

NEWS

Rekindling the gender-bias debate

It is almost five years since Harvard University's then-president Lawrence Summers made his controversial remarks about the innate differences between men's and women's skills in science and maths. Now, a book is reigniting the debate with equally contentious views about why female scientists have problems advancing in academia. *The Science on Women in Science* (AEI Press; 2009) is a collection of nine essays assembled and edited by former philosophy professor Christina Hoff Sommers. The book's aim, says Sommers, is to convince policy-makers and others that gender bias may not be the primary cause of the under-representation of women in science.

Six of the nine essays, including Sommers's own contribution, contend that innate gender differences, not bias, prompt men to be more interested than women in science, maths and engineering. Published by the American Enterprise Institute for Public Policy Research (AEI), a right-leaning think tank based in Washington DC, the book is Sommers's rejoinder to *Beyond Bias and Barriers*, a 2007 report by the US National Academy of Sciences, the National Academy of Engineering and the Institute of Medicine. That study found that under-representation of women in high-level academic posts is caused largely by bias and by an institutional framework that hinders women's advancement.

Gender gap

In the collection's first essay, developmental psychopathologist Simon Baron-Cohen of the University of Cambridge, UK, suggests that men are more interested in analysing the variables in a system to determine its rules — or 'systemizing' — whereas women are more interested in empathizing. Baron-Cohen refers to psychological and behavioural studies that show that boys prefer certain toys and perform better than girls on some tests, and that men dominate occupations such as metalworking. These findings provide strong evidence, he writes, that men are more drawn to systems-based operations than women, and that women are more likely to prefer and be better at empathy-based activities than men. To highlight this, he notes that women's conversations involve more discussion about feelings compared with those of men.

But Elizabeth Spelke, a psychologist at Harvard University in Cambridge, Massachusetts, contends that the gender gap is due to societal and historical reasons. She cites behavioural, physiological and psychological studies suggesting that male and female infants are equally interested in a variety of objects (in contrast to the traditional view that girls are more interested in people

than in objects); that girls and boys have an equal ability to learn the words that represent numbers and to count; and that girls can learn to read a map as well as boys can. "There is no evidence for a male advantage in intrinsic aptitude or motivation for mathematics and science," she writes. Spelke concludes that core cognitive and motivational patterns in women and men are much the same and that they play no part in the smaller numbers of women than men in science, maths and engineering.



Contrary to the view of Sommers and others, Rosalind Chait Barnett, a senior scientist at the Women's Studies Research Center at Brandeis University in Waltham, Massachusetts, dismisses the notion that women prefer to avoid science and engineering because of their gender. In their essay, she and her co-author, social psychologist Laura Sabatini, argue that academia in the United States has historically been inhospitable to women scientists. College requirements of the mid-nineteenth century stipulated that women faculty members be single, they point out, and the twentieth century's anti-nepotism policies often meant a female scientist could not be employed at the same university as her husband. "Preferences are learned," says Barnett, noting that today, many women deliberately avoid the only occupations that employed them years ago. "The whole thing is completely culturally determined," she says.

Other studies have reached similar conclusions: Reshma Jaggi at the University of Michigan and her colleagues found that women are less likely than men to receive major funding for early-career clinical research (R. Jaggi *et al. Ann. Intern. Med.* **151**, 804-811; 2009). The authors blame family

responsibilities and the excessive demands of clinical studies that take time away from research projects, suggesting that women are less successful than men at negotiating to reduce their clinical workload.

Sommers objects to initiatives such as the US National Science Foundation's ADVANCE programme, which seeks to increase women's representation and advancement in science, technology, engineering and maths. She also opposes the US government's application of 'Title IX' requirements — which bar gender discrimination in any federally funded operation — to academic science departments because, she believes, it could exclude male scientists in favour of females.

Advancing the debate

In her essay, 'Sex, Science and the Economy', she argues that quota-driven and gender-balanced academic research is likely to be of lower quality than research conducted in departments without quotas. To support this, Sommers refers to studies suggesting that professions are partly biologically determined, and includes anecdotal evidence from female scientists who have not experienced bias. "Before the government rushes in to correct the problem, they have to be sure it exists and they also have to understand it. I'm trying to create a healthy scepticism," says Sommers. "I'm not absolutely convinced there isn't any bias," she says, but there are "more plausible explanations" for academic gender disparity.

But institutional bias has already been shown to be the main obstacle to women's ascension in academic science and engineering, says Mary Hall Reno, professor and chair of the department of physics and astronomy at the University of Iowa in Iowa City, and outgoing chair of the American Physical Society's Committee on the Status of Women in Physics. She gives the example of how bias was identified and addressed in the medical profession: "Forty years ago, the thought was that women couldn't be medical doctors, and now they have thronged into the field," Reno says. "I thought we were past this. We don't need more debate."

Phoebe Leboy, president of the Association for Women in Science in Washington DC, says that the book "cannot be ignored", noting its potential to prompt the overturn of anti-discrimination legislation or programmes such as ADVANCE if lawmakers were to act on its conclusions. But she thinks that scenario is unlikely. "This book will preach mostly to the converted, and the converted are a relatively small group of people with unusually good access to the media," she says.

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