

Animal Consciousness and Morgan's Canon

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Introduction

An occasionally raised question about the animal consciousness might have an answer as follows. Since some of animals, clearly related to us, have organisms, brains, and behavior at least similar to our own it appears logically to consider that they do have some sort of experiences and minds similar to humans. Afore mentioned speculation is enhanced or even testified by anyone who ever possessed or has been in the vicinity of an animal. Therefore it seems that the question about animal consciousness is solved. However, a simple fact should be noted: this conclusion is not generally accepted. Namely, some natural scientists and philosophers often accept a certain version of Cartesian dualistic approach. Dealing with the problem of animal consciousness an unavoidable item is the so called Morgan's Canon i.e. the rule which postulates avoidance, whenever possible, of attributing humanlike mental states to animals. Are these, negative conclusions, about animal consciousness an expression of wishful thinking and our need for keeping science "pure", without any anthropomorphism? If the answer is affirmative, than the positioning of science on a pedestal above our humaneness is even more questionable. Besides, it is also the fact that the anthropomorphism is without any doubt a human characteristic. The aim of this text is presentation of Morgan's Canon, and therefore an overview of opinions concerning animal consciousness and consciousness in general is needed. It also has to be mentioned that those are the question that greatly interest philosophers as they do biologists.¹

Consciousness

Cartmill (1998) has stated that although consciousness is a very source of all values in our life and should be at the top of scientific priorities, it escapes scientific research. Also one could say that the concept of consciousness is intuitively clear as long as a precise definition is not needed.

It is evident that consciousness is connected and depended on the processes of the brain. Consciousness is lost when the neural patterns for awoken state are changed into the patterns characteristic for sleep or epileptic seizure. But it is not clear which of the brain activities are responsible for conscious state (Cartmill, 2000). Consciousness avoids a

scientific explanation so much that some scientists have simply given up the idea to explain the phenomenon scientifically.²

It is not difficult to find a proof of the existence of consciousness in humans. Let us note what is happening when two persons want to establish whether a certain subjective experience has been repeatedly observed when the same action was repeated. Primarily what would have happened is that two different persons would give the same verbal report about the action observed. Then we have to accept their findings as the proof, for we know, or at least believe, that the behavior and minds of adult and healthy persons is more or less similar to our own. Challenges become real if we want to reach conclusions about subjective experiences but have not obtained any verbal report from the subjects tested. Indeed, that is the problem elaborated in this text, because we are dealing with organisms (animals) similar to our own, but without any verbal communication between two species. In such a situation the question of animal consciousness arises.

Animal Consciousness

Doubts about animal consciousness are not new. Already Augustine has stated in “*De Civitate Dei*” (12.4) that cattle, trees and other transitory and mortal entities generally lack minds, senses and life. Obviously animals are part of that group. The reality of animal consciousness was seriously discussed by Descartes who considered animals as a certain kind of non-sentient automata. Descartes is also responsible for placing the question of consciousness into a central position in the history of modern philosophy. In the contemporary philosophy Dennett is promoting a position which ascribes no consciousness to animals, and states that a sort of information organization is needed in order to proclaim something to be conscious. A wide selection of cognitive abilities (e.g. reflection) which enables subject to have that organization exists only in humans. On the other hand some philosophers believe that animals are conscious. For instance, Hume attributed consciousness and thoughts to “beasts” (Cartmill, 2000). Donceel (1967), a philosophical anthropologist, thinks that animals do have some knowledge about things which surround them, and animals react because they are attracted or repulsed by them. Griffin (2000), a founder of a modern investigation of animal consciousness, states that some animals have consciousness, but the content of it is different in comparison with humans.

However, besides the ideas of philosophers, many people held the belief that our close animal relatives have some sort of conscious mental life, but one which is on a lower level of

quality compared to our own. Also most of the people think that language and verbal communication is the main difference. It appears that from the same reason stems the claim that nonexistence of conceptual thinking is due to the lack of language. And without conceptual thoughts they are not able to create the general notions because they simply do not have words needed. A problem with this statement is that quite a number of our (human) concepts are not linguistically marked (Cartmill, 1990). Another opinion is that animals having no language must lack self-awareness as well. They have some elementary consciousness of objects; they perceive things but they can not reflect i.e. perceive themselves as perceiving (Cartmill, 2000).

A complete opposition to the above mentioned opinions about the total lack of consciousness in animals, as well as the division between man and animals, was proclaimed by Darwin. According to Darwin: “there is no fundamental difference between man and higher mammals in their mental faculties” (Cartmill, 2000). This opinion was denoted as being unscientific or even anthropomorphic. It should be mentioned once again that Darwinist opinion is in evident contrast to Cartesian stressing of spiritual difference between man and animal. Perhaps it is necessary to observe a Darwinist concept as a completely strategic approach. In the mid-19th century an unbridgeable difference concerning consciousness between man and animal was considered as the main argument against the theory of evolution by the natural selection.

A hidden difficulty of that theory is included in an attempt to use expressive behavior of animals as a tool to demonstrate various signs of animal emotions and mental powers. To a consistent Darwinist an expressive animal behavior demands an explanation, and the explanation should overcome the proximate causes and should go toward their evolutionary sources. E.g. grief is the main cause of an act of crying. But that fact does not explain why grief is expressed in such a particular manner. Or why we cry at all. The lost of fluids in the form of tears or diminishing of our energy by the act of crying is a very unproductive procedure from the biological standpoint. In the spirit of Darwinist evolution we should be able to find some evolutionary or selective advantage in crying. And in that case the behavior observed (crying) should not be connected with some unspecified mental processes. Or in the other words one can conclude that a subjective sense, for example of pain exists in a kicked dog if his whining does not serve any other objective purpose, e.g. to warn other dogs in a pack of a danger (Cartmill, 2000). It would appear that Darwin’s theory of a minimal difference between men and animals contains in itself an initial source of its own denial. If expressive behavior of animals, which Darwin emphasized, has no adaptive value, than it can

not be explained by natural selection. And if it has adaptive value, than it can no be used as an evidence for animal consciousness.

Morgan's Canon

A British philosopher and psychologist C. Lloyd Morgan (1852-1936) had provided perhaps the most significant rejection of Darwinist anthropomorphic understanding of difference between human and animal consciousness. However Morgan was under the influence of Darwin, since he accepted the evolution as a continuous process (Gaudge, 1972).

In 1894 Morgan proposed a principle later known as Morgan's Canon: "In no case may we interpret an action as a outcome of the exercise of a higher psychological faculty, if it can be interpreted as the outcome of the exercise of one which stands lower in the psychological scale" (Cartmill, 2000). Generations of experimental psychologists have accepted the Canon in studies of animal behavior. The importance of Morgan's Canon becomes evident from the following two opinions. Kimler (2000), a historian of psychology, states that the Canon has created animal psychology as a scientific discipline. While Radick (2000) states: "Since latter Morgan and his Canon, objective observers have appealed whenever possible to quasi-mechanical processes such as trial-and error learning and imitation, rather than understanding and purpose-guided planning, to explain how animals come to act in apparently clever ways." From previous citations it is clear that Morgan's Canon has left a continuous impact upon all subsequent investigations into animal behavior and consciousness.

Let us try to conduct Morgan's Canon with a simple example (Brown, 2004). Somehow a baboon called Kanzi had acquired and removed a key of his cage. When his trainer tried to find the key she invited Kanzi to help her. Kanzi had performed all the necessary movements as to appear he was really trying to help. Eventually when the trainer had left the cage, Kanzi produced the key and escaped from the cage. It would appear that Kanzi had an intention to persuade his trainers that the key was really lost. The description of the situation can be even more far reaching: he had consciously taken the key in order to escape, while in the same time pretending to search for it. In that case an interpretation of the event should include a level of consciousness on a much higher scale then usually ascribed to animals. However a question should be asked: is there any other explanation? We might speculate that Kanzi has really "forgotten" the key while he was simply following the movements of his trainer without any premeditated aim. It is rather obvious which conclusion can be reached by using the Morgan's Canon.

Morgan's Canon could be considered, because of its simplicity, as a special case of Occam's Razor. Therefore if an animal behavior can be explained as a condition operant, than Morgan's Canon does not allow an interpretation of the outcome using "higher" mental processes (such as volition or deliberation). Cartmill suggests that for Morgan "lower in the psychological scale" does not signify "neurologically simpler", but with the reference to the human evolution, it means "historically prior". Therefore "lower" means "shared with other species" and "higher" means "distinctively human". Although Morgan's Canon appears to be a correct position when studying consciousness, there are problems. To explain one of it Cartmill introduces an almost ridiculous "urological version" of the canon. If one exchanges "the brain activity" with "the kidney activity" then Morgan's Canon would forbid one to explain the outcome (animal's urine) in the same way as humanlike kidney activity (Cartmill, 2000).

Of course, there is no physiologist who would accept such an interpretation as a real one. Therefore Morgan's Canon can not be used to escape anthropomorphism.

The next question is whether Morgan's Canon with such a limited applicability can be used as Occam's Razor in studying animal consciousness. Cartmill's answer is partly an affirmative one, but he thinks that means accepting epiphenomenalism as an ultimate consequence. Briefly epiphenomenalism denotes a theory that: "the mental events are caused by physical events in the brain, but have no effect upon any physical events. Behavior is caused by muscles that contract upon receiving neural impulses, and neural impulses are generated by input from other neurons or from sense organs" (Robinson, 2003). Therefore, if consciousness has no effect upon human behavior, dealing with similar animal behavior it is really the simplest solution not mentioning consciousness at all. Neurological events that we are not aware of are caused by a stimulus, and the neurological event can cause behavior (reflex) directly, or can trigger neurological processes connected with conscious states eventually. And the conscious states can cause sub sequential neurological processes which finally result in behavior. On the other hand, if conscious states do not cause a certain behavior, then Morgan's Canon becomes parsimonious by denying consciousness in animals. In such a case Cartmill equalizes Morgan's Canon with epiphenomenalism. A clear problem remains: a thesis that consciousness has no effect upon human behavior is probably unacceptable for most people, who believe that our thoughts do have at least some role in our behavior (Cartmill, 2000).

Has Morgan wanted really to deny any animal consciousness?

This is the last question which should be addressed to. It would appear that Morgan had no such intentions, because he accepted the continuity of evolution in Darwinist sense and basically believed in animal consciousness since they have inherited the brain structure similar to human (Radick, 2000). Also, according to Griffin (2000), Morgan did not have intention of denying animals consciousness completely, but the Canon was used by others for that purpose.

Conclusion

Based on the literature cited above and some personal experience my opinion can be summarized as follows.

1. For a very long time I had a dog and he had been showing signs of joy each time I came back home without any connections with some activities performed by me and beneficial for him. He was “conscious” of my coming, and not of a stranger.
2. The term “conscious” used above to denote an unknown neural/mental process which I presume is different from my own consciousness. I am aware of consciousness and that is perhaps the difference between human consciousness and animal one. Is it not true that humans are the only living creatures conscious of their own mortality?!
3. However the basic question about animal consciousness can not be properly answered for the time being. If and/or when we would be able to precisely answer the fundamental question i.e. what is human consciousness, only then we might be able to understand animal consciousness too.

Footnotes

1. The main body of literature consulted is from the symposium entitled “*Animal Consciousness: Historical, Theoretical, and Empirical Perspectives*”. The symposium took place January 6-9, 1999 at the annual meeting of the Society for Integrative and Comparative Biology at Denver (Colorado).
2. A good example of difficulties connected with the definition of consciousness is in Güzelder, G., *The Many Faces of Consciousness. A Field Guide*, in: Block, N., Flanagan, O., Güzeldere, G. (ed.), *Nature of Consciousness: Philosophical Debates* (MIT Press,

Cambridge) pp. 1-67. [taken from: Cartmill, M., *Animal Consciousness: Some Philosophical, Methodological, and Evolutionary Problems*, *American Zoologist* 40(2000)835-846].

Literature

Augustin, *O državi Božjoj. De civitate Dei* (Kršćanska sadašnjost, Zagreb, 1995).

Brown, D., (2004), *Do Dolphins Know Their Own Minds?*, *Biology and Philosophy* 19:633-653.

Cartmill, M., (1990), *Human Uniqueness and Theoretical Content in Paleoanthropology*, *International Journal of Primatology* 11:173-192.

Cartmill, M., (1998), *Animal Minds, Animal Dreams – Consciousness and Sleep in Animals*, *Natural History* 3:1.

Cartmill, M., (2000), *Animal Consciousness: Some Philosophical, Methodological, and Evolutionary Problems*, *American Zoologist* 40:835-836.

Donceel, J. F., (1967), *Philosophical Anthropology* (Sheed and Ward, New York), p. 86.

Edward, N. Z. (ed.), (2003), *Epiphenomenalism*, in: *The Stanford Encyclopedia of Philosophy* (Spring Edition); URL=<http://plato.stanford.edu/archives/spr2003/entries/epiphenomenalism/>

Goudge, T. A., (1972), *Morgan, C. Lloyd*, in: Edwards, P., *The Encyclopedia of Philosophy. Volume five* (Collier Macmillian Publishers, New York-London).

Griffin, D. R., (2000), *Scientific Approaches to Animal Consciousness*, *American Zoologist* 4:889-892.

Kimler, W. C., (2000), *Reading Morgan's Canon: Reduction and Unification in the Forging of a Science of Mind*, *American Zoologist* 40:853-861.

Radick, G., (2000), *Morgan's canon, Garner's Phonograph, and the Evolutionary Origins of Language and Reason*, *British Journal for the History of Science* 33:3-23.