

## The Unique Traits of Highly Trained Dogs

A new study confirms what many people suspect - highly trained dogs are different from their less-educated canine cousins. But as far as communication is concerned, is training needed for dogs to understand us or is some part of this ability innate? Another study with 160 stray dogs provides clues.

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### STORY AT-A-GLANCE

- A new study indicates that highly trained dogs are more persistent than their less-educated canine cousins
- The study showed that dogs who receive a high level of training in any sort of task not only learn new tasks more quickly, but are also less likely to give up on those tasks even when reinforcement/rewards are no longer offered
- A 2020 study suggests that dogs' ability to understand human gestures may be innate
- The study involved 160 stray dogs in India; the researchers found that 80% of dogs willing to approach two bowls on the ground did so in response to a human pointing to the bowls

Research shows that dogs who are highly trained in a variety of behaviors learn new tasks faster and solve problems more quickly than their canine counterparts with less training.<sup>1</sup>

In a newly published study, a team of researchers at the University of Buenos Aires did a deeper dive into this phenomenon and discovered that one of the factors of influence is likely persistence (a behavioral tendency or level of motivation) resulting from high levels of training. The research team published their findings in a recent issue of Behavioural Processes.<sup>2</sup>

### Reinforcement vs. Extinction

Positive reinforcement is used by both dog trainers and pet parents to reward desired behaviors in dogs, with the goal of ensuring those behaviors will become stronger and more frequent. At the opposite end of the spectrum is extinction, which occurs when behaviors that aren't rewarded become weaker and less frequent.

Depending on how well a behavior has been learned by a dog, resistance to extinction can occur, with the result that a well-learned behavior continues to be performed for some time after it is no longer being rewarded.

### Highly Trained Dogs and Extinction Resistance

Service animals such as search-and-rescue dogs, or canine obedience or agility competitors, are often required to perform a long series of behaviors with no reward until the entire sequence or task is complete. As a dog performs each behavior in a task with no reinforcement, there is a risk of extinction in that the animal will quit before the

“problem” is solved or the task is complete.

The possibility exists that highly trained dogs have learned to resist extinction and instead persist in desired behaviors, which makes them better at solving problems than the average dog. The specific type of training dogs receive has no bearing on their ability to learn persistence.

## **How the Study Was Conducted**

The University of Buenos Aires team divided 26 adult dogs into two groups. The first group, “trained dogs,” had basic obedience training and in most cases, additional training of various types, such as advanced obedience, agility, freestyle dancing, or recreational trick training. Two in the group were active service dogs — an assistance dog and a cadaver detection dog.

Group two, the “pet dogs,” were selected by the researchers to match as closely as possible the characteristics of the trained dogs, minus formal training of any kind. The dogs were given two tasks:

1. A social learning task that required they look directly into the researcher’s eyes. Each time they gazed at the researcher’s face they received reinforcement (a treat). Once they learned the task, the researcher began the extinction phase (the face-gazing was no longer rewarded) and monitored how long the newly learned behavior would persist.
2. A problem-solving task involving a flat disk into which plastic bones were fitted. The plastic bones hid treats, and the dogs had to learn how to move the bones with their mouth or paws to get to the treats. Once the dogs got the hang of it, again, the researcher began the extinction phase in which no treats were hidden beneath the bones.

The expectation was that once the dogs’ learned behaviors were no longer rewarded, they would perform them less frequently or not at all, demonstrating extinction.

## **Highly Trained Dogs Persist and Resist Behavior Extinction**

The study co-authors observed that during the extinction phase of the social learning task, the trained dogs gazed at the researcher longer than the pet dogs and picked up more plastic bones during the extinction phase of the problem-solving task.

In other words, the highly trained dogs (those trained on a variety of different tasks, but none that were similar to the two tasks in the study) persisted in their newly acquired social learning and problem-solving behaviors longer than the pet dogs.

This finding led the researchers to conclude that compared to less educated dogs, those who receive a high level of training in any sort of task not only learn new tasks more quickly but are also less likely to give up on those tasks even when reinforcement/rewards are no longer offered.

## Do Dogs Need To Be Trained to Understand Us?

Most of us with dogs assume our canine companions learn to read our communication cues through training and because we spend so much time together. But research suggests there may be more to the story.<sup>3</sup>

Believe it or not, 80% of untrained stray dogs observed for a 2020 study “successfully followed pointing gestures to a specific location despite having never received prior training,” according to a news release posted in Frontiers Science News.<sup>4</sup>

These results suggest the possibility that dogs are able to understand and respond to complex gestures without any training, meaning they may have an instinctive connection to human behaviors. According to researchers, this discovery may have implications in reducing negative encounters between stray dogs and humans.

Dogs are probably the oldest domesticated species on the planet and have been intentionally bred over thousands of years for traits that are both desirable and useful to humans. As a result, today’s domesticated dogs are highly attuned to human physical and verbal cues.

What the authors of the 2020 study, published in Frontiers in Psychology, wanted to learn was whether dogs understand humans through training alone, or whether some part of this ability is innate. Can a stray dog interpret certain human gestures having never been trained to do so, and having never laid eyes before on the person making the gestures?

Stray dogs running the streets isn’t a common sight in the U.S., but it is in other cities around the globe, especially in developing countries. These free-ranging dogs watch and occasionally interact with people, but for the most part they behave as the wild, untrained animals they are. The result, sadly, is regular clashes with humans.

### 80% of Dogs Seemed to Understand Human Pointing Gestures

For the study, a team of researchers in India led by Dr. Anindita Bhadra of the Indian Institute of Science Education and Research in Kolkata, studied a total of 160 stray dogs living in several cities.

The researchers located solitary dogs and placed two covered bowls on the ground close to them. A researcher would point to one of the bowls, either just once or several times, and then record both the dog’s response and his perceived emotional state.

About half the dogs didn’t approach either bowl “even after successful familiarization with the experimental setup.” According to the researchers, these dogs seemed anxious and may have had negative experiences with people in the past. In contrast, the dogs who approached the bowls appeared friendlier and less anxious.

About 80% of that group correctly interpreted the researchers’ pointing signals, whether they pointed once or repeatedly, indicating the dogs were able to read complex gestures.

*"We thought it was quite amazing that the dogs could follow a gesture as abstract as momentary pointing," Bhadra told ScienceDaily. "This means that they closely observe the human, whom they are meeting for the first time, and they use their understanding of humans to make a decision. This shows their intelligence and adaptability."*<sup>5</sup>

Bhadra and her colleagues believe their study results indicate that dogs may have an inborn ability to understand certain human gestures. However, since anxious dogs wouldn't participate, the researchers feel more research is needed to determine how dogs' personalities (and/or perhaps past experiences) affect their ability (or perhaps willingness) to understand and respond to human cues.

*"We need to understand that dogs are intelligent animals that can co-exist with us," said Bhadra "They are quite capable of understanding our body language and we need to give them their space. A little empathy and respect for another species can reduce a lot of conflict."*

## Sources and References

<sup>1</sup> [Stanley Coren PhD., DSc, FRSC. Psychology Today, October 26, 2022](#)

<sup>2</sup> [Cavalli, C. et al. Behavioural Processes, Volume 203, November 2022, 104769](#)

<sup>3</sup> [Bhattacharjee D, Mandal S, Shit P, Varghese MG, Vishnoi A and Bhadra A \(2020\) Free-Ranging Dogs Are Capable of Utilizing \[...\]. Front. Psychol. 10:2818](#)

<sup>4</sup> [Frontiers Science News, January 17, 2020](#)

<sup>5</sup> [ScienceDaily, January 17, 2020](#)

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