

Memory Lane Isn't Just for Humans

Turns out, your four-legged companion might have episodic memories, too. Dive into the research showing how dogs remember past experiences and the actions they mimic.

Analysis by [Dr. Karen Shaw Becker](#)

STORY AT-A-GLANCE

- The memory capacity of dogs has been explored for years in various ways, however, interpreting the findings remains challenging
- In a 2016 study, researchers trained a group of dogs to “Do as I do,” and were then able to demonstrate the dogs’ ability to copy human behavior on command, proving they possess episodic-like memory
- Research shows dogs also have associative memory that involves recall of people, places, and experiences based on the association a dog makes with them
- A dog’s memories, good and bad, naturally influence their behavior

As a pet parent, I know your heart is overflowing with memories of the enjoyable times you’ve spent with your canine companion — the one with you today, and perhaps those you’ve lost over the years as well. What you might be unsure about, however, is whether your dog also shares those memories.

Does he remember the day you brought him home? How about the family road trips she’s been a part of? We know that dogs remember where their toybox is, and what time meals are served ... but do they remember the time they spend with us?

We’re not the only ones pondering this question. Scientists have been interested in the topic of canine memory for many years.

“Studies have been done looking at short-term memory, episodic memory, memory related to chewing, and comparative memory of wolves versus dogs, among others,” veterinarian Dr. Barri Morrison writes in an article for PetMD. “The results of these studies indicate that, to a certain degree, dogs have a good memory and usually perform best when imitating human action.”

While the memory capacity of dogs has been explored in various ways, interpreting the findings can be difficult.”¹

Dogs Have Episodic Memories

Humans are able to remember events from the past, even events that weren’t particularly important to us at the time because we possess what is known as episodic memory. Research shows that dogs have episodic memory as well. A 2016 study revealed that dogs can recall a person's complex actions even when they have no compelling reason to do

so.²

“The results of our study can be considered as a further step to break down artificially erected barriers between non-human animals and humans,” lead author Claudia Fugazza of MTA-ELTE Comparative Ethology Research Group in Budapest, Hungary said in a press release. “Dogs are among the few species that people consider ‘clever,’ and yet we are still surprised whenever a study reveals that dogs and their owners may share some mental abilities despite our distant evolutionary relationship.”³

As Morrison explains:

“This ability was tested in dogs by training them to imitate a human action. Even after 24 hours, the dogs still remembered the action, thus demonstrating that they have a memory to be able to imitate. These dogs were then tested to see if they would remember a human action without allowing them to imitate the behavior right away. They were asked later to imitate the action — which they did.

This proved that dogs do have a good memory of about two minutes when it comes to imitation and training with people.”

Studies show that even actions a dog doesn't engage in regularly can be remembered and repeated years later. “When it comes to long-term memory in dogs, their ability to recall events is impressive,” says Morrison.

For the 2016 study, the researchers used a technique in which dogs trained to “Do as I do” watch a person perform a behavior and then mimic the behavior. For example, an owner jumps into the air and then tells his dog to “Do it,” and the dog follows suit.

The fact that dogs can be trained to “Do as I do” doesn't in and of itself demonstrate episodic memory, because it doesn't prove they remember what they just saw their owner do even when they weren't expecting to be asked or rewarded. So, first the researchers trained 17 dogs to mimic human behavior with the “Do as I do” technique. In the next phase, they trained them to simply lie down after watching the human perform a behavior, no matter what the behavior was.

Once the dogs were lying down reliably, the researchers pulled a fast one on them by performing a behavior and saying, “Do it” — and the dogs did, demonstrating that they recalled what they'd seen the person do, even though they had no compelling reason to remember. In other words, they showed episodic-like memory.

The researchers tested the dogs in that way after one minute and after one hour. The results show they were able to recall the demonstrated actions after both short and longer time intervals. However, their memory faded somewhat over time.

Dogs Also Have Associative Memories

A 2015 study⁴ suggests that dogs' short-term memory is related to storing information on how to survive vs. remembering events. Associative memories involve recall of people, places, and experiences based on the association a dog makes with them.

“A dog will remember that every time you grab the leash and put on your sneakers, they are going to go outside for a walk — but they don’t necessarily remember previous walks,” Morrison writes. “By training your dog, you are helping them build their associative memory.”

If a visitor to your home hands your dog a treat as he comes through the door, your dog is likely to remember the treat rather than the person. When you scold your dog for something she does, she’s likely to associate your tone of voice with the behavior and stop doing it.

Dogs also associate certain times of the day with memorable events, such as mealtime, walk time, playtime, and bedtime.

Memories Influence Your Dog’s Behavior

Your dog’s memories, good and bad, naturally affect his behavior.

“Loud noises and other bothersome sounds, for instance, can jog a dog’s memory and cause them to react negatively,” Morrison writes. “This is a common occurrence with items like the vacuum cleaner, where the loud noise of a machine that is ‘following them’ can evoke a memory of being yelled at, chased, or otherwise treated negatively in the past.”

Reacting to the noise that evokes the bad memory, your dog may show aggression toward the vacuum, or alternatively, put as much distance as possible between himself and the machine. Desensitization and counterconditioning techniques can help your dog better deal with this negative association.

“Showing your dog the vacuum when it’s off and putting a treat on top of it can demonstrate to your dog that the vacuum isn’t something to fear,” Morrison suggests. “Over time you can try turning the vacuum on and giving your dog treats and lots of praise so that they associate positive outcomes with it and no longer fear it.”

The take home message is that while further research into the canine memory is needed, you can rest assured that your furry family member remembers her favorite humans, places, and activities.

Sources and References

¹ [PetMD, February 23, 2024](#)

² [Fugazza, C. et al. Current Biology, Volume 26, Issue 23, P3209-3213, December 05, 2016](#)

³ [ScienceDaily, November 23, 2016](#)

⁴ [Lind, J. et al. Behavioural Processes, Volume 117, August 2015, Pages 52-58](#)
