

Archer, J. 1988. **The Behavioural Biology of Aggression**. Cambridge University Press, Cambridge, 257 pp., £27.50, \$59.50

Comparative studies of homologous behavior patterns have shed much light on behavioural biology. This is especially true for aggression, part of many decisive moments in the life of many animals. Theories about aggression in man and other species have a long history, but only recently has the question been approached experimentally. In "The Behavioural Biology of Aggression," Archer presents the general principles underlying animal aggression. The introduction presents an overview of traditions: behavioural biology, classical ethology, sociobiology, comparative psychology, social and development psychology and behavioural endocrinology.

After reviewing existing classifications of aggressive behaviour, the author introduces his own, which then serves as framework for the book. The division is made according to the function of the behaviour. Three partly overlapping types of aggression – protective, parental and competitive – are distinguished. I liked the clear distinction made throughout the book between functional aspects, i.e. the consequences of the behaviour for the animal's fitness, and causal or motivational mechanisms. Adaptive changes in aggressive behaviour are discussed as part of the different time-periods during which they occur. The relative importance of phylogeny, individual experience during development, and current stimuli are analysed.

It is striking to realize that protective aggression resulting from fear or frustration has hardly been studied at all in nature. Laboratory experiments, mostly on mice and rats, are all we have. The lack of a synthetic theory of aggression (deplored by the author) and ethical limits on the artificial causation of fear or frustration encourage the search for new approaches in more natural conditions.

More thought has been given to competitive aggression in territorial behaviour and competition for limited resources or the access to mating partners. Such behaviour appears to be the result of an internal control system and decision-making process in which animals assess the costs and benefits of an aggressive encounter with a counterspecific.

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Much theoretical work, including game theoretical models, is reviewed. Predictions and tests are discussed. The brief summaries at the end of each chapter were very helpful and kept me from getting lost in a few chapters that contained many unrelated experiments. The author's many suggestions for further research were stimulating. For example, he points out that little is known about imitation and other learning processes for the acquisition or modification of aggressive behaviour. I recommend this book to all students of the behavioural sciences.

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