

OPINION

Science's gender gap tied to beliefs about brilliance

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The **underrepresentation of women in science** has sparked much discussion and debate in the past few years. Explanations for the discrepancy invoke everything from women's unwillingness to work long hours and men's aptitude for abstract thinking to — most controversially — women's intellectual inferiority. But a new study, published 16 January in *Science*, suggests that **mistaken beliefs about brilliance** are the real culprit.

The researchers asked 1,820 faculty, postdocs and graduate students from 30 disciplines spanning the natural sciences, the social sciences and the humanities about the importance of innate intelligence and raw talent in their fields.

The relationship they found was striking: The more a field emphasized the importance of giftedness, the greater its gender gap. The researchers suggest that these 'field-specific ability beliefs' conspire with long-held gender stereotypes, which associate only men with natural intellectual ability.

"Consider how difficult it is to think of even a single pop-culture portrayal of a woman who displays that same special spark of innate, unspooled genius as Sherlock Holmes," **Sarah-Jane Leslie**, professor of philosophy at Princeton University and one of the researchers on the study, said in a teleconference. Girls or women presented as smart are typically shown to be extremely

hardworking, she added, citing “Harry Potter’s” Hermione Granger as an example.

Beliefs about the importance of raw talent also predict the underrepresentation of African-Americans, who, like women, evoke negative stereotypes about intelligence. This relationship doesn’t hold for Asian-Americans, however, perhaps because Asian-Americans aren’t stereotyped as having inferior intelligence, the researchers say.

To address competing hypotheses, the researchers also asked participants about their discipline’s work demands, the proportion of students admitted to a graduate program each year from the pool of applicants, and the emphasis on abstract thinking. (Some studies suggest that men and, incidentally, individuals with high-functioning autism, **are superior abstract thinkers.**)

None of these variables predict the gender gaps across disciplines. In fact, fields that are more selective in their admissions process tend to have a greater representation of women. Although this trend doesn’t reach statistical significance, it joins other studies in refuting claims about the purported inferior intellect of women.

If the lack of women in many scientific disciplines truly comes down to an emphasis on the importance of brilliance, then there might be an easy fix. The researchers suggest that these disciplines could retool their message to deemphasize raw ability. It’s not a perfect solution, but changing the way we communicate is surely faster than changing stereotypes about gender and intelligence.

We might also look to disciplines relevant to autism research, such as molecular biology and biochemistry, for solutions. These particular fields were outliers in the study, found to emphasize raw talent while also including relatively high proportions of women, in contrast to most scientific disciplines. Perhaps these fields impart a more inclusive message to prospective colleagues. If so, they could become models for others to emulate.