BRAN

DOGNITION REPORT - SEPTEMBER 15, 2020

Dognition®

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 Bran's case, she takes this talent to a whole new level - it is definitely her genius.

Although Bran is not as adept at independent problem-solving skills as other dogs, don't jump to any conclusions about her intelligence. Bran 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.

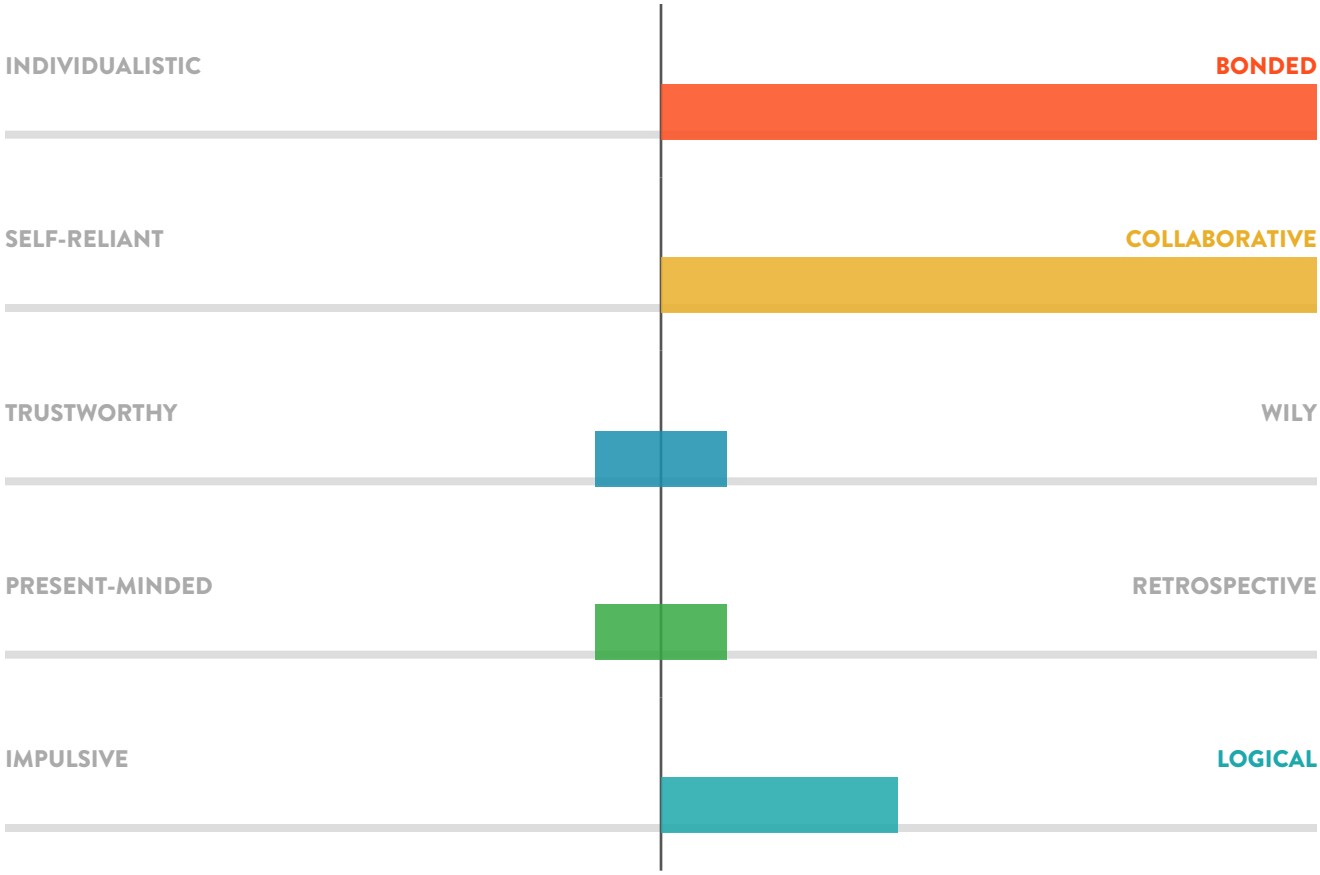
There has recently been a revolution in how we think about intelligence. The Dognition Profile is based on this cutting-edge field called cognitive science. Cognition is the study of how the mind works and draws on many scientific disciplines, from psychology to computer science to neuroscience.

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 Bran'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

Bran'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, Bran 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 Bran 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.

Bran 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 Bran 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 Bran spent gazing soulfully into your eyes, you probably often find her staring at you for no reason. You might wonder if Bran 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 Bran 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.

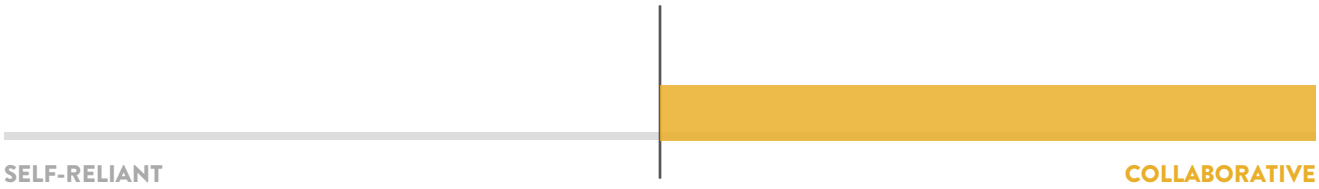
COMMUNICATION

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

Bran 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. Bran'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 Bran 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. Bran 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, Bran 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 Bran could read a gesture she has seen infrequently or not at all. If Bran 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 Bran can also solve the new problem, then she probably understands enough to spontaneously solve a range of related problems.

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

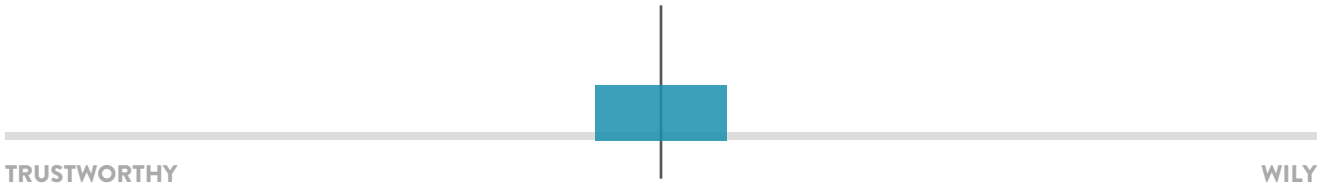
CUNNING

In the Cunning games, you placed a treat in front of Bran and let her know not to take the treat. You then showed Bran three different attentional states -- watching, turning your back, and covering your eyes.

In order to be at either end of this cognitive dimension, trustworthy or wily, Bran must show that she can tell when you are looking, and use this information when deciding when to go for the treat. In this case, Bran's decision did not change no matter which attentional state you presented; she waited roughly the same amount of time in each trial.

This doesn't mean that Bran can't be trusted, it just shows us that there are other internal factors influencing Bran's decision.

FIG.3



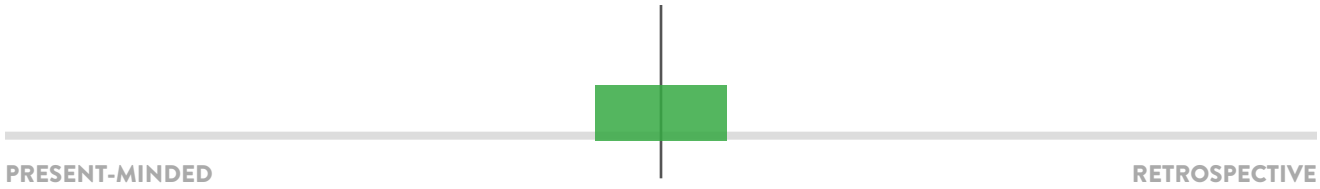
When it comes to begging, dogs prefer to be sure you're paying attention. In one study, dogs preferred to beg from a person who was looking at them rather than someone wearing dark sunglasses.

MEMORY

These games examined how heavily Bran relies on her working memory. Working memory is the kind of memory that allows your dog to keep information in mind for a few minutes and mentally manipulate it to solve problems.

In the memory games, Bran had to understand that even though the treat disappeared from view, it still existed, and it was her job to find it. It looks like Bran has a good working memory, but also uses other information, such as smell or social gestures, when making decisions and 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

Bran clearly sees you as someone to believe in. When Bran 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 Bran 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.

MEMORY VERSUS SMELL

Since dogs have such a keen sense of smell, you may have been surprised that after you switched the cups, Bran 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

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 her ancestors, Bran had to remember the location of the target for different amounts of time. Although the modern world has many distractions, it looks like Bran still did pretty well, using her 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.

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. Bran 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, Bran 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.

INFERENTIAL REASONING GAME

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

This is not as easy as it sounds because Bran was also attracted to the empty cup, for the simple reason that you touched it. It looks like Bran 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.

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

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

Bran 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 Bran 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 Bran'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 Bran very easily. Download and email or print Bran'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 Bran 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 Bran 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 Bran thinks and sees the world.

- Tips and activities prepared for Bran from canine training experts based on how Bran 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 Bran's strategies compare.

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

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