



Time-Life Books

## **WAR:** Anthropologists and sociologists ask whether warfare and aggression are inherited or learned

by Robert J. Trotter

Dawn—before the dawn of history—comes up across East Africa. In the mountains, valleys and plains, in the deserts, jungles and savannahs, small groups of prehuman primates begin to scratch and stir. For all of them it will be another day of what seems to be a never-ending battle for survival. Continually, wars must be waged against the harsh elements, the rugged terrain, the hungry predator animals and, increasingly, against similar groups of primates competing for the same food and territory. But for some of these semi-social groups the battles seem to be less trying, success seems to come easier. These groups, the survivors, have met and defeated their enemies. They have learned from past mistakes and are well prepared to do battle and survive again.

Who are these survivors? What makes them more likely to succeed? Why aren't they, like the other bands, ever defeated, disbanded or dispersed? A theory based on the genetic evolution of human aggression can answer all of these questions, contends Robert S. Bigelow of the University of Canterbury in Christchurch, New Zealand. At the recent International Congress of Anthropological and Ethnological Sciences in Chicago, Bigelow described his theory of the role of competition and cooperation in human evolution.

During the later stages of the

Pleistocene (2 million to 100,000 years ago), the hominid brain doubled in size. Competition between groups and cooperation within primate groups, says Bigelow, were responsible for the selective factors that went into these larger brains and produced modern humans.

A juvenile or a female encumbered by an infant, for instance, is easy prey for a leopard. But if they remain within their social group they are relatively safe. Three or more large male baboons can persuade lions and leopards to withdraw. A single male baboon, acting on his own, is unable to do so. He must learn to join forces with his fellows, and the group must learn to act as a cohesive social unit. But since hungry lions and leopards are not driven away by empty threats, early primate groups had to be able to back up their threats with powerful and effective aggressive responses. The groups that learned the value of cooperation in conjunction with aggression grew larger and became more stable.

While the lions and leopards continued to use the same weapons, some primate groups learned to make weapons of sticks and stones. These groups became even more effective and successful at survival. But hungry cats were not their only enemies. As primate groups began to grow larger and more numerous, they came into con-

tact with each other more often. Primitive warfare began. The survivors were usually the ones who were the most aggressive and the best organized. The losers were forced to abandon the water holes and the favorable territories and take up residence in the deserts. There they were less healthy, produced fewer offspring and became even less successful at survival.

As weapons became the tools of aggression, modes of communication became the tools of social cooperation. And as primates competed at greater levels of complexity, their tools became more complex. Now, says Bigelow, primates can "compete in vast nations of hundreds of millions of individuals, mobilize armed forces of several million individuals or coordinate attacks from land, sea and air." All of this, says Bigelow, has been genetically built into humans. His theory: "Early humans lived in social groups, and the social cohesion of these groups was achieved through communication between the individual members. Communication and cooperation involve intelligence, which is dependent on the physical organization of neural and endocrine systems. Capacities to interpret the signs and symbols used in communication depend on the physical structure of brains. The physical organization of neural and endocrine systems is a product of

interactions between sets of genes and the environments surrounding them, both inside and outside the individual body.”

Bigelow's theory and those like it can explain such things as physiological responses to aggression and the thousands of wars that make up human history. But these theories imply that humans are genetically and innately aggressive. They imply that the human race is basically bad and has a natural killer instinct. Not everyone is willing to accept such pessimistic conclusions. More optimistic theories say that aggression, and therefore war, came into being only with the development of cultural phenomena such as farming and trading. Aggression, these theories say, is a cultural pastime that has nothing to do with genetic traits. If it is cultural, it can be removed.

Richard G. Sipes of the State University of New York at Buffalo proposes a cultural pattern model of aggression and uses two empirical tests in an attempt to disprove the genetic model. If aggression is an innate drive,

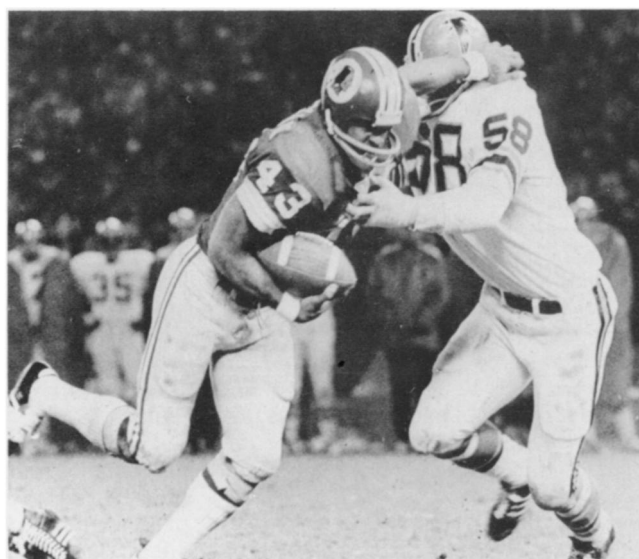
to have combative sports and peaceful societies more likely to have them. Of the ten warlike societies, nine had combative sports. Of the ten non-warlike societies, only two had combative sports. “Where we find warlike behavior we typically find combative sports and where war is relatively rare combative sports tend to be absent. This,” says Sipes, “refutes the hypothesis that combative sports are alternatives to war.”

In another study Sipes correlated military activity and combative sports activity over a period of time in the United States. If the drive-discharge model were correct, the level of aggressive sports activity would fall off during times of increased military activity. The military variable used was the corrected percent of adult males in the military. The sports variable was the percent of potential spectators or participants attending or engaging in combative sports (hunting and football). Sipes found that periods of actual combat (WWI, Korea, Vietnam) were not accompanied by

society is the teacher. To change this situation, Sipes admits, would require massive sociocultural manipulation. Possible steps would be to eliminate the military and quasi-military organizations, remove all references to war, riots, brawls, murder and assaults from all communications media; and eliminate combative sports. But even these drastic steps would be ineffective, Sipes says, unless they were undertaken and enforced in all nations. “Truly lasting peace,” he says, “would seem obtainable only through a politically achieved world order plus a simultaneous and massive culture-change effort in all societies. The probability of this happening is yet to be computed. . . . In theory,” says Sipes, “there is a way to bring lasting peace to our planet; in fact,” he concludes, “I cannot foresee it happening.”

But Bigelow, whose genetic theory is usually considered to be the more pessimistic one (because no amount of cultural manipulation can erase inborn aggression), comes up with a more optimistic conclusion. “Although aggressive behavior is, in a sense, the opposite of cooperative behavior,” he says, “the two have evolved together as highly interdependent components of a single evolutionary system.” Early primate groups had to develop and use their aggressive capacity when pressed. But in order to act together, they had to hold aggression in check during interactions with one another. If they did not develop the ability to intelligently control aggressive tendencies during encounters within the group, social cohesion would have deteriorated and all members of the group would have become more vulnerable to predators. The groups who learned intelligent control of aggression were selected for survival, and it is this selected intelligence, Bigelow feels, that will eventually conquer war. □

*The progression of aggression: From sticks and stones to the playing field to the ultimate battlefield.*



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he says, then there will be “a certain basal level of aggression pressure in every individual and society.” If this is the case, then warfare need not be the only way to release aggressive pressure. “And from the time of the first Olympic Game,” says Sipes, “in popular thought and learned circles, we find a recurring hope that sports and warfare might act as alternatives to each other; that possibly our intergroup problems and aggressive natures could be resolved on the playing field rather than on the battlefield.” Sipes calls this the drive-discharge model and says that it does not stand up under testing.

In one test, Sipes examined ten warlike and ten peaceful societies drawn from a total world sample. If the drive-discharge model were correct, warlike societies would be less likely

changes in sports activity. Again, the drive-discharge model is not supported by the facts.

Even so, what good does it do to prove or disprove one or the other theory? “In my opinion,” answers Sipes, “the goal of science is to find means of controlling phenomena. . . . I assume that the increasing study of war over the last 70-odd years reflects a desire similar to my own—desire to control war, preferably through its elimination and at least by decreasing its probability of occurrence and its intensity and scope.” Sipes believes his theoretical studies do suggest a means by which war may be eliminated or reduced.

Sipes' theory, the culture-pattern model, is that individual aggressive behavior is learned, not inherited. And

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