



APDT

On Behavior

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Dominance: The "Dirty" Word

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The concept of and, certainly, the word "dominance" has become a fire bed of controversy and emotional turmoil in recent years. When discussing dog behavior, some use the term pervasively while others avoid it entirely or develop various substitutive names. Opinions vary about the importance of dominance in the canine world, particularly its relevance to behavior modification. Before formulating an opinion, it helps to understand how we got to this point and what factors contributed to the current controversy. Also, this article shall consider the general theory, the relationship between dominance and aggression, the significance of dominance relationships in dogs, and what role, if any, this may play in human-dog interaction.

Different Things to Different People

The term dominance means different things to different people. Ethologists often use the term differently than clinical behaviorists, and the non-professional public has its own, often completely distorted, interpretation of what constitutes dominance. (Admittedly, we, "the professionals," are to blame for much of that misrepresentation.) Because wolves are known to be the genetic ancestors of domestic dogs (Clutton-Brock, 1995), many people have translated wolf behavior in a literal fashion to dogs.

There may be usefulness to this, but it is generally an erroneous approach, as this article will discuss later.

Dominance should not be used to indicate a temperamental attribute, motivation, territoriality, or aggressive act (even offensive). A dog who shows aggression toward a territorial intruder is not "dominant." The dog is driving off a perceived threat and the dog happens to have a home field advantage, which

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means the dog will show more confidence because it stands a better chance of being successful.

Dominance describes a *relationship* between two individuals based on the outcome of an agonistic encounter (Lindsay, 2001; Shepherd, 2002). Dominant-subordinate relationships permitted the evolution of social *hierarchies* to allow for more harmonious group living. Hierarchies allow animals to live in close contact in competitive situations without constant conflict and injurious, and potentially fatal, fighting. Social living has biological advantages, but social behavior did not evolve *around* social hier-

archies. Some social species, such as Bonobo chimps, do not even develop hierarchies (Hohman et al, 1999). So dominance also is not synonymous with social behavior or group living.

Dominance is a "predictive inference based on a pattern of win-lose contests between two or more animals" (Lindsay, 2001). A single interaction cannot accurately reflect the nature of the animals' relationship with each other. Dominance and subordination are based on which animal wins the encounter the majority of the time. If animal A is dominant to animal B, we can infer that animal A will win an agonistic encounter between the two most or all of the time. Dominance is not absolute. Every individual assumes the subordinate role at some point with some individual in some context unless the individual is pathological.

Dominant-subordinate relationships are not established in every encounter an animal has with a conspecific. Imagine how odd it would look if a human squared off or postured to the bank teller, the gas station attendant, or the nurse at the doctor's office. These are casual interactions. Similarly, when a dog first meets a particular human, the dog is not immediately attempting to test or establish dominance.

Studies testing dominance hierarchies indicate that *social* rank is distinct from the *feeding* rank.

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Social dominance is related to the level of the individual's freedom in relation to others (Zimen 1981), but feeding rank is related more to the actual resource-holding potential. This is supported by the observation that dogs can have food/possessive aggression that is unrelated to conflict over social rank and vice versa.

Dogs or Wolves?

As previously mentioned, most of our interpretations of dominance and hierarchy behavior in dogs has been extrapolated from wolf behavior. Numerous errors have occurred in this translation even if we assume that dogs are identical to wolves. Even in wolves, the alpha does not have absolute control over the will of the group as a whole (Zimen, 1981). Additionally, the dominance relationship is maintained by voluntary deferential behavior from the subordinate. A high-ranking animal does not casually intrude upon individual privileges of subordinates, nor does the animal show gratuitous displays of rank or aggression. High-ranking animals are more concerned with

macromanagement, rather than micromanagement, of the other members' behavior. This factor alone illustrates the absurdity of blaming sub par obedience performances and behavior problems such as digging and chewing on dominance issues.

In most higher social species, rank structure can be complex, fluid, or context specific. Alliances and triangular relationships complicate the picture. Using food tests to determine hierarchies is flawed if feeding hierarchies are different from social rank. It is often difficult to accurately assess rank order or, at times, whether a social rank even exists.

We know that dogs show social behavior, but do dogs have social *hierarchies*? Dogs are *not* wolves, and their behavior is not identical. Most authorities agree that domestication produced some degree of neoteny in dogs, both in their physical appearance and their behavior. Wolves do not show strong ranking (status climbing) behavior until social maturity. Dogs would be more similar to juvenile wolves than adult wolves. Dogs and wolves are

essentially genetically identical and interbreeding could easily occur. However, in areas where the ranges of wolf packs and dog groups overlap, little interbreeding occurs primarily due to behavioral segregation (Boitani et al, 1995). Dogs prefer to associate with dogs (or humans) and wolves prefer to associate with wolves. Furthermore, if wolves and dogs showed identical packing behavior, we should be able to live as successfully with wolves as we do with dogs. (See sidebar below, "What is a 'Pack?'")

During the process of domestication and selective breeding to produce dogs for different functions, humans have manipulated a variety of physical and behavioral characteristics. It would be impossible to develop the physical alterations responsible for breed diversity without also affecting social behavior. Considering that pack behavior and hierarchy formation was not the primary goal in the development of most breeds, the resulting effects on social behavior would be haphazard at best. Dogs demonstrate a greater degree of behavioral plasticity than wolves and can combine behavioral patterns in novel ways (Coppinger et al, 1995). Additionally, studies on feral dogs observe that dogs live in small, loosely organized groups. Feral dogs studied in central Italy did not show social bonds that followed the rules of pack living, and there was no reproductive suppression among subordinate females as is seen in wolf packs (Hohman et al, 1995). Coppinger's observations of free-ranging village dogs illustrate that

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What is a "Pack?"

True "pack" behavior involves cooperative behavior between the adult individuals with a clear leader. True packs are unreceptive to outside individuals and typically attack intruders on sight. Humans expect dogs to allow the approach and integration of other dogs at random, and, indeed, most dogs do allow this. There is little evidence that dogs form true packs, but much more that they tend to

form aggregations and loose social groups with open to semi-open memberships. (Individuals can come and go with relative ease.) Although groups of dogs may engage in the same activity, one has to differentiate cooperative behavior from social facilitation and local enhancement, of which the latter two are much more common in dogs.

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these dogs also do not show pack structure but live semi-solitarily (Coppinger 2001). Other studies of free-ranging dogs support the idea that dogs generally live in pairs or solitarily.

Dogs obviously show dominant and subordinate postures to each other; some dogs more so than others. However, many "submissive" signals are similar or identical to appeasement or cut-off signals. These are designed to avoid or abort impending aggression, but not necessarily in the context of a hierarchical system. Since dogs are descended from wolves, we can expect that some of the social behavior of wolves is retained in dogs. However, there appears to be a wide variation between breeds and individuals in the amount of

hierarchical and agonistic behavior demonstrated by dogs. In general, when dogs do develop hierarchies, they may be comparatively unstable. Hierarchies in dogs might also be so complex and fluid, and affected by so many different factors in any given situation, that it is pointless to try to define them.

Relationships with Humans

How does all this relate to dogs' relationships with humans and the development of "dominance aggression?" Since dog-dog aggression is not correlated with dog-human aggression, we know that dogs know humans are not dogs. Dogs also are able to adapt their behavior when interacting with other species; they don't treat cats exactly

like dogs or horses exactly like dogs, so they won't treat humans exactly like dogs. This does not mean that some communication signals cannot be recognized across species. It does mean that we must acknowledge that dogs will behave differently toward people than toward other dogs.

There has been a long-standing misconception that all dogs are vying for the "alpha dog" position in relation to both other dogs and humans, and that most or all aggression is related to status. This has resulted in a variety of "dominance exercises," ostensibly based on wolf behavior, designed to prevent or treat status-related aggression.

These approaches presume that all

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dogs are behaviorally normal and can be cured by asserting the “appropriate” amount of dominance over them. Pinning a dog on its back or side, staring at the dog until it looks or turns away, and other interactions designed to force the dog to show “submission” can be interpreted as random, non-contingent threats or acts of aggression by dogs, especially if dogs don’t understand “alpha wolf” behavior by humans anyway. Non-contingent punishment (including threats) is a definitive way to induce a variety of neurotic behaviors.

Dominance is not synonymous with aggression. Although aggression at times is used to establish dominance, agonistic encounters, particularly between familiar individuals, are normally resolved with non-injurious ritualistic behavior. Injurious or escalating aggression is atypical and counterproductive to group cohesion. In fact, in many social species, the level of aggression shown by a particular individual is inversely correlated with the animal’s ability to attain high social ranking. Studies in humans and several primate species show that escalating levels of aggression are correlated with impulse control disorders and are inversely correlated with social status and brain serotonin levels (reviewed in Haug 2003). In humans, boys with high levels of aggression are more likely to be interpreted by their peers as bullies rather than leaders. Thus, it is not appropriate to discuss dominance relationships and hierarchies in terms of aggression, particularly when referring to stable groups.

Aggression is ultimately about

control, i.e., one individual trying to influence the immediate behavior of another (Lindsay, 2001). (This refers to non-predatory aggression; however, one could argue that even predatory aggression is control related but for a different motivational purpose.) There is a significant link between anxiety, control, and predictability. In a situation where an individual *feels* as though he or she has some control over the outcome, anxiety levels remain low. A feeling of control injects a sense of predictability into the environment. Control and predictability reduce anxiety; a feeling of a lack of control and predictability is a recipe for anxiety, depression, and learned helplessness. For example, one major reason that some people are optimists is that they *overestimate* how much control they actually have over a situation; their anxiety levels are correspondingly low. Pessimists have a more realistic picture of how much control they have in any particular situation.

Aggression is usually about regaining control of a *situation*, not an individual. There are a number of factors that support the theory that most aggression (including owner-directed aggression) in dogs is about situational control rather than status. First, many dogs begin showing aggression when very young, sometimes as early as five to six weeks of age. There is no natural correlate for a young canid mounting a true dominance challenge against an adult conspecific. Second, most dogs show some degree of preliminary and/or concurrent anxiety before or during an attack. The dog also may withdraw

Erroneous Use of "Dominance"

Behaviors erroneously attributed to, or labeled as, “dominance:”

- pulling on leash
- getting on furniture
- disobedience
- running away
- jumping up
- aggression and fighting
- rushing through doorways
- digging and other destructive behaviors
- puppy mouthing and nipping
- aggression during veterinary exams
- intolerance of handling
- pawing people

from the owner or run and hide immediately after the attack. Individuals who feel they are in charge do not mount an attack (or challenge) and then run away—running away is a behavior demonstrated by the loser or “subordinate.”

In addition, if “dominance aggression” was about status, then severe punishment by the owner should suppress the problem. Individuals who feel that humans can adequately mimic dominance behavior (and that dogs are motivated by it) overlook the fact that those very actions toward the dog either 1) trigger increased aggression, or 2) do not ultimately resolve the problem. This implies that either humans cannot deliver these messages in a meaningful way and/or dogs cannot read them.

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Furthermore, many dogs show aggression highly out of proportion to the actual threat or challenge presented during the interaction. Owner-directed attacks often are rapidly escalating and include actual injuries; often there is little ritualism about them. Severe explosive biting is characteristic of a *defensive* attack.

Finally, dogs with “dominance aggression” often show significant levels of solicitous and attention-seeking behaviors toward their owners. In a wolf pack, attention is directed toward the leader animal—up the hierarchy—not down. Excessive attention-seeking behavior is not characteristic of a typical aloof, confident leader, but it is well within expectations for a

subordinate.

(Note: There is a small population of dogs that appear to show true dominance aggression. Among other things, these dogs are very confident, show considerable warning before biting, and do not retreat afterward. The aggression is usually very predictable in context and intensity. See sidebar, “Erroneous Use of Dominance” on page 16.)

Avoidance-Motivated Aggression

So if owner-directed dominance aggression is not about status, what is the problem? This behavioral pattern may arise in several ways, but almost all of them are forms of avoidance-motivated aggression (Luescher, 2004). As mentioned, habitual use of “dominance” exer-

cises can be interpreted as random attacks on the dog, leading to defensive behavior. Similarly, punishing a dog that is already fearful will exacerbate the fearfulness. If done in consistent interactions, the dog will develop an expectation for conflict in those situations. The dog then may show preemptive defensive behavior in an attempt to avoid or abort the interaction.

Some dogs may use aggression to terminate an ongoing interaction that they find *frustrating* or irritating. Humans routinely project their own thoughts and feelings on dogs, and thus misinterpret the dogs’ intentions and desires. For example, most dog owners would indicate that a dog wants its belly rubbed

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Appropriate Use of "Dominance"

The term "dominance" *can* be appropriately used to describe the individual in a dyad who wins an agonistic encounter the majority of the time and/or who is able to persistently control access to a resource or behavioral freedom in that specific context. I restrict the term to describing those individuals who have a close social rela-

tionship or repeated contact with each other. Using the term during a casual encounter could result in false presumptions about the animals' relationship. Aggression may be used to establish or solidify the relationship but is not a typical aspect of a stable dyad.

Terms often used to describe owner-directed aggression:

- Dominance aggression
- Dominance-related aggression
- Status-related aggression
- Conflict aggression
- Avoidance-motivated aggression

The term "conflict aggression" may be the most descriptive of the true etiology of most owner-directed aggression cases.

when it rolls onto its back, even if they recognize this as a submissive posture. They fail to understand the reaction that the dog (at least originally) expects in return: a brief interaction equivalent to another dog sniffing, and then the signal receiver *walking away*. Similarly, when dogs approach people, people assume the dog wants to be petted. When a dog desires proximity to the owner, it does not automatically follow that the dog wants to be petted, hugged, and/or kissed. These latter two interactions are, to some degree, innately hostile and threatening to dogs. Again, the dog may use aggression to avoid or abort the interaction. In any of these scenarios, when the dog learns to use aggression to regain control of the situation by terminating the encounter, the dog will receive significant reinforcement. The more control the dog feels it has in any given situation, the more confident the dog will be. The dog's posturing will look more offensive, making the dog appear to be acting "dominant." This does not mean the dog has increased its social *rank*.

Normal vs. Abnormal

Some dogs "are simply obnoxious subordinates who have not been properly trained to respect appropriate social boundaries" (Lindsay 2001). But another population of dogs is probably truly abnormal. Behavior is dynamic on an individual and a population basis. We cannot expect to manipulate breed genetics and produce all normal animals; some individuals will fall outside the bell curve. Dogs' brains are similar enough to humans that

"Dominance is not synonymous with aggression."

we can infer that they may suffer from mental and neurologic disorders similar to some of our own. Presuming that all dominant-aggressive dogs are just normal, obnoxious animals that need a dose of "leadership" is unfair to the animals and dangerous to the humans around them.

Although we are learning more and more about canine behavior, there is still a paucity of research on social behavior in dogs. The

more we analyze canine behavior, the more we realize how complex it can be. What business do we have trying to translate and mimic a language that we do not even understand? Focusing on dominance and hierarchies in therapy grossly oversimplifies the concept and can divert attention from more productive therapeutic approaches. That is a recipe for disaster and our dogs have been trying to tell us this for some time.

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