

Donald R. Griffin, *The Question of Animal Awareness: Evolutionary Continuity of Mental Experience*. Revised and Expanded Edition. (New York: Rockefeller University Press) 209 pp., 1981.

Donald R. Griffin, professor of animal behavior at The Rockefeller University, evaluates new multidisciplinary research that has renewed interest in the question of animal cognition and consciousness. His revised and expanded edition of *The Question of Animal Awareness* is an impressive scientific and philosophical critique of theories concerning man's qualitative uniqueness. Griffin has expanded his philosophical analysis of what it is to have mental experiences and has elaborated on his criticisms of behaviorism and positivism in light of new scientific studies concerning the ways in which certain birds, mammals and insects communicate. He also elaborates on his general theme that experimental participatory communication might provide us with a "window" through which we can learn what animals are thinking about. Griffin's work is characterized by a rigorous scientific approach to problems of determining the extent to which non-human animals may be self-conscious. He points out that in order to be convincing the data gathered should "be validated by replication, independent verification, and all the pertinent controls customary in experimental science."

Dogmatic assumptions to the effect that animals cannot be self-conscious are often based on the claim that mentalistic terms are not susceptible to precise definition and are useless for scientific analysis. Since Griffin is optimistic about gathering scientifically verifiable data about mental images, intentions, and awareness in nonhuman animals, he is obviously troubled by this type of objection. He correctly notes that almost any concept can be quibbled to death by

excessive insistence on exact operational definitions. Rather than engaging in pointless definitional disputes, Griffin employs model construction or analogical reasoning to determine mental experience. In calling certain events "mental" philosophers usually mean that they are private or directly known by one person only. Griffin notes that if taken too literally this precludes all knowledge of human mental experience other than that of oneself. He refuses to waste effort replying to this type of scepticism. Since indirect knowledge concerning the mental experience of other people is generally considered reliable and significant, the question is to what extent we can apply this reasoning to other species.

Griffin contends that we can make at least limited use of analogies when it comes to nonhumans, although we must do so cautiously. Mental experiences are said to include the following: images, feelings, desires, hopes, fears, sensations such as pain, hunger, rage, affection, and thinking about objects and events that are remote in time and space as well as beliefs concerning future events. Mental images need not be visual; they may include a pattern of remembered or imagined sounds, smells, or tactile perceptions. Griffin finds no difficulty in attributing beliefs about the future to animals. A hungry wolf, he says, may believe, for example, "If I chase that deer, I can catch it, and it will taste good." Objections to this type of theorizing are countered by citing numerous empirical studies. In addition, he points out that animals are used as surrogates or models for behavioral investigations on the implicit assumption that principles

discovered in this way are applicable to humans. According to Griffin, this assumption implies qualitative continuity, and not difference in kind, between humans and other species. He also notes that to the extent that "basic properties of neurons, synapses, and neuroendocrine mechanisms are similar, we might expect to find comparably similar mental experiences. It is well known that basic neurophysiological functions are very similar indeed in all multicellular animals. On this basis, we might be justified in turning the original argument of the strict behaviorists completely upside down. Because neurophysiological mechanisms appear to be very similar in men and bees, the mental experiences resulting from their operation must, according to this line of reasoning, be equally similar." (p. 127)

In spite of any such similarities concerning awareness, many behavioral scientists contend that self-awareness is unique to humans. Griffin finds this a desperate attempt which is prevalent among many philosophers, especially cartesians, to preserve man's superiority. First, animals are not conscious. When evidence indicates the contrary, the claim is that they are not self-conscious. However, says Griffin, this "is one of a very few areas of cognitive ethology that have already been illuminated by objective, verifiable experiments." He draws on recent research to support the claim that at least some animals are self-conscious. The experiments performed by Gallup, for example, show that chimpanzees and other Great Apes display an intense interest in their own mirror images. Since they have learned to use mirrors to examine parts of their bodies which they cannot see directly, Griffin suggests that they recognize the mirror image as a representation of the self.

For the most part, linguists and philosophers have agreed with the cartesian claim that language puts a perfect distinction between man and animal, that it establishes a clear difference in kind, not degree. In light of studies concerning the communication of bees, bats, and chimpanzees, Griffin considers this claim to be unsupported and dogmatic. Experiments indicate that vervet monkey alarm calls share an important property with human language, namely reference to external objects and events. Further, it is argued by many scholars that if animals use symbols, we must assume that they have mental experiences similar to humans. Griffin's work indicates that bee dances are highly complex and definitely symbolic. Most animal communication systems that he has studied exhibit a degree of complexity that is analogous to human linguistic exchange.

Griffin presents an extended critique of Chomsky's view that the capacity for learning and using language is a species-specific human characteristic. According to Chomsky, each "known animal communication system either consists of a fixed number of signals, each associated with a specific range of eliciting conditions or internal states, or a fixed number of 'linguistic dimensions,' each associated with a non-linguistic dimension." Griffin does not find empirical evidence for this contention. He points out that it is difficult to determine whether the communication behavior of any particular animal consists of an absolutely fixed number of signals or to establish just what eliciting conditions or internal states are associated with each. It is quite possible, he says, "that the perceived rigidity and limitation to a few specific conditions or states exists in the minds of human commentators rather than in the world of animal behavior." (p.76) His research indicates that contrary to Chomsky's opinion, animal

behavior and communication is adaptable to new situations and is even creative under some circumstances. Chomsky would obviously object to Griffin's suggestion of participatory investigation of animal communication. Griffin believes that we may be able to determine what animals are thinking about by a process of impersonation. The approach, he says, "would be direct 'impersonation' of a similar species, such as a chimpanzee, by an adequately disguised experimenter using the gestures and sounds characteristic of chimpanzee communication." (p. 157)

Griffin admits that the arguments

presented in his book are not conclusive, that they are offered as hypotheses and not as fixed or dogmatic assertions immune from challenge or experimental testing. We are, he points out, quite ignorant concerning the mental experience of animals. However, "open-minded agnosticism is clearly a necessary first step" in developing an experimental science of cognitive ethology. Scholars will find this work a fair assessment of current research. It is certainly a lively fact filled text which presents challenging philosophical and scientific arguments for the evolutionary continuity of mental experience.

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