

IQ tests show individual differences in bird brains

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Credit: Janice McKenna

Dr Rachael Shaw, a postdoctoral research fellow in Victoria's School of Biological Sciences, conducted a study on a group of wild North Island robin based at Zealandia to examine the mental skills of individual birds.

The birds participated voluntarily in six [cognitive tasks](#), which focused on colours, symbols, spatial memory, [inhibitory control](#) and motor skills.

"Our results suggest that if an individual did well in one test, it was likely to do well in others," says Dr Shaw. "There has been little research into whether [general intelligence](#) exists in non-humans, and our statistical analyses show that robins may have something like it and that these patterns are highly unlikely to have happened by chance."

Dr Shaw says setting a variety of tasks was imperative for measuring the structure of the birds' intelligence.

"Completing a one-off task may be dependent on other factors like the animals motivation to participate, and doesn't provide a reliable measure of cognitive ability.

"We carried out a series of tests to see if you could get consistent measures from an individual. It's a similar process to running an IQ test or psychometric test on humans."

Dr Shaw checked the robins were motivated to do their best by teaching them to jump on a scale and eat a worm before and after each test.

"The end check is really important because if a bird is failing a task, you want to ensure that they still want food rewards," says Dr Shaw.

The animal behaviour researcher spent five months testing 20 robins. Computer analysis and statistical techniques were used to tease out correlations in the performance of the birds and see whether it was underpinned by a general intelligence factor.

Dr Shaw now plans to investigate how individual cognitive abilities are linked to reproductive success and survival.

"I think it's intriguing that you pick up patterns in performance in [birds](#) that are similar to the patterns we see in humans—it has the potential to

tell us more about brains and how brains work. It would be great if more people ran similar studies that incorporated more data," says Dr Shaw.

Dr Shaw's research was recently published in leading international journal *Animal Behaviour* and is supported by a Rutherford Foundation postdoctoral fellowship and a Marsden Fast Start grant from the Royal Society of New Zealand.

Provided by Victoria University

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