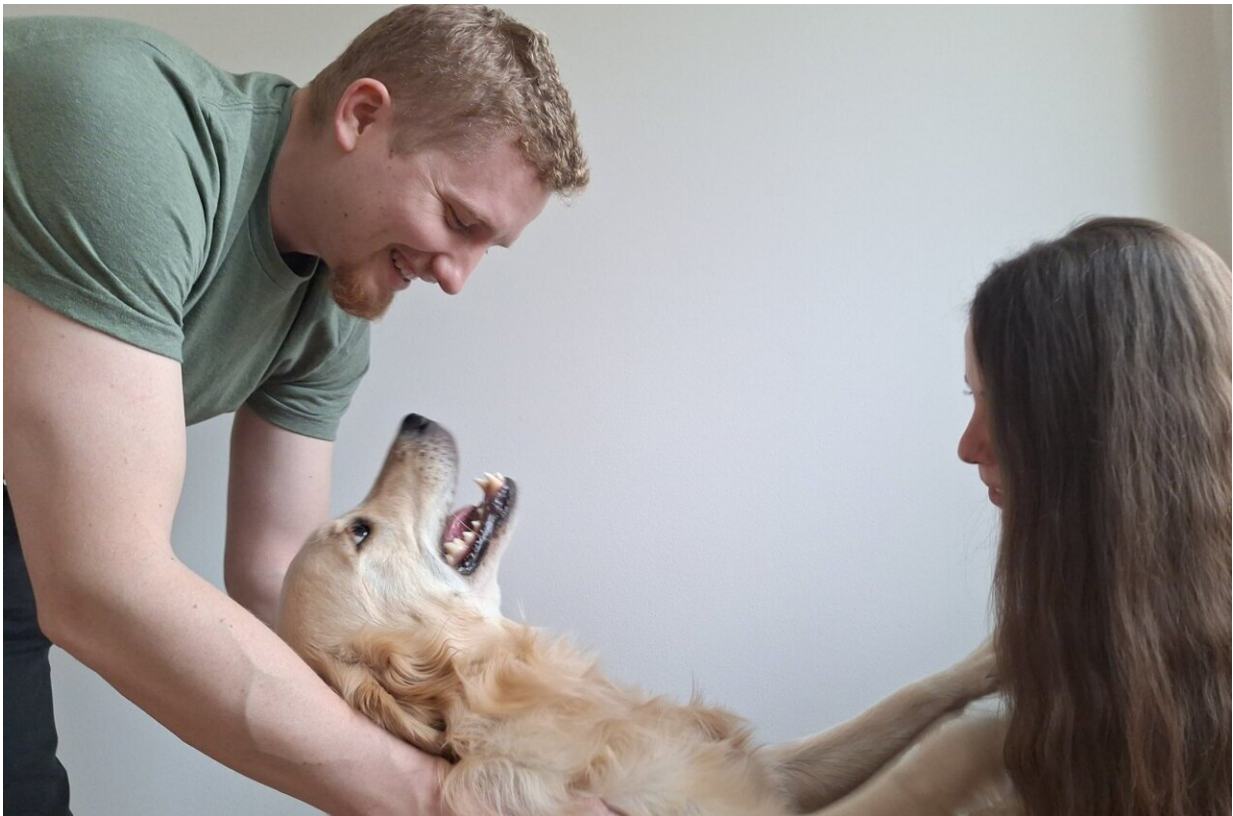


Dogs demonstrate ability to match voices to familiar humans

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"Previous studies demonstrated that [dogs](#) are sensitive to certain acoustic cues in the [human voice](#), they can recognize the sex of the speaker and distinguish between familiar and unfamiliar voices. Whether dogs are capable of voice-based individual-level recognition of humans had not been demonstrated before this experiment," explains Kinga Surányi, Ph.D. student at the ELTE Department of Ethology.

In individual-level recognition, animals can identify certain individuals even within the same social category (e.g., siblings), which can be crucial for their communication. However, distinguishing between equally familiar voices presents a difficult task. Demonstrating this ability in animals is challenging, especially when they listen to voices from another species (e.g., humans).

It must be proven that the animal can differentiate between the voices of other individuals while ensuring that all vocalizers are equally familiar with it. Although this ability seems to be beneficial for vocal species, voice-based individual-level recognition of humans has been demonstrated only in rhesus macaques and horses so far.

To find out whether dogs are capable of individual level recognition of humans, researchers at the ELTE Department of Ethology invited three persons of the same dog-owning family to participate in a special experiment. Each dog attended with their three owners, all equally familiar to the dog.

The owners' voices were recorded, then owners were seated next to each

other, and loudspeakers were placed behind them. The researchers played one of the three voices, and the dog had to go to the person to whom the voice belonged. All 31 participating dogs did this 18 times.

While the pre-recorded speech was played through the loudspeakers, the owners did not speak or make any gestures, so that dogs had to choose based solely on the voice they heard. Using a questionnaire and acoustic analyses of the [owners'](#) voices, the researchers investigated potential demographic and acoustic variables that might influence the dogs' voice recognition abilities.

"Dogs performed well: they chose more often and looked longer at the person whose voice they heard.



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"Dogs' performance was above chance for all [family members](#), indicating that they could recognize all of them based on voice. Furthermore, dogs' performance was the best when they heard their main owner's voice. This could be because dogs most frequently had vocal interactions with the main owner and were most likely to need to react to their voice," adds Anna Gábor, postdoctoral researcher at Neuroethology of Communication Lab.

This study provides the first evidence of individual-level recognition of humans in dogs. "Dogs can discriminate between familiar human voices and match the voices to the corresponding person. This ability seems to be beneficial for communication between different species as well," says Surányi.

"The study shows that dogs do know a lot about human voices: not only if they heard it before or not, but also who that voice belongs to. Future research will need to clarify whether this is a general ability among mammals or the result of specific evolutionary adaptations in certain species to whom humans are especially important," explains Gábor.

More information: Kinga Surányi et al, Individual level recognition of familiar human speakers in dogs, *Animal Behaviour* (2024). [DOI: 10.1016/j.anbehav.2024.10.030](https://doi.org/10.1016/j.anbehav.2024.10.030)

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