WASHINGTON — Can women be brilliant? Little girls are not so sure.

A study published Jan. 26 in the journal Science suggests that girls as young as 6 can be led to believe men are inherently smarter and more talented than women, making girls less motivated to pursue novel activities or ambitious careers. That such stereotypes exist is hardly a surprise, but the findings show these biases can affect children at a very young age.

"As a society, we associate a high level of intellectual ability with males more than females, and our research suggests that this association is picked up by children as young as 6 and 7," said Andrei Cimpian, associate professor in the psychology department at New York University. Cimpian co-authored the study, which looked at 400 children ages 5-7.

In the first part of the study, girls and boys were told a story about a person who is "really, really smart," a child's idea of brilliance, and then asked to identify that person among the photos of two women and two men. The people in the photos were dressed professionally,
looked the same age and appeared equally happy. At 5, both boys and girls tended to associate brilliance with their own gender, meaning that most girls chose women and most boys chose men.

But as they became older and began attending school, children apparently began endorsing gender stereotypes. At 6 and 7, girls were "significantly less likely" to pick women. The results were similar when the kids were shown photos of children.

Interestingly, when asked to select children who look like they do well in school, as opposed to being smart, girls tended to pick girls, which means that their perceptions of brilliance are not based on academic performance.

"These stereotypes float free of any objective markers of achievement and intelligence," Cimpian said.

In the second part of the study, children were introduced to two new board games, one described as an activity "for children who are really, really smart" and the other one "for children who try really, really hard." Five-year-old girls and boys were equally likely to want to play the game for smart kids, but at age 6 and 7, boys still wanted to play that game, while girls opted for the other activity.

"There isn't anything about the game itself that becomes less interesting for girls, but rather it's the description of it as being for kids that are really, really smart."

As a result, believing that they are not as gifted as boys, girls tend to shy away from demanding majors and fields, leading to big differences in aspirations and career choices between men and women. "These stereotypes discourage women's pursuit of many prestigious careers; that is, women are underrepresented in fields whose members cherish brilliance," the authors wrote.

It is still unclear where the stereotypes come from. Parents, teachers and peers and the media are the usual suspects, Cimpian said. But it is evident that action must be taken so that these biases don't curtail girls' professional aspirations. "Instill the idea that success in any line of work is not an innate ability, whatever it is, but rather putting your head down, being passionate about what you are doing," Cimpian said, adding that exposure to successful women who can serve as role models also helps.

Toy companies like Mattel, maker of the Barbie doll, have taken steps to try to reduce gender stereotypes. Mattel's "You can be anything" Barbie campaign tells girls that they can be paleontologists, veterinarians or professors, among other careers. The campaign also holds out the possibility that a girl can imagine herself to be a fairy princess.

Rebecca S. Bigler, professor of psychology at the University of Texas at Austin, described Cimpian's study as "exceptionally nice work." She suggested that the stereotypes develop in early elementary school when students are exposed to famous scientists, composers and writers, the "geniuses" of history, who are overwhelmingly men. Bigler said it is important to combine that knowledge with information on gender discrimination.
"We need to explain to children that laws were created specifically to prevent women from becoming great scientists, artists, composers, writers, explorers and leaders," Bigler added. "Children will then be ... more likely to believe in their own intellectual potential and contribute to social justice and equality by pursuing these careers themselves."
Quiz

1. Read the paragraphs from the article.

   Interestingly, when asked to select children who look like they do well in school, as opposed to being smart, girls tended to pick girls, which means that their perceptions of brilliance are not based on academic performance.

   “These stereotypes float free of any objective markers of achievement and intelligence,” Cimpian said.

Which of the following inferences can be drawn from these paragraphs?

(A) Boys are more likely than girls to do well on tests marking achievement and intelligence.

(B) Girls who believe they are very smart often still do not do well on objective tests in school.

(C) Achieving good grades would not be enough to convince these girls that they are very smart.

(D) Stereotypes about gender and intelligence are being reinforced by the grades given by teachers.
2 Which of the following selections from the article supports the conclusion that helping girls stop believing gender stereotypes could change society as a whole?

(A) As a result, believing that they are not as gifted as boys, girls tend to shy away from demanding majors and fields, leading to big differences in aspirations and career choices between men and women. "These stereotypes discourage women’s pursuit of many prestigious careers; that is, women are underrepresented in fields whose members cherish brilliance," the authors wrote.

(B) Toy companies like Mattel, maker of the Barbie doll, have taken steps to try to reduce gender stereotypes. Mattel’s "You can be anything" Barbie campaign tells girls that they can be paleontologists, veterinarians or professors, among other careers. The campaign also holds out the possibility that a girl can imagine herself to be a fairy princess.

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3 Which option accurately represents the relationship between the article’s CENTRAL ideas?

(A) A recent study suggests that girls as young as six tend to believe that men are inherently smarter than women; as a result, their scores on tests that objectively measure brilliance are not as high as those of boys in the same class.

(B) A recent study suggests that girls as young as six tend to believe that men are inherently smarter than women; as a result, people are trying to find ways to encourage girls to believe they can pursue more demanding majors and careers.

(C) A new study demonstrates the effects of gender stereotypes on young girls’ perception of themselves; the findings explain why women have been historically less likely to be classified as "geniuses."

(D) A new study demonstrates the effects of gender stereotypes on young girls’ perception of themselves; the findings have been explained by a focus on the role of parents, peers and the media in these ideas.
4 Which option is an accurate and objective summary of the study’s findings?

(A) The study found that girls tend to achieve higher scores on objective markers of ability and intelligence. Therefore, the authors are confused about possible reasons why boys continue to think they are smarter than girls.

(B) The study found that girls begin to believe they are not as smart as boys around the age of 6. The results provide a clear call to action for teachers to address the harmful biases written into children’s schoolbooks.

(C) The study found that both girls and boys alter the gender they identify as being very smart as they get older. The study’s authors concluded that this is most likely due to pressure from peers and the media, which are hard to change.

(D) The study found that both girls and boys at age 5 are likely to identify their own gender as being very smart. However, this changes around age 6, when girls begin to believe that men are objectively smarter and girls only work hard.
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