**Chimps, Too, Wage War and Annex Rival Territory**

**By** [**NICHOLAS WADE**](http://topics.nytimes.com/top/reference/timestopics/people/w/nicholas_wade/index.html?inline=nyt-per)

Every day, John Mitani or a colleague is up at sunrise to check on the action among the chimpanzees at Ngogo, in Uganda’s [Kibale National Park](http://www.uwa.or.ug/kibale.html). Most days the male chimps behave a lot like frat boys, making a lot of noise or beating each other up. But once every 10 to 14 days, they do something more adult and cooperative: they wage war.

A band of males, up to 20 or so, will assemble in single file and move to the edge of their territory. They fall into unusual silence as they penetrate deep into the area controlled by the neighboring group. They tensely scan the treetops and startle at every noise. “It’s quite clear that they are looking for individuals of the other community,” Dr. Mitani says.

When the enemy is encountered, the patrol’s reaction depends on its assessment of the opposing force. If they seem to be outnumbered, members of the patrol will break file and bolt back to home territory. But if a single chimp has wandered into their path, they will attack. Enemy males will be held down, then bitten and battered to death. Females are usually let go, but their babies will be eaten.

These killings have a purpose, but one that did not emerge until after Ngogo chimps’ patrols had been tracked and cataloged for 10 years. The Ngogo group has about 150 chimps and is particularly large, about three times the usual size. And its size makes it unusually aggressive. Its males directed most of their patrols against a chimp group that lived in a region to the northeast of their territory. Last year, the Ngogo chimps stopped patrolling the region and annexed it outright, increasing their home territory by 22 percent, Dr. Mitani said in a [report being published Tuesday](http://www.cell.com/current-biology/fulltext/S0960-9822%2810%2900459-8) in Current Biology with his colleagues David P. Watts of [Yale University](http://topics.nytimes.com/top/reference/timestopics/organizations/y/yale_university/index.html?inline=nyt-org) and Sylvia J. Amsler of the [University of Arkansas](http://topics.nytimes.com/top/reference/timestopics/organizations/u/university_of_arkansas/index.html?inline=nyt-org) at Little Rock. Dr. Mitani is at the [University of Michigan](http://topics.nytimes.com/top/reference/timestopics/organizations/u/university_of_michigan/index.html?inline=nyt-org).

The objective of the 10-year campaign was clearly to capture territory, the researchers concluded. The Ngogo males could control more fruit trees, their females would have more to eat and so would reproduce faster, and the group would grow larger, stronger and more likely to survive. The chimps’ waging of war is thus “adaptive,” Dr. Mitani and his colleagues concluded, meaning that natural selection has wired the behavior into the chimps’ neural circuitry because it promotes their survival.

Chimpanzee warfare is of particular interest because of the possibility that both humans and chimps inherited an instinct for aggressive territoriality from their joint ancestor who lived some five million years ago. Only two previous cases of chimp warfare have been recorded, neither as clear-cut as the Ngogo case.

In one, a chimp community first observed by [Jane Goodall](http://topics.nytimes.com/top/reference/timestopics/people/g/jane_goodall/index.html?inline=nyt-per) in Tanzania’s [Gombe National Park](http://www.tanzaniaparks.com/gombe.html) split into two and one group then wiped out the other. But the chimps had been fed bananas, to enable them to be observed, and some primatologists blamed the war on this human intervention. In a second case, in the [Mahale Mountains National Park](http://www.mahalepark.org/aboutmahale.html) of Tanzania, Toshisada Nishida of Kyoto University noticed that a chimp group had disappeared, presumably killed by its neighbors, but he was not able to witness the killings or find the bodies.

Dr. Mitani’s team has now put a full picture together by following chimps on their patrols, witnessing 18 fatal attacks over 10 years and establishing that the warfare led to annexation of a neighbor’s territory.

The benefits of chimp warfare are clear enough, at least from the perspective of human observers. Through decades of careful work, primatologists have documented the links in a long causal chain, proving for instance that females with access to more fruit trees will bear children faster.

But can the chimps themselves foresee the outcome of their behavior? Do they calculate that if they pick off their neighbors one by one, they will eventually be able to annex their territory, which will raise their females’ fertility and the power of their group? “I find that a difficult argument to sustain because the logical chain seems too deep,” says Richard Wrangham, a chimp expert at [Harvard](http://topics.nytimes.com/top/reference/timestopics/organizations/h/harvard_university/index.html?inline=nyt-org).

A simpler explanation is that the chimps are just innately aggressive toward their neighbors, and that natural selection has shaped them this way because of the survival advantage that will accrue to the winner.

Warfare among human groups that still live by hunting and gathering resembles chimp warfare in several ways. Foragers emphasize raids and ambushes in which few people are killed, yet casualties can mount up with incessant skirmishes. Dr. Wrangham argues that chimps and humans have both inherited a propensity for aggressive territoriality from a chimplike ancestor. Others argue the chimps’ peaceful cousin, the [bonobo](http://www.bonobo.org), is just as plausible a model for the joint ancestor.

Dr. Wrangham’s view is that since gorillas and chimps are so similar, their joint ancestor, which lived some seven million years ago, would have been chimplike and therefore so would the joint ancestor of chimps and humans when they parted ways two million years later. “So I think it’s very reasonable to think this behavior goes back a long way,” he said, referring to the propensity to wage war against one’s own species.

Dr. Mitani, however, is reluctant to infer any genetic link between human and chimp warfare, despite the similarity of purpose, cost and tactics. “It’s just not at all clear to me that these lethal raids are similar sorts of phenomena,” he said. More interesting than warfare, in his view, is the cooperative behavior that makes war possible.

Why do chimps incur the risk and time costs of patrolling into enemy territory when the advantage accrues most evidently to the group? Dr. Mitani invokes the idea of group-level selection — the idea that natural selection can work on groups and favor behaviors, like altruism and cooperation, that benefit the group at the expense of the individual. Selection usually depends only on whether an individual, not a group, leaves more surviving children.

Many biologists are skeptical of group-level selection, saying it could be effective only in cases where there is intense warfare between groups, a reduced rate of selection on individuals, and little interchange of genes between groups. Chimp warfare may be constant and ferocious, fulfilling the first condition, but young females emigrate to neighboring groups to avoid inbreeding. This constant flow of genes would severely weaken any group selective process, Dr. Wrangham said.

Samuel Bowles, an economist at the [Santa Fe Institute](http://www.santafe.edu) who has worked out theoretical models of group selection, said the case for it “is pretty strong for humans” but remains an open question in chimpanzees.

Chimp watching is an arduous task since researchers must first get the chimpanzees used to their presence, but without inducements like bananas, which could interfere with their natural behavior. Chimpanzees are immensely powerful, and since they can tear each other apart, they could also make short work of any researcher who incurred their animosity.

“Luckily for us, they haven’t figured out that they are stronger than us,” Dr. Mitani said, explaining that there was no danger in tagging along behind a file of chimps on the warpath. “What’s curious is that after we do gain their trust, we sort of blend into the background and they pretty much ignore us.”

http://www.nytimes.com/2010/06/22/science/22chimp.html?hpw