

Female brown-headed cowbirds perform spatial tasks better than males

February 28 2014, by Paul Mayne



Credit: Douglas Keddy

Tired jokes about men, women and sense of direction have existed since the dawn of time. A new study at Western, however, has shown female brown-headed cowbirds perform spatial tasks better than their male counterparts – which is opposite what is typically found in mammals, including humans.

And, it's likely a matter of evolution.

The predominant theory of neuroecology proposes the brain – and our ways of thinking – adapt to solve specific ecological problems. In this case, the brain provides greater spatial abilities in one sex to improve the success of reproduction.

Female [cowbirds](#) lay their eggs in other [birds'](#) nests, rather than build their own, hijacking host nests before sunrise, when it is still dark. As only female cowbirds locate, monitor and revisit these nests, their reproductive success rests on their ability to navigate space and remember locations.

Once the eggs are laid, unwitting host birds are duped into incubating and raising the young cowbirds as their own – a strategy known as [brood parasitism](#) employed by cowbirds, European cuckoos and a few other groups of birds.

"We tested cowbirds for sex and seasonal differences in [spatial memory](#) on a foraging task," said Mélanie Guigueno, a Biology PhD candidate, and lead author on the study. "Females made significantly fewer errors than males and took more direct paths to the rewarded location than males, leading us to believe female superiority in spatial search is an adaptation for brood parasitism in female cowbirds."

Guigueno conducted the study with undergraduate student, Danielle Snow, and professors Scott MacDougall-Shackleton and David Sherry at Western's Advanced Facility for Avian Research (AFAR), a world-unique centre examining bird behaviour, physiology and neurobiology.

Research at AFAR helps explore how birds' neural and physiological systems respond to changes in the environment, and provides insight into avian migration, evolution, ecosystem health and the spread of disease.

The results were published today in the new issue of the Royal Society

journal, *Biology Letters*.

Provided by University of Western Ontario

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