You talking to me? Scientists try to unravel the mystery of 'animal conversations'

June 5 2018

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African elephants like to rumble, naked mole rats trade soft chirps, while fireflies alternate flashes in courtship dialogues.

Welcome to the weird and wonderful world of 'animal conversations'.

An international team of academics undertook a large-scale review of research into turn-taking behaviour in animal communication, analysing hundreds of animal studies.

Turn-taking, the orderly exchange of communicative signals, is a hallmark of human conversation and has been shown to be largely universal across human cultures.

The review, a collaboration between the Universities of York and Sheffield, the Max Planck Institute for Evolutionary Anthropology in Germany, and the Max Planck Institute for Psycholinguistics in the Netherlands, reveals that this most human of abilities is actually remarkably widespread across the animal kingdom.

While research on turn-taking behaviour is abundant, beginning more than 50 years ago with studies of the vocal interactions of birds, the literature is currently fragmented, making rigorous cross-species comparisons impossible.

Researchers who study turn-taking behaviours in songbirds, for example, speak of "duets" whereas those who study some species of monkeys note their "antiphonal calls".

One of the most noteworthy aspects of turn-taking behaviour across all species, humans included, is its fine timing.

In some species of songbird, for example, the latency between notes produced by two different birds is less than 50 milliseconds.

Other species are considerably slower; for example, sperm whales exchange sequences of clicks with a gap of about two seconds between turns. Humans lie somewhere in between, with gaps of around 200 milliseconds between turns at talk in conversation.

The authors of the study propose that systematic cross-species comparisons of such turn-taking behaviour may shed new light on the evolution of language.

The academics propose a new comparative framework for future studies on turn-taking.

One of the authors, Dr. Kobin Kendrick, from the University of York's Department of Language and Linguistic Science, said: "The ultimate goal of the framework is to facilitate large-scale, systematic cross-species comparisons.

"Such a framework will allow researchers to trace the evolutionary history of this remarkable turn-taking behaviour and address longstanding questions about the origins of human language."

Dr. Sonja Vernes, from the Max Planck Institute for Psycholinguistics, added: "We came together because we all believe strongly that these fields can benefit from each other, and we hope that this paper drives more cross talk between human and animal turn-taking research in the future."

The review is published in the *Proceedings of the Royal Society B*.

More information: Taking turns: Bridging the gap between human and animal communication, *Proceedings of the Royal Society B*, rspb.royalsocietypublishing.or … .1098/rspb.2018.0598

Provided by University of York