

Animal Behavior **Comportement animal**

Aggressive dogs: What questions do we need to ask?

Diane Frank

Publications in the veterinary literature describe various types of aggressive behaviors. Classification often varies depending on authors. Unfortunately labeling the type of aggression is often insufficient to assess the relative dangerousness of an aggressive dog. So what important questions do we need to ask?

Dangerousness does not necessarily equate with aggressiveness, although they are often used interchangeably. A 50-kg enthusiastic excited dog running right someone, knocking them down, and injuring them is dangerous. On the other hand, a growling dog that has never bitten is aggressive but not necessarily dangerous. Aggression has been defined as “spoken or physical behavior that is threatening or involves harm to someone or something” (1). Some definitions of aggression also include the display of threats in the absence of injury. Aggression, therefore, encompasses a wide variety of behaviors ranging from subtle body postures and facial expressions to explosive attacks. To complicate matters even more, aggression can be an expression of either normal or abnormal behavior. Description of the behavior sequence, context, frequency, and severity of aggressive events as well as health status of the dog allows veterinarians to tease apart appropriate normal from inappropriate abnormal behaviors.

The dog

Size

A larger dog can potentially produce more damage.

Medical issues

A painful condition may cause or exacerbate anxiety and aggression.

Behavioral disorder

Aggression can be the result of fear or anxiety. Anxiety is defined as anticipation of a future threat or danger (real or imaginary). Anxiety can be normal if the potential threat is real. Anxiety becomes a disorder if the perceived potential threat is imaginary.

Dogs suffering from anxiety disorders (illness) are often unable to tell the difference between real threat and absence of threat. It is therefore important to realize that some aggressive dogs may in fact be ill and suffering from an anxiety disorder.

Signs compatible with an anxiety disorder

Facial expression compatible with anxiety (and/or fear) can include dilated pupils, panting, puffed cheeks, crinkled brows, repetitive yawning, constant lip licking, and pulling the ears back. Dogs may tremble, lower the body or head, tuck the tail, try to back up or escape, hide, whine, howl, bark or even seek owner attention excessively. Anxiety (and/or fear) can also result in urination, defecation, destruction or excessive salivation, behaviors that are reported in some dogs with separation anxiety. Aggression may also be a sign of anxiety.

Some anxious animals will have increased motor activity (pacing), whereas others will have decreased motor activity (freezing). Vigilance may be increased (i.e., the animal is unable to relax even in the absence of a threat). Reactivity may be exaggerated and may even increase over time.

An animal becoming “disobedient” may in fact be “over-reactive” in that context. This animal is unable to hear (“emergency mode”) any commands. As an analogy, just ask a person following a near miss car accident, if he/she would be able to tell what song played on the radio at the time of that close call... adrenaline increases and we shift into “emergency or survival mode,” our brain filters out information that is not essential for survival.

Anxiety during the veterinary appointment is not sufficient to conclude that a given animal suffers from an anxiety disorder. But clients made aware of all the possible signs may identify that their animal is exhibiting anxiety daily in the home environment in the absence of an identifiable cause. This dog has an anxiety disorder (behavioral illness).

The behavior sequence

Behavior is always a sequence. Observing the entire sequence is essential to determine if an animal is behaving normally or not. In the case of canine aggression we could illustrate the sequence as beginning with a warning such as a growl or lip lifting (initiation), then a pause (the dog communicated and is waiting for a response), then in some cases a bite (action), and if a bite does occur, there is immediate volitional release (end of sequence). Behavior becomes “abnormal” or illness-related if some of the steps from the sequence are omitted or altered. A dog growling and biting simultaneously without any other form of warning has an altered sequence because there is no clear initiation phase.

Université de Montréal, Faculté de Médecine Vétérinaire, Centre Hospitalier Universitaire Vétérinaire, 1525 rue des Vétérinaires, Saint-Hyacinthe, Quebec J2S 7C2.

Address all correspondence to Dr. Diane Frank; e-mail: diane-frank@umontreal.ca

Use of this article is limited to a single copy for personal study. Anyone interested in obtaining reprints should contact the CVMA office (hbroughton@cvma-acmv.org) for additional copies or permission to use this material elsewhere.

A “normal” dog may bark or growl briefly at the approach of a stranger and then wait and watch for the response. Based on stranger’s response, the dog will decide on subsequent action. The stranger walks away (no threat) and the dog will stop barking and growling. If the stranger threatens to hit the dog with a stick, the dog may lunge and may bite. The dog acted because it perceived a threat. The behaviors will depend on the receiver’s response and the dog’s interpretation of the response. If a dog growls, snarls, and lunges systematically at everyone approaching without first warning (barking and/or growling) and then pausing for a response, that aggressive behavior becomes inappropriate and out of context. That dog is ill (“abnormal”) and is unable to make the distinction between threat and non-threat.

The context

Context is also important in determining if behavior is normal or illness-related. Behavior can be inappropriate given the context. If I decide to randomly kick a person on the street given that this person did not even interact with me, kicking would be inappropriate behavior on my part in the described context. If on the other hand I am being mugged on the street and I am kicking my assailant, the same behavior becomes appropriate. The context made all the difference. A dog with otitis bites the veterinarian (or owner). Context will be considered (painful condition, defensive aggression) when interpreting this aggressive event, and this dog will likely not be labeled as a high-risk dangerous dog. Aggression in the context of pain can be appropriate. The dog is protecting himself from further pain and is communicating that he does not want physical contact. If a dog races up to a person, who was not interacting or threatening it, and the dog bites the person, the aggressive behavior is not appropriate for the context.

The severity and frequency of aggression

A dog may bark, growl, lift its lips, snarl, snap, bite, latch on, or release. Bites can be single or multiple, inhibited (no injury or minimal injury) or uninhibited. Clients are questioned on the severity and frequency of the aggressive events. Generally when a dog is communicating, and if there is a bite, the bite will be inhibited (little or no pressure applied), single, and the dog will release volitionally. Severity of bite can in some cases be exacerbated by fear or pain. The veterinarian must determine whether the severity and/or frequency of the aggressive behaviors are appropriate for that given context.

The type of aggression

Defensive aggression for the purpose of this article is defined as one individual “approaching or entering the animal’s space” and interacting with the animal (touching, handling); the animal reacts aggressively to the approach or physical contact. If the individual is far enough away, the dog may choose to flee from the perceived danger. However, if the threat is imminent or the individual too close thus making escape impossible, the dog may resort to aggressive behavior. The goal of the defensive aggressive behavior is to increase distance between the dog and the perceived dangerous individual.

Offensive aggression may be defined as aggression occurring without interaction (no touching, no handling, and not looking at the animal). The aggressive animal is the one approaching the individual (victim of aggression) regardless of what the individual was doing.

Predatory aggression is usually recognized by the behavior sequence: visual or auditory stimulation triggering a generally silent and direct approach or chase, capture, and kill the prey. The prey is rarely eaten. If a group of dogs exhibit predatory aggression, the chase may not be silent. Many dogs will chase small prey or animals without capturing or killing them. There is therefore a distinction between chasing (part of the predatory behavior sequence) and predatory aggression (chasing, capturing, and killing prey). Unfortunately, occasionally infants and small children are perceived as prey by dogs that exhibit predatory aggression.

Predictability of aggressive behavior

The context (triggers and specific situations) and the dog’s body language are used in determining predictability of aggressive events. If the dog exhibits only defensive aggression (approach and contact are the triggers), the events are more predictable. If the dog exhibits offensive aggression (situation and initial trigger are often difficult to identify) the aggression is not as predictable, making this type of aggression more dangerous.

Family composition

Relative risk for a young child unable to read and interpret canine body language will be higher: a young child will not understand the meaning of a warning growl.

Summary of various signs compatible with an anxiety disorder

1. Signs compatible with generalized anxiety in familiar environments in the absence of danger or threat.
2. Reactivity during the appointment for behavioral evaluation increases over time without any threat to the animal.
3. Excessive reactivity to benign stimuli (startles easily).
4. Behavior sequence is altered (other medical conditions ruled out).
5. Behavior is inappropriate for the context.
6. Frequency, severity or duration of the behavior is excessive for the context.
7. Recovery time after an undesirable behavior is excessive.
8. Animal is in “emergency mode” during episodes of undesirable behavior.

Summary of questions to ask

1. Does the dog have any medical conditions (including an anxiety disorder)?
2. Is the aggressive behavior appropriate for the context (ask this question for each different context)?
3. Is the behavior sequence modified?
4. Is the frequency of aggressive events within one context appropriate for the context?
5. Is the severity of aggressive events within one context appropriate for the context?

6. What type of aggression (defensive, offensive, predatory)?
7. Family composition (children, adults, seniors)?
8. How predictable are the aggressive events?

Dangerousness increases if

1. The behavior sequence is modified (no clear warning phase followed by a pause).
2. The bites are multiple and severe.
3. The aggression is offensive.
4. The aggression is truly unpredictable.

Reference

1. Cambridge Dictionary (homepage on Internet). Available from <http://dictionary.cambridge.org> Last accessed April 19, 2013.

Readers who would like Dr. Frank to address a specific topic in animal behavior are asked to contact her by e-mail.

Answers to Quiz Corner

Les réponses du test éclair

1. a) Glomerulonephritis, renal amyloidosis, hyperadrenocorticism, and systemic lupus erythematosus all may result in glomerular protein loss that can be quantified by the urinary protein/creatinine ratio (UPCR). Urinary tract infection may result in inflammation that increases the UPCR, so the UPCR would not be useful in monitoring urinary glomerular protein loss. UPCR should not be used in dogs with urinary tract infection.
 - a) La glomérulonéphrite, l'amyloïdose rénale, l'hyperadrénocorticisme et le lupus érythémateux aigu disséminé peuvent tous produire une perte de protéines glomérulaires qui peut être quantifiée par le rapport protéines/créatinine de l'urine (RPCU). L'infection du tractus urinaire peut produire une inflammation qui augmente le RPCU, de sorte que le RPCU n'est pas utile pour la surveillance de la perte de protéines urinaires. Le RPCU ne devrait pas être utilisé chez les chiens souffrant d'infection du système urinaire.
2. e) *Bordetella bronchiseptica* is the most common bacterial cause of infectious tracheobronchitis. Herpesvirus is a rare cause.
 - e) *Bordetella bronchiseptica* est la cause bactérienne la plus courante de la trachéobronchite infectieuse. L'herpèsvirus est une cause rare.
3. e) Prophylactic antibiotics should be administered intravenously immediately before surgery, after induction of general anesthesia.
 - e) Les antibiotiques prophylactiques doivent être administrés par voie intraveineuse immédiatement avant la chirurgie, après l'induction de l'anesthésie générale.
4. b) An oronasal fistula associated with severe periodontal disease most frequently produces a communication between the oral and nasal cavities.
 - b) Une fistule oro-nasale associée à une parodontolyse grave cause le plus fréquemment une communication entre les cavités orale et nasale.
5. b) Botulism prevents release of acetylcholine packets from the presynaptic membrane of the neuromuscular junction. Myasthenia gravis prevents binding of acetylcholine to the receptor on the postsynaptic membrane. Tick paralysis has the same mechanism of action as botulism.
 - b) Le botulisme empêche la libération de paquets préformés d'acétylcholine à partir de la membrane présynaptique de la jonction neuromusculaire. La myasthénie grave empêche la fixation de l'acétylcholine au récepteur sur la membrane postsynaptique. La paralysie due aux tiques possède le même mécanisme d'action que le botulisme.
6. d) Pemphigus foliaceus is an autoimmune phenomenon directed against the cell membrane-associated epidermal antigen.
 - d) Le pemphigus foliacé est un phénomène auto-immun dirigé contre la membrane cellulaire associée à l'antigène épidermique.
7. a) Suturing the dorsal commissure of the labia is known as Caslick's operation.
 - a) La suture de la commissure dorsale des lèvres de la vulve est connue sous le nom de chirurgie de Caslick.
8. e) Antibiotic therapy is not essential in treatment of diarrhea in neonatal calves.
 - e) L'antibiothérapie n'est pas essentielle dans le traitement de la diarrhée des veaux nouveau-nés.
9. c) The enteric viruses cause villus atrophy, which causes malabsorption.
 - c) Les virus intestinaux causent une atrophie des villosités, ce qui provoque de la malabsorption.
10. a) Functional pituitary adenoma, with secretion of adrenocorticotrophic hormone (ACTH) and subsequent adrenocortical hyperplasia, is associated with hirsutism.
 - a) L'hirsutisme est associé à l'adénome hypophysaire fonctionnel, avec sécrétion de l'hormone adrénocorticotrope (ACTH) et hyperplasie corticosurrénale subséquente.