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Crows may be able to make analogies

Birds pass a lab test for picking out similar relationships





BY
[SUSAN MILIUS](#)
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LIKE A CROW Hooded crows have passed a challenging lab test designed to see whether animals can think in terms of analogies.

TANYA OBOZOVA

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Two hooded crows in a lab have wowed their human colleagues by passing a test designed to see whether animals can grasp analogies.

The test presents a sample card showing two symbols, such as two triangles or a plus sign paired with a circle, that may be alike or different in shape, color or size, says study coauthor Edward Wasserman of the University of Iowa in Iowa City. A crow also sees two other cards with completely different symbols and has to pick the one that best exemplifies the relationship — sameness or difference — shown in the sample card.

The crows managed to pick the correct card more than three-quarters of the time, Wasserman and his colleagues [report](#) December 18 in *Current Biology*. ([Watch a video of the test.](#))

The triumph of the crows at this test, he says, adds new evidence to a growing revolution in attitudes toward animal's mental processes. Research has been exploding, he says, suggesting that animals, without language or a fancy human forebrain, have ways of dealing with what humans consider abstract concepts. "We have been grossly wrong: underestimating animal intelligence," Wasserman says.

Some apes plus monkeys such as baboons have also passed a version of the tests as difficult as this one, with just two symbols for determining sameness or difference, Wasserman says. He eventually trained pigeons to do a simple version of the task but had to hype up the samples with clusters of 16 icons to create blatant sameness and difference. "This is quite a chore for pigeons," he says.

Honeybees have made news for learning tasks that required distinguishing sameness or difference, but the crow test "is a step ahead in cognitive complexity," says Martin Giurfa, based at Université Paul Sabatier in Toulouse with France's CNRS research agency. He and his colleagues had shown honeybees a single icon and then required that they choose flight paths marked with either the same icon or a different one. The

crow version presented sameness or difference with pairs of symbols, which Giurfa suspects would be more difficult.

“It’s a tough task,” Wasserman says. What especially interested him was that the crows scored well the first time they tried it. The birds, working in the lab of Wasserman’s coauthors at Lomonosov Moscow State University in Russia, had learned how to take easier versions of the test, picking one of two cards that had symbols of the same size, shape or color as a reference sample. When the Moscow researchers first challenged the crows using a reference sample with symbols not shown on any of the choice cards, the crows did well the first time.

The test can’t detect what mental processes the bird uses to get the right answers, Wasserman cautions. Bird minds quite possibly would not use the same approaches that humans might use.

Citations

A. Smirnova et al. [Crows spontaneously exhibit analogical reasoning](#). *Current Biology*. Published online December 18, 2015. doi: 10.106/j.cub.2014.11.063.

Further Reading

S. Milius. [Average bear could be pretty smart](#). *Science News*. Vol. 182, October 6, 2012, p. 14.

S. Milius. [A different kind of smart](#). *Science News*. Vol. 183, May 4, 2013, p. 24.

S. Milius. [When birds go to town](#). *Science News*. Vol. 180, August 27, 201, p. 26.