

# Fighting stereotypes



**“Girls don’t like physics” is a common refrain, but this perception has not always existed, nor does it occur everywhere in the world today. We call on our readers to fight such unfounded stereotypes.**

Earlier this year, Katharine Birbalsingh, the UK Government’s tsar for social mobility, made the comment that “[physics isn’t something that girls tend to fancy](#)”, because girls allegedly don’t like hard maths. The comments came in the context of the fact that just 16% of the A-level physics cohort in the school where Birbalsingh is Head were girls. The sentiment that physics is not a ‘girl’s subject’ will not be a surprise to anyone who has worked in physics in places like the UK, USA or Western Europe, where the proportion of women physicists at any career stage today rarely surpasses 1 in 5. These statistics, which have remained steady for a number of decades, despite gender equality increasing on other fronts, are often explained by the idea that girls simply don’t like physics. Yet, this stereotype is neither universal, nor rooted in a particularly deep history.

Today, in Eastern Europe women make up [half of the scientific work force](#), a legacy of the Soviet Union’s commitment to gender equality in education. A similar commitment to gender equality could be seen in China in the 1970s, when 1 in 3 Chinese physicists were women. But in the early 2000s the number dropped to just 8%, and sits around 20% (on par with the West) today<sup>1</sup>. It is clear that top-down government policies can have a tangible impact on the gender balance of physicists. But so do cultural perceptions and stereotypes (or lack thereof) about gender and physics. For example, in India, there is very little perception that women do not enjoy, or are less capable in physics or maths<sup>2</sup>.

A 2021 study<sup>3</sup> of Muslim-majority societies, including places where girls outnumber boys in physics<sup>4</sup>, identified a number of social factors in these countries that supported women to study physics. Participants mentioned a lack of stereotyping of subjects (single-sex classrooms mean that women do not feel out of place because of their gender) and also attributed their religion as driving them to study hard in all subjects and learn about the world around them. The women in the study reflected that they were encouraged to pursue studies that benefit society – this is true in many cultures – but in their cases, physics was seen as a practical subject towards the betterment of humanity.

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Even in the West, the idea that physics is for boys is a relatively recent one<sup>5</sup>. A study of secondary schools in Boston, USA in 1845 revealed that more girls than boys were taking classes in natural philosophy (as physics was then called) and getting higher grades than them, too. In 19th-century America, not only were girls studying physics, but women were writing physics textbooks. At the time, natural philosophy and theology were closely linked and the study of physics and astronomy was perceived as crucial in the intellectual and moral education of women – both to appreciate God’s creation of the world and to ward off superstitious beliefs. However, in the 20th century, increasing numbers of working-class children began to attend secondary school, and the educational focus shifted to practical subjects that would help them to join the working world, and at the time the most common future for girls was in domestic or secretarial work, rather than scientific research<sup>5</sup>.

The stereotype that girls do not like physics or maths is often used against diversity and inclusion initiatives that are driving to increase the number of women in physics. But girls do not have an innate dislike of maths. Rather, the uptake of physics by girls is determined by social and cultural expectations that have evolved over time, and these values continue to change. Negative gendered stereotypes are damaging and work against the diversity and inclusion initiatives to increase the number of women in physics. We believe that the entire physics community should fight back against these unfounded views. In this Issue we include a [World View](#) that provides practical tips on how to change the gender stereotypes about physics found today. We hope it will inspire our readers to become part of this change in their personal and professional lives and find their own ways to teach children and young people that physics is for everyone.

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## References

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