

Achievement

Jacquelynne S. Eccles

University of Michigan

- I. Gender and Academic Achievement
 - II. Gender/Sex and Adult Occupational Choice and Success
 - III. Eccles' Expectancy-Value Model of Achievement
 - IV. Predicting Occupational Choice
 - V. Gender Roles and Gendered Occupational Choice
-

Glossary

- Causal attributions** Explanations people provide to themselves for their behavior, successes, and failures.
- Expectancy** How well a person expects to do on an upcoming task.
- Gender** The socially constructed characteristics of being male or female.
- Gendered** The extent to which a characteristic, outcome, occupational choice, or participation in various roles is more likely to be true of one gender or the other. For example, employment in information technology jobs is more common for males than for females.
- Gender-role stereotyping** The extent to which a role or activities is seen as more appropriate for one gender or the other.
- Identity and identity formation** Identity is the sense one has of who one is and what one should be doing with one's life. Identity formation is the process of deciding on, or committing oneself to, a specific identity.
- Self-concept** Beliefs about oneself and one's abilities and interests.
- Self-perceptions** Perceptions of oneself and one's successes and failures.

- Stereotypes** Generalized beliefs about particular groups of people such as males and females.
- Task values** The value one attaches to engaging (doing) particular tasks, activities, or roles.

ACHIEVEMENT is defined in *Webster's Collegiate Dictionary*, 10th ed., as "the act of achieving, a result gained by effort, and the quality and quantity of a students' work." Psychologists have typically used this term to refer to school grades, extent of education, level and type of occupation, and success in terms of income, status of job, awards, promotions, and so on. This article focuses on the ways in which gender (one's status as a female or male) is related to these various measures of achievement.

The relation of gender/sex to achievement is a massive and complex topic. Even defining what is included under the topic of achievement is complex. This article limits the discussion to school-related achievement during the childhood and adolescent years and educational and vocational achievement during the adult years, focusing on the gendered patterns associated with these objective indicators of achievement. But even within this limited scope, the relation of gender/sex to achievement is complicated. The patterns of sex differences are not consistent across ages and there is always greater variation

within sex than across sex. To make sense of this heterogeneity, this article presents the findings in relation to the Eccles Expectancy-Value Model of Achievement-Related Choices with a specific focus on the ways in which gender as a social system influences individual's self-perceptions, values, and experiences.

This article focuses on studies of European Americans because they are the most studied population. Studies on gender differences in achievement in other populations are just becoming available, and even these focus on only a limited range of groups. In addition, none of the existing studies on other populations have the range of constructs presented in this entry, making comparisons of findings across groups impossible at this point in time. Consequently, rather than leaving the impression that the findings presented are universal, this article will be explicit about their limitations. More work is desperately needed to determine the generalizability of these patterns to other cultural and ethnic groups.

I. Gender and Academic Achievement

Over the past 10 years, there have been extensive discussions in both the media and more academic publication outlets regarding gender differences in achievement. Much of this discussion has focused on how girls are being "short changed" by the school systems. Most recently, the American Association of University Women (AAUW) published two reports on this topic in 1990 and 1993. This perspective on gender inequity in secondary schools has been quite consistent with larger concerns being raised about the negative impact of adolescence on young women's development. For example, in recent reports, the AAUW reported marked declines in girls' self-confidence during the early adolescent years. Similarly, Carol Gilligan has reported that girls lose confidence in their ability to express their needs and opinions as they move into the early adolescent years—she refers to this process as losing one's voice.

However, just 10 years earlier, in the 1960s, the big gender equity concern focused on how schools were "short changing" boys. Concerns were raised about how the "feminized culture" in most schools fits very poorly with the behavioral styles of boys, leading many boys to become alienated and then to underachieve. The contrast between these two pictures of gender inequities in school was recently highlighted by Sommers in her article in the May 2000 issue of the *Atlantic Monthly*.

So what is the truth? Like most such situations, the truth is complex. On the one hand, female and male youth (both children and adolescents), on average, fare differently in American public schools in terms of both the ways in which they are treated and their actual performance. On the other hand, it is not the case that one sex is consistently treated less equitably than the other: female and male youth appear to be differentially advantaged and disadvantaged on various indicators of treatment and performance. In terms of performance, girls and women earn better grades, as well as graduate from high school, attend and graduate from college, and earn master's degrees at higher rates than boys and men. In contrast, men and boys do slightly better than girls and women on standardized tests, particularly in math and science, and obtain more advanced degrees than women in many areas of study, particularly in math-related, computer-related, engineering, and physical science fields. Men are also more likely than women to obtain advanced graduate degrees in all fields except the social sciences. These patterns are most clear in European American samples. They are less extreme in other ethnic groups within the United States.

In terms of treatment, in most ethnic groups in the United States, male youth are more likely than female youth to be assigned to all types of special/remedial education programs and to either be expelled from or forced to drop out of school before high school graduation. Low-achieving boys (in both White and Black samples) receive more negative disciplinary interactions from their teachers than any other group of students—disproportionately more than their "fair" share. In addition, in most studies of academic underachievers, male youth outnumber female youth 2 to 1. In contrast, high-achieving male youth (particularly White high-achieving male youth) receive more favorable interactions with their teachers than any other group of students and are more likely to be encouraged by their teachers to take difficult courses, to apply to top colleges, and to aspire to challenging careers.

More consistent sex differences emerge for college major and for enrollment in particular vocational educational programs. Here the story is one of gender-role stereotyping. Both White women and men are most likely to specialize or major in content areas that are consistent with their gender role—that is, in content areas that are most heavily populated by members of their own sex. This gendered pattern is especially marked in vocational education pro-

grams for non-college-bound youth; for physical science, engineering, and computer science majors; and for those seeking professional degrees in nursing, social welfare, and teaching.

II. Gender/Sex and Adult Occupational Choice and Success

Gendered patterns of achievement behaviors and choices among whites are still very clear in the arena of adult vocations. This is especially true in the blue- and pink-collar labor markets where technical and unionized skilled labor jobs are occupied primarily by men and pink-collar and other service-related skilled jobs are occupied primarily by women. In the white-collar and professional labor markets, men and women of all ethnic groups are much more evenly distributed across various job types. The entry of women into medicine, law, and business over the last 20 to 30 years has gone a long way toward equalizing the proportion of women and men in these fields. Although the proportion of jobs held by women (versus men) has increased some in the fields of chemistry, physics, engineering and computer science, women are still underrepresented in these fields, especially physics and engineering. Finally, the proportion of nurses, social workers, and teachers who are men has remained low.

These data suggest that, as was true for college majors, gender is still a major factor in the occupational choices of many men and women—with women of all ethnic groups seeking occupations requiring a college degree being most willing to cross gender-stereotyped barriers. Despite recent efforts to increase the participation of women in advanced educational training and high-status professional fields and in such male-dominated recreational activities as athletics, women and men of most ethnic groups studied in the United States are still concentrated in different educational programs, occupational fields, and recreational activities. Most important for this article, women (and people of color more generally) are still underrepresented in many high-status occupational fields—particularly those associated with physical science, engineering, and applied mathematics (the one exception being the high rates of participation of both Asian American men and women in the sciences and engineering). In addition, sex differences remain evident in such indicators of occupational success as salary, advancement up the status hierarchy, and awards for outstanding achievements in virtually all fields and for

most ethnic groups in the United States. Although the extent of the sex discrepancy on these indicators has declined to some extent over the past 30 years, men still fare better than woman on most of these dimensions of achievement.

Why? Many factors, ranging from outright discrimination to the processes associated with gender-role socialization, undoubtedly contribute to these gendered patterns of educational and occupational choices and of the level of occupational success. Discussing all possible mediating variables is beyond the scope of a single encyclopedia entry. Instead, this article focuses on a set of social and psychological factors related to the Eccles Expectancy-Value Model of Achievement-Related Choices and Performance (see Figure 1). [See ACADEMIC ASPIRATIONS AND DEGREE ATTAINMENT OF WOMEN; CAREER ACHIEVEMENT.]

III. Eccles' Expectancy-Value Model of Achievement

Over the past 20 years, Eccles and her colleagues have studied the motivational and social factors influencing such achievement goals and behaviors as educational and career choices, recreational activity selection, persistence on difficult tasks, and the allocation of effort across various achievement-related activities. Given the striking sex differences in educational, vocational, and avocational choices, they have been particularly interested in the motivational factors underlying boys'/men's and girls'/women's achievement-related decisions. Drawing on the theoretical and empirical work associated with decision making, achievement theory, and attribution theory, they elaborated a comprehensive theoretical model of achievement-related choices that could be used to guide our subsequent research efforts. This model, depicted in Figure 1, links achievement-related choices directly to two sets of beliefs: the individual's expectations for success and the importance or value the individual attaches to the various options perceived by the individual as available. The model also specifies the relation of these beliefs to cultural norms, experiences, aptitudes, and to those personal beliefs and attitudes that are commonly assumed to be associated with achievement-related activities by researchers in this field. In particular, the model links achievement-related beliefs, outcomes, and goals to interpretative systems like causal attributions, to the input of socializers (primarily parents, teachers, and peers), to gender-role beliefs, to self-

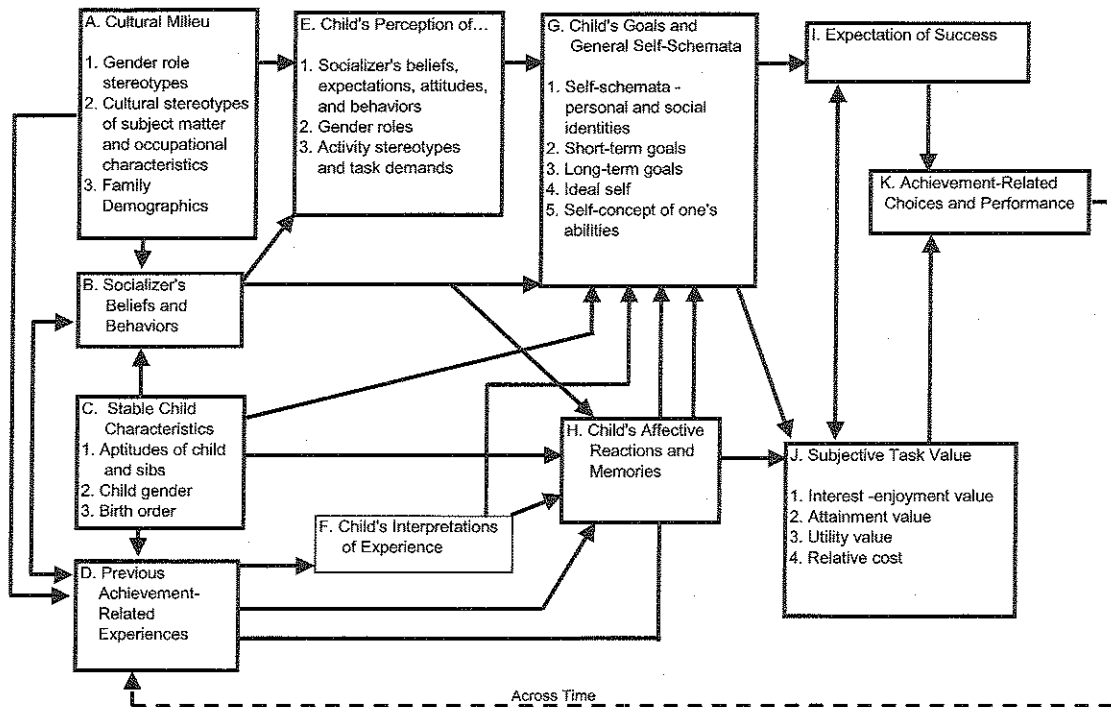


Figure 1. Eccles' expectancy model of task choice.

perceptions and self-concept, and to one's perceptions of the task itself.

For example, consider course enrollment decisions. The model predicts that people will be most likely to enroll in courses that they think they can master and that have high task value for them. Expectations for success (and a sense of domain-specific personal efficacy) depend on the confidence the individual has in his or her intellectual abilities and on the individual's estimations of the difficulty of the course. These beliefs have been shaped over time by the individual's experiences with the subject matter and by the individual's subjective interpretation of those experiences (e.g., does the person think that her or his successes are a consequence of high ability or lots of hard work?). Likewise, Eccles and colleagues assume that the value of a particular course to the individual is influenced by several factors. For example, does the person enjoy doing the subject material? Is the course required? Is the course seen as instrumental in meeting one of the individual's long- or short-range goals? Have the individual's parents or counselors insisted that the course be taken or, conversely, have other people tried to discourage the in-

dividual from taking the course? Is the person afraid of the material to be covered in the course? The fact that women and men may make different choices is likely to reflect sex differences in a wide range of predictors, mediated primarily by differences in self-perceptions, values, and goals rather than motivational strength or drive.

Eccles and her colleagues have spent the past 20 years testing the hypotheses implicit in this model on European American samples. They have just begun testing the hypotheses on African American samples. By and large these studies support most of the key components of this model for both populations. The next section reviews some of this support, focusing on the power of the two most proximal predictors of achievement-related choices—expectations for success and subjective task value. However, since the studies of African Americans is in the preliminary stage, the results reported focus on findings from the European American samples. Thus far, however, we have found no evidence that the model is any less appropriate for African Americans. The final section examines more specifically how gender roles relate to the model in Figure 1.

A. COMPETENCE AND EXPECTANCY-RELATED SELF-PERCEPTIONS

In the past 20 years, there has been considerable public attention focused on the issue of girls' declining confidence in their academic abilities. In addition, researchers and policy makers interested in young women's educational and occupational choices have stressed the potential role that such declining confidences might play in undermining young women's educational and vocational aspirations, particularly in the technical fields related to math and physical science. For example, these researchers suggest that young women may drop out of math and physical science because they lose confidence in their math abilities as they move into and through adolescence—resulting in women being less likely to pursue these types of careers than men. Similarly, these researchers suggest that sex differences in confidence in one's abilities in other areas underlie sex differences across the board in educational and occupational choices. Equally important, Eccles and her colleagues have suggested that the individual differences in women's educational and occupational choices are also related to variations among women in their confidence in their abilities in different domains.

But do girls/women and boys/men differ on measures commonly linked to expectations for success, particularly with regard to their academic subjects and various future occupations? Are girls/women more confident of their abilities in female gender-role stereotyped domains? In most studies, the answer is yes. For example, both Terman and Subotnik found that gifted White girls were more likely to underestimate their intellectual skills and their relative class standing than gifted White boys—who were more likely to overestimate theirs. Sex differences in the competence beliefs of more typical samples are also often reported, particularly in gender-role-stereotyped domains and on novel tasks. Often these differences favor boys and men. For example, in the studies of Eccles, Wigfield, and their colleagues (as well as in related work by John Nicholls and Virginia Crandall), high-achieving White female students were more likely than their White male peers to underestimate both their ability level and their class standing; in contrast, the White male students were more likely than their White female peers to overestimate their likely performance. When asked about specific domains, the sex differences depended on the gender-role stereotyping of the activity. For

example, in the work by Eccles and her colleagues, White boys and young men had higher competence beliefs than their female peers for math and sports, even after all relevant skill-level differences were controlled; in contrast, White girls had higher competence beliefs than White boys for reading, instrumental music, and social skills; and the magnitude of these differences increased following puberty. Furthermore, in these studies, the young women, on average, had greater confidence in their abilities in reading and social skills than in math, physical science, and athletics and, when averaged across math and English, the male students had lower confidence than their female peers in their academic abilities in general. By and large, these sex differences were also evident in the preliminary studies of African American students. This could be one explanation for the fact that the young men in these samples, as in the nation more generally, are more likely to drop out of high school than the young women.

Finally, the White female and male students in the Eccles and Wigfield studies rank-ordered these skill areas quite differently: the girls rated themselves as most competent in English and social activities and as least competent in sports; the boys rated themselves as most competent, by a substantial margin, in sports, followed by math, and then social activities; the boys rated themselves as least competent in English. Such within-sex, rank order comparisons are critically important for understanding differences in life choices. In the followup studies of these same youth, Jozefowicz, Barber, and Eccles were able to predict within-sex differences in the young women's and men's occupational goals with the pattern of their confidences across subject domains. The youth who wanted to go into occupations requiring a lot of writing, for example, had higher confidence in their artistic and writing abilities than in their math and science abilities. In contrast, the youth who wanted to go into science and advanced health field-related fields (e.g., becoming a physician) had higher confidence in their math and science abilities than in their artist and social abilities.

One of the most interesting findings from existing studies of academic self-confidence is that the sex differences in self-perceptions are usually much larger than one would expect given objective measures of actual performance and competence. First, consider mathematics; with the exception of performance on the most anxiety-provoking standardized test, girls do as well as boys on all measures of math competence

throughout primary, secondary, and tertiary education. Furthermore, the few sex differences that do exist have been decreasing in magnitude over the past 20 years and do not appear with great regularity until late in the primary school years. Similarly, the sex difference in perceived sports competence is much larger (accounting for 9% of the variance in one of our studies) than the sex difference in our measures of actual sport-related skills (which accounted for between 1 and 3% of the variance on these indicators). [See SPORT AND ATHLETICS.]

So why do female students rate their math and sports competence so much lower than their male peers and so much lower than they rate their English ability and social skills? Some theorists have suggested that female and male students interpret variations in their performance in various academic subjects and leisure activities in a gender-role stereotyped manner. For example, girls and women might be more likely to attribute their math and sports successes to hard work and effort and their failures in these domains to lack of ability than do boys and men; in contrast boys and men might be more likely than girls and women to attribute their successes to natural talent. Similarly, girls and women might be more likely to attribute their English and social successes to natural ability. Such differences in causal attributions would lead to both the between- and within-gender differences in confidence levels reported earlier.

The evidence for these differences in causal attributions is mixed. Some researchers find that White girls and women are less likely than White boys and men to attribute success to ability and more likely to attribute failure to lack of ability. Others have found that this pattern depends on the kind of task used: occurring more with unfamiliar tasks or stereotypically masculine achievement task. The most consistent difference occurs for attributions of success to ability versus effort: White girls and women are less likely than White boys and men to stress the relevance of their own ability as a cause of their successes. Instead, White girls and women tend to rate effort and hard work as a more important determinant of their success than ability. Interestingly, so do their parents. There is nothing inherently wrong with attributing one's successes to hard work. In fact, Stevenson and his colleagues stress that this attributional pattern is a major advantage that Japanese students have over U.S. students. Nonetheless, it appears that within the context of the United States of America, this attributional pattern undermines girls'

and women's confidence in their ability to master increasingly more difficult material—perhaps leading young women to stop taking mathematics and physical science courses prematurely.

Gender-role stereotyping has also been suggested as a cause of the sex differences in academic self-concepts. The extent to which adolescents endorse the White American cultural stereotypes regarding which sex is likely to be most talented in each domain predicts the extent to which White girls/women and boys/men distort their ability self-concepts and expectations in the gender-stereotypic direction. Spencer and Steele suggested a related mechanism linking culturally based gendered stereotypes to competence: stereotype vulnerability. They hypothesized that members of social groups (like women) stereotyped as being less competent in a particular subject area (like math) will become anxious when asked to do difficult problems because they are afraid the stereotype may be true of them. This vulnerability is also likely to increase girls' and women's vulnerability to failure feedback on male-stereotyped tasks, leading them to lower their expectations and their confidence in their ability to succeed for these types of tasks. To test these hypotheses, Spencer and Steele gave college students a difficult math test under two conditions: after being told that men typically do better on this test or that men and women typically do about the same. The women scored lower than the men only in the first condition. Furthermore, the manipulation's effect was mediated by variations across condition in reported anxiety. Apparently, knowing that one is taking a test on which men typically do better than women increases young women's anxiety, which, in turn, undermines their performance. This study also suggests that changing this dynamic is relatively easy if one can change the women's perception of the sex-typing of the test.

In sum, when either sex differences or within-sex individual differences emerge on competence-related measures for academic subjects and other important skill areas, they are consistent with the gender-role stereotypes held by the group being studied (most often European Americans). These differences have also been found to be important mediators of both sex differences and within-sex individual differences in various types of achievement-related behaviors and choices. Such gendered patterns are theoretically important because they point to the power of gender-role socialization processes as key to understanding both girls' and boys' confidence in their various abilities. To the extent that gender-role so-

cialization is key, it is important to study how and why young women differ in the extent to which they are either exposed to these socialization pressures or resist them when they are so exposed.

But even more important, all of the relevant studies have documented extensive variation within each sex. Both girls/women and boys/men vary a great deal among themselves in their intellectual confidence for various academic domains. They also vary considerably in their test anxiety, their attributional styles, and their locus of control. Such variations within each sex are a major set of predictors of variation among both young men and young women in their educational and occupational choices. White adolescent males and females who aspire to careers in math and science and who take advanced courses in math and physical science have greater confidence in their math and science abilities than those that do not. They also have just as much, if not more, confidence in their math and science abilities as in their English abilities.

B. OCCUPATIONAL ABILITY SELF-CONCEPTS

Eccles and her colleagues have extended the work on academic and athletic self-concepts by looking at White and Black adolescents' competence ratings for skills more directly linked to adult occupational choice. As their samples moved into and through high school, they asked the students a series of questions directly related to future job choices. First, they asked them to rate how good they were compared to other students at each of several job-related skills. Second, they asked the students to rate the probability that they would succeed at each of a series of standard careers. On the one hand, the results are quite gender-role stereotyped: the young women (both Black and White) were less confident of success than were their male peers in science-related professions and in male-typed skilled labor occupations. In contrast, the young men (both Black and White) were less confident of their success than were their female peers in health-related professions and female-typed skilled labor occupations. On the other hand, there were no sex differences in these seniors' ratings of either their confidence of success in business and law or their leadership, independence, intellectual, and computer skills. Furthermore, although the young men were more confident of success in physical science and engineering fields, the young women were more confident than their male peers of success in health-related fields that involve extensive scientific training.

The within-sex patterns were equally interesting. On the average these young women saw themselves as quite competent in traditionally female-typed jobs and skills related to human service, particularly in comparison to their confidence for science-related jobs and mechanical skills. Interestingly, these young women also saw themselves as quite competent in terms of their leadership and intellectual skills and their independence.

C. GENDER AND ACHIEVEMENT VALUES

Do women and men make gender-role stereotypic life choices because they have gender-role stereotypic values? In most studies, the answer is yes for the populations most studied (European Americans and African Americans). Gender-role stereotypic patterns in adolescents' valuing of sports, social activities, and English have emerged consistently. Interestingly, the gendered pattern associated with the value of math does not emerge until high school. Finally, the gendered pattern of valuing math, physics, and computer skills have emerged as the key predictors of both sex differences among White Americans and individual differences among White female students in adolescents' plans to enter math-related scientific and engineering fields.

It is important to note, however, that these gendered patterns have decreased over time for women of most ethnic groups in the United States. Young women today are more likely to aspire to the male-stereotyped fields of medicine, law, and business than their mothers and grandmothers. Although the numbers are not nearly as large, young women today are also much more likely to seek out occupations related to engineering and physical science. Finally, young women today are also much more involved in athletic activities than their mothers and grandmothers.

Because of their interest in understanding career choice, Eccles and her colleagues asked their Black and White senior high school participants to rate how important each of a series of job-related and life-related values and a series of job characteristics were to them. As was true for the job-related skills, they found evidence of both gender-role stereotypic differences and of gender-role transcendence. In keeping with traditional stereotypes, the young women more than their male peers, rated family and friends as important to them; the young women were also more likely than the male peers to want jobs that were people oriented. In contrast, but also consistent with traditional stereotypes, the young men placed a higher

value on high-risk and competitive activities and wealth; they also were more interested in jobs that allowed for work with machinery, math, and computers. However, counter to traditional stereotypes, there were no sex differences in careerism (focus on career as a critical part of one's identity), and the women and men were equally likely to want jobs that allowed flexibility to meet family obligations, that entailed prestige and responsibility, and that provided opportunities for creative and intellectual work.

Evidence of both gender-role typing and gender-role transcendence was also evident in the within-sex patterns. Although these young women still, on the average, attached most importance to having a job with sufficient flexibility to meet family obligations and with the opportunity to help people, they also placed great importance on the role of their career for their personal identity (careerism) and on the importance of both prestige/responsibility and creativity as key components of their future occupations.

IV. *Predicting Occupational Choice*

Eccles and her colleagues next used the values and ability self-concepts to predict these young men's and women's occupational aspirations. As expected, ability self-concepts were key predictors of both between- and within-sex differences in career aspirations. Also as predicted by the Eccles Expectancy-Value Model of Achievement-Related Choices, the lifestyle and valued job characteristics were significant predictors of career aspirations. The within-sex analyses were especially interesting. Values did an excellent job of discriminating between these young women's occupational plans. Perhaps most interestingly, it was the value placed on helping other people that predicted which women aspired to advanced level health-related professions (e.g., a physician) and which women aspired to Ph.D.-level science careers. Both of these groups of women had done very well in their math and science courses and had very high confidence in their math and science abilities. In contrast, they differed dramatically in the value they placed on helping others: the women aspiring to the health-related fields placed more importance on this dimension than on any other value dimension. In contrast, the women aspiring to Ph.D.-level physical science and engineering careers placed less importance on this dimension than on any other dimension, particularly the value of being able to work with math and computers.

Evidence from other investigators also provides good support for a key role of perceived task value in achievement-related decisions. For example, Dunteman, Wisenbaker, and Taylor studied the link between personal values and selection of one's college major using a longitudinal, correlational design. In their 1978 report to the National Science Foundation, they identified two sets of values that both predicted students' subsequent choice of major and differentiated the sexes: the first set (labeled thing-orientation) reflected an interest in manipulating objects and understanding the physical world; the second set (labeled person-orientation) reflected an interest in understanding human social interaction and a concern with helping people. Students who scored high on thing-orientation and low on person-orientation were more likely than other students to select a math or physical science major. Not surprisingly, the women in their study were more likely than their male peers to be person oriented and to major in something other than math or physical science; in contrast, the men were more likely than their female peers to both be thing oriented and to major in math and physical science.

In summary, gendered patterns in the valuing of different academic subject areas and activities still exist. Although it is encouraging that girls value math during elementary school, the fact that young White women have less positive views of both their math ability and the value of math is problematic because these differences lead young White women to be less likely than young White men to take optional advanced-level math and physical science courses. It is likely that similar sex differences exist in other ethnic groups.

V. *Gender Roles and Gendered Occupational Choice*

This analysis has a number of important implications for understanding how gender leads to differences in educational and occupational achievement. Because socialization shapes individuals' self-perceptions, identity formation, goals, and values, men and women should acquire different self-concepts, different patterns of expectations for success across various activities, and different values and goals through the processes associated with gender-role socialization. Through the potential impact of the socialization practices linked to various gender roles on both ex-

pectations for success and subjective task value, these socialization experiences can affect educational and vocational choices in several ways.

First, because gender-role socialization-related experiences influence identity formation, such experiences could lead the two sexes to have different hierarchies of core personal values. Several studies have documented such differences for White populations. More work is needed to determine the generalizability of this pattern to other ethnic groups. What little evidence there is suggests that these differences are evident in most other groups.

Gender-role socialization could also lead the two sexes to place different values on various long-range goals and adult activities. The essence of gender roles is that they define what an individual should do with her or his life in order to be successful as a man or woman. If success in various gender-related roles is a central component of an individual's identity, then activities that fulfill these roles should have higher subjective task value than tasks linked to the opposite gender's stereotypic roles. Gender roles mandate different primary activities for women and men. Traditionally, in the gendered roles of wife and mother (within at least European American, Asian American, and Hispanic American cultures), women are supposed to support their husbands' careers and raise their children; men are supposed to compete successfully in the occupational world in order to confirm their worth as human beings and to support their families. To the extent that a woman has internalized this traditional definition of these female roles, she should rank-order the importance of the associated adult activities differently than her male peers. In particular, she should rate the parenting and the spouse-support roles as more important than a professional career role and she should be more likely than her male peers to resolve life's decisions in favor of these family roles. The men and women in the Eccles study described earlier did exactly this: the women indicated they would be more likely to make sacrifices in their professional life for the needs of their family than did the men. They were also more likely to mention both family and career concerns in qualitative descriptions of what they thought a day in their lives would be like when they were 25. Similar results were reported by Sears and Kerr in their studies of the career-related decisions of gifted women—many of whom ended up choosing to limit their career development after they had their families in order to fulfill their image of their role as wife and mother. Each of these studies, however, had primar-

ily European American samples. Work is needed to see if these patterns are also evident in other ethnic groups.

Similarly, gender roles can influence the definition one has of successful performance of those activities considered to be central to one's identity. For example, women and men may differ in their understanding of the requirements for successful task participation and completion. If so, then men and women should approach and structure their task involvement differently even when they appear on the surface to be selecting a similar task. The parenting role provides an excellent example of this process. If men define success in the parenting role as an extension of their occupational and bread-winner roles, then they may respond to parenthood with increased commitment to their career goals and with emphasis on encouraging a competitive drive in their children. In contrast, if women define success in the parenting role as high levels of involvement in their children's lives, they may respond to parenthood with decreased commitment to their career goals. Furthermore, if staying home with her children and being psychologically available to them most of the time are central components of a woman's gender-role schema, then involvement in a demanding, high-level career should have reduced subjective value precisely because it conflicts with a more central component of her identity. Evidence from studies with White American samples confirms these predictions.

Women and men could also differ in the density of their goals and values. There is some evidence suggesting that White men, at least, are more likely than White women to exhibit a single-minded devotion to one particular goal, especially their occupational goal. In contrast, White women seem more likely than White men to be involved in, and to value, competence in several activities simultaneously. Becoming a leader in any field requires sustained and quite focused engagement with that field. Such intense engagement is easier if an individual is single-mindedly devoted to one goal.

One other pattern characterizes the responses of the White women and men in several studies: White men usually rate family and occupation as of equal importance while the White women rate family as more important than occupation. Several researchers have suggested that the perceived conflict of traditional female values and roles with the demands of male-typed achievement activities is very salient to women. How this conflict affects women's lives is a complex issue. Some studies emphasize its negative

consequence. For example, recent interviews with the Terman women suggest they now have regrets about the sacrifices they made in their professional development for their family's needs. Similarly studies with predominantly White children and adolescents suggest that girls and young women feel caught between their need to be "nice" and their need to achieve.

Several investigators have pointed out that this conflict results, in part, from the fact that women have multiple roles and multiple goals. These multiple roles, however, provide richness to women's lives as well as stress. There is growing evidence (from studies of several different ethnic groups) that women with multiple roles are healthier both mentally and physically than women with few roles and than men in general.

Finally, as predicted in the model in Figure 1, gender roles could affect the subjective value of various educational and vocational options indirectly through their influence on the behaviors and attitudes of the people individuals are exposed to as they grow up. If, for example, parents, friends, teachers, or counselors provide boys and girls with different feedback on their performance in various school subjects, with different advice regarding the importance of various school subjects, with different information regarding the importance of preparing to support oneself and one's family, with different information regarding the occupational opportunities that the student should be considering, and with different opportunities to develop various skills, then it is likely that girls and boys will develop different self-perceptions, different patterns of expectations for success, and different estimates of the value of various educational and vocational options. Similarly, if the men and women around children engage in different educational and vocational activities, then girls and boys should develop different ideas regarding those activities for which they are best suited. Finally, if one's peers reinforce traditional gender-role behaviors and values, girls and boys will likely engage in different activities as they are growing up and thus are likely to acquire different competencies, different patterns of expectations or success, and different values and long-term goals.

In summary, it is likely that gender roles have their largest impact on life trajectories through their impact on both personal and social identities. As girls and boys grow up, some learn to value those aspects of life and personality that are consistent with their various gender-related roles. They learn to see them-

selves in terms of these gender roles. Such a socialization process affects their expectations and values, which, in turn, affect their life choices. Exactly why some women and men place great importance on such roles and others do not has been the subject of extensive theorizing and empirical work. Developmental psychologists link it to gendered socialization pressures from parents, peers, and the larger social context and to children's early need to form stable social categories and personal identities and then to become competent members of the groups they have identified with. To the extent that the child grows up in a gendered world with strong pressures toward conformity to that world, the child will come to attach great importance to behaving in accord with the norms of this gendered world. In contrast, to the extent that the child grows up in a world that both encourages and reinforces independence, flexibility, and individual choice and provides extensive models of gender-role transcendence, she or he is likely to place much less importance on conformity to gender-role stereotypic behavior norms. By and large research evidence supports these predictions for European American populations. More work is needed to determine the extent to which this is also true in other ethnic groups. What evidence there is suggests two conclusions: (1) the predicted relations are likely to be true in most ethnic groups, and (2) the exact extent and specific nature of both gender-role stereotyping and gender-role socialization will differ across ethnic groups—leading to ethnic group differences in the magnitude of sex differences on all of the constructs discussed in the article.

SUGGESTED READING

- American Association of University Women. (1990). *Shortchanging Girls, Shortchanging America: Full Data Report*. American Association of University Women, Washington, D.C.
- Baruch, G., Barnett, R., and Rivers, C. (1983). *Life Prints*. McGraw-Hill, New York.
- Bell, L. A. (1989). Something's wrong here and it's not me: Challenging the dilemmas that block girls' success. *Journal for the Education of the Gifted* 12, 118-130.
- Betz, N. E., and Fitzgerald, L. F. (1987). *The Career Psychology of Women*. Academic Press, Orlando, FL.
- Crosby, F. J. (1991). *Juggling*. The Free Press, New York.
- Eccles, J. S. (1994). Understanding women's educational and occupational choices: Applying the Eccles *et al.* model of achievement-related choices. *Psychology of Women Quarterly* 18, 585-609.
- Eccles, J. S., Barber, B., and Jozekowicz, D. (1998). Linking gender to educational, occupational, and recreational choices: Applying the Eccles *et al.* model of achievement-related choices.

- In *The Many Faces of Gender: The Multidimensional Model of Janet Taylor Spence*. (W. B. Swann, Jr., J. H. Langlois, and L. A. Gilbert, eds.) APA Press, Washington, D.C.
- Eccles, J. S., and Harold, R. D. (1992). Gender differences in educational and occupational patterns among the gifted. In *Talent Development: Proceedings from the 1991 Henry B. and Jocelyn Wallace National Research Symposium on Talent Development*. N. Colangelo, S. G. Assouline, and D. L. Ambrosion, eds.). Trillium Press, Unionville, NY.
- Eccles, J. S., Jacobs, J., Harold, R., Yoon, K. S., Arbreton, A., and Freedman-Doan, C. (1993). Parents and gender role socialization. In *Claremont Symposium on Applied Social Psychology, 1992: Gender and Social Psychology*. (S. Oskamp and M. Costanzo, eds.), pp. 59-84. Sage, Thousand Oaks, CA.
- Farmer, H. S. (1997). Women's motivation related to master, career salience, and career aspiration: A multivariate model focusing on the effects of sex role socialization. *Journal of Career Aspirations* 5, 355-381.
- Gilligan, C., Lyons, N. P., and Tammer, T. J. (1990). *Making Connections: The Relational Worlds of Adolescent Girls at Emma Willard School*. Harvard University Press, Cambridge, MA.
- Kerr, B. A. (1985). *Smart Girls, Gifted Women*. Ohio Psychology Publishing, Dayton, OH.
- National Science Foundation. (1999). *Women, Minorities and Persons with Physical Disabilities in Science and Engineering*. National Science Foundation, Washington, D.C.
- Ruble, D. N., and Martin, C. L. (1997). Gender development. In *Handbook of Child Psychology, Vol. 3, Social, Emotional, and Personality Development*, 5th ed. (W. Damon and N. Eisenberg, eds.). Wiley, New York.
- Sommers, C. H. (2000, May) Girls rule! Mythmakers to the contrary, it's boys who are in deep trouble. *Atlantic Monthly*, 59-74.
- Subotnik, R. F., and Arnold, K. D. (1991). *Remarkable Women: Perspectives on Female Talent Development*. Hampton Press, Cresskill, NJ.

