

Animal Consciousness: Evolution and Our Environment

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The question of animal awareness and animal rights has been discussed as early as Aristotle. Aristotle believed animals were incapable of reason and therefore were to be regarded as inferior to man in the same manner as were slaves. Although attitudes such as Aristotle's have changed over the years, philosophers and scientists still cannot agree on one coherent view of animal awareness.

Awareness is defined as “[the state of being] knowing or conscious of something, cognizant.” *Conscious* is then defined as “mentally aware of one's inner thoughts and feelings and also of things external to oneself.” Arguments in support of animal awareness are relatively recent, and emerging scientific evidence comes closer and closer to fully supporting these arguments. In fact, there is much evidence that animals *are* aware, from bacteria and earthworms to orangutans and chimpanzees. If animals are indeed aware, then there should be appropriate rights given to them not as animals, but as conscious agents such as ourselves.

Previous views traditionally do not support rights for animals. Like Aristotle, the Bible also decrees man as master over animals: “Let [man] have dominion over the fish of the sea, the birds of the air, and the cattle, and over all the wild animals and all the creatures that crawl on the ground.”¹ According to the Bible, man has control over all animals, domestic ones as well as wild.

Although this view is similar to Aristotle's, Descartes' view took animal existence to another level. He believed animals were assembled as machines and that they were incapable of having thoughts, language, feeling, or consciousness.² Descartes' view was one of the most innovative, but also rather drastic and not many people believed in this theory wholeheartedly. Although Aristotle believed animals should be enslaved by man,

this belief was a direct result of animals' inability to reason. If it can be proven that animals are indeed conscious, then the life sentence of slavery and inferiority, proposed by Aristotle and others, should be able to be lifted.

Before discussing the possibility of animal consciousness, it must be mentioned that this is only a cognitive view. Many psychologists are behaviorists and do not believe the human brain is capable of having "conscious thoughts" or "feelings"; behavior is only a result of biological processes, in animals as well as in human beings.³ However, our own minds tell us that this is not the case. There are instances when our bodies are unaware of a biological reaction, such as the withdrawal of a hand from a painful stimulus. However, there are also conscious decisions to perform a biological action, such as reaching out and picking up an object. Both conscious and unconscious reactions such as these occur in humans as well as animals.⁴ It is impossible to tell by observation alone whether or not an animal is performing a conscious action or an unconscious action.

Unfortunately, this example also brings about the problem of "other minds." Many philosophers are not so quick to assume that fellow humans have the same thoughts and feelings as their own. In reality, it cannot be proven that other minds actually exist in the universe, since each person is only able to access his/her own mind and no one else's.⁵ Man's ability to reason, however, allows us to realize that other people probably experience the world the same way we do. Our similar physical structures, biological reactions, social structures, and our ability to communicate with one another make it very difficult for anyone to really believe his or hers is the only real mind that exists.

Most importantly, language helps solve the problem of other minds by allowing people to communicate to one another through their thoughts and feelings, which can

only be results of the mind.⁶ However, language can be used as a restraining component when it comes to animal rights. Some philosophers such as Popper and Aristotle believed that human language was the primary component for consciousness.⁷ Despite obvious counterarguments about people incapable of “human language,” it is obvious that animals are capable of using languages of their own, if only from simple observation of their everyday life.

The story of Koko proves a nonhuman animal can not only use language, but utilize human language as well. Koko was a sickly African gorilla who was taken in by researchers at Stanford University in California, USA. She was taught sign language and could combine several hundred signs to construct sentences to her researchers expressing commands, needs, and even her feelings. She expressed sentences of love toward her pet kitten, and when the kitten died, Koko grieved.⁸ Koko was living proof that a nonhuman animal could use human language successfully. Other researchers have been successful with teaching primates how to use sign language. Washoe, a female chimpanzee, was taught over a hundred signs in American Sign Language (ASL) and could also communicate to her researchers, who only spoke to her and each other in ASL.⁹

According to Popper and Aristotle, Koko and Washoe would be considered conscious agents. Not only did they prove themselves conscious in that regard, but Koko’s ability to express feelings is evidence that it is possible for animals to have inner thoughts about themselves. Koko must have had some understanding of the sentences she was constructing and the words she was using, because her ability to communicate with her human companions was too acute to only be due to chance.

Koko’s and Washoe’s stories, as well as many other primate research attempts, have helped the belief of animal consciousness become more widespread. However, some philosophers and scientists believe that it is not language that is necessary for

consciousness, but the ability to communicate. This belief is mostly a spin-off of the necessity of “human language,” but is a bit more inclusive for animals, since it includes use of their various language tactics as well as human ones.

Many philosophers and psychologists believe that animal communication is not *real* communication, but rather unconscious biological reactions that can be compared to blinking, blushing, etc. Donald R. Griffin discusses the importance of animal communication in his books *Animal Minds* and *Animal Thinking*. In these books, he tries to prove that animals indeed have intentional communication with other animals and that this communication is strong evidence that they are aware. Griffin states:

If nonhuman animals experience conscious thoughts or subjective feelings, we might be able to learn about them by intercepting the signals by which they communicate these thoughts and feelings to other animals...the analogy to how we learn about other people’s thoughts and feelings is so directly appropriate that we should make an effort to see where it might lead.¹⁰

Griffin also makes an interesting point about consciousness and evolution:

...Socially independent primates or early men had to be what he calls “natural psychologists” rests on the assumption that for efficient interaction, each group member must be able to understand his companions’ frame of mind...consciousness evolved in our own species because it had adaptive value.¹¹

In short, for Griffin communication is the key point. He also notes that if animals’ communication with one another were completely unconscious and biological, then the signals should only depend on the animal’s internal state, not the presence of or in response to a receiver. He notes the communication between mother and young and distress and mating calls in certain species.¹² If these were only responses to internal states, no receiver should exist and no other animal of that species should be affected by the call.

Another qualification for consciousness proposed by philosophers is the ability to

learn. This qualification is clearly important, because no species of animal succeeds in life without learning from its mistakes and, in the case of humankind, flourishing in species is usually more successful when consciousness is present.

Natural selection, first proposed by Darwin in *The Origin of Species*, proposes that offspring which adapt most strongly to their environment will survive.¹³ Although this traditionally means biological adaptation, behavioral adaptation is necessary in order to keep social groups together and to know how to react in certain life or death situations. For example, three scientists, Silk, Alberts, and Altmann, studied the lifetime reproductive success of female baboons living in Amboseli National Park, Kenya. According to this study, highest rates of infant survival were held by those baboons that had the most social bonds. Females who lost close relatives extended their social network by forming bonds with other members of their family and they also formed close bonds with other males if they felt there was a potentially infanticidal male within the group.¹⁴

These observations reflect natural selection in that those mothers who socially network protect their young, and those protected offspring survive infanticide. However, those offspring don't necessarily inherit biological traits that will keep their future children alive, but they *learn* through experience and observation of others within the group that forming close social bonds helps protect their young from hostile aggressors.

Traditional results from behavioral "conditioning" can be thought of in a new way, one of which supports animal thought. For example, a laboratory animal can learn that a certain action can be made to avoid a painful shock, such as pulling a lever or pushing a button. After a certain amount of trials, the laboratory animal still performs the action, even though no more painful shocks are delivered. Many psychologists believe that animals are capable of cognition, or the process of knowing, but deny that consciousness is a factor in the processing of the knowledge. However, it is more likely

to be the case that the animal anticipates the pain that it will feel following a certain stimulus, so it will perform the learned action it knows will be effective in avoiding it. Many behaviorists do not like this interpretation, because it gives a very mentalist interpretation to an apparently “conditioned,” not *learned*, response.¹⁵

One of the most universally discussed criteria for consciousness, among philosophers and scientists alike, is self-awareness. Descartes’ *cogito ergo sum*, the self-aware man declaring “I think, therefore I am,” may be a lot to ask for a nonhuman animal, but that doesn’t mean that certain animals cannot be aware of themselves as individuals in other ways.

Some philosophers claim that it is impossible for animals to be able to separate themselves from biological urges, that is, they cannot think “It is I who am hungry and searching for food.” However, it seems odd for an animal *not* to be able to do this; after all, if an animal is not aware that *it* is the one who is hungry, then it would probably starve. In addition, some animal studies have yielded interesting results in relation to self-awareness in animals. For example, Lance Olsen of the University of Montana, USA, proposed that self-concealment in animals is an indicator of self-awareness as well as conscious thinking. A noteworthy example of this is found in the behavior of grizzly bears, studied by Olsen and other dating back to the early 20th century. Grizzlies choose positions, when hiding, in which they can see hunters or other human trespassers and still remain unseen themselves. Grizzlies also make an effort to not leave tracks or to remove their tracks, showing they are able to comprehend that they may be followed by human predators.¹⁶

What all of this evidence suggests is that animals have the potential to be if they are not already aware, and the possibility that animals are aware is very likely. Along with behavioral observation and studies, hard scientific evidence has been gathered in

favor of consciousness in nonhuman animals, such as the reactions to sound stimuli by human beings and monkeys. In the study, the man and the monkey both produced brain waves when a sound occurred that differed from the preceding sound pattern. The P300 wave that the man produced was a result of conscious reflection, or thinking (according to previous studies); the wave emitted by the monkey was slightly different, but occurred at the same time as the man's. The monkey, at this point, could have very well been thinking "I remember hearing the other sounds before this sound, and this sound is different from the other sounds I heard before." If this were the case, the difference in the type of brain waves emitted may have only been due to the electrode's direct implantation into the monkey's brain, while the man's were externally applied.¹⁷

What animals specifically think may be a mystery, but we are getting close to proving that they are at least capable of simple thought. At the very least, it is difficult to ignore the facts pointing to the consciousness of "higher" animals. If this is the case, what does it mean for the rest of the animal kingdom?

It is hard enough for animals to have any sort of rights in such modern anthropocentric societies that are prominent in our world today. Animal rights activists have numerous arguments for the "humane" treatment of animals. Some more abstract reasons are tricky to refute with hard evidence, such as the belief that it is simply our duty to be kind to animals and not harm them.¹⁸ However, one of the most popular platforms is most difficult to refute, because normal human empathy and sympathy make it hard to ignore.

Animal activists generally platform on the fact that animals feel pain, and that needless suffering of animals caused by animal testing and commercial farming is wrong. This platform, campaigning against suffering in animals, can be refuted in two ways: one, denying any importance to the pain or suffering of animals, and two, denying that any

pain and suffering actually exists for animals.¹⁹ The latter refutation is clearly a remnant of Descartes' belief and has very little ground to stand upon, especially since advancements in science show the biological ridiculousness of this claim. The first refutation, however, brings forth a multitude of ethical questions about the importance of animals and their place in the world.

The evidence put forth previously in this paper supports the view that animals have a strong possibility of consciousness, if they are not already conscious (as some higher species are, including human beings). These variations in the levels of consciousness in the animal kingdom are very vast, from the simple task-oriented cognition of ants to Koko's awareness of her feelings. Clearly, evolution has brought many species, as well as man, quite a long way.

These vast differences show just how far man has come intellectually as well as physically. However, it is easy to forget that man originated from ape, ape from other mammals, all the way back to single celled organisms. From an evolutionary standpoint, what seems most important to preserve in animals is their representation of man's previous evolutionary states and their potential to evolve, if they have not already, into animals with even higher intellectual states.

Preventing the needless suffering of animals is very important, but often the unbelievable abilities of animals are ignored and they are reduced to exploited and pathetic beings unable to be saved unless by human intervention. Sometimes this is the case, but most animals are extremely self sufficient and capable of doing extraordinary things. Sea otters use stones, specially selected for their size and shape, to pry open shells underwater that will not come apart by traditional means. The otters sometimes keep the very good stones they find for long periods of time and tuck them under their armpit while swimming.²⁰ Beavers cut down large trees with their teeth, taking days at a time, to

engineer a dam that is inaccessible to predators. They adapt to their environment; some beavers that live in streams or ponds create an underwater tunnel to a burrow on dry ground.²¹ Other everyday animal structures, such as bird nests or anthills, require a significant amount of time and effort for the animals involved. The urge to hunt, gather, reproduce and build suitable living structures are all somewhat biologically influenced, but as mentioned before, there has to be some element of problem-solving in new situations for natural selection to be able to take its course.

An interesting addition to this discussion is research done on the evolution of the brain. In general, brain size is determined by body size, not by mental capacity. However, some animals have brains that are larger than they should be according to their body size, such as chimpanzees, whose brain is over two times as heavy. Also, Harry J. Jerison held a functionalist view that brain size increases depending on mode or style of life, not just as a quantity with a tendency to increase. Jerison's studies found carnivores that had to capture their prey on average had larger brains than herbivores. He also found that primates generally had the largest brains through most of the process of evolution.²²

This new information gives the animal ethicist a lot to consider. If an animal's brain size depends on lifestyle, then any new problems that may arise in day to day life could inevitably expand the biological capacity of the animal's brain. The more an animal encounters, the more it is able to *learn* and natural selection favors the adaptability of offspring to its environment, which includes new and challenging problems. Over millions of years, if adaptation were to take its course, consciousness in all levels of species may be possible. If it happened for primates, it could happen for many other species of animals.

What is important to recognize is the possibility of this in *all* species of animals and to preserve this possibility by fostering the natural livelihood of animals and protect

them from extinction. Instead of focusing on the “innocence” (more like ignorance) of animals in animal rights, we should recognize nonhuman animals as potential intelligent species to rival our own. Holmes Rolston discusses the importance of finding a place for humanity in the environment. He notes that ethics can only be applied to individuals and that animals as *species* cannot, therefore, have any ethical theory applied to them as a collection. However, he then says that “duties” to a species is not to a collection or category, but to a life line, and that applying an ethic to *species*, a collection of sentient individuals, is even more important than applying it to animals’ individual interests.²³ He comes to a very enlightening conclusion about animals, humans, and their environment:

There is nothing wrong with humans exploiting their environment, resourcefully using it. Nature requires this of every species, humans not excepted...But humans have options about the extent to which they do so; they also have, or ought to have, a conscience about it. The consumption of individual animals and plants is one thing; it can be routinely justified. But the consumption of species is something else; it cannot be routinely justified. To the contrary, each species made extinct is forever slain, and each extinction incrementally erodes the regenerative powers on our planet.²⁴

It is challenging for some people to recognize that consuming the environment in some regard is necessary for survival. Humans are “knowledgeable” enough to know that we should be preserving everything that we exploit and take for granted. However, Rolston’s view gives humanity the option for a happy medium. Using the earth’s resources is allowable, according to the natural order of things, namely the food chain. But Rolston calls for an ethical consciousness, one that many anthropocentric-minded people are hesitant to adopt. If the anthropocentric mindset can be abolished, whether it come from this acceptance of animals’ consciousness or the dangerous decline of our earth’s environment, then maybe an environmentally-friendly ethic can finally be established.

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¹ *Genesis* 1:26.

² John Cottingham, "A Brute to the Brutes?:' Descartes' Treatment of Animals," *Philosophy* 53 (1978): 551. <http://www.jstor.org/pss/3749880>.

³ Griffin, Donald R. *Animal Thinking*. Cambridge: Harvard UP, 1984. Donald R. Griffin, *Animal Thinking* (Cambridge: Harvard University Press, 1984), 4.

⁴ *Ibid.*, 43.

⁵ *Ibid.*, 27.

⁶ *Ibid.*, 161.

⁷ *Ibid.*, 2.

⁸ Holmes Rolston III, *Environmental Ethics* (Philadelphia: Temple University Press, 1988), 69-70.

⁹ Donald R. Griffin, *Animal Minds* (New York: University of Chicago Press, 1992), 218.

¹⁰ Donald R. Griffin, *Animal Thinking*, 186.

¹¹ *Ibid.*, 186.

¹² *Ibid.*, 162.

¹³ Stephen Jay Gould, *Ever Since Darwin* (New York: Norton & Company, 1977), 11.

¹⁴ Dorothy L. Cheney and Robert M. Seyfarth, *Baboon Metaphysics: The Evolution of a Social Mind* (New York: University of Chicago Press, 2007), 110.

¹⁵ Donald R. Griffin, *Animal Thinking*, 135.

¹⁶ *Ibid.*, 74.

¹⁷ Donald R. Griffin, *Animal Minds*, 151.

¹⁸ Tom Regan, "The Case for Animal Rights," *The Animal Rights Library*, <<http://www.animal-rights-library.com/texts-m/regan03.htm>>.

¹⁹ *Ibid.*

²⁰ Donald R. Griffin, *Animal Thinking*, 135.

²¹ *Ibid.*, 131.

²² Stephen J. Gould, *Ever Since Darwin*, 188-190.

²³ Holmes Rolston III, *Environmental Ethics*, 146-147.

²⁴ *Ibid.*, 158.