

**Psychology and the sexes****Nurture strikes back**

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**Some sex differences that look biological are really cultural**

ONCE upon a time, the only ideologically acceptable explanations of mental differences between men and women were cultural. Any biologist who dared to suggest in public that perhaps evolution might work differently on the sexes, and that this might perhaps result in some underlying neurological inequalities, was likely to get tarred and feathered.

Today, by contrast, biology tends to be an explanation of first resort in matters sexual. So it is salutary to come across an experiment which shows that a newly discovered difference which fits easily, at first sight, into the biological-determinism camp, actually does not belong there at all.

Writing in *Psychological Science*, a team led by Ian Spence of the University of Toronto describes a test performed on people's ability to spot unusual objects that appear in their field of vision. Success at spatial tasks like this often differs between the sexes (men are better at remembering and locating general landmarks; women are better at remembering and locating food), so the researchers were not surprised to discover a discrepancy between the two. The test asked people to identify an "odd man out" object in a briefly displayed field of two dozen otherwise identical objects. Men had a 68% success rate. Women had a 55% success rate.

Had they left it at that, Dr Spence and his colleagues might have concluded that they had uncovered yet another evolved difference between the sexes, come up with a "Just So" story to explain it in terms of division of labour on the African savannah, and moved on. However, they did not leave it at that. Instead, they asked some of their volunteers to spend ten hours playing an action-packed, shoot-'em-up video game, called "Medal of Honour: Pacific Assault". As a control, other volunteers were asked to play a decidedly non-action-packed puzzle game, called "Ballance", for a similar time. Both sets were then asked to do the odd-man-out test again.

Among the Ballancers, there was no change in the ability to pick out the unusual. Among those who had played "Medal of Honour", both sexes improved their performances.

That is not surprising, given the different natures of the games. However, the improvement in the women was greater than the improvement in the men—so much so that there was no longer a significant difference between the two. Moreover, that absence of difference was long-lived. When the volunteers were tested again after five months, both the improvement and the lack of difference between the sexes remained. Though it is too early to be sure, it looks likely that the change in spatial acuity—and the abolition of any sex difference in that acuity—induced by playing "Medal of Honour" is permanent.

That has several implications. One is that playing violent computer games can have beneficial effects. Another is that the games might provide a way of rapidly improving spatial ability in people such as drivers and soldiers. And a third is that although genes are important, upbringing matters, too.

In this instance, exactly which bit of upbringing remains unclear. Perhaps it has to do with the different games that boys and girls play. But without further research, that suggestion is as much of a "Just So" story as those tales from the savannah.