Research shows crows comparable to humans when it comes to waiting

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Corvus brachyrhynchos or Corvus caurinus. Image: Wikipedia.

(PhysOrg.com) -- In a new study published in Royal Society's *Biology Letters*, researchers have discovered that crows and raven birds show the same ability to complete delayed exchange tasks as monkeys and humans do.

The researchers, led by Dr. Valerie Dufour from the Universite de Strasbourg, began their study by training 12 birds to exchange tokens for food. They gave each bird a piece of food. Keeping their giving hand closed, they showed the birds the reward in their other hand. After a waiting period, the researchers opened their giving hand again. The birds then received the reward if they gave back the initial piece of food.

The maximum waiting period the researchers used was five minutes and the quality of the reward varied in each exchange. What the birds did during the waiting period varied with some birds leaving the food on the ground or hiding it and checking on it during the time period.

This study shows that the crows are able to wait before making a decision and that this behavior is not limited to only humans and apes. While the researchers believed that the birds would be able to wait a few seconds, they were surprised that the birds were able to wait as long as they did.

The destructive behavior, such as hiding the food and checking on it, enabled the crows to wait a longer period of time. Those birds with the longest waiting times all displayed this particular destructive behavior.

More information: Corvids can decide if a future exchange is worth waiting for, *Biol. Lett.* Published online before print September 14, 2011, doi: 10.1098/rsbl.2011.0726

Abstract
Evidence for time-dependent calculations about future rewards is scarce in non-human animals. In non-human primates, only great apes are comparable with humans. Still, some species wait for several minutes to obtain a better reward in delayed exchange tasks. Corvids have been shown to match with non-human primates in some time-related tasks. Here, we investigate a delay of gratification in two corvid species, the carrion crow (Corvus corone) and the common raven (Corvus corax), in an exchange task. Results show that corvids success decreases quickly as delay increases, with a maximal delay of up to 320 s (more than 5 min). The decision to wait rests both on the quality of the prospective reward and the time required to obtain it. Corvids also apply tactics (placing the reward on the ground or caching it) that probably alleviate costs of waiting and distract their attention during waiting. These findings

contrast previous results on delayed gratification in birds and indicate that some species may perform comparably to primates.

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