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Scott, J.P. . . . That Old-Time Aggression
~~Man and Aggression~~, M.F. Ashley Montagu
(Ed.) Oxford University Press, New York,
1968. . . p.51/2

He (Lorenz) points out that fighting behavior in the animal kingdom had evolved in many different ways and usually serves some useful function, such as the dispersal of animals throughout their living space and the division of land into breeding territories so that adequate food is available for the young. And he describes human aggressive impulses as probably having had some such constructive function in primitive man. Aggression is therefore not necessarily an evil, but is evil because it has been distorted from its original function.

No modern student of the evolution of animal behavior would quarrel with this viewpoint, and this is a major contribution to the understanding of aggressive behavior in animal societies.



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One of the major points in Lorenz's theory is the spontaneity of aggression. To him, this is self-evident. But for a physiologist there must be a demonstration of chemical and physical changes within the body which would lead to such "spontaneous" aggressive behavior. A series of these changes are well known in the case of hunger, where the cells use up blood sugar; which in turn stimulates certain centers of the brain which then cause hunger contractions in the stomach, thus making one more ready to eat. The situation with respect to the emotion of an anger is quite different. Beginning with the studies of the American physiologist Walter B. Cannon, whose book Bodily Changes in Pain, Hunger, Fear, and Rage was published in 1929, it has been shown that the emotion of anger originates in one portion of the

brain, the hypothalamus, and stimulating this area with electrodes in an animal such as a cat will produce reactions very similar to anger. Without such stimulation the animal is quiet. Evidence obtained from the removal of parts of the brain shows that certain other areas have a stimulating effect on anger, and that these are balanced by other portions which inhibit it. Stimulation from the outside, such as the pain of a blow, will upset the balance and cause the emotion of anger. Thus we have a mechanism which prolongs and magnifies the effects of external stimulation but no mechanism for building up the first stimulation from within. There is no internal change corresponding to the change in blood sugar which results in hunger. In short, the physiological evidence is against Lorenz's notion of the spontaneity of aggression, and indeed, it is difficult to see how such a mechanism for spontaneity could have evolved. Fighting is an emergency reaction, and it is hard to imagine how natural selection would lead to the development of a mechanism of continuous internal accumulation of energy which would unnecessarily put an animal



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At the same time he is a very narrow specialist, who primarily knows the behavior of birds, and particularly that of ducks and geese, on which his book has an excellent chapter. He evidently reads very little other than material which is directly related to his own specialty. Consequently, when he began observing the behavior of birds from the viewpoint of native behavior, or instinct, he went back to the writings of other students of bird life, Wallace Craig and Whitman, for his theoretical concepts. Lorenz quotes articles published in 1918, and most of the ideas in them had been worked out years before. This was before modern geneticists had begun to work out the consequences of the facts of Mendelian genetics in relation to evolution, and it was also before the publication of much of the modern work on the physiology of the

emotions and appetites. These ideas of instinct are thus pre-Mendelian and pre-physiological, and in this day and age such a classical theory of instinct forms a very incomplete and inadequate explanation of behavior.

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Lorenz has also completely missed (and this may be because of his lack of acquaintance with research done on mammals) one of the major recent findings of research done on animal behavior. Social organization is not something which is born into an animal, but something which is developed, and if social organization is disturbed, harmless or even beneficial aggressive behavior can be transformed into destructive violence. Thus the violent baboons in the London Zoo studied by Zuckerman were a group of individuals strange to each other and hence a disorganized society. The undisturbed societies of baboons studied by Washburn and DeVore on the South African plains present an entirely different picture. Fighting is present but controlled by a dominance order, and is chiefly directed against predators, and one sees the baboons



risking their lives for the benefit of a group. Thus a baboon, in common with many other mammals, has the capacity to develop destructive violence under conditions of social disorganization, whereas under the proper conditions of social organization he has the capacity to develop peaceful and cooperative behavior, to direct fighting into useful channels, and to act in a manner which might well be described as altruistic. One wonders whether the same might not be said of man.

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The facts are that territoriality occurs only in the higher animals such as the vertebrates and arthropods and even there in a very spotty fashion. In primates, our closest biological relatives, there are many cases of species which have no real territories.