## Exceptional learning capacities revealed in some gifted dogs

October 52021


Whiskey is one of the talented dogs who participate in experiments at Eötvös Loránd University. Credit: Helge O. Savela

Does your dog understand you? All dogs are smart but some are uniquely gifted at learning words. According to a new study, just published in Royal Society Open Science, these gifted dogs can learn up to 12 new toy names in one week. Not only that, but they can also remember the new toy names for at least two months. The dogs presented their exceptional skills as part of the Genius Dog Challenge, a series of live broadcasted experiments, which went viral over social media.
"We know that dogs can easily learn words that are linked to actions, such as 'sit' or 'down'. But very few dogs can learn names of objects" explains Shany Dror, leading researcher, from the Family Dog Project, Eötvös Loránd University. "For more than two years we searched around the world for dogs that had learnt the names of their toys, and we managed to find 6."

The dogs: Max (Hungary), Gaia (Brazil), Nalani (Holland), Squall (USA), Whisky (Norway), and Rico (Spain), all qualified to participate in the challenge by proving to know the names of more than 28 toys, with some knowing more than 100.
"These gifted dogs can learn new names of toys in a remarkable speed" says Dr. Claudia Fugazza, head of the research team. "In our previous study we found that they could learn a new toy name after hearing it only 4 times. But, with such short exposure, they did not form a long-term memory of it."

In this new study, the researchers wanted to push the limits of the dogs' talent, so they challenged the owners to teach their dogs the names of first 6 and then 12 new toys in only one week. The researchers were amazed by the dogs' performance. "It turned out that, for these talented dogs, this was not much of a challenge. They easily learned between 11 to 12 toys," discloses Shany Dror. The researchers also tested the dogs one, and two months after they had learned the names of the new toys
and found that they still remembered those.

The study not only reveals that some gifted dogs can learn new words in an astonishing rate but also standardizes a new way of conducting science.

The researchers explained that they collected data during COVID-19 lockdowns, which meant that they needed to take the laboratory to the owner's home. To do this, they asked the owners to set up two video cameras and connect to a livestream, which meant that they could fully monitor the dogs' and the owners' behavior. "Once we realized we can remotely test the dogs, we decided to bring the experiment to the homes of people all around the world by broadcasting the tests live on YouTube " says Shany Dror.

## All of the dogs in this research are Border Collies, is this the smartest dog breed?

"Originally Border Collies were breed to work as herding dogs, so most of them are very sensitive and responsive to the behavior of their owners. However, although the ability to learn names of toys appears to be more common among Border Collies, in a recently published study we found that even among this breed it is very rare" emphasizes Shany Dror. "Moreover, this talent is not unique to this breed. We are constantly searching for more gifted dogs. Thanks to the Genius Dog Challenge we have managed until now to find also dogs from other breeds including a German Shepherd, a Pekingese, a Mini Australian Shepherd and a few dogs of mixed breeds." Previous research has documented this talent also in Yorkshire Terriers.

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"Dogs are good models for studying human behavior as they evolved and develop in the human environment" explains Prof. Adam Miklósi, head of the Department of Ethology at Eötvös Loránd University and coauthor of the study. "With these talented dogs we have a unique opportunity to study how another species understands the human language and how learning words influences the way we think about the world."
"Moreover, gifted dogs are especially interesting because they show that also among other species there are individuals that are uniquely talented. With the help of these dogs, we hope to better understand the factors that contribute to the development of talent."

The skill to learn object names is very rare and dogs with this capacity are important for research. By studying these dogs, we can not only better understand dogs, but also better understand ourselves. So, the researchers encourage dog owners that believe their dogs know multiple toy names to contact them through the Genius Dog Challenge.

More information: Acquisition and long-term memory of object names in a sample of Gifted Word Learner dogs, Royal Society Open Science (2021). royalsocietypublishing.org/doi/10.1098/rsos. 210976

## Provided by Eötvös Loránd University

Citation: Exceptional learning capacities revealed in some gifted dogs (2021, October 5) retrieved 23 June 2024 from https://phys.org/news/2021-10-exceptional-capacities-revealed-gifted-dogs.html

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