

Crows are 'wicked smaht'

Anthony J. Marolda

I have a lot of wild life in my backyard. There are three bird feeders that I keep stocked year-round. This results in attracting a wide range of creatures to the area. Among these are a flock of crows who compete with the squirrels for the seeds that fall to the ground. So, I've had an opportunity to continue an interest in the behaviors of these large, black birds. Over the years, I have always been impressed by their apparent intelligence. So, I started to investigate if my observations were correct. I was surprised to find just how "smaht" they really are.

People have been watching crows for a long time and reporting on their remarkable behaviors. For example, crows in Japan, as reported by naturalist Sir David Attenborough on the BBC, have learned that they can drop hard walnuts on a roadway and wait for a car to run it over, so they can get the nut inside. But, there was a problem.

The crows realized that they could be hit by an oncoming car as they tried to retrieve the food. So, they figured a way around that danger. They dropped the nuts onto a crosswalk on the roadway and waited for them to be run over there. Later, when cars stopped to let pedestrians pass on the crosswalk, the black birds were able to swoop in to get their reward without any

danger of being hit.

Beyond the anecdotal evidence, scientists have done many studies of the depth of crow intelligence. One measure of intelligence in any creature is the ability to use tools to solve problems. And the more complex and multi-stepped the task is, the more intelligence required. A research team, headed by Dr. Alex Taylor, at the University of Auckland in New Zealand tested a crow with a problem that, to be successful, would take eight steps using tools in the proper sequence. The crow had used the individual pieces of the puzzle before but had never put them all together, or in the required sequence.

Here is how it worked: The crow, in a large enclosure, could see a piece of food that he wanted. But it was inside a long, clear, plastic box with an open end. He could see that the box was too long for him to reach inside with his beak and get to the food.

Now, the crow knew about using a stick to extend his reach. Crows in New Zealand do this in the wild when they want to get an insect hidden in the bark of a tree. So, elsewhere on the test table, the crow could see a stick that was long enough to reach in and get the food, but it was also out of reach, in another, clear plastic box. How to get that box open that had the long stick inside?

In other experiments the crow, named 007, had managed to open that type of box



AP Photo/Elaine Thompson

Scientists for years have known that crows have great memories, that they can recognize a human face, their behavior and can pass that information onto their offspring.

by dropping a stone through a tube on the top side of the box. The weight of the stone was enough to push the downward hanging door open. On the table, he could see three wooden cages with stones inside. But again, he couldn't reach through the bars of the cages with his beak to get to the stones. He needed a small stick. There was a small stick available elsewhere in the large cage. It was hanging, tied with a string to a perch. The crow flew to the perch and proceeded to pull up the string. He then pulled out the small stick (step 1). He took the small stick and went to each of the three wooden cages with the stones inside and used the small stick to reach between the bars and bring out each stone (steps 2, 3 and 4).

After a short time for consideration, he took the first stone and dropped it into the tube on the top of the clear plastic box with the large stick inside (step 5). It didn't open the door as he expected.

He repeated that step with the second stone (step 6) into the same tube and box. Still nothing happened. Once more, he dropped in the third stone (step 7), and this time the weight of the three stones together was enough to open the downward hung door.

Now, 007 was able to reach inside and grab the longer stick. He walked over to the long, plastic box with the food inside and used the long stick to force out the tasty morsel (step 8). Success!

And it took eight sequential steps to achieve. The researchers at Auckland claimed that this was the first known demonstration of spontaneous, sequential tool use by an animal other than a human. And the creature who did it was a crow. It is well known that animal intelligence is related to the size of the brain compared to total body mass. So, how does a crow compare to other animals? Scientists use something called the encephalization quotient (EQ) to get at

that relationship. The higher the EQ, the more intelligent the animal. For example, homo sapiens has an EQ of 8.1. This compares to 5.9 for a bottlenose dolphin, 4.2 for a chimpanzee and 4.1 for a crow. So, you can see that a crow is right up there in the hierarchy of intelligent animals. For comparative purposes, our beloved dogs, who we believe are very bright, only have an EQ of about 1.4. Who would have thought that a crow would have the potential to be that much more intelligent than "man's best friend?"

One surprising capability demonstrated by wild crows is the ability to recognize and differentiate human faces. John Marzluff, a professor of wildlife science at the University of Washington, did some experiments that demonstrated this skill. There was a flock of crows in a park near his campus. The research team caught and banded seven of the crows while wearing a rubber mask of an ugly, ominous-looking cave-man with a large brow and protruding teeth. For the next eight years, whenever someone would don that same mask and go to the park, those crows would spot the masked intruder and become agitated and begin scolding in alarm. Without the cave-man mask, or even wearing a different control mask, the crows would not pay attention to those same people. And the crows

developed this behavior in just one trial.

Even more interesting is that, somehow, the crows communicated with each other so that, over time, most of the flock developed the ability to recognize the "cave-man" whenever he would appear, even in a crowd. Who would have guessed that crows were able to exchange such detailed information so well?

In another example of advanced intelligence, research scientists at the University of Tuebingen in Germany found that crows can recognize the number of things in a set. They trained the crows to recognize groups of dots, from one to seven. Then they changed the sizes and arrangements of the dots, and the birds still recognized the number. Neuroscientist Dr. Helen Ditz, said, "When a crow sees three points, seeds or even hunters, single nerve cells recognize the 'three-ness' of the objects." And this is exactly how primate brains perform, she said, which is interesting since the brain structures of the two species are so different.

So, the next time you get upset with your local crows for making all that racket, or for opening your trash bags and making a mess, remember that they are among our most intelligent companions in the animal world and deserve a little respect, as hard as that might be.

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