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Murder 'comes naturally' to chimpanzees

By Jonathan Webb

Science reporter, BBC News

A major study suggests that killing among chimpanzees results from normal competition, not human interference.

Apart from humans, chimpanzees are the only primates known to gang up on their neighbours with lethal results - but primatologists have long disagreed about the underlying reasons.

One proposal was that human activity, including destroying habitats and providing food, increased aggression.

But the new findings, [published in Nature](#), suggest this is not the case.

Instead, murder rates in different chimp communities simply reflect the numerical make-up of the local population.

The international study was co-written by more than 30 scientists and gathers data from some 426 combined years of observation, across 18 different chimp communities.

A total of 152 killings were reported. This includes 58 that were directly observed by researchers; the rest were counted based on detective work - tell-tale injuries or other circumstances surrounding an animal's death or disappearance.

Interestingly, the team also compiled the figures for bonobos, with strikingly different results: just a single suspected killing from 92 combined years of observation at four different sites. This is consistent with the established view of bonobos as a less violent species of ape.

Killing the competition

The researchers' global compilation of chimp violent crime statistics allowed them to consider what conditions in a community produce a higher murder rate.

Chimpanzees live in well-defined colonies, and groups of males patrol the borders of each colony's territory. This is where violent conflicts are known to arise, particularly if a patrol encounters a single chimp from a neighbouring community - but never before has this much data on the lethality of those interactions been combined in a single study.

When the scientists compared the figures across chimpanzee research sites, they found that the level of human interference (e.g. whether the chimps had been fed, or their habitat restricted) had little effect on the number of killings.

Instead, it was basic characteristics of each community that made the biggest difference: the number of males within it, and the overall population density of the area.

These parameters link the violence to natural selection: killing competitors improves a male chimp's access to resources like food and territory - and crucially, it will happen more frequently when there is greater competition from neighbouring groups, and when the males can patrol in large numbers, with less risk to their own survival.

"It's a natural behaviour - it's not something that we've induced by disturbance or intervention," explained Dr Susanne Shultz, an evolutionary biologist at the University of Manchester.

Dr Shultz was not involved in the study, but told BBC News the scale of the collected data was impressive.

"There's a real effort to look across a really wide range of populations, and the results are very compelling and very thorough," she said.

Violent debate

In an accompanying [commentary](#) for the journal Nature, Prof Joan Silk from Arizona State University said the results "should finally put an end to the idea" that violence in wild chimpanzees was a product of human interference.

She suggested that our perceptions of our evolutionary cousins can sometimes be distorted, because we want to believe that it is the nice behaviours, not the nasty ones, which have deep evolutionary roots.

There is no need to cling to such ideas, Prof Silk argues: "Humans are not destined to be warlike because chimpanzees sometimes kill their neighbours."

Prof John Mitani, a behavioural ecologist at the University of Michigan and one of the study's authors, agrees. "There is considerable variation in rates of killing by chimpanzees living in different populations, so even in chimpanzees killing is not inevitable," he said.

"And, of course, we are humans and not chimpanzees. We have the ability to shape and alter our behaviour in ways that they can't."

Prof Frans de Waal, an animal behaviour expert from Emory University in the US, said the new study was an important contribution.

"I'm very glad they're publishing this," he told BBC News. It answers a "long, long history of resistance", Prof de Waal explained, to the idea of natural, inter-community violence in chimpanzees.

"It has always been contentious - we've had meetings where people screamed at each other.

"What this paper does is, instead of getting into the ideology and the history of these arguments... they have just taken the data and analysed it, and said: Where do the chips fall?"

The chips, in this case, appear to fall in favour of a natural history of violence.

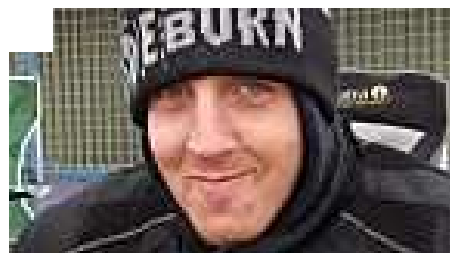
But rather than having deep implications for human nature, the authors of the new study suggest that chimpanzee homicide - which [previous research](#) has estimated to occur at a similar rate to that seen in hunter-gatherer human societies - goes up and down as a simple consequence of competition for resources.

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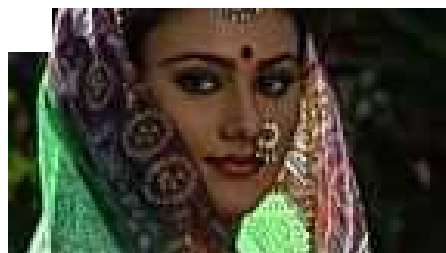
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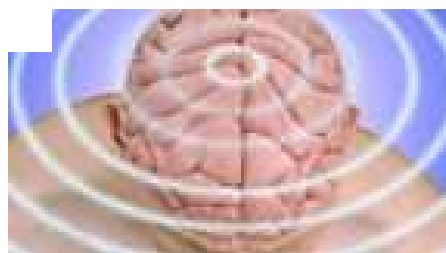
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