Parity as a Goal Sparks Bitter Battle

Women in science have come a long way in the last few decades, going from a barely noticeable presence in the scientific workforce to near-parity in many of the life sciences and a majority in fields such as psychology and veterinary medicine. But leaders of the women-in-science movement say that the days of "chilly climates" on campus and sex discrimination are far from over. They say the lack of gender "parity" (see main text) is proof that those negative factors still skew participation in fields such as engineering, physics, and computer sciences.

A small group of contrarian scholars, however, is rising up to challenge these assumptions. They believe that the main reason for the dearth of women in engineering and physical sciences is that females by nature are more interested in people-oriented professions. And they don't see this as a problem that needs fixing. Mainstream activists acknowledge the differences but attribute them to cultural factors.

One scholar who is fighting the prevailing tide is Judith Kleinfeld, a psychologist at the University of Alaska, Fairbanks, who drew feminist rage last year by labeling as "junk science" a highly praised report that found discrimination against senior women at the Massachusetts Institute of Technology (MIT) (*Science*, 12 November 1999, p. 1272; 14 January, p. 221). "The pursuit of sex [parity] in the sciences has turned into an evangelical mission that threatens to undermine science itself," she claims. It "prevents robust and fruitful discussion of the reasons for gender differences." Another maverick is independent social scientist Patti Hausman, who drew flak at a women-in-science symposium at the Georgia Institute of Technology in Atlanta. "The question of why more women don't choose careers in engineering has a rather obvious answer," she says: "Because they don't want to."

"Wherever you go, you will find females far less likely than males to see what is so fascinating about ohms, carburetors, or quarks," said Hausman at the April symposium, sponsored by the National Academy of Engineering. "Reinventing the curriculum will not make me more interested in learning how my dishwasher works."

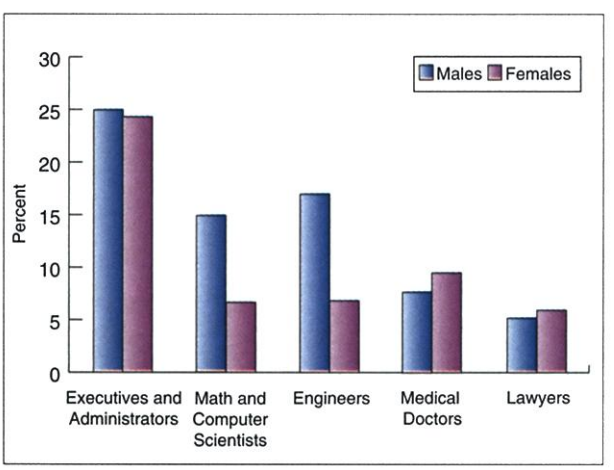
Many in the audience didn't buy her argument. MIT engineer Sheila Widnell calls her analysis "pseudoscience—a selective use of 'data'... to take an advocacy position. But test expert Linda Gottfredson, a sociologist at the University of Delaware, Newark, says the literature on vocational preferences supports Hausman. "On average, women are more interested in dealing with people and men with things," she says. Vocational inventories also show boys to be higher in "realistic" and "investigative" as opposed to "artistic" and "social" interests.

This difference in preferences applies within science as well, according to researchers at Vanderbilt University in Nashville, Tennessee, who have been analyzing data from a sample of superhigh scorers on the Scholastic Assessment Test in math first identified in the 1970s in the Johns Hopkins Study of Mathematically Precocious Youth (SMPY). David Lubinski and Camilla Benbow found, for example, that the sexes diverged in two key values: Boys put more weight on "theoretical" (interest in abstract thought such as that which goes on in engineering, physics, and math) and girls on "social" (interest in people). Follow-up research to be published in the November issue of *Psychological Science* has shown those preferences playing out in career choices: Gifted girls were less likely to go into science and preferred educational and vocational activities involving "people contact" (see graph).

Mathematically gifted girls tend to score higher than mathematically gifted boys in verbal abilities, say Benbow and Lubinski. They have shown that people with more balanced ability profiles are less likely to choose science than those who tilt toward math. The SMPY research comports with other findings: For example, according to the Educational Testing Service, data from the Strong Interest Inventory show that top girl scorers are more likely to identify literature and art as career interests than boys, who favor the physical sciences.

None of this research cuts any ice with those who see cultural and educational barriers as the chief cause of the gender gap in science. "If both males and females were given the same amount of information and opportunities to do things, then I don't believe there would be differences," says Suzanne Brainard, director of the Center for Women in Science and Engineering at the University of Washington, Seattle.

Brainard and others who argue for gender parity, such as Susan Metz of the New Jersey Institute of Technology in Newark and Jane Daniels of Purdue University in West Lafayette, Indiana, agree that males and females do indeed have different career preferences. But they ascribe these differences to cultural conditioning—"stereotypes" about who belongs in these fields and lack of "exposure and awareness" about the realities. And they see no reason why more women can't be conditioned to choose engineering. Brainard told *Science*, for example, that more women would become engineers if they could more readily see the social relevance—such as opportunities for "designing different kinds of equipment for the kitchen or solving environmental problems dealing with pollution." Metz agrees. "Engineering is ... extraordinarily people- and help-oriented," she says, and should be presented as such.



Separate paths. Boys and girls who scored in the top 1% of mathematical ability at age 12 exercise different career choices 20 years later with regard to jobs in math and engineering.

But Hausman and others don't think humanizing the image will change the reality that, although engineering is certainly "good for helping people ... it is a highly theoretical field. People with high social values," she says, "tend to find highly theoretical fields cold and inhuman." In fact, Lubinski's research has found a negative correlation between the desire to "help people" and an interest in the physical sciences.

If these findings are accurate, Gottfredson and others believe "parity" might actually come in conflict with fairness. "If you insist on using [it] as your measure of social justice," she says, "it means you will have to keep many men and women out of the work they like best and push them into work they don't like." In the midst of this often shrill debate, the one issue that both sides can rally around is the importance of providing students with the widest possible selection of career choices. "It's a tiresome kind of fight," says psychologist Diane Halpern of California State University, San Bernardino. "We need to be doing a better job of educating everyone."

—CONSTANCE HOLDEN

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