

**DO DOGS MEAN TO BE MEAN?
UNDERSTANDING & HELPING AGGRESSIVE DOGS
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BEHAVIOR

For both owners and veterinarians, aggression is one of the most distressing behavior problems seen in dogs. Aggression undermines the owner's belief in his or her partnership with the dog, and many owners feel it is traitorous to the social contract they believed existed between humans and dogs. But certainly, we know that dogs biting people is not new. Research tells us that up to 15% of pet owners have been bitten by their own dogs, but they rarely consult a veterinarian for advice (Guy et al. 2001). At its simplest, aggression is about changing the outcome of the social encounter, using threats to imply potential harm should the encounter continue. But the underlying motivations actually go deeper, especially when the encounters are between a companion dog and a human. By understanding and recognizing those motivations and how they are expressed, we can often not only prevent or diffuse aggression, but also teach dogs to respond differently.

Unfortunately, training in canine behavior is not available at many veterinary schools in the United States, and this leaves many veterinarians questioning how much they know about behavioral medicine. However, veterinarians, by virtue of what they do every day, have accumulated a great deal of knowledge about animal behavior, specifically about canine signaling behavior. The ability to interact and treat dogs on a daily basis requires an understanding of body postures and facial expressions that indicate fear, anxiety, threat, and the precursors to more dangerous behaviors, such as biting. What is missing is the ability to actually see this as knowledge and the inability to label this knowledge appropriately so that it can be shared with staff and owners to aid in developing better safety, welfare, and handling practices for their patients.

Why Do Dogs Use Aggressive Signaling?

We all recognize that dogs are not verbal—they cannot tell us with words how they are interpreting a social situation. Therefore, dogs will use various forms of signaling to broadcast their intents in a social encounter. Some of these signals can be very subtle and easily missed, which may require the dog to use another, more emphatic signal. Additionally, canines often have different expectations in social encounters than do the humans with whom they interact. In a canine-to-canine social encounter involving a possession or food, if dog “A” has the item and dog “B” approaches, dog “A” may respond with an assertive and/or an aggressive response, which usually would clearly signal to dog “B” not to continue to try and obtain the object. This dynamic may not necessarily be related to the size of the dogs involved—smaller dogs often keep objects they have even when approached by larger dogs. However, when a human decides that he or she wants something a dog has, the human will often attempt to get it despite low-level signals from the dog that are designed to discourage interaction and end the encounter. A dog may use a subtle body posture or facial expression to slow or stop the approach of another dog; a dog will use the same signals toward humans, who often are oblivious to the meaning. If these subtle measures do not work, then stronger ones may be utilized instead. Certainly, interpretations of the significance of the interaction, the intent of the approaching individual—whether a dog or a human, and the individual temperament and experience of the dog involved also influence what responses are offered.

We usually look at aggressive behavior from the perspective of the potential harm to the victim, but we must also realize that aggression incurs a cost to the aggressor. When we recognize this, we are able to understand that most, if not all, aggression is defensive in nature (as the scenario above illustrates), and often it has an underlying anxiety component. In an aggressive encounter, either or both participants may be injured, perhaps fatally, which obviously is not the outcome the aggressor desires. Toward that end, as the earlier examples show, aggressive encounters generally begin with threats. The goal of threat behavior is to indicate to the other individual your possible intent and perhaps how strong you are and your willingness to proceed with aggression. Based on these parameters, threat helps to avoid increasing conflict and potential harm to oneself. If we watch encounters between animals of the same species, we often note that aggressive encounters do not end with outright fighting and injury, but often with a great deal of posturing, noise, and the potential for each participant to withdraw with minimal injury. Inherent in this way of looking at aggressive encounters is understanding not only the communication of threat, but that the desire to pursue an aggressive encounter can vary from encounter to encounter and individual to individual. In most situations, avoiding aggression would be the norm whenever possible, since aggression is stressful and potentially dangerous and possibly fatal.

What Goes Wrong between People and Dogs?

Popular culture has often looked at dog-to-human aggression in one particular way, through the lens of the dog's

need to dominate the humans in the interaction. This theory tells us that whenever we interact with a dog, the dog is trying to get the upper hand, and all the dog's behaviors are a result of the dog trying to "dominate" or win in every encounter. So if a dog will not let you touch its food, walks out the door in front of you, or barks when you tell it to stop, the dog is trying to dominate you. Where did this idea come from? Initially it was derived from early studies of captive wolves. The wolves were not related, but were put into social groupings. The researchers noted a pattern of aggressive encounters that over time seemed to ebb and flow in a certain direction based on the participants. Thus, the idea was formed that wolf packs had a dominance hierarchy, with some individuals able to control certain resources at the expense of other individuals within the social group. Because dogs are known to have evolved from wolves, this idea was extrapolated to dogs *and* to their relationships with humans. Fast forward 20-plus years, when researcher David Mech studied wolf packs in the wild. Lo and behold, he found that naturally forming wolf packs were family units, with parents and their offspring of various ages. And, rather than being confrontational, the entire pack functioned with extreme cooperation and worked toward survival of all members. In other words, you take care of your young so that they survive and perpetuate your genes and the genes of their siblings (Mech 1999). There is no room for daily life-and-death struggles; rather, a parental model is the most useful way to view the way a wolf pack functions. Voilà, theory disproven, and if it does not apply to wolves, why do we cling to it in dog-human relationships (Bradshaw 2009)?

What Does Science Tell Us?

Classification of Aggression

Aggression is usually defined as threat or harmful action directed toward one or more individuals (Beaver 1994). The behavior can consist of vocalizations, facial expressions, body postures, inhibited attacks, and physically injurious attacks. There are many different methods of classifying and categorizing aggression in animals. The victim or target, the location where the aggression occurs, or the type of aggression, such as offensive or defensive, all can be used to classify aggressive behavior. In veterinary behavioral medicine, diagnostic categories are utilized to classify aggression in animals. Those commonly cited include dominance/conflict aggression, fear, possessive, protective and territorial, parental, play, predatory, redirected, pain induced or irritable, pathophysiological or medical and learned, and affective and nonaffective (Reisner 2002; Houpt 2005; De Keuster and Hildegarde 2009). However, no standardization of diagnostic categories presently exists. In many cases, more than one form of aggression may be exhibited in any one animal, since aggressive responses tend to be multifactorial and complex.

Another way to look at aggression is based on its function and on its benefits and costs to the individual. As mentioned above, aggression is not without a cost both to the aggressor and the victim. Therefore, most species will use threats and posturing to assess the desire and willingness of each individual to continue the aggressive encounter. Outside of the human-dog dyad, aggression is often about resources, food, resting places, mates, and territory. These items are important to animals who wish to survive and reproduce. Therefore, social animals have devised ways to signal their intent in encounters over these resources, making outright aggression and injury less frequent. Often, encounters are decided based on many components, including the age, size, and resource-holding potential of the involved individuals, allowing conflict to resolve without injury. Aggressive signals are respected and often result in what the aggressor may see as a favorable outcome. This is reinforcing and can result in two possible but not mutually exclusive outcomes. First, the victim has learned not to approach again and no more aggression occurs. Second, the aggressor learns that the behavior made the threat go away, making it more likely the behavior will be repeated. Between animals, these two outcomes often result in fewer aggressive encounters. This learned relationship is at the heart of the definition of "dominance"—it is a characteristic of the relationship between two individuals, not the quality of the individuals themselves. However, between humans and dogs, this is often misapplied and misunderstood (Bradshaw et al. 2009). Certainly, such misunderstandings can be a huge component of how we interpret and respond to canine signaling.

Canine Signaling

Canids have evolved a series of facial expressions and body postures designed to indicate their intention in social encounters with other canids, and they use these same signals in their encounters with humans. Often the misunderstanding of these signals results in biting episodes. In dogs, staring, snarling (lifting the lip), growling, snapping, and biting are all indicators of aggression, and ones that veterinarians often understand. However, subtle changes, such as turning the head or body, are also indications of discomfort with the social encounter. In addition, the position of the ears, tail, and hair indicate what the animal will do and the underlying emotional state, such as fear, anxiety, etc. It is the understanding of these aggressive indicators that help veterinarians almost unknowingly

avoid injury in many cases. However, pet owners are not skilled at these observations or interpretations, often assuming erroneously that the dog will not bite. Not all dogs will go through the different signals in order, or slowly. The type of intruder, the distance to the dog, the speed of approach, and prior encounters will all influence the dog's response. If a dog has learned that an aggressive response results in what the dog considers a beneficial outcome, the aggressive response is likely to be repeated.

Human-Canine Aggressive Encounters

Research has indicated that aggressive encounters between people and dogs have many variables. Guy et al. (2001) found that growling and biting directed toward owners occurs most frequent in dogs less than 1 year of age. Podberscek and Serpell (1997) found no demographic differences between owners of "low" and "high" aggression cocker spaniels; however, they did find that dogs who suffered some form of illness during the first four months of life were more likely to be aggressive later in life. Yet they also noted that dogs from both groups were equally likely to sleep on the bed and be fed before the owner and to play so-called competitive games. Additionally, we know that there are genetic components to aggressive behavior. A behavioral study utilizing a validated survey, the Canine Behavioral Assessment and Research Questionnaire (C-BARQ), collected behavioral data on aggression from owners of purebred dogs (Duffy et al. 2008). The resulting data showed a wide variation among breeds in the prevalence and severity of aggression directed at different targets (strangers, owners, other dogs). However, there was also substantial within-breed variation in the aggression scores, making predictions based solely on breed less reliable. Certain breeds were more likely to be aggressive toward other dogs, and other breeds were more aggressive toward strangers. For owner-directed aggression where biting took place, over half occurred when a household member attempted to take food or other valuable objects away from the dog (Duffy et al. 2008). Finally, Herron et al. (2009) found that the utilization of punishment when a dog was aggressive was likely to increase rather than decrease aggressive encounters.

What can we learn from this research? First, aggressive encounters between dogs and people are quite common. Second, aggression often is directed toward familiar people, especially over resources, but is also directed toward strangers. Third, there is a genetic component to aggression; however, genetics are not the only reason dogs bite—their early socialization and experiences are also key. Finally, how we interact with dogs can alter whether or not aggression continues. It is this last point that is most helpful in not only understanding canine aggression but in treating and ultimately preventing aggression from happening.

The best place to begin is to understand that certain types of encounters can be quite provocative for dogs. These include handling food or other food-related items and moving a dog when the dog is resting. Research by Dr. Ilana Reisner examined dog bites directed toward children and found that children less than six years old were significantly more likely than older children to be bitten in relation to food guarding or other resource-associated aggression, whereas older children were most commonly bitten in association with territory guarding (Reisner et al. 2007). In a subsequent study, Reisner et al. (2011) found that most bites in children were from dogs that they knew and involved a positive interaction with the dog initiated by the child toward a stationary or resting dog. This same research found that a high proportion of the dogs also exhibited behaviors indicative of anxiety and fear.

The research confirms something that has been said about dogs for centuries—some situations are likely to cause a dog to respond aggressively. Situations that may incite aggression include handling food and possessions; approaching, interacting with, or moving a dog while it is resting or stationary; reprimanding a dog, especially by utilizing physical means; interacting with a dog when it is highly emotionally aroused; and circumstances that cause fear and anxiety. We also know that when we examine the body postures of the dogs in these encounters, they look fearful and uncertain. Of course, not every dog will respond with aggression in any or all of these circumstances. Additionally, it often is clear that a dog is attempting to signal anxiety and displeasure with a social encounter through low-level aggressive threats that often go unnoticed or are ignored, perhaps leading the dog to assume that escalation is necessary to change the outcome.

What Should We Do?

So how do we begin to address aggression by dogs toward humans? First, we need to discard outdated and inappropriate theories that do not address underlying motivations and canine communication. Second, we need to understand, recognize, and react appropriately to canine social signals, including those that warn of impending aggressive actions. Third, we must also recognize that dogs may not understand what we want, what we do, or what we say, and often they are uncertain and confused. Fourth, it is our responsibility to raise dogs who are well socialized, are familiar with humans and how they act, and have learned basic manners. Fifth, we need to recognize

that dogs are sentient beings who at times may not want to interact with humans, may not understand what is being asked of them, or are simply frightened, unsure, and fearful. Equally important is the understanding that when the dog does not do something we request, the dog is not trying to dominate us. As veterinarians, we must always do our medical due diligence, and medical health can influence behavioral health.

Finally, as sentient beings, dogs should have the right to say no to something that is requested of them. It is then incumbent upon us to try and understand why the dog is unwilling to engage in the way we desire. In many situations, we are attempting to make dogs do something that makes them afraid or anxious, and as their caretakers we need to remove them from those situations until we can teach them that they need not be afraid or anxious.

Many dogs that are aggressive toward family members are fearful or anxious and exhibit conflict behavior (Luescher and Reisner 2008). Their behavior arises from uncertainty about their role or place within the social group or the response to their actions, both assertive and deferential. Their future behavior is often determined by the responses to their threats, yet owners can be very inconsistent, allowing behaviors at some times and punishing them at other times. Caution should be exercised, and practitioners should avoid labeling aggression toward family members as dominance-motivated aggression, since this may be simplistic. Whenever you are dealing with an aggressive dog, confrontations should be avoided, as these will likely increase rather than decrease aggression, since they increase anxiety, fear, and defensive responses. When dogs are calm, we must use appropriate behavioral modification techniques to teach them the correct responses and help diminish their fear and anxiety.

Management: A Good First Step

Some simple tasks can also help people manage aggression in dogs:

- Always rule out a medical condition, whether acute or chronic. Changes in health status can be manifest by changes in behavior. Painful conditions can make dogs irritable. All acute and chronic disorders should be identified and treated. Even after medical resolution, aggressive responses may remain due to learning.
- Every dog should have a safe haven. This can be a bed, rug, crate, or room. The dog should be taught to go there on command and use it for a resting place. If the dog is in a “safe” spot, no one should bother the dog.
- Make sure all dogs get some training on basic commands and that all training is based on positive methods. No choke collars, pinch collars, electric collars, or harsh punishments. These cause fear and anxiety and have no place in dog training.
- Punishment is contraindicated because it can escalate rather than diminish aggression by causing pain, fear, or anxiety. In fact, in many cases, underlying anxiety is what has induced the aggressive responses. When interacting with an aggressive dog, curtail all punitive measures, including “alpha rolls” and other attempts to dominate, as these can increase aggression rather than diminish it (Herron et al. 2009).
- Feed meals at regular times, preferably in quiet areas. Once the bowl is empty, pick it up and put it away. In some cases the dog may be more comfortable in a room behind a closed door or a crate when eating.
- Offer all dogs some type of enrichment on a regular basis. This can be food-dispensing toys, walks, or playtime.
- Dogs that are uncomfortable with unfamiliar people visiting should be placed in their safe place when company is present.
- Dogs that are uncomfortable greeting unfamiliar people or other dogs on walks should only walk during low-traffic times and in low-traffic areas.
- Finally, when problems are ongoing, seek help from a qualified individual, such as a board-certified veterinary behaviorist.

Conclusion

When we recognize and address these issues we can begin to help pet owners better understand their dogs. We can educate them about canine communication. We can emphasize the importance of socialization and help them achieve well-socialized dogs. We can show them how to interact humanely, kindly, and clearly with their dogs. We can teach them what are reasonable expectations for interactions and what are not. If we do these things, we can finally understand that dogs do not mean to be mean and hopefully diminish aggressive encounters between people and the dogs they love.

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