

# Human crying stresses out dogs more than pigs, finds study of family pets

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Researchers at ELTE Department of Ethology in Budapest compared how companion dogs and companion miniature pigs from all over the world reacted to human emotional vocalizations. Credit: Oszkár Dániel Gáti

Researchers at ELTE Department of Ethology in Budapest compared

how companion dogs and companion miniature pigs from all over the world reacted to human emotional vocalizations. They found that both dogs and pigs differentiated between human crying (a negative but very usual vocalization) and human humming (not negative but unusual vocalization), but their reactions to the sounds differed.

Dogs' responses indicated that they matched their [emotional state](#) with the emotional content of the vocalizations they heard, supporting the concept of [emotional contagion](#). In contrast, pigs exhibited more stress behaviors when exposed to the more neutral but unusual humming.

These findings suggest that the special selection of dogs for dependency on humans during domestication may play a crucial role in facilitating emotional [contagion](#) induced by human sounds.

Animals, including humans, express their emotions through different channels, like vocalizations. These emotional vocalizations, especially those of negative valence, are suggested to possess a well-conserved acoustic structure through evolution, meaning that how they code information about an individual's emotional state is very similar across species. This implies that not only conspecifics (members of the same species) but also heterospecific (members of different species) individuals can process these vocalizations similarly.

Furthermore, hearing emotional vocalizations can lead to a process called emotional contagion, wherein there is an automatic emotional state matching between the caller and the receiver. Cross-species emotional contagion has been observed in family dogs after hearing human distress vocalizations.

"We were curious whether the emotional contagion observed between dogs and humans was related to the well-conserved acoustic structure of some emotional vocalizations across species," explains Fanni Lehoczki

from the Neuroethology of Communication Lab at ELTE Department of Ethology, first author of the study—or if it was promoted by the dogs' specific selection for cooperation and dependency on humans."

To address this question, the researchers compared the reactions of similarly raised family dogs and family minipigs to human sound playbacks.

Miniature pigs are also domestic animals and popular companions, but their common past with humans lacks selection for cooperation. The animals were exposed to a high-intensity, negative sound with a well-conserved acoustic structure: crying, and to a low-intensity, slightly positive and also unusual human sound: humming.

"For collecting this data we used a so-called 'citizen science approach,'" explains co-first author Paula Pérez Fraga, also from the Neuroethology of Communication Lab at ELTE Department of Ethology. "The animals were tested remotely at their homes by their owners, facilitating the inclusion of more subjects in the study from various locations worldwide."

Researchers found a very interesting result: dogs matched their emotional state with that of the human [vocalization](#) they heard, meaning that they displayed more behaviors indicative of high-arousal and negative emotional state, and vocalized more to the crying than to the humming. However, family pigs seemed to be highly aroused and in a more negative emotional state after hearing the more neutral humming.

"Our findings suggest that decoding the emotional content of certain human vocalizations, particularly those lacking a conservative acoustic structure and possibly perceived as less relevant for animals, such as humming, might be challenging for some domestic species," says Pérez Fraga.

"While we cannot exclude that pigs also experienced emotional contagion when listening to human crying, one explanation for their reaction might be that humming is highly unusual, and surprising sounds stresses out pigs more than human sadness. On the other hand, one thing is clear, dogs seem to be specially keen on catching the emotional content of differently valenced human vocalizations, even of the more unusual ones.

"Therefore, selection for cooperation with humans might be key in promoting human-sound induced emotional contagion in domestic animals. However, to confirm this suggestion further research is needed involving physiological measurements."

This study was published on July 2, 2024 in *Animal Behaviour* titled "[Family pigs' and dogs' reactions to human emotional vocalizations—A citizen science study.](#)"

**More information:** Fanni Lehoczki et al, Family pigs' and dogs' reactions to human emotional vocalizations: A citizen science study, *Animal Behaviour* (2024). [DOI: 10.1016/j.anbehav.2024.05.011](https://doi.org/10.1016/j.anbehav.2024.05.011)

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