

## Dogs' Sense of Self and Others

### Part one: Communication

As an animal behaviorist, with special interests in problem solving and communication, I am often asked about animal thinking, such as, "Do they think like humans?" I am sometimes asked how I communicate with animals. For example, "Do you communicate telepathically?" No. I am just an average, everyday, run of the mill human. Which is not to say that I cannot understand the expressions of animals. In this three part series, I will discuss the dogs' sense of self and others. Part one covers the topic of communication. Part two will discuss social development. Finally, part three will discuss how research has been turned upside and all around regarding dogs' cognitive abilities.

What do we think about when we say self-awareness? What do we mean when we say empathy? These are big questions today in the field of Animal behavior and cognition. I have entitled this series of articles a Dogs' Sense of Self and Others, because these are the tough questions dealt with on a daily basis by human companions and scientists alike. Usually, as human companions we describe our pets' behavior in words that make sense to us. Words like love, hate, happy, compassionate, and joy come to mind when describing our canine companions. But how do we know if our dogs feel compassion or think about others in their daily lives?

Animals have expressive and complex communication systems... all animals (even the worm). Animals also have the capacity to think and as Darwin once asserted to emote feelings. However, for a moment let us explore the inner minds and communication of our dearest companion *canis familiaris*, our dog.

Dogs have the uncanny ability to "know" our every thought. How is it they know when it is time to go for a walk even before we announce it? Sure we know that they understand certain words like WALK, and CAR, but sometimes before we put on our shoes they are anxious with anticipation, dancing about, tripping our every move. Do our dogs know our thoughts by reading our minds or do they anticipate our next move through an exquisite set of senses?

Communication is the process of sending and receiving information. There are four major modalities of communication, chemical, visual, acoustical, and tactile. Humans rely heavily on the visual and acoustic modalities. Dogs rely heavily on chemical, visual, and tactile modalities. Even though our furry friends exhibit preference for three, they use all four with a huge emphasis on chemical communication - odors. Dogs are supremely sensitive to odors and to sounds in certain frequencies. They detect the slightest change of our odor and in the tremor and pitch of our voice.

Dogs also have a biological clock. Yes, we do too! If we take our furry friends out to the beach at the same time everyday, they know when that time is approaching just as we know when it is time to pick-up the kids from school. Dogs know what comes next through association. For example, we know Chanukah and Christmas follow Thanksgiving, and that Thanksgiving follows Halloween. We know this even without calendars. Through many iterations of the same thing following the same the same thing we come to know order and patterns. We (dogs and humans) communicate temporally as well as through actions.

So how do they know when it is time for that walk? Dogs witness the sigh, when it is time to find the dog park shoes, the wallet or purse being collected, the keys being jangled, the panic when you can't find the L-E-A-S-H or the C-O-L-L-A-R, the words, the whispers, the smells - those delicious odors. Aside from a vigorous workout at the gym, can humans detect changes in odors from one minute to the next? Not usually. Dogs can "read" these communications as if they were lighted like the neon of Las Vegas. They "see" in odors, therefore, it is likely that they think in ways we can only guess. I have read several studies on canine olfaction (sense of smell) and the dogs' sense of smell has been estimated to be as little as 10,000 times better than humans to over 3 million times more sensitive than humans. So when we begin to prepare for our walk or trip to the park our "little mind readers" are detecting the slightest change in the molecules of odors we are throwing off. This is just one language our dogs have learned to decipher.

But with this major difference, our meager sense of smell compared to canine olfaction, how is it that our dogs communicate so well with us? Dogs are extremely social, as humans are, and because of this orientation they need to communicate. Our dogs become bilingual and in some cases tri-lingual or more. When a water bowl is empty, perhaps a simple shove of the bowl will get the human companion's attention. If this gesture does not work, then perhaps taking the empty bowl to the human will work. This escalation of communication is how many children learn to communicate when they are pre-verbal. If a grunt does not work for a human child then perhaps a gesture will.

The dogs' ability to change or escalate communication is the scientists first hint that the dog exhibits a sense of other, meaning that the dog continues to change the communication until the proper response is made by the receiver. For example, the water bowl is first shoved, if the human is slow and does not act upon the communication of the shoved bowl, then the dog continues to improve the communication to tossing or perhaps carrying the bowl to the human. When the human has filled the water bowl, then the dog has successfully communicated his/her need, WATER. The persistence in communicating the need of water tells us two things, a) the dog perceives an empty water bowl and b) does something about it by communicating the need to another. This process illustrates a sense of self and a sense of the other.

Do we see the dogs' sense of self and other when they interact with another dog? When we see dogs greeting one another, we see anal-genital sniffing, a lot of this - sometimes to the embarrassment of owners. Anal-genital sniffing, that all too familiar butt sniffing, is accompanied by posturing, then we see the outcome. For a dog to communicate it must not only transmit information but it must receive information. When it receives information what it does with that information is the outcome. So when we see dogs sniffing one another they may play with one another, retreat from one another, or scuffle with one another.

When play ensues this means one dog has acknowledged the other dog as a superior and it is

time to play (sniff then playbow or chase). A playbow is a posture, which is hard to miss. The dog lowers his entire front body to the ground with head up and tail up waving gently side to side. His hind legs are up and spread to facilitate quickly running, as in a chase game. Sometimes a playbow is accompanied by a bark or whine, but is always accompanied by a dog laugh. Some dogs augment their laugh with a growly wah-wah while in the playbow to try to engage the other dog. Playbows are sometimes confused by humans as an attack posture, but this misreading is remote from the message sent. Dogs rarely misunderstand this communication.

"Let's Play" Message		
Head	Tail	Body Posture
Ears Forward	Tail up & Gently wagging	Forward legs down to ground
Play Grin		Rear legs up

Another response to anal-genital sniffing is for one dog to drop his tail and retreat from the other dog. This is an appropriate response for a more submissive dog to do when greeted by a higher ranking or alpha dog. The submissive dog is acknowledging the other dog as superior and does not wish to challenge, rather retreat is preferred.

"You are superior, you are leader" Message		
Head	Tail	Body Posture
Head lowered	Tail down some-times slightly tucked	Fur is flat to appear smaller
Ears back		
Tense grin		
Eyes averted		

Finally, the response to the anal-genital greeting may be a denial of superiority and a scuffle will ensue. Human companions may have witnessed two dogs sniff one another, then one dog will throw the other to the ground in what to a human appears to be a savage and unwarranted display. This would be an incorrect understanding of the communication. Let's dissect the communication.

First, during anal-genital sniffing there are also many other communicative signals being offered. There is the tail position, the hackles, the hair at the base of the spine, the ears, the mouth, the legs, the back, and the head position to name a few. If one dog is very stiff in body and leg with tail high over the back he is communicating "I am the boss!" However, if the other dog does not acknowledge this then the posturing dog must escalate the communication. The dominant dog now pins his ears or raises his hackles. If his communication is still ignored then he escalates to a full body slam to the ground.

"I am the leader" Message		
Head	Tail	Body Posture
Head high, ears forward	Held high	Fur fluffed to appear larger
Relaxed mouth		Animal is relaxed
Direct Stare		

Dogs that have not been trained or selected (genetically) to attack will cease the attack as soon as the vanquished dog signals submission. Dogs rarely continue to fight once a belly has been

exposed. This is again the dog's ability to understand the "other." There is no need to continue. The communication has been received and understood.

"I don't want to fight, don't hurt me" Message		
Head	Tail	Body Posture
Head down ears back	Low often tucked	Animal rolls on back
Mouth closed	tightly	Shows belly
Eyes averted		

Sometimes dogs during play will yelp and the yelping dog may even roll belly up. The rough dog may back off entirely or display into a playbow, to reiterate that the intention is playful.

Sometimes you may even witness face licking. This is all about maintaining a solid structure that is well understood by all dogs (but maybe not humans). I have seen people scoop their dogs and retreat when another dog has approached and presented a beautifully exaggerated playbow, even after their dog had returned a playbow and a bark.

Dogs will also correct one another too. Just as children will say "No" to one another or "Stop it, I don't want to play" I have seen this too in dogs. Dogs while playing may sometimes try to engage other dogs into the game. Older dogs may simply not want to play, and turn and snap or growl or bark to the enterprising playster. As soon as this happens the playster goes off to continue playing. No hard feelings, no grudge.

Dogs have long been associated with humans. Recent DNA research suggests that the first round of domestication of dogs may have occurred as far back as 100,000 years ago. With this common history is it any wonder that we have very similar patterns of development and a sense of self and others as our canine companions?

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