ASAS CENTENNIAL PAPER: Perspectives on domestication: The history of our relationship with man's best friend

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ASAS CENTENNIAL PAPER: Perspectives on domestication: The history of our relationship with man's best friend

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ABSTRACT: We are a nation of dog lovers. Never before in our history have we spent more time, money, and emotional energy on a group of animals that are kept solely for companionship. Pet food sales are a multi-billion dollar industry, and pet owners are spending more than 11 billion dollars each year on veterinary care. This devotion is further illustrated by the exponential growth of the pet supply industry, including increasing numbers of pet superstores, play-parks, training centers, and doggie day care centers. During the 1980s, recognition of the human-animal bond led to serious study of the roles that dogs play in our lives. These studies have shown that pets provide significant benefits to our emotional, physical, and social well being. It is ironic then, that at a time when we recognize and appreciate our bonds with animal companions, dark elements of this relationship are equally pervasive. Animal shelters in the United States kill between 3 and 4 million dogs and cats annually. Dog fighting, although outlawed, has reached epidemic proportions in some areas of the country. Episodes of animal cruelty and neglect are reported with alarming frequency in the media; so frequently that discussions of the connection between animal cruelty and human violence have become daily parlance. How then did we come to have such paradoxical perceptions and treatment of our canine companions? This question is explored through an examination of the ancestry of the dog and the prevailing myths and facts about domestication. Historical and present-day perceptions of the wolf and the impact that these attitudes may have upon perceptions of dogs are examined.

Key words: dog, domestication, history, wolf

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America is a society of dog lovers. The statistics bear this out. Currently, 40% of households in the United States include at least one dog, totaling more than 61 million canine companions (AVMA, 2002). It is also clear that these dogs are important to us. According to a survey conducted by the American Animal Hospital Association (2004), 94% of owners consider their pet to have human-like personality traits, 93% say that they would risk their own life for their pet, and one-half said they would choose their dog as their single companion if stranded on a deserted island. This devotion is further illustrated by the exponential growth of the pet supply industry, including increasing numbers of pet superstores, play parks, training centers, and doggie day care centers. Pet food sales are a multi-billion dollar industry, and pet owners spend approximately $11 billion each year on veterinary care (APPMA, 2008). Finally, numerous studies of the relationships between people and dogs have shown that pets provide significant benefits to our emotional, physical, and social well being (Wilson and Turner, 1998). Yet, there is also a dark side to this relationship. Animal shelters in the United States kill between 3 and 4 million dogs and cats annually. Dog fighting, although outlawed, has reached epidemic proportions in some areas of the country. The connection between animal cruelty and domestic violence is well established, and cases of animal hoarding and neglect have been reported in almost every community (Faver and Strand, 2003; Patronek, 2006).

How did it come to be that so many of us share our lives, hearts, and homes with dogs? Although we can confidently say that the dog, as "man's best friend", is one of our oldest companions, this relationship is still a very recent phenomenon when viewed on an evolutionary scale. Archaeological evidence indicates that the dog *looked* like the dog 10,000 yr ago, whereas DNA evidence suggests that the dog may have diverged from other canids for as long as 100,000 yr (Morey, 1992; Vila et al., 1999). Regardless of which figure is eventually accepted as the official birth of the dog, in terms of the age of *Homo sapiens*, this constitutes a very recent friendship. Why at this point in human evolution and

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cultural development do we form such strong bonds with dogs, yet demonstrate such inconsistencies in our treatment of them? Some answers may be found in an examination of the dog's ancestry. This is an important starting point because our beliefs about where dogs came from and about how they may be similar to and different from their progenitor species inevitably influence our attitudes toward them.

KISSIN' COUSINS: DOGS AND WOLVES

Although there has been dispute in the past, current genetic, morphological, and behavioral evidence confirms that the wolf, *Canis lupus*, is indeed our domestic dog's closest relative (Vila et al., 1997). However, although dogs are quite obviously different in both appearance and behavior from the wolf, the 2 species are still very closely related, genetically. Mitochondrial DNA (**mDNA**) studies have shown that from a genetic standpoint, the domestic dog shares more than 99.8% of its mDNA with the wolf (Wayne, 1993). By contrast, wolves differ from coyotes (*Canis latrans*), the species that is their closest wild relative, by approximately 4% of mDNA. Because of this genetic similarity, in the early 1990s some taxonomists suggested reclassifying the domestic dog as a subspecies of the wolf (i.e., *Canis lupus familiaris*; Wozencraft, 1993). This new classification is refuted by many evolutionary biologists and has not been universally accepted because species designations are arguably not decided by genetics alone, but also influenced by a population's geographic region, behavior, and reproductive isolation.

Where exactly the dog originated in the world has also been the cause of some dispute. Fossil evidence shows that the dog was distributed across Eurasia and in the Americas before transoceanic travel during the 15th century. For many years, it was believed that the dog, similar to pigs and horses, had been domesticated on several occasions, in different geographic regions of the world. The theory of multiple domestication events helped to explain the diversity that we see today in different breeds of dogs, as well as their presence throughout the globe. This theory was recently challenged by studies providing evidence for a single domestication event occurring approximately 15,000 yr ago in Eastern Asia (Savolainen et al., 2002). By examining mDNA mutations in more than 600 domestic dogs and 38 Eurasian wolves, Savolainen's group showed that the domestic dog split off from wolves approximately 15,000 yr ago. This date corresponds with the archaeological evidence that places domestication of the dog at about the same time that humans began to transition from hunter-gathers to hunter-farmers. They found no evidence of any other domestication event in the Old or New World after that time. The implication of this research is that although dogs were found all around the world 9,000 yr ago, this must have been because they were already traveling with their human companions. Support for this theory came from an examination of the genetic make-up of the Mexican hairless dog (or Xoloitzcuintel), which was considered to be one of the oldest identifiable breeds of America. Contrary to local folklore, this breed was shown to be closely related to several modern European breeds of dogs and was not related at all to the American gray wolf (Vila et al., 1999).

Although these results support a single, Eurasian domestication event, they could not be considered conclusive because genetic analysis of present day American dogs could reflect interbreeding between native American dogs and dogs that had been brought to the New World relatively recently with European explorers. To solve the mystery once and for all, Leonard and Fisher examined genetic material recovered from the ancient, pre-Columbian remains of 17 dogs found in archaeological digs of Latin America and Alaska (Leonard and Fisher, 2005). Their results showed unequivocally that while the dogs were all closely related to each other, they were not related to American (New World) wolves. Collectively, these studies show that a single domestication event occurred for the dog, somewhere in Europe or Asia, from Old World gray wolves (most likely, ancestors of the small Chinese wolf).

From that origin, the dog began to travel around the world, not of its own accord, but by accompanying its new human companions. It now appears that when the first humans traveled to the New World across the Bering Strait, they brought dogs with them. Subsequently, dogs, wolves, and coyotes seem to have occasionally hybridized in the New World, leading to increased genetic variation. It was not until the last 100 to 150 yr, when urbanization, the extirpation of wolves, and the development of the cultural concept of purebred resulted in almost complete reproductive isolation of dogs from other canids and of dogs of different breeds from one another (Zawistowski, 2008).

OUR BEST FRIEND—A CAMP FREELOADER

In addition to new information regarding the dog's genetic relationships and timing of domestication, new theories of the cultural process of domestication have been formulated in recent years. Domestication has traditionally been explained as a process that occurred as humans selected, isolated, and bred animals for their own use (Zeuner, 1963). In this interpretation, domestication was viewed as intentional and goal-oriented: a purposeful process that humans imposed upon other animals to exploit them as sources of food, fiber, or physical labor. Enduring episodes of domestication first began during the Mesolithic and early Neolithic periods at the end of the last ice age, about 14,000 yr ago. As ancestral humans gradually evolved from nomadic hunter-gatherers to pastoralists and agriculturalists, they began to confine, control, and eventually domesticate selected wild species. This biological process first involved the separation of a small founder

group of animals from their wild populations and the subsequent taming and captive breeding of these individuals. Over a period of many generations of reproductive isolation, a new group of animals diverged from their wild progenitor species. Eventually, the selective breeding for desirable traits (i.e., those that enhanced an animal's abilities to serve or provide food) resulted in the evolution of a distinct group that was eventually classified as a new species. In the case of our 2 companion animals, the dog and cat, this interpretation of domestication proposed that these species were domesticated principally for the work that they did for humans, and as an occasional food source in the case of the dog (Lorenz, 1954; MacDonald and Ginsberg, 1981). Using this traditional model, the dog's domestication has been explained using the following scenario:

> At the end of the last Ice Age, humans gradually evolved from nomadic gatherer-hunters to semisedentary pastoralists and ultimately to settled agriculturalists. As our human ancestors established permanent settlements, wolves would gather near the periphery, out of curiosity and perha+ps to scavenge food. Seeing this, humans began to capture and tame some of the less fearful individuals, recognizing their value in sanitation, as hunting aids, and as sentinels. Eventually when these tamed individuals were allowed to breed, selection propagated individuals who were more amenable to taming and handling than those who were more wary or resistant. Because wolves and humans hunted similar prey species, these first dogs were eventually used to help in the hunt. As time went on, dogs were used for an increasing number of useful functions, and the confinement and breeding of these animals brought about the physical and behavioral changes that we see today (Coppinger and Coppinger, 2001).

Although this scenario fits well with the traditional theory of domestication, it implies that humans of the late Mesolithic and early Neolithic periods recognized a need for domestic animals (the dog in this case) and purposefully exploited animals of the local ecosystem to fill that need. However, in recent years, several alternative evolutionary-based theories of dog domestication have been proposed. Although several different mechanisms are identified, these theories are not necessarily exclusive of one another (Paxton, 2000; Coppinger and Coppinger, 2001; Koler-Matznick, 2002). Coppinger and Coppinger (2001) have written extensively on this topic and dispute the likelihood of prehistoric humans intentionally capturing, taming, and training individual wolves. They suggest that the requirement that this happened repeatedly and with enough regularity to result in captive breeding and selection is highly improbable. Wolves are extremely shy and nervous animals, and each pack, or family group, has a highly structured and ritualized social hierarchy. Experiences with captive wolves show that even when pups are socialized to human caretakers from birth, they continue to be extremely wary of anyone who is not well known to them and are highly resistant to human control and training (Klinghammer and Goodman, 1998). As adults, socialized wolves still resist control by human caretakers, retain their need for rigid social relationships, and pose a significant threat even to humans to whom they are well socialized. Therefore, the scenario presented previously, in which humans of the Mesolithic period took the time and trouble (not to mention risk of bodily harm) to force individual wolves into captivity as new work partners does not hold up under scrutiny.

In contrast, theories of proto-domestication or self-domestication posit that as humans settled into semipermanent villages at the end of the last ice age, these villages created an entirely new ecological niche into which wolves gradually adapted through natural selection. Specifically, villages provided a steady supply of food in the form of human wastes (i.e., trash dumps). Although the popular mythology surrounding wolves depicts them as efficient predators, wolves are also highly opportunistic scavengers (Stahler et al., 2006). They are capable of consuming and thriving on a varied and omnivorous diet. Therefore, as a species, the wolf was already highly suited to feed at these newly established dump sites, which contained a wide variety of food types. It is also probable that the edges of human settlements were relatively safe from other predator species and may have provided a source of new nesting sites. It is likely that humans of that period simply tolerated or ignored the presence of the wolves around their settlements, viewing them as opportunistic pests who scavenged on waste.

Being shy and nervous by nature, wolves have a highly sensitive and well-developed flight response. During the early stages of exploiting this new niche, Coppinger and Coppinger (2001) maintain that most wolves would have been inclined to run away whenever a human appeared or an unfamiliar situation developed. Natural selection in this new environment would have favored those wolves who were more tolerant (less fearful) of humans and had a greater flight threshold. The less timid animals would have had more opportunity to feed because they would stay longer and flee less frequently. More feeding opportunities enhanced survival and led to increased opportunities for breeding. Over time, the frequency of nontimid behaviors in this newly evolving subpopulation gradually increased, leading to a group of "tame" individuals, living communally on the outskirts of human villages.

Self-domestication at human dumpsites led to several specific physical and behavioral changes in the wolf as a result of natural selection. Because the waste sites associated with human villages contained food that was, in general, of lower quality and less energy dense than that of the usual prey species of the wolf, natural selection would favor individuals who were small-

er in overall size and had smaller teeth and weaker jaws (Coppinger and Coppinger, 2001). Behaviorally, selective pressure for social hierarchies and a strict adherence to pack order relaxed as pack behavior and hunting were replaced by semi-solitary scavenging and increased group tolerance. The well-defined roles needed for wolves to hunt cooperatively were no longer under selective pressure and so decreased in importance. As this proto-dog became more adapted to eating and reproducing in the presence of humans, the population as a whole became "naturally" tame, and developed a set of behavior patterns that differed significantly from those of the wild wolf. The evolving village dog was smaller, less timid, less concerned with social status, and more tolerant of others compared with its wolf predecessors. It is theorized that these new subpopulations of wolf-dogs gradually became reproductively isolated from the wild wolf population and developed altered social, feeding, and reproductive behaviors. It was from this population of naturally tame village dogs that humans are proposed to have eventually selected individuals for further taming, selection, and use (Coppinger and Coppinger, 2001). Interestingly, Paxton (2000) and McGee (2002), who present similar models of self-domestication for the dog, also suggest that the very early associations between humans and scavenging wolf-dogs may also have conferred certain advantages to the humans living in the settlements, thus influencing our own evolution as well.

A NEW DICHOTOMY: WILD VS. DOMESTIC

Whether or not we coevolved with dogs, it is without dispute that domestication of the dog (and other species) has affected our perceptions of other animals. The gradual expansion of agriculture and its attendant selection for domesticated plants and animals resulted in a new dichotomy—the wild vs. the domestic. Because this dichotomy has been part of our collective consciousness for many generations, we seldom pay attention to this distinction. However, the contemporary division of wild versus domestic would not exist in the absence of the domestic. Because we know that domesticated species have been with us in full form for only the last 10,000 yr, the vast majority of human history has lacked this distinction. Russell (2002) examined this phenomenon and argues that the creation of the wild-domestic dichotomy has had profound consequences upon our attitudes toward and treatment of other animals. This distinction is related to the classification of domestic animals as something over which we exert ownership (i.e., property), compared with animals existing in the wild who are still perceived as free agents in the world. Russell explains: "This locates the key change in animal domestication not in the animal's bodies, nor even in human-animal relations, but in the social definition of animals as a resource. It is a change in human social relationship. People share wild animals; they husband domestic ones. It is ownership that makes the husbanding possible" (Russell, 2002).

There is historical and linguistic evidence indicating that the basic concepts of ownership, property, and capitalism have their foundations in animal agriculture (Noske, 1997). The conception of animals as property is intricately connected to the process of domestication and to the culturally constructed divide between human and nonhuman (and between domestic and wild). For example, financial activities such as lending and borrowing trace back to the early pastoral tribes of the Near East who used livestock animals as one of the first forms of currency. Indeed, the word "cattle" (derived from "chattel"), translates to Latin as "pecunia", which is the word for money. The concept of animals as units for exchange is seen in the word "capital", coming from "capita" or "a head of cattle". Therefore, this new category of animals, domesticated species, not only resulted in a creation of the wild vs. the domestic, but created an entirely new category of animals as commodities to be purchased, owned, traded, and sold. By contrast, those that were in the category of "wild" came to be viewed as animals to be managed, pests to be exterminated, or dangerous "beasts" to be hunted down and killed (Serpell, 1996). In most cases, the tendency to vilify wild species and project negative attributes onto their behavior came about because of perceived or actual competition with human interests (Thomas, 1983). Similarly, ambivalent attitudes toward wild animals also are related to the tendency to prefer the familiar and controllable and over the unknown and unmanageable. One certain example of this tension between domestic and wild is demonstrated in our past and current attitudes toward the dog's progenitor species, the wolf.

THE BIG BAD WOLF

Much has been written about historical, mythological, and contemporary perceptions of wolves. Until recent times, most of these perceptions have been negative, and beliefs about wolves have rarely been based upon factual knowledge about them. Attitudes of fear and hatred of wolves predate American culture and can be traced back at least as far as ancient Greek culture in the first millennium BC (Lopez, 2004). The Greeks are credited with the creation of the mythical werewolf, a dangerous and evil creature whose invention reflected prevailing attitudes of revulsion and fear of wolves. Associating werewolves with viciousness, destruction, and wastefulness served to reinforce hatred toward actual wolves, justifying their brutal extermination. Serpell suggests that the purpose of such cultural misrepresentations is to construct a negative image of the targeted species with the intended effect of promoting fear and loathing. This then creates the illusion of a moral imperative to hunt, kill, and exterminate the demonized animals (Serpell, 1996, 2000).

The wolf is a prime example of this, but such misrepresentations are seen with many animal species, including rats, squirrels, bears, snakes, and even feral-living horses (Thomas, 1983; Kellert, 1997). For each of these animals, the greater the real or perceived threat to human interests, the more intense and prejudiced is the misrepresentation.

The werewolf-inspired prejudices of the ancients were carried forward into medieval times when Europeans believed wolves to be evil and untrustworthy. As Christianity began to dominate life in Europe, the Roman Church promulgated the view that the wolf (and its mythical counterpart, the werewolf) was an animal incarnation of evil itself. Similar to witch-hunts and the persecution of women and cats, the systematic spread of hatred toward wolves resulted in widespread killing of these animals, as well as of people who were accused of being werewolves. When Europeans arrived on the American continent, they brought these attitudes along. As settlers moved west with their livestock, the wolf was recklessly slaughtered, ostensibly because it was preying upon newly introduced domestic livestock, but also because of unwarranted fears of attacks on humans. During this period, the US government not only supported the widespread slaughter of wolves throughout the 19th and early 20th centuries, but produced and distributed propaganda that encouraged wolf killings (Isenberg, 2002). Similar to the bison of the west, wolves were systematically and purposefully exterminated during the last 2 centuries, leading eventually to near extinction on the American continent.

In the latter half of the 20th century attitudes toward wolves gradually began to improve. These changes have been attributed to an increased understanding of wolf biology specifically and to slowly changing attitudes toward nature in general (Kellert, 1997; McGee, 2002). Today, the wolf has become an almost iconoclastic symbol representing what is left of the wild in an increasingly urbanized and isolated society. Although this represents a major shift in attitude from one of fear to something more benevolent, it has resulted in the creation of an entirely new wolf mythology, one that may be just as distorted as that which it replaced (Klinghammer, 1989). For many, this new fascination with wolves seems to represent an opportunity to reconnect with nature. Viewing wolves as noble and courageous martyrs of the lost wild is part of this veneration. Its most detrimental manifestation is observed in the desire to possess this wildness through the ownership of a wolf or wolf-hybrid. Wolf-hybrids are widely sought after and kept, ostensibly as pets, by a small subgroup of dog lovers (Hope, 1994). Less dramatic (and less dangerous) examples include participation in communal "howls" at wolf sanctuaries and guided trips into parks with the objective of viewing or hearing wolves. So, in essence, we have come full circle, first making the wolf a symbol of nature to be feared, hated, and exploited and then transforming him into an equally unrealistic representation of a highly romanticized natural world.

In terms of our present day attitudes toward dogs, attitudes that people have toward wolves influence our cultural perceptions of the dog. On the one hand, the dog is considered to be not only fully domesticated, but completely domestic. We celebrate the dog's ease of integration into our homes and families as an honorary human, indeed as a beloved family member. We also "husband" the dog, asserting ownership and exerting complete control over the dog's reproduction, behavior, and social environment. By contrast, fascination with the perceived wild nature of the dog often leads to romanticized and distorted views of the domestic dog's behavior and social relationships. For example, despite extensive evidence to the contrary, the depiction of dogs as pack-living animals that adhere to strict social hierarchies and respond to dominance-based training methods continue to prevail (Buitrago, 2004; van Kerkhove, 2004; Steinker, 2007). Fascination with the wolf also drives the deliberate breeding and keeping of wolf-hybrids, individuals who are literally trapped in a borderland between the wild and the domestic. This paradox is expressed nicely by the late Elizabeth Lawrence, who wrote "The dog, more than any other animal, seems to bridge the gap between two worlds – the wild and the tame" (Lawrence, 1989).

DOG AS CIVILIZED WOLF

Representing the dog as a civilized version of the wolf became highly popularized during the latter half of the 20th century. Concepts of pack behavior and ranked social groups became conventional as a way of explaining relationships between dogs and their owners as a result of the extrapolation of that period's understanding of wolf pack behavior onto the behavior of the domestic dog. Because social ranking and the dog's relationship to the wolf was emphasized, dogs were considered to all be "naturally" dominant and were expected to constantly challenge their human caretakers in an effort to achieve "alpha" status. As a result of this popular (but incorrect) paradigm, almost any behavior that a dog offered that was not in compliance with their owner's wishes came to earn the label of dominant. In addition, highly confrontational training techniques such as scruff shakes, alpha rolls, and physical punishments were promoted as effective approaches to teaching a dog that the owner was dominant. Interestingly, most of the information that was available about wolves during the 1970s and upon which these beliefs about dogs were based was obtained through observations of captive wolf packs. These were typically comprised of unrelated individuals who were forced to live together in a confined space. (Naturally occurring wolf packs are actually families of closely related individuals.) Researchers who have subsequently studied wolves living in natural environments have learned that free-living wolves live with much less strife and aggression than levels reported from these earlier captive wolf studies. Current research shows that cooperation and social

group cohesiveness are more important for successful pack life than are agonistic displays and confrontation (Mech and Boitani, 2003). Unfortunately, these enlightened findings have not trickled down into the general consciousness, and beliefs about dominant dogs, pack order, and owners needing to attain and maintain alpha status continue to be popular.

Evolution-based explanations of domestication provide plausible evidence that behavior changed significantly as the dog's wolf ancestors adapted to a new ecological niche. Specifically, the need for a strict social hierarchy relaxed, individuals showed an increased tolerance of other adults and behavioral signs of timidity and shyness were reduced. More recently, generations of selective breeding to develop dogs that work closely with humans has resulted in a species that has an enhanced ability to learn certain types of tasks, to communicate with human caretakers, and to form varied types of social bonds (Miklosi et al., 2000; Hare and Tomasello, 2006; Miklosi, 2007). Recent studies have shown that domestic dogs are well adapted to forming naturally deferential social relationships with their human caretakers and are readily trained to a variety of social cues (Hare et al., 2002; Hare and Tomasello, 2005). Although most dogs are still capable of displaying dominant and submissive signals, the expression of these communication patterns should not be confused with unrelenting attempts to be dominant or to attain alpha social status over their owners. Similarly, although dominance-related aggression can develop in dogs and is a dangerous behavior problem, it is in fact relatively rare, yet is frequently misdiagnosed as an underlying cause for aggression (Overall, 1999). Although unruly and overly exuberant behaviors are commonly reported by owners and signify a need for basic manners training, these problems do not represent an attempt to dominate (Hetts, 1999; Buitrago, 2004).

In recent years, the use of a wolf-based dominance model for describing the normal social relationships of dogs has been largely discarded by behaviorists and trainers because it is not only inaccurate, but dangerous (Hetts, 1999; Overall, 1999; Steinker, 2007). The highly popularized but inaccurate portrayal of domestic dog relationships as consisting of endless rounds of scheming and battling to achieve alpha status does not generally apply and ignores the context-specific nature of inter-dog and dog-human relationships (van Kerkhove, 2004). Because relationships between dogs in multiple dog homes are more fluid, less hierarchical, and do not directly impact a dog's ability to obtain food or survive, the dog's social organization is more accurately defined as a social group rather than the value-laden label of pack, which was appropriated from wolf social behavior. For the same reasons, a dominance model of social organization is an inaccurate model for describing social relationships that dogs have with their human caretakers. Indeed, although it does not make for good television, many owners and dogs live together quite peaceably, without the dog showing any signs of attempting to be alpha or to continually gain the upper hand in the relationship.

ACCEPTING DOGS AS DOGS

Although a connection between these paradoxical attitudes toward wolves and our attitudes toward domestic dogs have not been studied in detail, it is impossible to ignore the implications that views of wolves have toward perceptions of the domestic dog. On the one hand, mythologies of the dog as wolf prevail in behavior and training literature, and comparisons between the domestic dog and the ancestral wolf continue to be promulgated in popular media. Perhaps owners enjoy seeing their dog as a little piece of the wild, but of course a little piece that has been conveniently molded to be safe around the kids and to fit nicely into the back of the SUV. When all goes well, attributes assigned to dogs that reflect the dog's wolf heritage are viewed as natural, intriguing, and even endearing. "Yes, Goldie likes to chase rabbits in the back yard, but, well, she is descended from a predator after all, isn't she? She doesn't catch them, (well usually anyway), so what is the harm"? Similarly, unquestioned adherence to an overly simplified and erroneous dominance model of behavior as the explanation for "all things dog" reflects the general public's continuing fascination with wolves and the widespread popularization of ideas of pack behavior and social hierarchies. Unfortunately, when things do not go so well for the dog, the wolf connection is again invoked to explain problems and is there to shoulder the blame. When rabbit-chasing Goldie suddenly escapes her yard and kills the neighbor's cat, Goldie-as-wolf now takes on a more sinister tone. And as she is shuttled off to a local shelter for euthanasia her owners simply shrug, "Well, it is their nature; killing instinct, isn't it? Not our fault, you know. Nothing to be done; she is a predator after all".

It seems that a fascination with the wolf as our dog's ancestor is a mythology that needs to be laid to rest once and for all. Not only does the camp parasite theory provide us with a better explanation of the dog's evolution, it may also provide a more realistic understanding of the dog as *dog*, rather than a civilized version of the wolf. If we can rid ourselves of such distorted perceptions, perhaps we can begin to understand and accept the dog for the unique, well-adapted, and trainable species that it is. Possibly, what all of this really boils down to is the fact that we are after all, only human. And maybe, to learn that the companion we wish to ennoble as a civilized symbol of the wild is actually an opportunist camp parasite who is not all that interested in being alpha and enjoys dining on trash is a bit of a let down. However I suggest that it is exactly this type of shift in attitude and letting go of cherished mythologies that is necessary for us to move toward attitudes that respect our canine companions for who they really are, rather than for who we might like to imagine them to be.

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