

Are Animals Conscious?



By Karlene Stange, DVM

People who love their pets tend to believe that non-human animals are conscious. It seems intuitively obvious, but science has never admitted that anything, other than human beings, has consciousness. Scientists describe animal behavior as nothing more than instinctual response to stimuli. They find the idea of animal consciousness to be a silly, anthropomorphic, Disney version of reality - until now.

A little history is needed to understand how contentious this question has been. In 1969, Washoe, the first chimpanzee to learn sign language, showed evidence of cognition by describing a duck, using the signs "water bird." A gorilla named Koko learned 1000 American signs and understood 2000 English words. When she first saw a Zebra she signed "white tiger." Yet scientists denied that any animal, other than humans, had even a rudimentary facility for language.

In the late 1970s, Irene Pepperberg performed communication research with an African grey parrot named Alex. He spoke 100 words and demonstrated the cognitive processing of a 5-6 year old child. Pepperberg tested Alex with colored objects, asking questions such as, "Which object blue with four corners?" He identified items such as a key, in spite of color, shape or size changes. With a brain the size of a shelled walnut, Alex did mathematics, accurately responding to queries like, "How many red?" He spoke in complete sentences saying, "I love you." After he spilled coffee one day he said, "I'm sorry. I'm really, really sorry."

Alex also learned to spell phonetically. During one spelling lesson he asked for a nut, but Irene kept him on task. "Want a nut,"

Alex insisted. When Irene did not comply, he spelled it out for her before she had taught him, "Want a nut! Na, u, ta."

Yet, Pepperberg initially found it difficult to have her research with Alex published. The idea that animals had language was taboo. Finally, a German journal accepted her work and, over time, Alex became the ambassador of animal intelligence. Now, we also know that prairie dogs have a complex language, using different sounds for hawk, badger, man with gun, man with shovel and so on.

As for consciousness, even though Darwin mentioned it, scientists tend to ignore the concept, leaving it to philosophers to discuss. Scientists want empirical data. Evidence must be objective and testable. Consciousness is not a physical item that can be easily measured. Hence, animal behaviorists deflect the topic.

In *Comparative Cognition, Experimental Explorations of Animal Intelligence (2006)*, the goal was to study animal behavior without considering the concept of mind or consciousness, in order to avoid assumptions about the similarity of human mental states to those of other animals and prevent distorting a clear view of the animals' minds. However, Alex, and other creatures caused researchers to view a discussion of consciousness in non-human animals as respectable rather than heretical.

What is Consciousness?

From a veterinary medical perspective, consciousness relates to the brain. Either a living animal is conscious, asleep, under anesthesia or in a coma. If an animal can be made unconscious with anesthesia, it follows that the creature was conscious to begin with. But that is not the type of consciousness people deny to animals. Supposedly,

there is some other kind of consciousness, which no one has specifically defined, that is special to humans.

Most definitions of consciousness include the word “awareness,” another nebulous term with vague connections to intelligence and empathy. Furthermore, levels of awareness change by the minute. A horse is often more aware than humans of wildlife in the vicinity. A human genius can be an absent-minded professor so engrossed in his own thoughts that he is oblivious to the world around him. So what is awareness?

For many years, the idea of consciousness in non-human animals was rejected because animals were not “self-aware.” The test for self-awareness required an animal to recognize itself in a mirror; a dot was placed on the animal’s head, and the creature would have to touch the dot on its head rather than on the mirror to indicate that it understood the image in the mirror was a reflection. Children do not pass this test until they are 18-24 months of age. To date, numerous birds, gorillas, chimpanzees, dolphins and elephants have all passed the test. Interestingly, once an animal learns about mirrors they tend to check out their teeth and other body parts.

The good news is that on July 7, 2012, at the Francis Crick Memorial Conference in Cambridge, research on consciousness in human and non-human animals was presented by a group of prominent international neuroscientists, and a declaration in favor of animal consciousness was made. Several important points bear reporting:

- 1) The part of the brain that humans have (the neocortex) which other animals do not have is not responsible for consciousness. Consciousness is not a function of the brain neocortex.
- 2) Self-awareness is a given. All animals are self-aware or they would be bumping into each other. The mirror test is now simply called “the mirror self-recognition test.”
- 3) The report further states that an African grey parrot has demonstrated “near human-like levels of consciousness.”
- 4) The Cambridge Declaration on consciousness says, “The weight of the evidence indicates that humans are not unique in possessing the neurological substrates that generate consciousness. Non-human animals, including all mammals and birds, and many other creatures, including octopuses, also possess these neurological substrates.”



[A]n African grey parrot has demonstrated “near human-like levels of consciousness.”

Other researchers, such as Jane Goodall (famous chimpanzee researcher), Marc Bekoff (author of *The Emotional Lives of Animals*), and Bernd Heinrich (in his book *Mind of the Raven*), have been saying this for years. So, what took the rest of the world so long? Are humans so narcissistic that we are blinded by our own reflections? It is not because of a lack of evidence. According to Bekoff, the evidence is so replete that it makes skepticism anti-scientific.

It is important to remember that science is not the truth. It is a complex system of theories that are in constant revision, complicated by politics and economics. Not all the evidence that has been accepted remains valid over time, and much that is rejected becomes a commonly accepted view years later. (One example is the theory of continental drift, long denied. Another is that life began in a primordial soup, which is now an outmoded theory.) Too often the evidence that is accepted and promoted is that which benefits the political and financial gain of those in power.

Marc Bekoff believes the reason we don’t want to admit that animals are conscious is because we are afraid; if we accept that non-human animals are conscious we have to look at how we treat them. Fortunately, we now admit it and we are looking.

This year, the National Institutes of Health recommended the retirement of almost all chimpanzees from their research facilities. In other parts of the world, the European Union wrote the Treaty of Lisbon in 2009, which regards all animals, including fish, as sentient beings to be given full regard for welfare requirements.

Human beings have finally become conscious enough to be aware of consciousness in non-human animals. Soon we may see that consciousness is more than neurological substrates, agreeing with those who suggest that it is the fabric of the Universe, and that we are all One. ☺

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