preferences in preschool-aged children. *Developmental Psychology, 14*, 614–623.
- Fagot, B. I., & Leinbach, M. D. (1995). Gender knowledge in egalitarian and traditional families. *Sex Roles, 32*, 513–526.
- Featherman, D. L., & Stevens, G. (1982). A revised socioeconomic index of occupational status: Application in analysis of sex differences in attainment. In R. Hauser, A. Haller, D. Mechanic, & T. Hauser (Eds.), *Social structure and behavior* (pp. 141–181). New York: Academic.
- Fredricks, J. A., & Eccles, J. S. (2002). Children's competence and value beliefs from childhood through adolescence: Growth trajectories in two male-sex domains. *Developmental Psychology, 38*, 519–533.
- Friedman, C. K., Leaper, C., & Bigler, R. S. (2007). Do mothers' gender-related attitudes or comments predict young children's gender beliefs? *Parenting: Science & Practice, 7*, 357–366.
- Fulcher, M., Sutfin, E. L., & Patterson, C. J. (2008). Children's future occupational aspirations: Associations with parental sexual orientation, attitudes, and division of labor. *Sex Roles, 58*, 330–341.
- Gervai, J., Turner, P. J., & Hinde, R. A. (1995). Gender-related behavior, attitudes, and personality in parents of young children in England and Hungary. *International Journal of Behavioural Development, 18*, 105–126.
- Goldberg, W. A., Prause, J., Lucas-Thompson, R., & Himsel, A. (2008). Maternal employment and children's achievement in context: A meta-analysis of four decades of research. *Psychological Bulletin, 134*, 77–108.
- Gottfredson, L. (1981). Circumscription and compromise: A developmental theory of occupational aspirations. *Journal of Counseling Psychology, 28*, 545–580.
- Helwig, A. A. (1998). Gender-role stereotyping: Testing theory with a longitudinal study. *Sex Roles, 38*, 403–424.
- Hill, N. E. (2001). Parenting and academic socialization as they relate to school readiness: The roles of ethnicity and family income. *Journal of Educational Psychology, 93*, 686–697.
- Hyde, J. S., & Linn, M. C. (2008). Gender similarities characterize math performance. *Science, 321*, 494–495.
- Jacobs, J. E., & Eccles, J. S. (1992). The impact of mother's gender-role stereotypic beliefs on mothers' and children's ability perceptions. *Journal of Personality and Social Psychology, 63*, 932–944.
- Joreskog, K. G., & Sorbom, D. (1993). *LISREAL 8: Structural equation modeling with the SIMPLIS command language*. Hillsdale: Scientific Software International, Inc.
- Katz, P. A., & Ksiansnak, K. R. (1994). Developmental aspects of gender-role flexibility and traditionality in middle childhood and adolescence. *Developmental Psychology, 30*, 272–282.
- Liben, L. S., & Bigler, R. S. (2002). The developmental course of gender differentiation. *Monographs of the Society for Research in Child Development, 66*(2, Serial No. 269).
- Lindberg, S. M., Hyde, J. S., & Hirsch, L. M. (2008). Gender and mother-child interactions during mathematics homework: The importance of individual differences. *Merrill-Palmer Quarterly, 54*, 232–255.
- Lummis, M., & Stevenson, H. W. (1990). Gender differences in beliefs and achievement: A cross-cultural study. *Developmental Psychology, 26*, 254–263.
- Maccoby, E. E. (1998). *The two sexes: Growing up apart, coming together*. Cambridge: Harvard University Press.
- Mannino, C. A., & Deutsch, F. M. (2007). Changing the division of household labor: A negotiated process between partners. *Sex Roles, 56*, 309–324.
- Martin, C. L. (1989). Children's use of gender-related information in making social judgments. *Developmental Psychology, 25*, 80–88.
- Martin, C. L., Ruble, D. N., & Szkrybalo, J. (2002). Cognitive theories of gender development. *Psychological Bulletin, 128*, 903–933.
- O'Brien, K. M., & Fassinger, R. E. (1993). A causal model of the career orientation and career choice of adolescent women. *Journal of Counseling Psychology, 40*, 456–469.
- Riggio, H. R., & Desrochers, S. J. (2006). Maternal employment relations with young adults' work and family expectations and self-efficacy. *The American Behavioral Scientist, 49*, 1328–1353.
- Solomon, S. E., Rothblum, E. D., & Balsam, K. F. (2005). Money, housework, sex, and conflict: Same-sex couples in civil unions, those not in civil unions, and heterosexual siblings. *Sex Roles, 52*, 561–575.
- Spelke, E. S. (2005). Sex differences in intrinsic aptitude for mathematics and science? A critical review. *The American Psychologist, 60*, 950–958.
- Stockard, J., & McGee, J. (1990). Children's occupational preferences: The influence of sex and the perceptions of occupational characteristics. *Journal of Vocational Behavior, 36*, 287–303.
- Tenenbaum, H. R., & Leaper, C. (2003). Parent-child conversations about science: The socializations of gender inequities? *Developmental Psychology, 39*, 34–47.
- Teig, S., & Susskind, J. E. (2008). Truck driver or nurse? The impact of gender roles and occupational status on children's occupational preferences. *Sex Roles, 58*, 848–863.
- Weisgram, E., Bigler, R., & Liben, L. (2010). Gender, values, and occupational interests among children, adolescents, and adults. *Child Development, 81*, 778–796.
- Weisner, T. S., Garnier, H., & Loucky, J. (1994). Domestic tasks, gender egalitarian values and children's gender typing in conventional and nonconventional families. *Sex Roles, 30*, 23–54.