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Omoju Miller's talk was very interesting all around, but what stood out to me most was her explanation about how gender plays a huge role in why certain people stay or leave the computer science field. It didn't come as a surprise to me to find out that in this small sample study done at Berkley, women were less likely to continue or even pursue a CS major, because it's known as a pretty male-dominated field. What did surprise (and sadden) me, however, was that these students still believed that biology can determine intelligence. It's no wonder that female students don't feel a sense of belonging in CS when they already believe that they're at a significant disadvantage to their male counterparts. Obviously, since the study uses such a small data set more experimentation will need to be done, but I have a feeling that the same trend will continue no matter what university they go to. As Miller says, if the female students don't find a sense of belonging in their major then they're not going to stay, so it's important to create an environment that will benefit everyone.

The BRAID initiative was created in 2014 to increase the percentage of women and minorities in undergraduate computer science programs. According to the U.S. Department of Education, the percentage of women who earn CS-desgrees is the smallest group in the STEM fields. In this UCLA article about Linda Sax, a professor of higher education at UCLA, with the help of her team, surveys were distributed to all fifteen BRAID schools to understand the factors that contribute to a student's aspirations for a CS degree. In order to do this, the researchers tracked the students' academic performance and final degrees. While the study isn't over yet, initial findings have found that intro to CS classes are pretty significant in whether or not a student goes down that route. Also, women who take those intro classes usually aren't CS majors. A lot of students' first impressions about CS are created in these introduction classes, especially women, who are far less likely to have taken a class in high school. It is hypothesized that because of this, women may feel they're not allowed to make mistakes, since they're often socialized to achieve perfection. On the other hand, men tend to follow the trial-and-error process and don't see their code failing as a reflection of their own skills or worth, like women tend to do.

I was unaware that in 2017, a software engineer at Google was fired because he wrote in an internal memo that "the distribution of preferences and abilities of men and women differ in part due to biological causes," and he implied that women are less naturally suited to being coders at Google because of their "neuroticism." While it's great that they took his misogyny so seriously, it's unfortunate that only 20% of Google engineers are women. Professor Dame Wendy Hall, a director of the Web Science Institute at the University of Southampton, argues that the gender gap in Silicon Valley would not be seen if there was actually a biological difference in the sexes. That's because in other countries such as India, Malaysia, and Nigeria, lots of women are passionate about coding and there's hardly a gender difference like in the U.S. Hall also believes that this gap in the U.S. occurred back in the early '80s when computers were new and marketed as gaming systems for men, and the cultural stigma around computers being associated with men just seemed to stick. All of this makes me wonder why the stigma is much more prevalent in the U.S. than in other countries, where women are more interested in computer science.

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In a statistical comparison of the male-to-female ratio in computer science education in India and the United States, it was shown that the percentage of women with CS degrees in the U.S. is about 21%, while in India it's 45%. Women make up 50.8% of the U.S. population and only 47.7% of India's population. The ratio of males-to-females in CS graduate programs is 1.2:1.0 in India, and 4.2:1.0 in the U.S. That's amazing to me, and not in a good way. In a study done by several students from the University of Michigan, they conducted twenty interviews with twenty participants, half being Indian women who had attended college in India, and half American women who attended college in the U.S. In each group, half had majored in a STEM subject and the other half majored in a non-STEM subject. They found that there was a strong agreement between the women from both countries about their fear of being wrong in public or in front of their peers. They were all very cautious about what they said out loud, because the male students in both countries were described as being more assertive and even aggressive. What I found the most interesting about the study was the differences between the groups. In India, engineering or medicine is the default subject of study for many families who are sending their children to university. That includes both men and women, because career and marriage partners are both prime concerns. Most of the Indian participants in the study didn't even consider other majors or careers. This isn't usually the case for American women.

A lot of the articles I found related to women in computer science said practically the same thing: there's something about the environment of the field that is making them not want to proceed with a degree, and whatever it is, it seems to mostly affect women in the U.S. Some of the things I read about other women's experiences really hit home for me, especially about the fear of failure. That's something that often triggers my anxiety and depression to the point where if I'm not immediately good at something, I want to drop it. This has been the case for jobs, hobbies, activities, and even this class. It's reassuring to know that there are tons of women who feel the same, but at the same time, it's sad how much we're affected by it to the point where we'll quit something if we fail because society has conditioned us to strive to be perfect. Omoju Miller is right in that we have to come up with a solution to the problem that is women feeling forced out of the computer science field, because they're missing out on some bright minds.

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