

Orangutans can make two sounds at the same time, similar to human beatboxing, study finds

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Orangutans can make two separate sounds simultaneously, much like songbirds or human beatboxers, according to a study led by the

University of Warwick. The paper, "Wild orangutans can simultaneously use two independent vocal sound sources similarly to songbirds and human beatboxers," is published by *PNAS Nexus*.

Academics say the findings provide clues around the [evolution](#) of human speech, as well as human beatboxing.

Scientists observed two populations of vocalizing [orangutans](#) in Borneo and Sumatra across a total of 3,800 hours and found primates within both groups used the same vocal phenomenon.

Dr. Adriano Lameira, Associate Professor of Psychology at the University of Warwick said, "Humans use the lips, tongue, and jaw to make the unvoiced sounds of consonants, while activating the [vocal folds](#) in the larynx with exhaled air to make the voiced, open sounds of vowels.

"Orangutans are also capable of producing both types of sounds—and both at once.

"For example, large male orangutans in Borneo will produce noises known as 'chomps' in combination with 'grumbles' in combative situations. Female orangutans in Sumatra produce 'kiss squeaks' at the same time as 'rolling calls' to alert others of a possible predator threat.

"The fact that two separate populations of orangutans were observed making two calls simultaneously, is proof that this is a biological phenomenon."

Co-author and independent researcher Madeleine Hardus added, "Humans rarely produce voiced and voiceless noises simultaneously. The exception is beatboxing, a skilled vocal performance which mimics the complex beats of hip hop music.

"But the very fact that humans are anatomically able to beatbox, raises questions about where that ability came from. We know now the answer could lie within the evolution of our ancestors."

According to the authors, the vocal control and coordination abilities of wild great apes have been underestimated compared to the focus on the vocal abilities of birds.

"Producing two sounds, exactly how birds produce song, resembles spoken language but bird anatomy has no similarity to our own so it is difficult to make links between birdsong, and spoken human language," continued Dr. Hardus.

The new research has implications for the vocal capabilities of our shared ancestors and for the evolution of human speech—as well as human beatboxing. Dr. Lameira said, "Now that we know this vocal ability is part of the great ape repertoire, we can't ignore the evolutionary links.

"It could be possible that early [human language](#) resembled something that sounded more like beatboxing, before evolution organized [language](#) into the consonant—vowel structure that we know today."

More information: Wild orangutans can simultaneously use two independent vocal sound sources similarly to songbirds and human beatboxers, *PNAS Nexus* (2023). [DOI: 10.1093/pnasnexus/pgad182](https://doi.org/10.1093/pnasnexus/pgad182)

Provided by University of Warwick

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