

The family dog:

A real smarty pants after all

{ by Dr. Nicola Davies }



Recently adopted, Anubis looks forward to learning lots of good stuff in his new home. After all, each dog has his own unique genius.



In 1982, when faced with a scraggly mutt who just wouldn't stop following her down a New York City back alley, a well-known red-headed orphan named Annie (portrayed by Aileen Quinn in the hit musical of the same name) sang the following: "Dumb dog, why are you following me? Dumb dog, how about lettin' me be?" Turns out, of course, Sandy, Annie's famed faithful sidekick, was anything but dumb. It also turns out that the same can be said for our own family dogs. No longer just a hunch, recent studies prove what canine lovers have believed all along: Dogs are a whole lot smarter than they have traditionally been given credit for.

was learning new objects much faster and had developed the insight that objects had names which she could learn from clues I gave her."

Having graduated beyond "sit" and "stay," Chaser's repertoire today includes not only an ability to differentiate between the "big Frisbee" and the "small Frisbee," but also an ability to follow complex instructions. She can successfully "take Frisbee to ball," and she also understands when the wording of the cue is reversed: "To ball, take Frisbee." When finding a hidden object, Chaser is even able to play the "hot and cold" children's game, indicating whether she is getting closer or farther from the vicinity of the object.

Emotional intelligence and body language

But canine smarts aren't relegated to impressive language skills. Dr. Gregory Berns, professor of neuroeconomics at Emory University in Atlanta, Georgia, and parent of Callie, a rescued black terrier mix, has begun to research the perceptions and emotions of dogs through MRI scans. An MRI scanner is an extremely loud, confined space that requires perfect stillness on the part of the patient. Prior to Gregory's work, a dog would have to be anesthetized to be the subject of a brain scan via an MRI, thereby limiting the research findings. To allow MRI scans without anesthesia, Gregory began

ABCs and 123s

According to Dr. Stanley Coren, professor of psychology at the University of British Columbia and author of *The Intelligence of Dogs*, dogs possess three types of intelligence: instinctive intelligence (what they are bred to do), adaptive intelligence (how well they learn from the environment to solve problems), and working and obedience intelligence (how well they learn from humans).

Dedicating much of the later part of his career to dog behavioral research, Stanley is also an instructor at the Vancouver Dog Obedience Training Club. He says that the average dog can learn approximately 165 words (which is similar to the ability of the average two-year-old child), while "super dogs," those in the top 20 percent of dog intelligence, can learn about 250 words. While this propensity for picking up language is impressive, there are exceptions that, quite frankly, blow the 250-word super dog out of the water.

Take, for example, Chaser, a nine-year-old border collie who has mastered more than 1,000 words. Chaser belongs to Dr. John Pilley of Spartanburg, South Carolina. Determined never to have a dog again after the death of Yasha, his 16-year companion, John was still grieving when his wife, Sally, won him over with Chaser. John says, "As soon as we brought her home, we started teaching her different behaviors: sit, come, fetch. We then set out to teach her proper nouns. After five months, we noticed that she





training Callie to walk into an MRI simulator, place her head in a dog-specific chin rest and, wearing earmuffs to protect her ears from the noise, remain motionless for up to 30 seconds. After Callie was successfully trained and scanned, a dozen other pet dogs were also trained to be “MRI certified.”

What was revealed is nothing short of remarkable. The caudate nucleus (the area of the brain that can indicate enjoyment of such things as food, music and beauty) of a dog is strikingly similar to that of a human. Simply put, the caudate nucleus is activated through the experience of positive emotions. The MRI scans of dogs indicated that the caudate nucleus was activated when the dog was shown the hand signal for food and when the dog’s person reappeared after a brief absence. This research has proven what we dog lovers have suspected all along: Dogs are capable of love, attachment and sentience.

For those of us without access to an MRI machine, when it comes to identifying that connection with our own pets, Vanessa Woods (co-author, with husband Brian Hare, of *The Genius of Dogs*) says it’s all in the eye contact. If you notice that you and your dog are able to share direct eye contact, chances are your dog has a much

closer emotional response connection with you than those who are unable to make direct eye contact with their people. So, the next time you’re having a bad day, and Fifi looks up at you and snuggles in extra closely, chances are it’s no coincidence.

Dogs have also become masters of interpreting the body language of humans. In their book, Vanessa and Brian explain how dogs are able to make inferences. “Inference ability varies from dog to dog, but most have some ability,” Vanessa says. “For example, if you have a toy and two cups and you hide the toy underneath one cup, when you show the dog the empty cup he can infer that the toy is under the second cup.”

In the same way, dogs can infer the meaning of gestures. When a ball is thrown, the arm extends in the direction that the ball has gone and points the dog to the place where he needs to go to chase the ball. This is

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According to Vanessa Woods and Brian Hare, dogs are able to make inferences, such as when you trick your dog into chasing a ball before you have thrown it. When an arm is extended to throw, a dog infers that there is a ball to be chased, and he will head in that direction, even if the ball has not been released.



Authors Vanessa and Brian
with their dog Tassie

“There is no such thing as a stupid dog. Each dog has (his) own genius and it is up to us as humans to find out what that is.”

~ Brian Hare

The unique genius of your dog

If you don't have a super-achiever like Chaser, all is not lost. Chaser's dad, John, says, “I like to think any dog, given the same sort of training, will learn words. The key is finding the play that corresponds with their instincts.” In the case of Chaser, suitable play includes things like finding hidden toys and playing catch and fetch.

Teaching your dogs new words and improving their skills may seem daunting, but once they have the basic cues down, it's just a matter of expanding on what they know. John was able to reinforce Chaser's language inventory through regular learning intervals, which would take place over about five hours each day and were combined with play. John says, “By using one

object at a time, there was never anything that was not of interest to Chaser. Objects like toys or a ball — anything that moves in their sight excites (most dogs).”

So, how can we use this knowledge to increase our dogs' word know-how? John, who has written a book called *Chaser: The Dog Who Knew*, concludes, “The essential part is to play with the pup and make it fun by giving (her) the opportunity to link it with (her) built-in instincts. This leads to them paying more attention ... and as a result, they start to learn.”

More good news: Basic mastery of these skills isn't relegated to young dogs. Older dogs can learn as well, though their scope for learning may be a bit narrower. John says of Chaser, “She is now nine years old and continuing to learn. Learning builds on learning and old dogs can continue to learn all their lives, as long as they have had the ABCs taught to them. It is just the same with children: They can learn some words on their own, but once shown the ABCs, they leap ahead.”

While the science confirms what many of us have believed all along, perhaps Brian sums it up best: “There is no such thing as a stupid dog. Each dog has (his) own genius and it is up to us as humans to find out what that is.” 🐾

why you can often “trick” your dog into chasing a ball that has not been released. He has inferred that there is a ball to be chased from your outstretched arm. It is an emotional response to your gesture, as opposed to a cognitive observation that the ball has not been released. Cognition would allow the dog to recognize that the ball has not been thrown, but emotion takes over and he wants that ball and the fun associated with playing with you.

And if you think the dogs in your life seem to be getting smarter and smarter, you just may be on to something. A finding by Suzanne Shultz and Robin Dunbar at Oxford University indicates that dogs' encephalization quotient (EQ) — which compares brain weight to expected brain mass, taking body size into consideration — has increased over time. Scientists use EQ as a measure of cognitive intelligence, suggesting that our canine companions are not just intelligent, but they are evolving, since their initial domestication, to be even more intelligent. They hypothesize that this is happening because of the new demands that interspecies interactions have placed on the dog, such as understanding human words and gestures. Stories about dogs like Chaser certainly support this hypothesis.