

R.L. Holloway Human Aggression. Natural History  
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Aggression is most often defined as "behavior whose goal is the injury of some person or object"<sup>1</sup> which stems mainly from the treatise by Dollard et al<sup>2</sup> on aggression and frustration. Scott<sup>3</sup> uses the word to refer<sup>4</sup> to fighting, or the act of initiating attack. Buss<sup>5</sup> defines aggression as a response that delivers noxious stimuli to another organism. Note that neither Buss's nor Scott's definition includes any reference to intent.

1. Berkowitz, L. Aggression. McGraw-Hill, NY 1962  
" ed. Advances in Experimental Social Psychology, Vol. 2. Academic Press, NY 1966, p.301-329 ("The Concept of Aggressive Drive")
  2. Dollard, J., et al. Frustration and Aggression. Yale Univ. Press, New Haven, 1939.
  3. Scott, J.P. Aggression. Univ. of Chicago Press, Chicago, 1958.
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4. Buss, A.H. The Psychology of Aggression. Wiley, NY, 1961.

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But does man have any instincts? Particularly, does he have an instinct toward aggression? If understood in the usual sense of a fixed invariant pattern of action directed toward some definite invariant cluster of stimuli, there appear to be precious few, if any, examples of instincts in man, and no evidence for an aggressive instinct. There is neither motor nor sensory constancy, in the ethological sense, for human aggression. The range of stimuli that can produce acts of aggression for man is enormous, as are the ways in which he can manifest his aggression. Red feathers, blue gewgaws, green turf, butyric acid, white eyelids, the exposed neck, and white tails have been identified for various animals. What are the critical sign stimuli for the human that act to release stereotypical adaptive responses? What are the invariances of the cue functions in the human environment, not mediated by symbols, that help to

release specific motor patterns built up through evolution by natural selection? The sordid history of man attests well to the fantastic plurality of stimuli that can be cooked up to elicit aggression. But how "natural" are they?

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It is argued here, however, that we need a species-specific framework of aggression, and such a framework must integrate the aggressive components of man's behavior with the rest of his social, psychological, and biological matrix. Man is the only animal with language and an adaptation based on the sharing and use of arbitrary symbol systems. As Lenneberg<sup>1</sup> has so well argued, the organization and development (ontogenesis) of his brain are unique or, to phrase it better, species-specific. His development and behavioral expression are species-specific too; also man is in constant interaction with his peers, himself, a material world, symbol systems, strangers, and enemies.

1. Lenneberg, E.H. The Biological Foundations of Language. Wiley, N.Y. 1967.

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Goodenough<sup>1</sup>, for example, found definite developmental patterns of expression and control of rage during the course of child maturation. In general, as the brain grows, so does the child's reality picture of the world, his expectations of the behavior of parents and peers, and his control of rage. In early stages, rage is sudden and explosive, but quick to subside and easily forgotten. With maturation, the thresholds for such expression rise, but once exceeded, the rage and anger are longer in duration and subsequent brooding or hostile periods are prolonged. These changes point to neural and ego variables, involving components of inhibition and facilitation, as well as an enlarged capacity for sustaining particular memories.

1. Goodenough, F.L. Anger in Young Children. Inst. of Child Welfare Monogr. Series, No. 9. Univ. of Minnesota Press, Minneapolis, 1931.

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Other authors have studied children's aggression, and there seems to be wide agreement that aggression increases during the early years, reaches a peak, and then tapers off as social control factors and the child's realization of deferment of gratification by the environmental surround comes into effect. It is worth stressing what Schilder pointed out some time ago: many of the destructive elements of child play are natural concomitants of learning and are often accompanied by a constructive aftermath as well.



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These considerations lead me to the formulation that human aggression is an outcome, in part, of natural selection for heightened sentiment structures, focused about self-identity and a co-operative social structure. To achieve his co-operative abilities, social structuring has required selection for greater degrees of affect, or emotion, interplay than in other animals. These are necessary for other-commitment, which develops through self-commitment. The structures, social and symbolic, that permit his adaptations and the execution of shared tasks to insure his existence, also insure frustration, pain, and group conflict. In short, groups mean conflict. Conflict is structured into existence by the very fact of group identifications. Aggression may be defined as the imposition of the self (either individual or group identity) on others (individual, group, object, abstraction).

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It is convenient to start with what seem to be reasonable conclusions of some important variables involved in the early evolution of man.

1. An enlarged and more elaborate central nervous system, particularly the cerebral cortex, which grew from roughly 500 cc. 1.75 million years ago to roughly 1,500 cc. at the present.
2. A diminution in sexual dimorphism between male and female with respect to structures used aggressively, such as canines; but an increase of dimorphism in terms of fat, muscular development, and shape. Possible increased dimorphism of behavior.
3. Full-time sexual receptivity of the female, and domestication of the male, or, if not actual domestication in early stages, a division of roles, with the male hunting and procuring high protein food sources.
4. An increased time of infant and child dependency, because of a prolonged growth period.

5. Some cognitive reorganization dependent upon expanded and reorganized brains, and a shift in the nature of social relations, resulting in toolmaking and the use of arbitrary symbols for language.



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Let us now examine intellectual functioning and the brain with respect to natural selection:

1. Selection for larger brains was also selection for an increase in the ability to sustain any ongoing activity requiring (a) concentration, (b) time lengthened at task, (c) inhibition of non-relevant cues (selective perception).
2. Such selection also meant selection for ability to perceive more complex cues or stimuli.
3. Such selection meant an increased memory storage potential, through more parts and more connections, plus some possible biochemical changes in terms of coding experience.
4. It seems likely that such selection also meant selection for co-operative abilities, requiring facilitation of attention, and inhibition of second-to-second monitoring of other actors' personal qualities, as found particularly developed in some of

the most aggressive of the terrestrial primates, the baboons and macaques.

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But what of aggression, particularly human aggression? The hypothesis I offer here is as follows: Human evolution has been the evolution of a paradox. The evolution of the brain and social structure, as well as symbol systems, has also meant an attending increase in frustration and aggression. The meaning of symbols in the adaptive evolutionary sense is at least twofold: they aid in cognitive optimization, and also, they mediate the social controls necessary to stem what arises out of the human condition - frustration and aggression. The same symbolism that enhances sentimental bonds between kinsmen and between symbolically defined groups outside of biological relationships (clan, tribe, state, nation, ideology), brings in its wake its antithesis: extra-group aggressional tendencies. Role differentiation and intra-group commitments generate frustration. Man

is up against himself - he is up against social structure, he is up against culture. These are his costs as well as his gains. Each man is killed and deadened many times over in the course of his life.

