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DEEP THOUGHTS

Games improve women's spatial skills

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SHAUNA REMPEL
TORONTO STAR

Name: Jing Feng

Age: 25

Program: Doctoral student in psychology at University of Toronto.

Study: Playing an Action Video Game Reduces Gender Differences in Spatial Cognition.

The Experiments: Jing Feng and her supervisor, Ian Spence, a co-author of the study, found that while men scored higher than women in spatial attention and cognition skills, women in the study could improve their skills and eliminate that gender difference after playing an action video game for just a few hours.

The Skills: Spatial skills are necessary to complete routine tasks such as driving a car and reading a map. In this case, spatial skills were tested by playing an "odd object out" game, where a bunch of objects were shown briefly on a screen and participants were asked to identify which were not like the others.

Women in the test group scored 55 per cent while men scored 68 per cent. Previous research into higher levels of spatial skills has demonstrated the gender gap, which led Feng to explore whether video games could have an impact.

She says one reason for the gap may be that, on average, women are not quite as good at rapidly switching attention among different objects. Another possibility is that boys and girls participate in different activities growing up. "Action video games are a type of video game that a lot of boys play rather than girls," Feng says.

The Games: Feng took a group of 20 undergraduate students, none of whom had experience playing video games. One group played 10 hours of a first-person shooter game called *Medal of Honor: Pacific Assault*, while another group played *Ballance*, a 3-D maze game, for 10 hours. Then the participants were tested again.

The Result: Among students who played *Ballance*, there was little change in test results. But those who played *Medal of Honor* showed marked improvement and the women improved more than men, essentially eliminating the gender gap. The rapid pace and reaction-heavy game may cause new neural connections to develop in the brain, the researchers speculate.

The Follow-up: Feng tested the participants five months after the video game training and found that the *Medal of Honor* players retained the higher spatial skills. Another student in Spence's engineering psychology lab is repeating the experiment with another set of test subjects and has found the results mirror the initial experiment.

The Impact: The study has received a lot of attention from both the psychological world (where it was published in the journal *Psychological Science* last month) and in the gaming world. Feng says the experiment offers women a way to catch up to men in terms of spatial skills. Spence hopes it may lead to more female students going into the fields of mathematics and engineering, two male-dominated fields that require high levels of spatial skills.

Deep Thoughts looks at research going on in the GTA. Email living@thestar.ca.

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