



# RUSTY

DOGNITION REPORT - MAY 17, 2025



## THERE'S MORE GOING ON IN THE STARGAZER'S MIND THAN MEETS THE EYE.

Rusty is an intriguing enigma. Rusty's unique genius lies in the mix of strategies that he uses to approach daily life. His performance in both the social games and the independent problem solving games shows a use of strategies that are generally self-directed.

He certainly has a wild, wolf-like side that is especially useful in the environment of the rugged individual. This could mean that he has to work a little harder than other dogs in social situations, and that you may have to work a little harder than other owners.

While what goes on behind your Stargazer's eyes may sometimes seem mysterious, it is by no means dull. Perhaps this dog sees a whole other world that is hidden to us.



# 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:*

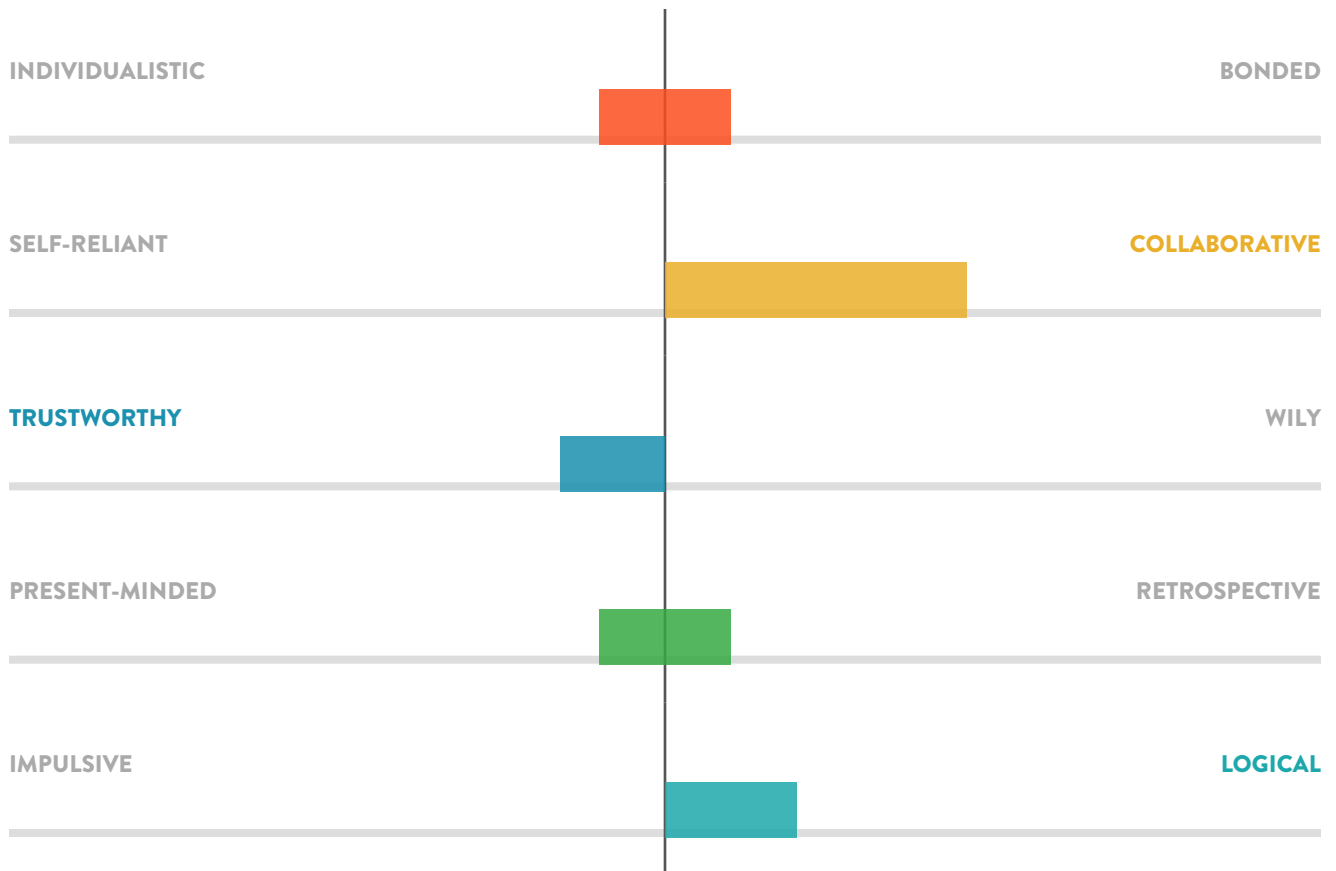
Animals use many types of cognition to survive (learning skills from others, remembering the location of food, inferring the solution to a new problem or deceiving others during competition).

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 he 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 Rusty's mind and reveal his 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

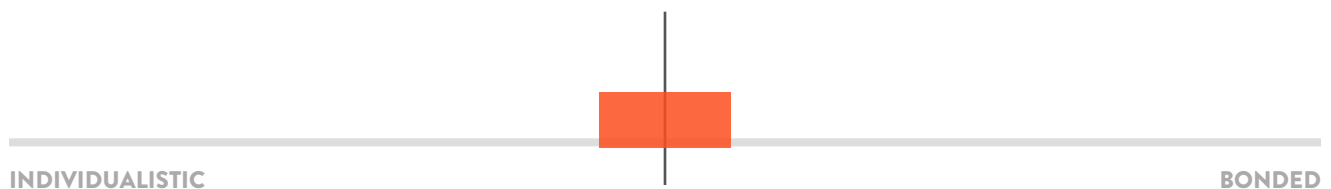
REASONING - Inferring the solution to new problems

# EMPATHY

The two games you played were looking for signs of empathy, and Rusty 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.

Rusty was somewhere between bonded and individualistic in the Empathy dimension. This means that while Rusty has an independent streak, he 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

In this game, you yawned and recorded whether Rusty yawned in response. Yawning in dogs can be an indicator of stress, but we were measuring something different - social yawning. The rationale behind this game is that even as young children, we 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.

Rusty did not yawn in response to your yawn, but this is not surprising. Although dogs are one of the few species besides humans that contagiously yawn, there is variation among dogs. Data from several research groups shows differing results, but our preliminary data shows that only 20% of dogs yawn contagiously.



## EYE CONTACT GAME

In this game, you timed how long Rusty held your eye contact. Before babies can hug or speak, they use eye gaze to bond with their mothers. Research with dogs has shown that a similar phenomenon may happen with owners and dogs. Owners whose dogs stared at them for longer had significant increases in the hormone oxytocin. Oxytocin, also known as the "hug hormone," is related to feelings of bonding, pleasure and affection.

Judging by the extraordinary length of time Rusty spent gazing soulfully into your eyes, you probably often find him staring at you for no reason. You might wonder if Rusty is trying to tell you something, like he is hungry, needs to go to the bathroom or has an opinion on what to do over the weekend. But Rusty may not want or need anything - he may be just hugging you with his eyes.

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.



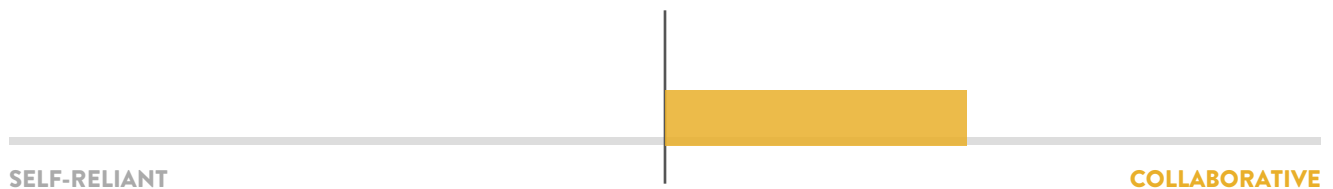
# COMMUNICATION

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

Rusty 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. Rusty's behavior in the Communication games demonstrated exactly why the dog and human relationship is so special.

FIG.2



## ARM POINTING

Although the pointing game may have seemed simple, the skills it requires are quite specialized. Dogs are one of the only animals that rely on human gestures - but even among dogs there is variation. Some dogs are more like infants and rely heavily on our communicative gestures, while other dogs are more like chimpanzees and try to solve problems on their own without our help. Rusty seems to use a mixed strategy. Because Rusty could see food in both places, he didn't really need your help, but occasionally chose to follow your gestures anyway.

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 Rusty could read a gesture he has seen infrequently or not at all. If Rusty is good at solving a problem but can't solve a new version of it, then he probably learned to solve the original problem through lots of practice. For example, perhaps in the previous game he was just following the motion of your hand without understanding your communicative intentions. If Rusty can also solve the new problem, then he probably understands enough to spontaneously solve a range of related problems.

Not only could Rusty follow your point, he also responded to a more unusual gesture - when you pointed with your foot. This suggests that Rusty 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

Rusty scores as trustworthy in this game since he does not use your social information when deciding whether to take advantage of you. When you put the treat down in front of Rusty and said 'No,' you then presented him with different attentional states. In the first condition, you were watching Rusty 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, Rusty was more likely to take the treat when you were looking at him than if you had your back turned. This may seem a little audacious, but, in fact, it actually makes him trustworthy because he does not use your social information to deceive you.

This is especially impressive because in the Communication dimension, Rusty showed he can easily and flexibly read your gestures. But when given the chance, he 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.

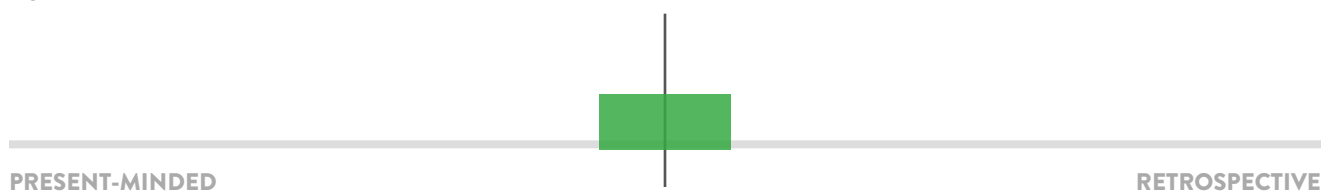


# MEMORY

In these games, it looks like Rusty does not rely as heavily on his working memory as other dogs do. Working memory is a kind of short-term memory that allows Rusty to immediately retain and process information.

This does not mean Rusty has a bad memory in general. The games did not test long-term memory, which is Rusty's ability to remember places, people, or important events over days, months and even years! Rather, it means that in these games, Rusty was more present-minded, using other information like social cues or his sense of smell when solving problems.

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

Rusty was clearly trying hard to figure this one out. When he saw you hide the treat under one cup but point to the other cup, he wanted to use the information you were giving him, but he also knew what he saw. Rather than choose one strategy, he switched back and forth between the two, which shows impressive flexibility.



## MEMORY VERSUS SMELL

Rusty's performance in this game was extraordinary. He used his sense of smell to find the treat, rather than his 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.

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



## DELAYED CUP GAME

Working memory is critical for animals that are endurance hunters such as wolves or feral dogs. Endurance hunters chase after prey for long periods of time, slowly wearing them out. During long chases the prey may not always be in direct sight, so the hunter has to remember where its prey was last seen.

Just like his ancestors, Rusty had to remember the location of the target for different amounts of time. Although the modern world has many distractions, it looks like Rusty still did pretty well, using his working memory to find the treat most of the time. This is no easy feat, as even you may have forgotten where the treat was during the longer delays.

By no means did Rusty do badly on this game; in fact, he developed quite a clever strategy. He developed a right or left side bias, meaning when he didn't know which side was correct, he went to one side every time. This is pretty clever, because 50% of the time he was correct.



# REASONING

Rusty shows solid reasoning skills in one or both of the games. This is impressive, since the games in this dimension were the most difficult of the Assessment. Reasoning is the ability to solve a problem when you can't see the answer and have to imagine the solution.

Rusty was somewhere in between logical and impulsive. It seems that sometimes he uses his powers of deduction, but sometimes he prefers to make decisions on the fly.

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

In this game, you presented Rusty with a problem and provided some, but not all of the information needed to solve it. When you showed Rusty the empty cup he had to infer that the treat must be in the other cup.

This is not as easy as it sounds because Rusty was also attracted to the empty cup, for the simple reason that you touched it. It looks like Rusty switched back and forth between strategies in this game, sometimes making an inference and choosing the correct cup, and sometimes relying on your social cues. Either way, this shows impressive flexibility.

Rusty is quite the clever dog! Once again, when faced with a difficult decision during this game he consistently chose one side. Kudos to him for developing this unique strategy.



## PHYSICAL REASONING GAME

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

Rusty 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 Rusty 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 Rusty's Dognition Profile and gaining fresh perspective on how he sees the world!

You can fill your friends in on what you've discovered about Rusty very easily. Download and email or print Rusty'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 Rusty 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 Rusty 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 Rusty thinks and sees the world.
- Tips and activities prepared for Rusty from canine training experts based on how Rusty 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 Rusty's strategies compare.

At the same time, by contributing to Dognition you and Rusty 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](mailto:hello@dognition.com).

Woof!

The Dognition Team



Dognition

See the World Through Your Dog's Eyes

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