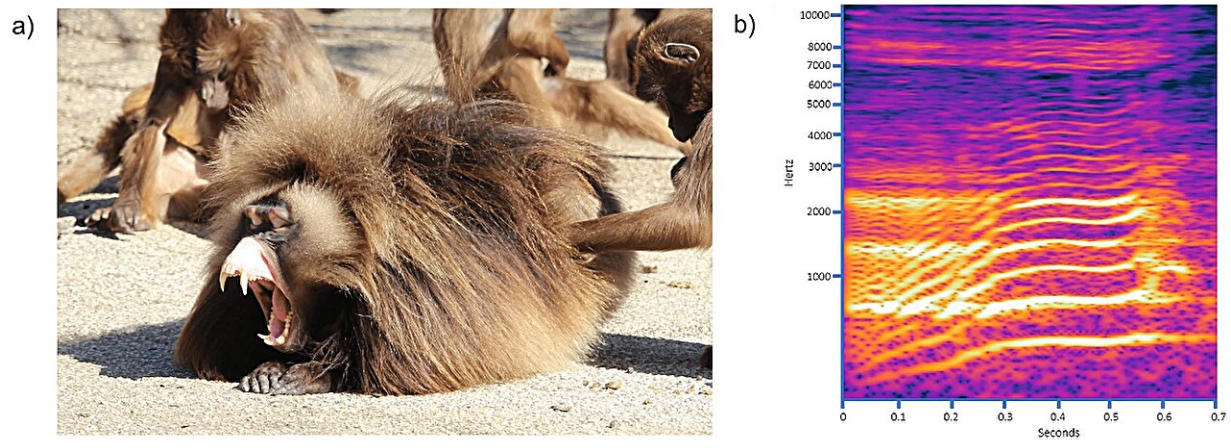
Audible yawns in a non-human species may convey important social information

January 16 2024, by Stephanie Baum



(a) Male gelada yawning (NaturZoo Rheine, credits: M. Francesconi). (b) Spectrogram of a yawn vocalization produced by a gelada male. Credit: *Scientific Reports* (2024). DOI: 10.1038/s41598-023-49797-5

Most of us are familiar with yawn contagion, which is the act of spontaneous yawning when someone nearby yawns, often but not always audibly. For humans, yawning can emanate from fatigue or boredom, and either seeing or hearing someone else yawn may start a chain reaction.

Many animal species also yawn when they're tired, and yawn contagion is known to occur among various social animals including certain apes,

monkeys, lemurs, pigs, wolves, domestic dogs, lions, spotted hyenas, and more. But other than humans, only one species—the gelada (Theropithecus gelada), a species of Old World monkey—is known to yawn audibly.

Earlier studies have explored yawn contagion within and between various species; for example, some work has shown that dogs will yawn in response to the sound of human yawns. But to date, there have been no known studies on intraspecific audibly-triggered yawn contagion in a non-human species.

Now a research team from France and Italy has specifically studied how the sound of gelada yawns affects their conspecifics. The team's work is published in *Scientific Reports*.

Geladas, also known as bleeding-heart monkeys, are endemic to Ethiopia. They live in multi-level societies that include units, teams, bands, and communities. Core units either include a single reproductive adult male with multiple adult females, their young, and at least one follower male; or only young adult and adolescent males no longer living within their birth units.

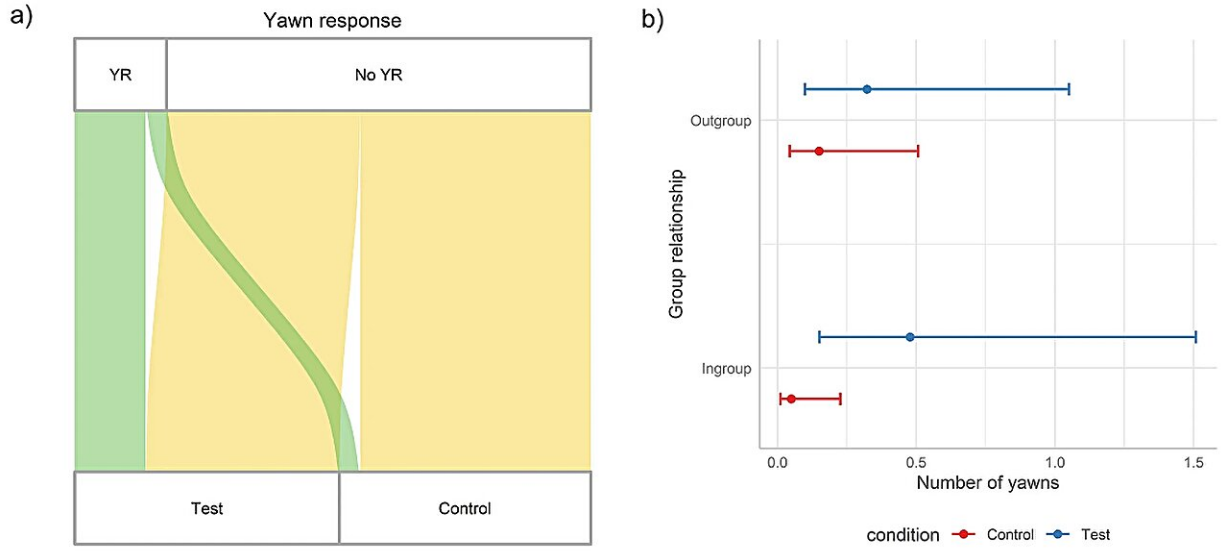
Similar to humans, geladas enjoy rich and complex vocal communication. According to the new study, "A similar evolutionary social landscape, with similar challenges (e.g., need of group coordination with subjects not always in visual contact), has indeed possibly led to the emergence of multimodal communication in both species."

Existing findings show that yawning geladas, mostly males, emit a loud vocal sound that does not arise solely from inhaling and exhaling. While the researchers behind this study knew that visually-based yawn contagion could affect geladas, they wanted to find out whether the

sound of yawning without a visual cue would result in a similar effect.

Testing the effects of audible yawn sounds

The researchers hypothesized that—as with humans—as it evolved, yawn vocalization among geladas might have led to the possibility of yawn contagion among subjects who could not see each other; and moreover, that any such vocalization-based yawn contagion would adjust itself in accordance with the perceived social value of the actuating sound.



(a) Alluvial plot showing the occurrence of yawn response (YR = sessions with yawn responses; No YR = sessions without yawn responses) for each level of the factor "Condition," showing the different occurrence of yawn responses when tested subjects were exposed to Test vs. Control stimuli (green streams = proportion of sessions with presence of yawn response by the tested subject; yellow streams = proportion of sessions with absence of yawn response by the tested subject), thus representing the significant effect of "Condition" in $GLMM_{yawn\ response}$ (Condition: $X^2 = 18.54$, p

Citation: Audible yawns in a non-human species may convey important social information (2024, January 16) retrieved 28 April 2024 from https://phys.org/news/2024-01-audible-human-species-convey-important.html

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.