

Stereotype Threat

refers to the concern with being viewed through the lens of a stereotype.¹

Stereotyped threat is caused by cues in the situation that remind people of negative stereotypes.^{13,18}

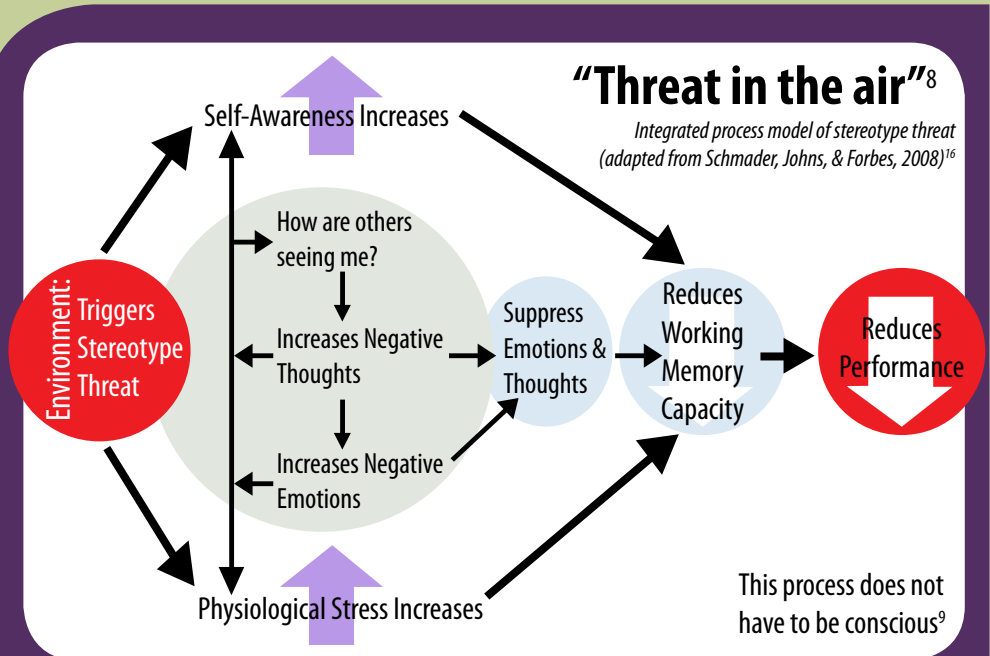
Anxiety over confirming these stereotypes can **impair** an individual's ability to perform up to their full potential.²

Research has shown that stereotype threat negatively impacts: women's math performance³ (compared to men's), White men's math performance⁴ (compared to Asian men), men's social sensitivity⁵ and spatial abilities⁶ (compared to women's), White athletic performance⁷ (compared to Black), and Black students' verbal problem-solving abilities¹ (compared to White students').

Stereotype threat may be a significant factor in undermining women's success and persistence in engineering.¹³ This has important implications for STEM fields. A simple reminder of one's race or gender is enough to elicit stereotype threat.¹⁸

STEM fields should consider ways to create identity safe environments to help people overcome stereotype threat.

By actively **raising awareness** about stereotype threat, providing **role models**, and **encouraging self-affirmation** exercises, individuals' performances are more likely to match their potential.



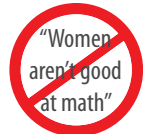
Environment Triggers

Don't...

... define people by their gender,



... or their group,



... or stereotype on performance expectations

Impact on STEM

Reduced:

Performance¹⁸

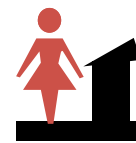
of women & minority students on the SAT, by 50 points¹⁸



Job Engagement & Organizational Commitment

in academia¹¹ & in the engineering industry¹²

Coping Strategies & Alleviating the Threat

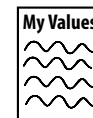


Role Models

Show that others have struggled and succeeded^{9,17,20}

Self-Affirmation

Write about your core values²¹



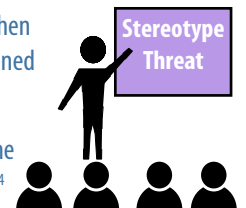
Reframing the Situation

Create identity safe contexts e.g. gender-fair tests³

Learning about Stereotype Threat

Performance improves when stereotype threat is explained before a test^{14,15,19}

Attribute the anxiety to the stereotype, not the self¹⁴





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References

1. Steele, C.M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African-Americans. *Journal of Personality and Social Psychology*, 69, 797-811.
2. Walton, G., & Spencer, S. (2009). Latent ability: Grades and test scores systematically underestimate the intellectual ability of negatively stereotyped students. *Psychological Science*, 20(9), 1132-1139.
3. Spencer, S.J., Steele, C.M., Quinn, D.M. (1999). Stereotype threat and women's math performance. *Journal of Experimental Social Psychology*, 35(1), 4-28.
4. Aronson, J., Lustina, M.J., Good, C., & Keough, K. (1999). When white men can't do math: Necessary and sufficient factors in stereotype threat. *Journal of Experimental Social Psychology*, 35, 29-46.
5. Leyens, J., Désert, M., Croizet, J., & Darcis, C. (2000). Stereotype threat: Are lower status and history of stigmatization preconditions of stereotype threat? *Personality and Social Psychology Bulletin*, 26, 1189-1199.
6. Wraga, M., Duncan, L., Jacobs, E., Helt, M., & Church, J. (2006). Stereotype susceptibility narrows the gender gap in imagined self-rotation performance. *Psychonomic Bulletin & Review*, 13, 813-819.
7. Stone, J., Lynch, C. I., Sjomeling, M., & Darley, J.M. (1999). Stereotype threat effects on black and white athletic performance. *Journal of Personality and Social Psychology*, 77, 1213-1227.
8. Steele, C.M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist*, 52(6), 613-629.
9. Schmader, T., & Johns, M. (2003). Converging evidence that stereotype threat reduces working memory capacity. *Journal of Personality and Social Psychology*, 85, 440-452.
10. von Hippel, C., Wiryakusuma, C., Bowden, J., & Schocet, M. (2011). Stereotype threat and female communication styles. *Personality and Social Psychology Bulletin*, 37(10), 1312-1324.
11. Holleran, S., Whitehead, J., Schmader, T., & Mehl, M. (2011). Talking shop and shooting the breeze: Predicting women's job disengagement from workplace conversations. *Social Psychological and Personality Science*, 2, 65-71.
12. Hall, W., Schmader, T., & Croft, E. (2013). *Engineering equality: How negative interactions undermine the health and well-being of male and female engineers*. Paper presented at Society for Personality and Social Psychology Annual Meeting, New Orleans, LA, USA.
13. Bell, A. E., Spencer, S. J., Iserman, E., & Logel, C. R. (2003). Stereotype threat and women's performance in engineering. *Journal of Engineering Education*, 92(4), 307-312.
14. Johns, M., Schmader, T., & Martens, A. (2005). Knowing is half the battle: Teaching stereotype threat as a means of improving women's math performance. *Psychological Science*, 16, 175-179.
15. Aronson, J., & Williams, J. (2004). Stereotype threat: Forewarned is forearmed. Unpublished manuscript, New York University, New York.
16. Schmader, T., Johns, M., & Forbes, C. (2008). An integrated process model of stereotype threat effects on performance. *Psychological Review*, 115(2), 336-356.
17. Johns, M.J., Inzlicht, M., & Schmader, T. (2008). Stereotype threat and executive resource depletion: Examining the influence of emotion regulation. *Journal of Experimental Psychology: General*, 137, 691-705.
18. Nguyen, H.-H. D., & Ryan, A. M. (2008). Does stereotype threat affect test performance of minorities and women? A meta-analysis of experimental evidence. *Journal of Applied Psychology*, 93, 1314-1334.
19. Schmader, T. (2010). Stereotype threat deconstructed. *Current Directions in Psychological Science*, 19, 14-18.
20. Dasgupta, N., & Asgari, S. (2004). Seeing is believing: Exposure to counterstereotypic women leaders and its effect on automatic gender stereotyping. *Journal of Experimental Social Psychology*, 40, 642-658.
21. Cohen, G. L., Garcia, J., Apfel, N., & Master, A. (2006). Reducing the racial achievement gap: A social-psychological intervention. *Science*, 313, 1307-1310.

Recommended Readings

1. <http://www.reducingstereotypethreat.org/>
2. Dr. Toni Schmader's website: <http://schmader.psych.ubc.ca/research.html>

About ONWiE

The Ontario Network of Women in Engineering (ONWiE) was formed in 2005 between all the schools and faculties of engineering across Ontario. The objective of this network is to work collaboratively to support current female engineers, students, and encourage the next generation of women to pursue careers in engineering.

Find out more at: <http://www.onwie.ca/>