

- Mark your confusion.
- Purposefully annotate the article (1-2 mature, thoughtful responses per page to what the author is saying)
- Write a 250+ word response to the article.

(If you are a teacher or student who would like to modify this Google Doc, go to File > Make a Copy. I cannot and do not respond to Share requests -- my apologies!)

Maybe some of us can learn from the animals: Take turns when we talk

By Smithsonian.com, adapted by Newsela staff, 8-6-2018

In conversations, people seem to just know instinctively when to speak and when to listen. This kind of lively speaking is considered uniquely human, a trait separating us from the rest of the animal kingdom.

However, smart, back-and-forth conversations actually happen all around us.

They might occur in a low elephant rumble that's barely heard. Elephants feel the sound in the ground through the pads of their feet. They might involve the delicate hand gestures of chimpanzees, or whale songs traveling thousands of miles through lonely oceans. In some cases they exist only in the brief flashes of light between frisky fireflies in the dark.

According to a recent scientific review, a common theme runs through many of these verbal or non-verbal dialogues. Animals, too, seem to know when to speak and when to listen. The review, published last month in the *Philosophical Transactions of the Royal Society B: Biological Sciences*, looked at more than 300 studies of animals including birds, mammals, insects and frogs who practice turn-taking behavior.

Many animals alternate their call and response in ways that are similar to human conversations. For example, marmosets, a type of small monkey, often exchange calls to locate each other in the wild and figure out whether they know one another. Dolphins chatter back and forth while coordinating attacks on prey.

Not Just Sound-Based

Many of these forms of communication are sound-based, from frog croaks to the crackling noises made by some insects. Other species have more creative methods of communication. Infant bonobos, a type of great ape, let their parents know they want to be carried with arm gestures. Birds, insects and frogs get their messages across through colorful displays, and the elephants feel those vibrations through the earth when they use rumbles to find each other.

Many of these less traditional modes of communication also resemble the turn-taking common in human conversation. For instance, elephants wait their turn before responding to rumbles.

Conversations cannot be studied like fossils. Therefore, it is hard to study how they have evolved over time. Still, Robin Kendrick, a language professor and co-author of the review, thinks making comparisons among animals taking turns when communicating is important. It gives us a better understanding of how this trait evolved in humans and our ancestors. "The biggest goal when we're doing the comparisons is to reconstruct the evolution of these turn-taking behaviors," he says.

"We know very little about the origin of the human language," he adds about the need for more study. "Any possibility of gaining insight into it is worth pursuing."

Turn-Taking Involves Many Different Species

Thom Scott-Phillips, a researcher who was not involved in the review, says Kendrick and his coauthors' paper "seems authoritative." He accepts that many different species use coordinated exchanges to communicate.

However, he cautions that "we need to be careful what conclusions we draw from that." Scott-Phillips says similar behavior doesn't mean these traits involve similar functions in the brain or body.

A main question is whether this turn-taking trait could have evolved independently in different species. In other words, did taking turns come about on its own in many different species?

The other possibility is that the trait evolved long ago in an ancestor shared by all the different species. Scott-Phillips believes turn-taking by humans has evolved independently from other species, adding that continued research will make it more clear.

Kendrick singles out another element worth comparing: the silence between exchanges. In a typical human conversation, we generally pause for 200 milliseconds before answering. Kendrick says a longer or shorter pause tends to signal something is amiss. Examples include a delayed response from a politician when questioned about wrongdoing, or a lightning-quick "it wasn't me" from a kid with a bat near a broken window.

Some Politicians Emulate Barn Owl Chicks

The idea of turn-taking might bring to mind a picture of well-mannered animals. Kendrick stresses this isn't always the case. Animals can also resemble politicians interrupting each other or reporters jockeying to get their question answered. Barn owl chicks try to outdo each other by chirping louder or more quickly to attract favor from their mothers during feeding.

Some skilled operators even know how to hijack the conversation. Antbird males, for instance, call out invites to single females near them. However, just when a young female gets interested enough to respond, another male will often jam up the process. The second male answers her before the first male can continue his conversation. The second male either calls more loudly or at the same time in an effort to steal the female's affection.

These cases of overlapping signals can be seen as the exception to the rule, says Kendrick. He believes it highlights the importance of turn-taking in general.

One problem with studying turn-taking is that some researchers don't do it well themselves. They fail to communicate with researchers outside their particular species of interest. Kendrick says a goal of the review is to bring together all the separate research on turn-taking, allowing scientists to do more cross-species comparisons.

Sonja Vernes is a coauthor of the review. She says, "We hope that this paper drives more cross talk between human and animal turn-taking research in the future."

Response option(s):

- What did the authors of this study find, and why does it matter? Do you find this purpose compelling?
- On what do the scientists cited in this article agree? On what do they disagree?
- Pick any passage and respond to it.