



LOUIE

DOGNITION REPORT - MARCH 25, 2023



SOCIAL GRACES ARE THE KEYS TO THE SOCIALITE'S SUCCESS.

It's hard work making everything look so easy. In a culture obsessed with academic achievement, sometimes it is easy to overlook the fact that gracefully interacting and communicating with others requires talent. In Louie's case, she takes this talent to a whole new level - it is definitely her genius.

Although Louie is not as adept at independent problem-solving skills as other dogs, don't jump to any conclusions about her intelligence. Louie relies on a very specific strategy - using you and other humans in her pack to get what she wants. Judging from her performance in the social games, we suspect that most of the time this strategy succeeds.



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:

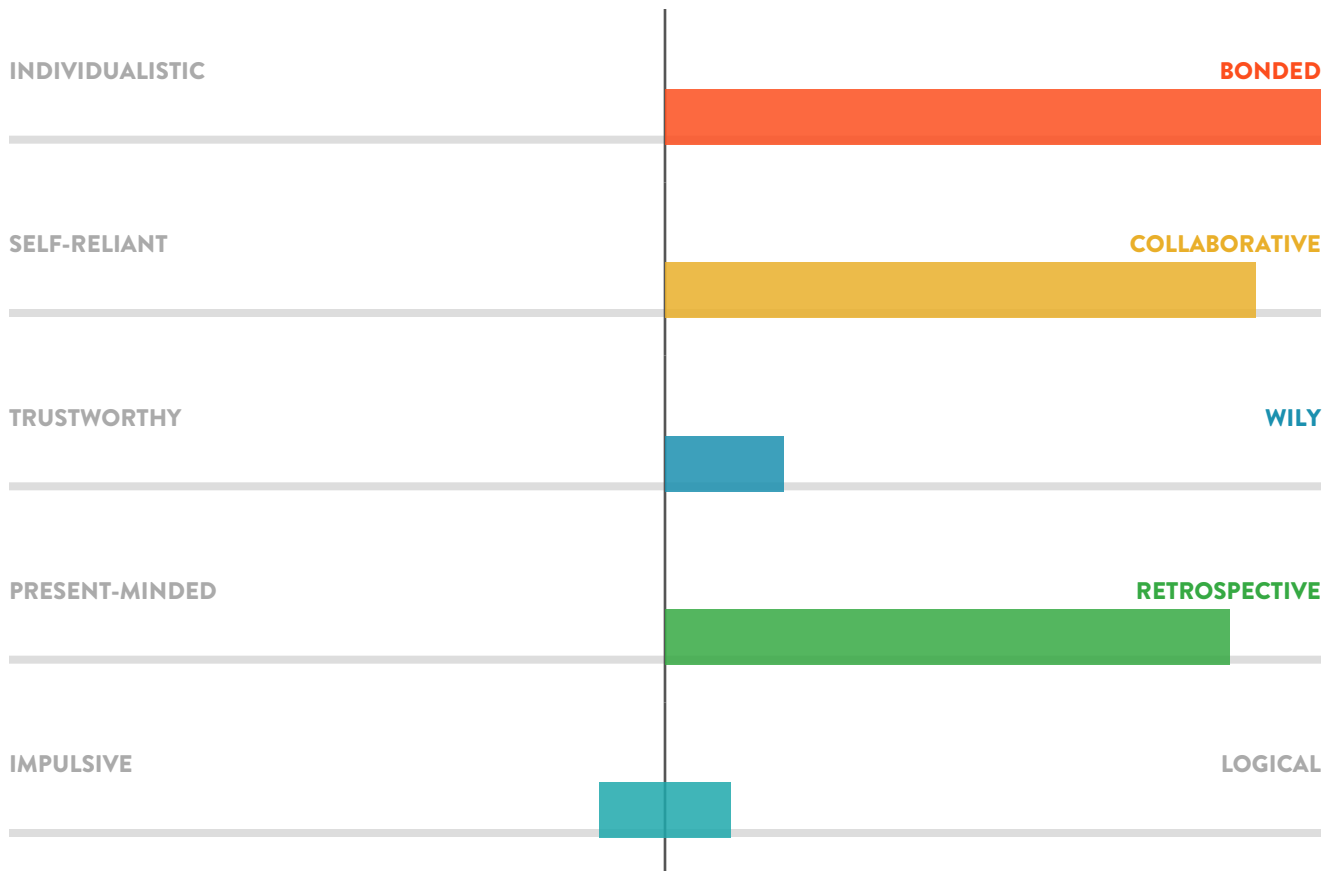
Animals use many types of cognition to survive (learning skills from others, remembering the location of food, inferring the solution to a new problem or deceiving others during competition).

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 Louie'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

Louie's empathy scores were off the charts. Empathy is the ability to feel what someone else is feeling. Humans are extremely empathetic; it is one of our best qualities. Empathy is not something we are taught; it is present even in young children, growing and strengthening as we get older.

Researchers have recently suggested that other animals also have empathy, or at least a basic form of empathy. If this is true, dogs are an ideal place to look. Humans and dogs go back thousands of years - enough time for the bond between us to develop into something special.

If most dogs are bonded to their owners, Louie absolutely adores you.

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 Louie 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.

Louie 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.

Recent studies have shown that dogs only catch yawns from humans, not other dogs.



EYE CONTACT GAME

In this game, you timed how long Louie 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 Louie spent gazing soulfully into your eyes, you probably often find her staring at you for no reason. You might wonder if Louie is trying to tell you something, like she is hungry, needs to go to the bathroom or has an opinion on what to do over the weekend. But Louie may not want or need anything - she may be just hugging you with her 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

Louie's performance was highly collaborative. You probably notice that Louie 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 Louie pays close attention to your gestures and what you are trying to communicate.

Louie 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. Louie'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. Louie seems to use a mixed strategy. Because Louie could see food in both places, she 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

Just like in the hand pointing game, Louie thought she had better cover all her bases by sometimes choosing the treat you pointed at and sometimes striking out on her own.

Louie probably does not see you point with your foot very often, so this game was a way of seeing how flexibly Louie can read new gestures. Giving animals a new version of a problem they have seen before is a common tactic used to reveal what strategy they are using to solve a problem.

Although Louie did not follow you every time, she may have sensed your communicative intent, and would probably not need much practice to start using a range of new gestures.

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

It could be a tasty morsel left on a coffee table. Or a stuffed animal you've forbidden Louie to chew up. As soon as you aren't paying attention, whatever Louie has been lusting after mysteriously disappears. You might have wondered whether Louie is incapable of learning a tiny word like 'No!'

On the contrary - Louie has a keen mind and is not afraid to use it. The cunning games are based on research showing that many dogs use information about what you can and can't see when deciding how to behave - or, in some cases, misbehave.

Louie is the perfect example of a dog using cognitive strategies effectively. She knew she should wait when you were watching, and that it was safe to swoop in and take the treat when you had your back turned or your eyes covered.

The fact that Louie didn't wait as long to take the treat when your eyes were covered is impressive, since you looked almost exactly the same as when you were watching Louie - the only difference was that you had your hands over your eyes. Many animals can tell the difference between your front and back, but even some primates (like lemurs) have difficulty detecting the subtle meaning of covering your eyes. Louie's performance shows a sophisticated mind at work.

Interestingly, although chimpanzees would not do so well in the Communication dimension where gestures are cooperative, they do very well in games where they have to compete with or deceive a human. In fact, just like Louie, they can tell what you can or can't see, and use this social information for their own ends.

Louie's performance in the Communication dimension shows that she is excellent at using your social information to cooperate with you. Her performance in the Cunning dimension shows that she is not above using this same social information to get her own way.

FIG.3



MEMORY

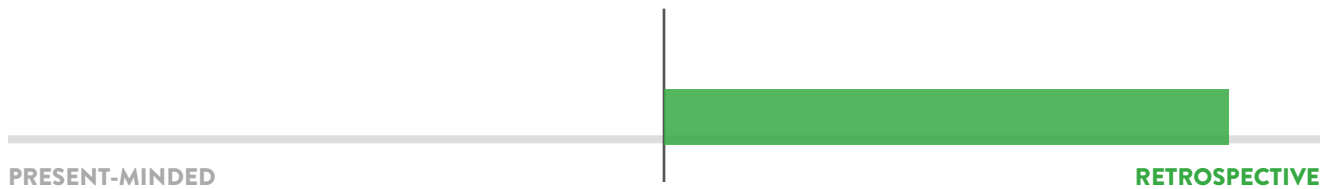
Louie has an amazing working memory, which is a type of memory that allows your dog to keep information in mind for a few minutes and mentally manipulate it. This may sound simple, but working memory is crucial for any kind of problem-solving. In humans, working memory has been found to correlate with 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, Louie 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 Louie is an avid fetch player, you've probably noticed that no stick or ball escapes for long. Louie skillfully searching for an object that has briefly disappeared is a perfect example of her using her working memory to solve a problem.

For Louie, 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

Louie clearly sees you as someone to believe in. When Louie saw you put the treat under one cup then point to the other cup, she chose to rely on your communicative gestures rather than what she can see and remember.

It's no wonder Louie was so collaborative in the Communication dimension. She is an expert when it comes to reading your gestures, and relies on your input in all kinds of situations.

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

Since dogs have such a keen sense of smell, you may have been surprised that after you switched the cups, Louie used her memory over her sense of smell. She went to where she remembered seeing the treat hidden, rather than sniffing out where the treat was.

Because a dog's nose can sniff everything from narcotics to cancer, whenever we run a study where we hide a treat under one of two cups, the first question people always ask is, "Can't my dog just smell the food under the cup?" It was certainly our first question, but extensive research by half a dozen independent research groups has concluded that dogs do not rely on their sense of smell to find the food in these games.

If dogs were using smell, they would go directly to the cup with the hidden food. In fact, these studies found that dogs only choose the correct cup around half the time - which means they are guessing. 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.



DELAYED CUP GAME

This game was a perfect demonstration of Louie's excellent working memory. After you hid the treat Louie 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.



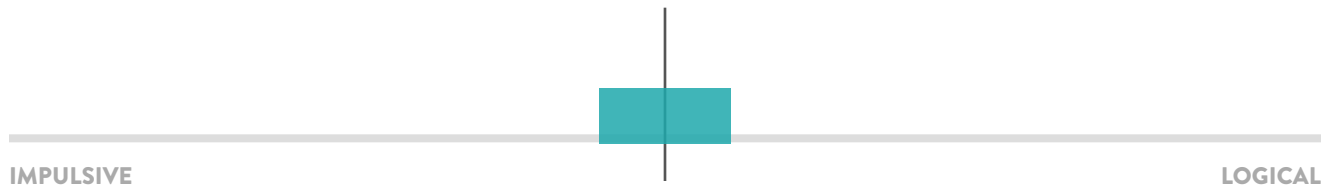
REASONING

Louie is the kind of dog that likes to see all the pieces before she solves the puzzle. Reasoning is the ability to solve a problem when you can't see the answer and have to imagine the solution.

Louie scored more towards the impulsive end, which means she doesn't get caught up in the details - especially details that aren't right in front of her. There is no shame in this. The reasoning games are the most difficult in the Assessment and most dogs find them extremely challenging.

From Louie's performance in the Communication dimension, she relies on you for help when making decisions. She obviously sees you as her best bet when solving a problem.

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

This was probably the most difficult game, and Louie's performance was excellent. In this game, we presented Louie with a problem and you provided some, but not all, of the information needed to solve it. When you showed Louie 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.

Just because Louie did not choose the cup with the reward, it doesn't mean that she failed. In fact, this shows a strongly cooperative nature. By lifting up the empty cup, you were actually drawing attention to it, and Louie preferred to choose this cup over the other. Louie views you as a cooperative partner and assumed that you were trying to help her by showing her the correct cup.

In the Communication dimension, Louie was highly responsive to your social cues. To Louie, you are the perfect partner in crime and she will turn to you any time she needs help.

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

Louie did seem to understand the principle of solidity - that one solid object cannot pass through another - at least some of the time.

Although this might have seemed like a simple game, it was actually quite complicated. First, Louie had to infer that you hid a treat (since Louie didn't actually see you hide it). Then she had to understand enough of the physical world to infer that a piece of paper at an angle indicated that the treat was hidden behind it. It is impressive that Louie figured out the answer as often as she did.

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 Louie'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 Louie very easily. Download and email or print Louie'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 Louie 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 Louie 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 Louie thinks and sees the world.
- Tips and activities prepared for Louie from canine training experts based on how Louie 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 Louie's strategies compare.

At the same time, by contributing to Dognition you and Louie 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

Visit **[Dognition.com](https://dognition.com)**