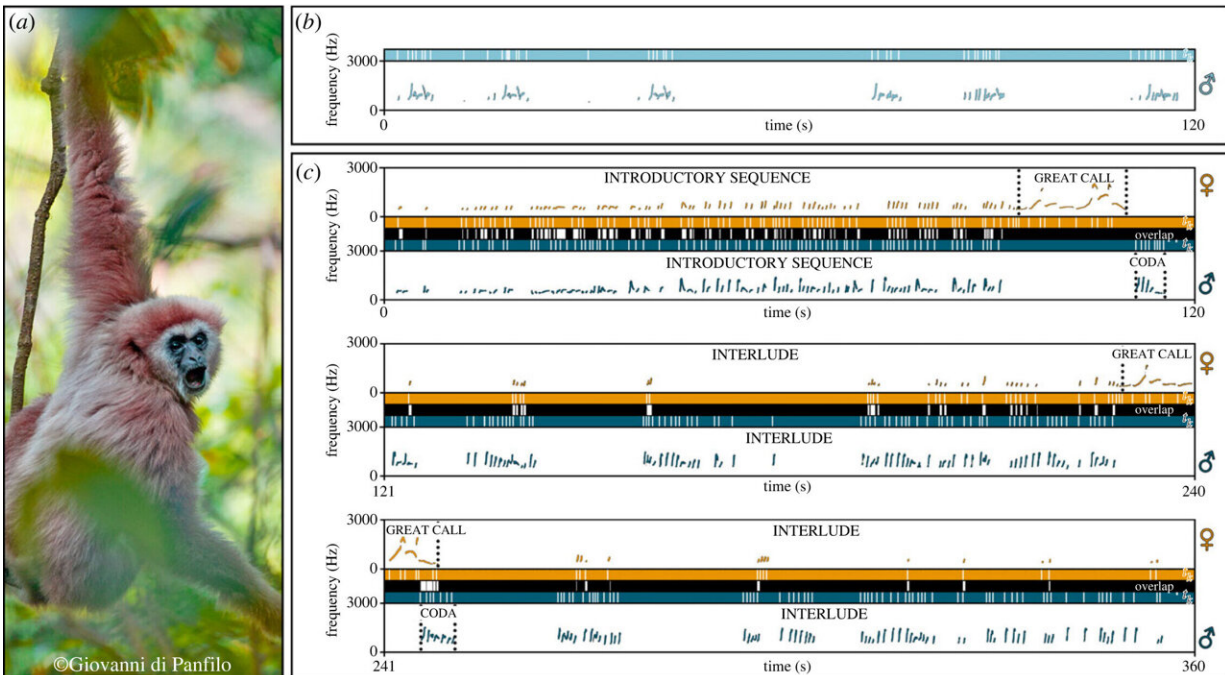


# Singing gibbons found to be more rhythmic when performing duets

January 13 2023, by Bob Yirka



Organization of lar gibbon's songs. (a) Male lar gibbon singing in the Huai Kha Khaeng Wildlife Sanctuary (Thailand). (b) Spectrogram and inter-onset-interval graphs of the male solo. The fundamental frequency is highlighted in light blue on the spectrogram. The colored bar indicates inter-onset intervals (tk) of the solo singing male, where solid white lines on the bar represent the onsets. (c) Spectrograms and inter-onset-interval graphs of the reproductive couple's whole duet. The fundamental frequency of individuals' contributions is highlighted on the spectrogram in dark blue for the male contribution to duet and dark yellow for the female contribution to duet. The sections of the song are labeled in the upper part of the spectrogram and separated with dotted lines. Colored bars indicate inter-onset intervals (tk) of the contributions of each individual with

white lines again corresponding to the onsets. Black bars turn white when the co-singers overlap. Notice how rhythmicity unfolds heterogeneously throughout the duet, alternating periods of higher and lower overlap. Note clusters onsets of the duetting gibbons influence each other (see also figure 4), with introductory sequences and interludes showing higher levels of synchrony, while great calls and codas partly overlap. Credit: *Proceedings of the Royal Society B: Biological Sciences* (2023). DOI: 10.1098/rspb.2022.2244

A team of researchers at the University of Turin, working with a colleague from the Max Planck Institute for Psycholinguistics and another from Aarhus University and The Royal Academy of Music, has found that the lar gibbon tends to be more isochronous (repeating notes more regularly) when singing as part of a duet with a member of the opposite gender. The research is published in the journal *Proceedings of the Royal Society B: Biological Sciences*.

The researchers recorded and studied songs performed by lar gibbons (also known as white-handed gibbons) living in a [wildlife sanctuary](#) in Thailand and a zoo park in Italy. Lar gibbons, they note, are among the few singing primates. Their work was part of an effort aimed at learning about the origins of [rhythm](#) in humans. Prior research has shown that not only do both genders of lar gibbons sing, they sometimes do so together as duets.

In all, the researchers made 215 recordings of songs voiced by 12 gibbons. Their analysis consisted of labeling notes making it possible to discern patterns, particularly those that were repeating. They also measured the intervals and the intertwining of notes as duets occurred.

The researchers found evidence of rhythm in all of the songs on their recordings, noting that they were in many respects similar to rhythm in human songs. They also found differences in rhythm based on [gender](#)

—males tended to sing with more beats when singing with a female partner. During duets, the researchers found that notes sung by the male and female singers overlapped approximately 16 to 18% of the time, which they note is greater than chance.

The researchers also found that during duets, the males tended to sing more than the females, which they discovered meant that the females sang fewer notes when singing with a partner. This, they suggest, was evidence of rhythm playing a social role with the apes.

The researchers suggest that rhythmic ability in apes may have evolved as a means for coordinating vocalisms between genders. They also note that it is still not known if the last common ancestor between primates had similar abilities or if they evolved independently.

**More information:** Teresa Raimondi et al, Isochrony and rhythmic interaction in ape duetting, *Proceedings of the Royal Society B: Biological Sciences* (2023). [DOI: 10.1098/rspb.2022.2244](https://doi.org/10.1098/rspb.2022.2244)

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