

This Week's Citation Classic

CC/NUMBER 40
OCTOBER 3, 1983

Moyer K E. Kinds of aggression and their physiological basis.

Commun. Behav. Biol. Pt. A 2:65-87, 1968.

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The physiological bases of aggressive behavior have been reviewed and the concept has been developed that aggression is not a unitary phenomenon. The following classes are tentatively suggested: predatory, inter-male, fear-induced, irritable, territorial, maternal, and instrumental. The physiological basis of each of these classes of aggression is examined. [The *Science Citation Index*® (SCI®) and the *Social Sciences Citation Index*® (SSCI®) indicate that this paper has been cited in over 320 publications since 1968.]

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June 3, 1983

"My concern with the problem of aggressive behavior began in 1966 in an attempt to understand what appeared to me to be a significant increase in senseless violence. That was the year that Richard Speck killed eight young women in a nurses' residence in Chicago; Charles Whitman climbed to the top of the clock tower of the University of Texas with a high-powered rifle and shot innocent passersby, killing 14 and injuring 31 more; and Robert Smith, a high school senior, coolly and without apparent motive shot five women and two children through the head after forcing them to lie on the floor in the form of a cartwheel.

"Initially, my motive was to find out what was known about the physiology of this bizarre hostile behavior in order to determine whether the field of physiological psychology (broadly defined) could make any contribution to the

control of irrational aggressive tendencies. It can, as a later publication has shown.¹ Two descriptors characterized much of the literature on aggression at that time: confusion and contradiction. Many studies could not be replicated and results, sometimes from the same laboratory, were contradictory. There was little precise theorizing in the field partly because it was so difficult to reconcile diverse findings. It seemed clear that experimenters and theorists alike were observing quite different behaviors and referring to them as aggressive.

"The attack of a predator on its prey was labeled aggressive, as was the ritualistic contest between two males in the establishment of a dominance relationship. It was generally agreed that these two behaviors differed on a number of dimensions in spite of the fact that they were both given the same label. It became obvious that there was a need for a studied differentiation among the various aggression types.

"There were early attempts to define types of aggression by Scott² and Valzelli.³ The reasons that these classifications of aggression were infrequently referred to by researchers are not clear. It may have been because the papers were not in journals in the mainstream. Thus there continued to be a need for a set of useful definitions differentiating among the various behaviors labeled aggressive. The paper 'Kinds of aggression and their physiological basis' appears to have filled that need. In general, when a concept appears at the right time and in the right place it will be frequently cited.

"A final note on the fallibility of journal editors and their boards may be in order. This paper was rejected by the editors of two major psychological journals before its eventual publication."

1. Moyer K E. *The psychobiology of aggression*. New York: Harper & Row, 1976. 402 p.

2. Scott J P. *Aggression*. Chicago: University of Chicago Press, 1958. 148 p.

[The SCI and the SSCI indicate that this book has been cited in over 180 publications since 1961.]

3. Valzelli L. Drugs and aggressiveness. *Advan. Pharmacol.* 5:79-108, 1967.

[The SSCI indicates that this paper has been cited in over 55 publications since 1967.]