# Children's Gender Stereotypes About Math Ability Are Weak on Average. But **Computer Science, Engineering, and Physics** Tell a Different Story.
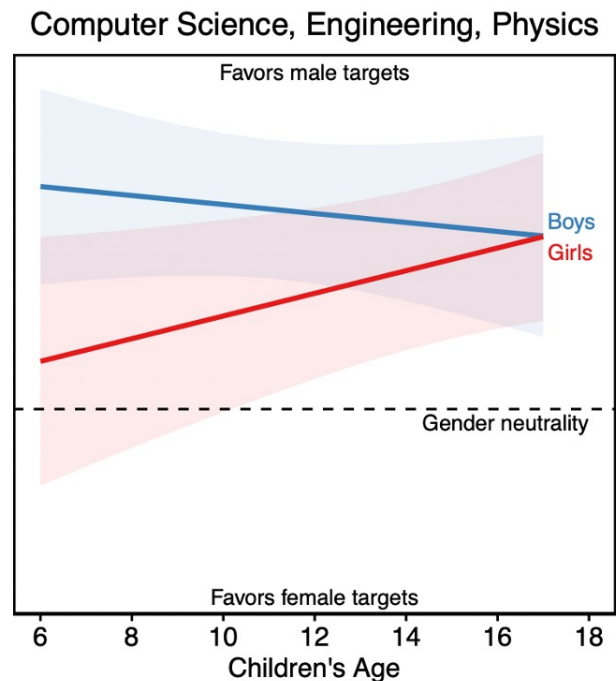
Background: Despite decades of research, clear insights on the development of children's gender stereotypes about STEM abilities has remained elusive due to mixed empirical findings. We used meta-analysis to understand those mixed findings.

Result 1: For math stereotypes, young children show in-group bias at age 6. These beliefs shift across age but still only weakly favor male ability at age 16.
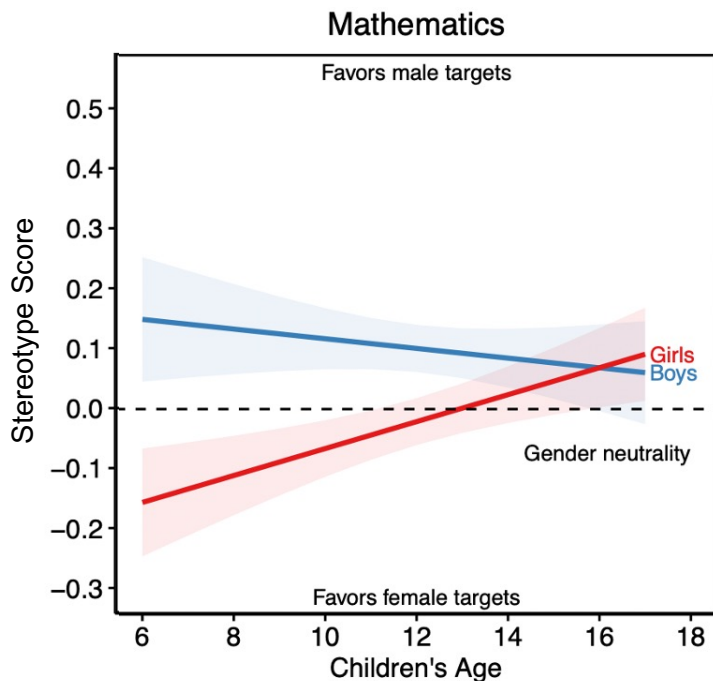
Result 2: But for computer science, engineering, and physics, both boys and girls strongly believe in male superiority, even at age 6.

Mathematics

Favors male targets

Stereotype Score

Girls
Boys

Gender neutrality

Favors female targets

Children's Age

Computer Science, Engineering, Physics

Favors male targets

Boys
Girls

Gender neutrality

Favors female targets

Children's Age

Methods Systematic review Meta-analysis

- Preregistered hypotheses and analysis plan on Open Science Framework.
- Screened more than 18,000 citations for eligibility.
- Found 98 eligible studies representing 145,000+ children.
- Spans four decades of data (1977–2020) and 31 nations.
- Used latest meta-analysis methods (e.g., robust variance estimation).

Current Challenge

What are innovative but feasible ways to disseminate to (a) applied researchers interested in building on the findings or (b) STEM outreach organizations with gender-based programming?

David Miller, Courtney Tanenbaum, Jillian Lauer
✉ dimiller@air.org
🐦 @davidimiller

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