



CHASER

DOGNITION REPORT - DECEMBER 10, 2024



AN ACCOMPLISHED PROBLEM SOLVER WITH GREAT COMMUNICATION SKILLS, AN ACE HAS EVERYTHING THAT MAKES DOGS SPECIAL, AND A LITTLE MORE BESIDES.

Chaser is the dog with it all. An accomplished problem solver with great communication skills, Chaser has everything that makes dogs special, and a little more besides. The only downside to having a dog as gifted as Chaser is that sometimes she may be too smart for her own good. She may occasionally try to get away with things she shouldn't and then rely on her soulful gaze and an ingratiating nuzzle to win you over. There isn't much that escapes an Ace like Chaser, and you can feel lucky to have such a talented dog as part of your pack.



THE DOGNITION PROFILE

Usually, when you get test results, you see a score that means you either passed or failed. To compare your results to someone else, you see who got the higher score. This is why your dog didn't take a test. Instead, you played a series of games together - and when you play a game there is more than one way to win. Success often comes from playing to your strengths.

There has recently been a revolution in how we think about intelligence. The Dognition Profile is based on this cutting-edge field called cognitive science. Cognition is the study of how the mind works and draws on many scientific disciplines, from psychology to computer science to neuroscience.

By studying animals, cognitive scientists have made three important discoveries:

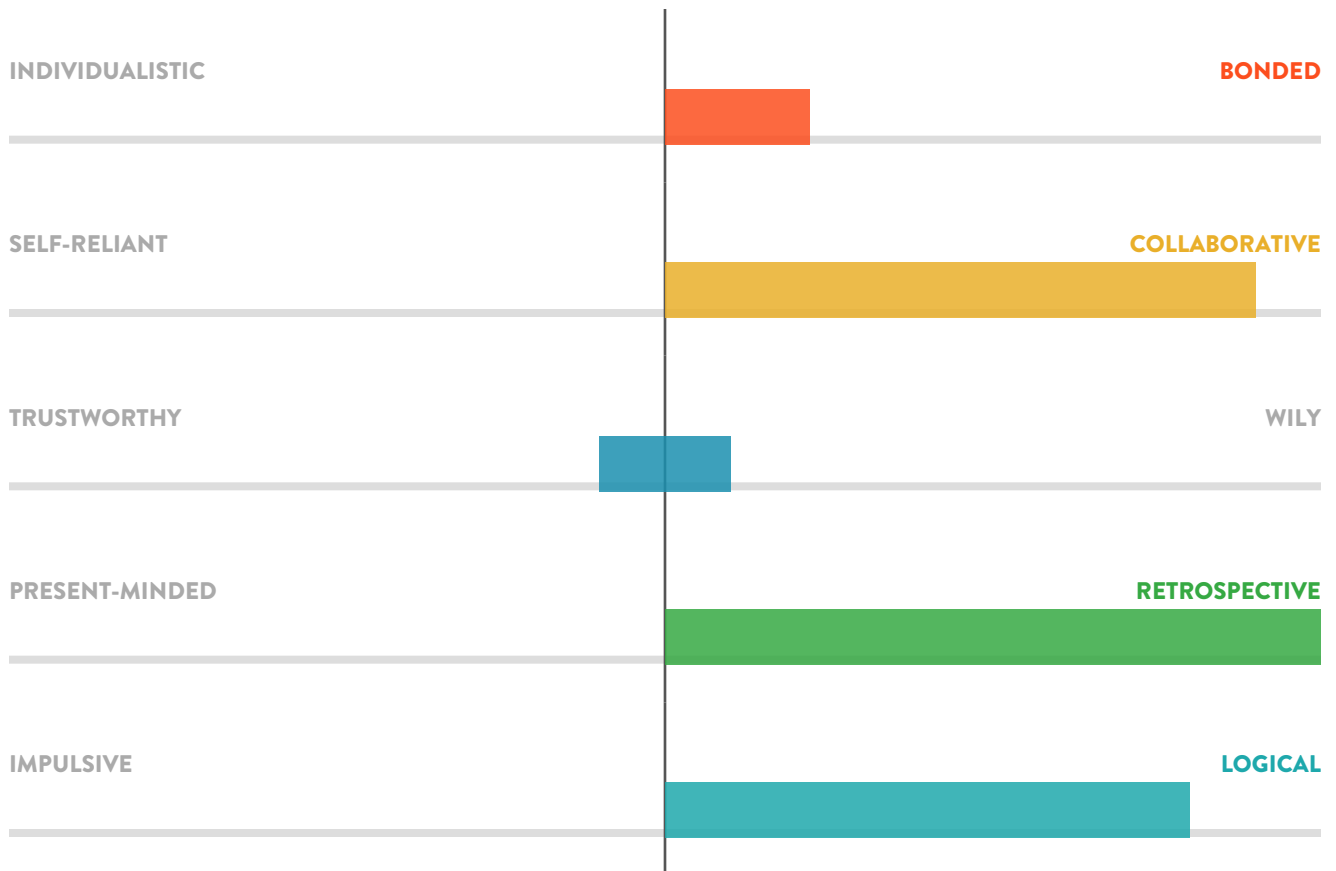
Animals use many types of cognition to survive (learning skills from others, remembering the location of food, inferring the solution to a new problem or deceiving others during competition).

Different animals rely on different cognitive strategies. Asking if a crow is more intelligent than a dolphin is like asking whether a hammer is a better tool than a saw. Each animal has strategies to solve a unique set of problems.

Just because an animal tends to use a certain strategy to solve specific problems doesn't mean he or she will always apply that strategy to all types of problems. Animals rely on a toolbox of strategies that depend on a variety of factors. Dognition gives you insight to the most significant tools that your dog will use on a daily basis to interact with you and the world.

Based on these findings, the Dognition Profile looks at five cognitive dimensions. Rather than counting correct and incorrect answers, the Dognition Profile identifies your dog's cognitive style, and the strategies she relies on to solve a variety of problems. Using this revolutionary new science, the Dognition Profile will give you an unprecedented window into the workings of Chaser's mind and reveal her particular genius.

COGNITIVE DIMENSION RESULTS



EMPATHY - Reading and responding to the emotions of others

COMMUNICATION - Using information from others to learn about the environment

CUNNING - Using information from others to avoid detection

MEMORY - Storing past experiences to make future choices

REASONING - Inferring the solution to new problems

EMPATHY

The two games you played were looking for signs of empathy, and Chaser gave a solid performance. Empathy is the ability to feel what someone else is feeling. We usually think of empathy as being a human quality, but researchers have recently suggested that animals might also have a basic form of empathy.

Chaser was somewhere between bonded and individualistic in the Empathy dimension. This means that while Chaser has an independent streak, she is still very attached to you. Since relationships are all about balance, this probably suits you perfectly.

FIG.1



Playing and interacting with your dog like you did in the Dognition games increases your oxytocin, the hormone responsible for feelings of pleasure, bonding, and affection.



YAWN GAME

It is quite impressive that, during a limited amount of time, Chaser yawned when you yawned. Humans laugh when we see someone laughing, and we cry when we see someone in distress. Our ability to "catch" the emotions of others is called emotional contagion. A common form of emotional contagion is yawning. If you see, hear or even think about someone yawning, you will probably feel an irresistible urge to yawn. Contagious yawning is related to empathy scores in adults.

If Chaser could take a human empathy test, she would probably score quite high! So far, only a few species besides humans have been shown to contagiously yawn. Although dogs may yawn when they are stressed, they also yawn socially. Contagious yawning has been seen in dogs, but not all dogs yawn. It looks like Chaser is one of the empathetic ones.



EYE CONTACT GAME

This game was based on research that showed that owners whose dogs stared at them for longer periods of time had significant increases in the hormone oxytocin. Oxytocin, also known as the "hug hormone," is related to feelings of bonding, pleasure and affection.

Chaser is more wolf-like when it comes to eye contact. Wolves do not seek out the gaze of humans like dogs do. But this doesn't mean that wolves are not bonded to their pack members. They have other ways of connecting. Similarly, not all dogs connect with their owners through eye contact. You know better than anyone how Chaser displays her affection for you. But if you are looking for ways to increase oxytocin in a similar way to eye contact, research has shown that hugging and playing with your dog for half an hour raises oxytocin in both you and your dog. You should engage in as many of these play sessions as possible. According to one study, it's more relaxing than reading a book!

Dogs can even be better than aspirin. Children in a hospital reported that their pain was four times less when they played with a dog than when they spent the same time relaxing.



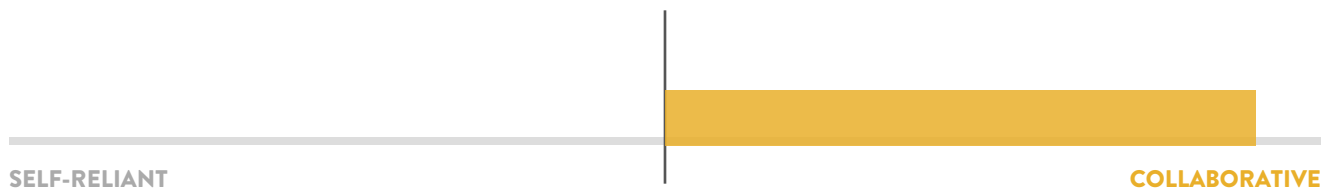
COMMUNICATION

Chaser's performance was highly collaborative. You probably notice that Chaser can read you like a book. Maybe she seems to know where you are going before you do. Maybe she can tell where to find a lost ball just by you glancing in the right direction. However her talent expresses itself, you can be sure that Chaser pays close attention to your gestures and what you are trying to communicate.

Chaser is remarkably like a human infant, who start reading communicative gestures at around nine months old. This ability is the foundation for all forms of culture and communication, including language.

Communication is the basis of many relationships, including our relationship with dogs. Chaser's behavior in the Communication games demonstrated exactly why the dog and human relationship is so special.

FIG.2



ARM POINTING

You probably don't take much notice when Chaser effortlessly uses your pointing gesture in all sorts of situations, from finding a toy to figuring out which direction to go next. But this is a remarkable skill. Chaser did so well in this game that her skills are similar to those of a human infant. At around nine months old, infants begin paying attention to what people are trying to communicate when they point. Infants also begin pointing things out to people. Whether infants point to their favorite toy or watch you point to a bird, they are beginning to build core communication skills. Just like an infant, Chaser relies on your communicative gestures to solve all sorts of problems she probably could not solve alone.

Did you know that, on average, dogs can start following a human point as young as 6 weeks old?



FOOT POINTING

You probably don't usually point things out with your foot, so this was one way to see if Chaser could read a gesture she has seen infrequently or not at all. If Chaser is good at solving a problem but can't solve a new version of it, then she probably learned to solve the original problem through lots of practice. For example, perhaps in the previous game she was just following the motion of your hand without understanding your communicative intentions. If Chaser can also solve the new problem, then she probably understands enough to spontaneously solve a range of related problems.

Not only could Chaser follow your point, she also responded to a more unusual gesture - when you pointed with your foot. This suggests that Chaser has a flexible understanding of the communicative nature of human gestures - a talent you can be proud of, since this is also what children do.

Many dogs tend to ignore unintentional cues from humans. The most effective way to communicate is to call the dog's name, make eye contact, then point and look in the direction of the object.



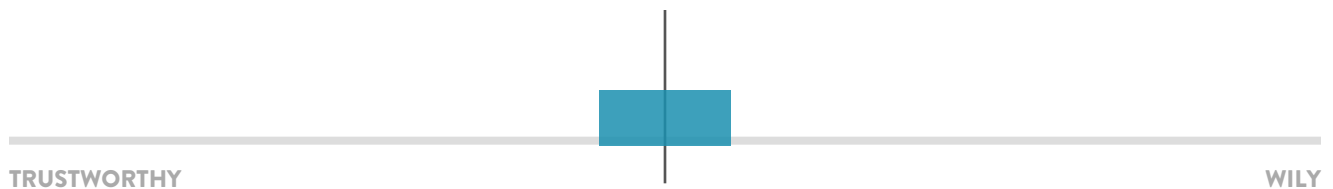
CUNNING

Chaser scores as trustworthy in this game since she does not use your social information when deciding whether to take advantage of you. When you put the treat down in front of Chaser and said 'No,' you then presented her with different attentional states. In the first condition, you were watching Chaser directly. In the second condition you covered your eyes, and in the final condition you turned your back.

A wily dog would have waited until you could not see before they took the treat. In contrast, Chaser was more likely to take the treat when you were looking at her than if you had your back turned. This may seem a little audacious, but, in fact, it actually makes her trustworthy because she does not use your social information to deceive you.

This is especially impressive because in the Communication dimension, Chaser showed she can easily and flexibly read your gestures. But when given the chance, she won't use this knowledge against you.

FIG.3



When it comes to begging, dogs prefer to be sure you're paying attention. In one study, dogs preferred to beg from a person who was looking at them rather than someone wearing dark sunglasses.



MEMORY

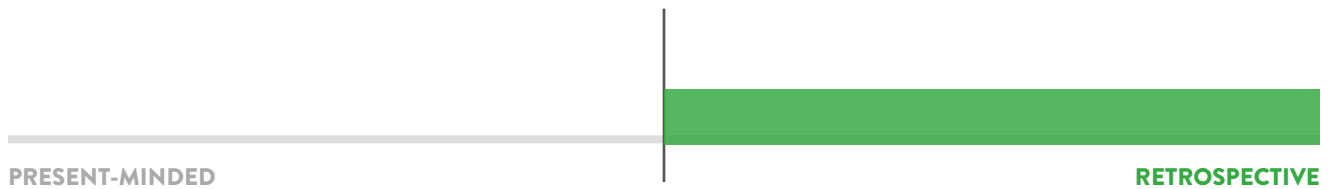
Chaser has an amazing working memory, which is a type of memory that allows your dog to keep information in mind for a few minutes and mentally manipulate it. This may sound simple, but working memory is crucial for any kind of problem-solving. In humans, working memory has been found to correlate with skills in learning, math, reading, and language. Researchers have even found some evidence that in children, working memory is more predictive of academic success than IQ.

In these memory games, Chaser had to understand that the treat continued to exist, even though it had disappeared from view. In the wild, this ability is essential. Animals have to keep track of mates, predators, and prey that might disappear momentarily behind a bush or a rock.

If Chaser is an avid fetch player, you've probably noticed that no stick or ball escapes for long. Chaser skillfully searching for an object that has briefly disappeared is a perfect example of her using her working memory to solve a problem.

For Chaser, out of sight is definitely not out of mind.

FIG.4



Most dogs can remember their mothers even if they haven't seen them for two years. However, they can't remember their brothers and sisters after a similar separation.



MEMORY VERSUS POINTING

In this game, Chaser saw you put the treat under one cup, but point to the other cup. Chaser preferred to rely on the information in her working memory rather than what you pointed to. Even though you gave Chaser misleading information, she remembered where the treat was and chose to ignore you. This shows an independent thinker; you should be aware that in other situations Chaser might not listen to you if she thinks you are wrong.

Despite being genetically similar, dogs and wolves make opposite choices in this game. This difference may be behind why we love dogs so much.



MEMORY VERSUS SMELL

Chaser's performance in this game was extraordinary. She used his sense of smell to find the treat, rather than her memory. This may seem obvious, since dogs are famous for their sense of smell. However, half a dozen research groups have conducted many tests similar to this one and found that since dogs are not allowed to inspect both cups before they make their choice, dogs do not rely on their sense of smell to find the food. Dogs do have an excellent sense of smell and can probably detect food if allowed to sniff both cups before choosing. But when you study their first choice, they cannot localize the food to a specific cup from a distance of six feet away.

One study found that to successfully track a person's direction of travel, tracking dogs need at least five sequential footsteps.

Chaser seems to be one of the rare dogs that has such a strong sense of smell that she can detect the food where most dogs cannot. Perhaps Chaser could consider a career with the narcotics department of your local police force. Until then, don't bother hiding the treat bag from Chaser. She knows exactly where it is at all times.



DELAYED CUP GAME

This game was a perfect demonstration of Chaser's excellent working memory. After you hid the treat Chaser had to retain the information for up to two and a half minutes before making a choice.

This skill comes in handy in the wild. Feral dogs tend to be endurance hunters, slowly wearing down their prey. During the chase, the prey may not always be in direct sight, and feral dogs have to remember where their prey was last seen and predict where they might reappear.

In these kinds of memory games, most cats quickly start to forget where an object is after only 10 seconds, while most dogs are still able to show success for up to 4 minutes.



REASONING

You can be very proud. Chaser just aced the most difficult games in the Assessment. Reasoning is the ability to solve a problem when you can't see the answer and have to imagine the solution. Unlike learning through trial and error, which doesn't necessarily require much understanding, reasoning requires that you truly understand the problem and the phenomena behind the problem.

A Sherlock Holmes among dogs, Chaser was able to solve the mystery by imagining different solutions and choosing the one that made the most sense. This leads to a lot of flexibility. She can solve a new version of a problem she has seen before, and spontaneously solve new problems she has never seen before. This is a sign of true genius.

FIG.5



Some studies show dogs are better at solving complex puzzles when humans are not around. When humans are around, dogs look to us for help rather than solving it themselves.



INFERENCE REASONING GAME

Congratulations - when playing the most difficult game in the most difficult dimension, Chaser's performance was masterful. When you showed Chaser the empty cup, you were providing indirect information on where the treat was - she had to make an inference that because that cup was empty, the treat must be in the other cup.

This ability to infer by exclusion is problematic for most dogs because they are often confused by conflicting social cues. By lifting up the empty cup, you were actually drawing attention to it, and some dogs prefer to choose this cup even though it was empty. The fact that Chaser was able to control this impulse shows an impressive ability to make inferences.

What is even more impressive is that Chaser was so collaborative in the Communication dimension. It seems that Chaser knows exactly when to use your gestures to make decisions and when to make decisions on her own.

Ravens and crows have been shown to have incredible reasoning abilities that surpass dogs, and even rival some human children. But when it comes to being our best friends, dogs still take the cup.



PHYSICAL REASONING GAME

In this game, Chaser demonstrated an excellent understanding of a fundamental property of the physical world - that one solid object cannot pass through another solid object.

Chaser had to infer that a piece of paper on an angle meant that a treat was hidden behind it. This talent would come in handy in the wild, since animals often have to keep track of objects that become hidden. To find these objects, animals have to maintain a representation of the object and predict where it might appear.

Humans intuitively understand basic physical phenomena like the solidity principle - it looks like Chaser does too.

Even though many dogs may struggle with physical properties like gravity, this doesn't stop them from thoroughly enjoying a game of fetch.





NEXT STEPS

We hope you've enjoyed reading Chaser's Dognition Profile and gaining fresh perspective on how she sees the world!

You can fill your friends in on what you've discovered about Chaser very easily. Download and email or print Chaser's profile report any time from your portal.

Of course, these five cognitive dimensions are only part of the picture; the magic of your relationship with Chaser is how you spend your time together. To that end, a Dognition membership gives you on-going games and tips that will help provide even more insight into what makes Chaser tick and how to act on that information.

As a member, each month you'll receive:

- A new game that will shed light on another aspect of how Chaser thinks and sees the world.
- Tips and activities prepared for Chaser from canine training experts based on how Chaser sees the world.
- Exclusive offers from Dognition partners, including brands such as Kong and Purina ONE.
- New findings about how all dogs think and how Chaser's strategies compare.

At the same time, by contributing to Dognition you and Chaser are helping to build the world's knowledge about all dogs. This allows us to tackle fresh questions -- how do certain breeds think compared to others? To what extent do memory skills decline by age? Are female dogs any more empathic than male dogs? And many more!

What questions would you like answered? We'd love any feedback on that or anything else related to Dognition. Contact us any time at hello@dognition.com.

Woof!

The Dognition Team



Dognition

See the World Through Your Dog's Eyes

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