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by
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I had hoped that I could resist the urge to comment on Harvard President Larry Summers' remarks about women; however, none of the responses I've read adequately addressed one question. Even if Summers lacked tact, was it legitimate to call for research on the question of whether women have less innate mathematical ability?

As a scientist, I've learned that progress requires the acceptance of well-verified theories as well as the willingness to consider new hypotheses for unexplained phenomena. Engineers trying to design better cooling systems do not waste time with proposals that violate the second law of thermodynamics. In 1986, the British Royal Society (hardly a bastion of radical feminist theory) concluded that there was no convincing evidence for innate gender differences in mathematical ability. Does Summers have new evidence that would call for reopening this question?

Had he been addressing a group of biologists, would he have tried to provoke them by suggesting that they reconsider creationism? Would he have asked nuclear physicists to re-evaluate cold fusion? Would he have suggested that astronomers reconsider the possibility that the sun revolves around the earth? Will he urge the medical school to appoint homeopathic practitioners to the faculty?

Fifteen years ago I spent several months examining the literature on the "gender gap" in mathematics. I started out wondering why one would hypothesize that test differences which emerge near puberty, when social pressures reach their peak, would be the result of genetics rather than culture. But I soon discovered that the widely accepted "gender gap" in mathematics tests was largely a myth. Even when differences exist, the effect of gender is much smaller than other factors. Anyone who doubts this should take a serious look at the reports from the Trends in International Mathematics and Science Study conducted in 1995, 1999 and 2003. The few gender differences that emerge vary with the country studied and are much, much smaller than the differences between countries.

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What about the widely publicized SAT gender gap? When one experiment is inconsistent with others, scientists examine it for hidden flaws and subtle defects. Because SAT scores depend on too many parameters to discuss here, I'll mention only one that is not widely known. Among those taking the test, girls are much more likely than boys to come from low-income families and to have parents whose formal education did not go beyond high school. The male and female cohorts are so dissimilar that the annual College Board announcement that the "gender gap" in math has gone up or down by 1 or 2 points is not just meaningless, it's irresponsible.

I have not examined the literature as thoroughly as I did in 1990; there's no new evidence that would merit taking time away from my research in quantum information. Quantum theory is also a subject with a long history of controversy and skepticism. But scientists have begun to exploit features long regarded as paradoxical to build quantum computers and find new ways of making data transmission secure. Full acceptance of quantum theory has led to practical applications, and new experimental evidence for its validity.

What could be accomplished if, instead of diverting women from scientific research, we accepted them without constantly questioning their ability?