

# Laugh and apes laugh with you

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Two chimpanzees share the joke

(PhysOrg.com) -- Just like humans, chimpanzees mimic the laughter of their playmates even if they don't find the situation as 'funny'.

New research from the University of Portsmouth, published in the journal *Emotion*, has produced the first evidence that apes do not just 'ape' the expressions of their social partners, but that their responses have a distinct social and emotional meaning. This shows that great apes have a more complex social use of expressions than previously thought.

Lead author, behavioral biologist Dr. Marina Davila-Ross said: "I didn't expect to find such prominent differences between responsive and spontaneous [laughter](#) in [chimpanzees](#), but my biggest surprise was the

results showing those in newer groups mimic their playmates more often than those in established groups where the chimpanzees know each other well. This suggests mimicking laughter might play a special role in strengthening [social bonds](#)."

The findings reveal important similarities with findings on humans, where both laugh cultures and mimicking cultures have been reported.

Dr. Davila-Ross, of the University's Department of Psychology, said: "Humans clearly use laughter as an important response in a wide range of social situations, but it is particularly interesting that chimpanzees seem to also use laughter to respond in such distinct ways.

"Great apes' ability to manage the sounds they make seems to be much more limited than humans and other animals, and even parrots. Nonetheless, their laughter might be partly managed and partly automatic.

"They do not just mimic the expressions of their playmates; they respond with their expressions in more complex ways than we were aware of before.

"We found their responsive laughter shows a similarity to the conversational laughter of humans. Both are shorter than spontaneous laughter and both seem designed to promote [social interaction](#).

"These sorts of responses may lead to important advantages in cooperation and social communication – qualities that help explain why laughter and smiles have become integral tools of emotional intelligence in humans.

The researchers found that responsive laughter is also used differently across social groups of chimpanzees compared to their use of

spontaneous laughter. It is not evident at such a young age as spontaneous laughter, it is shorter, and it seems to prolong play, which has a vital role in the physical, emotional, social and cognitive development of both chimpanzees and humans.

Dr. Davila-Ross's study examined laughter in 59 chimpanzees living in four groups in the chimpanzee sanctuary Chimfunshi Wildlife Orphanage in Zambia. Two of the groups had been established for more than 14 years, and two groups had been living together for less than five years. All contained a mixture of ages and sexes. Nearly 500 play bouts were video recorded and in all cases, playing sessions lasted significantly longer when one playmate joined in the laughter of another.

Dr. Davila-Ross said: "Five million years ago the ancestors of apes and humans must have produced laughter as rather honest social responses. Since then, the ability to control laughter must have drastically increased, along with its adaptive advantages, which explains why laughter has become a highly sophisticated, ubiquitous tool of cooperation and social communication in humans."

Joining in with a playmate's laughter is not the same as fake laughter, which only humans seem capable of, she said.

Laughing is seen by evolutionary scientists to be present in all of the great apes. Human laughter is widely seen as an expression of joy but it can also be used in a wide range of situations. In contrast, great apes have only ever been documented to laugh during social play and tickling.

Dr. Davila-Ross said: "Selection pressures might have favoured individuals who use their laughter in socially distinctive ways.

"The phenomenon of a laugh triggered by the laughter of others seems to be deeply rooted in primate evolution. In humans such laugh responses

appear early in development. Apes and monkeys also copy the expressions of other apes, such as yawning and play faces."

Laugh contagion, where laughter continuously spreads across many individuals, seems to be unique to humans. Apes always need to be part of the 'fun' in order to laugh so an ape would not start to laugh just by hearing laughter of apes playing nearby.

Dr. Davila-Ross said:"Future studies examining the social abilities linked to the use of other emotional expressions in monkeys and [apes](#) will help us better understand how pure emotional outbursts might have emerged into superior instruments of communication and to what extent the ability to manage them might have contributed to the origin of language."

Provided by University of Portsmouth

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