

## Human Influence on Physical and Temperamental Traits of the Dog

Christina Bond, BSc, MBA, CAP3

Bond, C. (2007). Human Influence on Physical and Temperamental Traits of the Dog. *Journal of Applied Companion Animal Behavior*, 1(1), 39-45.

Humans have greatly influenced the physical and temperamental shape of the domestic dog. The strongest pressure on the shape of most kennel club registered breeds today is appearance, rather than temperament and function. Through breeding practices, dogs are “sometimes chronically deformed by our taste for strange or comical physical features” (Serpell, 1995b, p. 261). Dogs are also “regularly subjected to painful and pointless cosmetic procedures in order to fit our capricious, aesthetic preferences” (Serpell, 1995b, p. 261). Although such practices appear to some as harmless, they can be detrimental to the comfort and health of the dog. There are steps we can take to ensure that all breeds of dog continue to be healthy, physically comfortable and long-lived, while still maintaining endearing characteristics that make them so appealing to mankind.

### Functions of the Dog

Historically, the domestic dog has provided food, shelter, clothing, transportation and companionship (Beaver, 1999, p. 4). Dogs have been used to hunt game, dispose of rodents, fight wars, guard valuables and tend livestock (Serpell, 1995b, p. 259). Their more recent roles include scientific research, search and rescue operations, assistance for the disabled, alerting a person prior to seizure or diabetic episode, and detection of a wide variety of substances such as drugs, explosives, accelerants in suspected arson, mold and termites in homes, and various types of cancer in humans (Beaver, 1999, pp. 51–54; Serpell, 1995b, p. 259). “In the twentieth century, dogs have been used to meet more human needs than any other domestic species” (Beaver, 1999, p. 4). It is difficult to imagine a more versatile and useful animal than the domestic dog.

The most common role for the domestic dog in Western society today is as a family pet (Hart, 1995, p. 66). There are an estimated 52 million dogs in the United States, and 40% of U.S. homes have at least one dog (Beaver, 1999, p. 6).

### Detrimental Practices Affecting the Shape of the Dog

Detrimental practices affecting the shape of the domestic dog include:

- Indiscriminate breeding. This increases the risk of genetic diseases.
- Breeding for homogeneous appearance. This is accomplished by inbreeding, which can cause an increase in congenital defects.
- Breeding for unusual features. Due to pleiotropy (the fact that a single gene can control more than one trait), this can cause unwanted characteristics.
- Extreme breed standards. These may not take into consideration the dog’s physical comfort or ability to function.
- Cosmetic surgery. This is sometimes performed to modify appearance or to correct breed faults, putting the dog through unnecessary pain and risk.

People may intentionally or unintentionally support detrimental practices in various ways, for various reasons. For example, people who adopt dogs may like the appearance of a particular breed, such as a flat-faced breed, because it has a childlike appearance, without realizing that the appearance has a detrimental effect on the animal’s health (Coppinger & Coppinger, 2001, p. 240). Professional breeders may trust that breed standards are humane and acceptable, and are reinforced for breeding extreme appearance by winning conformation shows. Backyard breeders may be ignorant of

congenital diseases, and so fail to test for hip dysplasia and other identifiable diseases. Puppy mills may breed dogs for profit, without regard for the health of the individual or the breed ("Puppy mill," 2006).

### *Indiscriminate Breeding*

"Dogs are usually bred by people who have no training in either behavior or genetics, despite having a wealth of hands-on practical experience" (Willis, 1995, p. 62). Uneducated or unethical breeders may not take steps to avoid known genetically driven physical problems in a particular breed. For example, the breeder may mate dogs that have not had their hips examined for hip dysplasia.

Indiscriminate breeding increases when a breed becomes popular. This often occurs when a dog actor or icon becomes successful (Beaver, 1999, p. 7). Dogs with less desirable traits, which would not otherwise be bred, are mated to meet demand. Popular breeds can become victims of puppy mills and backyard breeding (American Society for the Prevention of Cruelty to Animals, 2006).

Indiscriminate breeding can produce dogs with congenital diseases such as hip dysplasia, a debilitating hip disease; and progressive retinal atrophy (PRA), a disease that causes gradual loss of sight (Presberg, 2006). Mandatory tests for known genetic diseases such as these, as prerequisites for kennel club competition, can reduce the occurrence of identifiable genetic problems in a breed. For example, a prerequisite eye test for border collies entered in herding trials reduced PRA from 12% to 2% (Wolfensohn, cited in Hubrecht, 1995, p. 181).

Indiscriminate breeding can also produce dogs with behavioral problems such as fear and aggression. The German shepherd dog and American cocker spaniel, for example, have an inherited tendency to suffer from these behavioral problems (Voith, cited in Lindsay, 2001, p. 233; Willis, cited in Willis, 1995, p. 61).

Some congenital diseases, such as hip dysplasia and PRA, can be identified prior to breeding through veterinary examinations (Presberg, 2006). Identification of other problems, such as fear and aggression, may require the breeder to follow up with annual reports from adopters throughout the life of the offspring, and adjust breeding practices as needed.

### *Breeding for Homogeneous Appearance*

Every modern breed of dog originated through crossbreeding, giving them a level of hybrid vigor (Coppinger & Coppinger, 2001, p. 316). Dogs are inbred to provide a homogeneous breed appearance. Unfortunately, inbreeding for many generations increases the expression of defective genes, causing genetic diseases to become more common in a gene pool and reducing hybrid vigor (Coppinger & Coppinger, 2001, p. 316).

Through inbreeding, "bad alleles, uncommon in the canine population as a whole, may achieve a much higher frequency of occurrence owing to their presence in a small founder population" (Bragg, n.d., p. 4). This can cause an increase in otherwise uncommon behavioral and physical problems, such as flank-sucking in Doberman pinschers (Hart, cited in Hubrecht, 1995, p. 181); and collie eye anomaly, which can cause loss of sight, in breeds such as the rough collie and Shetland sheepdog ("Collie eye anomaly," 2006).

Once a stud book closes, dogs become inbred quickly. If a breed is started with 500 unrelated founding males and a closed stud book, by the tenth generation (within 15 years) inbreeding will begin. If only champions are bred, inbreeding is accelerated (Coppinger & Coppinger, 2001, p. 315).

### *Breeding for Unusual Features*

"In some breeds, genetic defects have arisen as accidental by-products of selection for other, apparently unrelated, traits" (Hubrecht, 1995, p. 181). Due to the "mysterious laws of correlation" (pleiotropy), a gene, or series of

genes, can control more than one characteristic (Coppinger & Coppinger, 2001, p. 251). For example, the ability to hear is related to the presence of skin pigment in the inner ear. The white coats that occur in some dogs are due to a lack of skin pigment, so breeding for white coats can result in deaf dogs (Presberg, 2006). This occurs in many breeds, including Australian shepherds, boxers, Dalmations and border collies.

### *Extreme Breed Standards*

When a group of feral dogs is isolated enough to become homogeneous, they tend to have a moderate shape and size. Their shape is similar to that of a dingo and they weigh between 25 and 35 pounds (11–16 kg). Their shape and size vary slightly depending on their particular niche, but are similar worldwide (Coppinger & Coppinger, 2001, pp. 86–87). This is a healthy and comfortable shape for a dog.

Before the 19<sup>th</sup> century, most breeds were developed for working characteristics (Hubrecht, 1995, p. 180). Today, dog breeding is dominated by the show ring (Willis, 1995, p. 61). Breed standards and the opinions of show ring judges have a major impact on the proliferation of certain physical traits in a breed's gene pool. Former president of the American Kennel Club (AKC), Kenneth Marden, states that: "We [the AKC] have gotten away from what dogs were originally bred for. In some cases we have paid so much attention to form that we have lost the use of the dog" ("Rosettes to ruin," n.d.).

Many modern purebred dogs come in extreme shapes, from the bulldog to the borzoi, and extreme sizes, from the chihuahua to the Great Dane. Recent emphasis on exaggerated characteristics in the appearance of different breeds has been damaging to breed behavior and physiology (Serpell, 1995b, p. 259). Although dogs have "infinitely malleable shapes," this does not mean that it is acceptable to breed deformations of the basic shape merely because we like the appearance (Coppinger & Coppinger, 2001, p. 240).

"By moulding dogs to fit our own curious notions of canine beauty, we condemn many of them to chronic pain or ill-health through the propagation of inherited physical disorders" (Serpell, 1995a, p. 252). In 1994, *Time* magazine estimated that as many as 25% of purebred dogs were afflicted with serious genetic problems (Humane Society of the United States, 2002). Examples of physical problems caused by extreme breed standards include:

- Turned-in eyelids (entropion), which can cause pain and blindness if untreated, in breeds selected for diamond-shaped eyes, such as the chow chow (Hubrecht, 1995, p. 181).
- Turned-out eyelids (ectropion), which can lead to conjunctivitis, in breeds with loose facial skin, such as the bloodhound (Hubrecht, 1995, p. 181).
- Respiratory defects in breeds with extremely short muzzles, such as the bulldog (Hubrecht, 1995, p. 181).
- Shortened and deformed legs (achondroplasia) in short-legged breeds, such as the dachshund and basset hound (Coppinger & Coppinger, 2001, pp. 249–250).
- Congenital heart diseases in extremely large breeds, such as the Great Dane ("Great Dane," 2006).
- Patella luxation, which can cause debilitating knee pain, in extremely small breeds, such as the chihuahua ("Chihuahua," 2006).

In addition, extreme breed standards can compromise the dog's ability to communicate with other dogs. Features that interfere with dog communication include hair over eyes, stub tails, unusual tail carriage and unusual ear carriage (Bradshaw & Nott, 1995, p. 252). An inability to display and read body signals properly can cause aggression to escalate when it otherwise would be cut off through ritualized body posturing.

Some breeders are seeing the issues these standards cause, and promoting a return to healthier breed standards. For example, breeders of the Cavalier King Charles spaniel are breeding dogs with longer muzzles to return to

the traditional Tudor type of King Charles spaniel (Cavalier King Charles Spaniel Club, 2002).

### *Unnecessary Cosmetic Surgery*

“The desire to make dogs conform to some arbitrary physical ‘ideal’ has also encouraged the development of a number of surgical procedures which are carried out on dogs for non-therapeutic reasons” (Young, cited in Hubrecht, 1995, p. 181). Unnecessary cosmetic surgeries include tail docking, ear cropping and ear implants (to correct a badly cropped ear).

Tail docking and ear cropping procedures, for appearance in the show ring, are approved by the AKC. But canine cosmetic surgery doesn’t stop there. There is a growing trend in areas including California and Brazil for dog owners to enhance their dogs’ appearance through cosmetic surgery. Surgical procedures include facelifts, tummy tucks, nose jobs, breast reductions and testicular implants. Some of these surgeries, such as nasal surgery to alleviate breathing difficulties and facelifts to reduce problematic skin folds, are aimed at correcting health problems caused by extreme breed standards. Other surgeries, such as breast reductions and testicular implants, are performed to conceal a genetic defect, thereby improving the dog’s chances of becoming a show champion. And some of these surgeries are performed to make the dog more attractive, for the owner’s prestige (Kingstone, 2004; Robins, 2005).

Hubrecht (1995, p. 192) states:

Surgery carried out purely for “cosmetic” purposes is clearly of no possible welfare benefit to the animals involved, and is now considered unacceptable by the Royal College of Veterinary Surgeons, the RSPCA [Royal Society for the Prevention of Cruelty to Animals], the British Veterinary Association and British Small Animal Veterinary Association. In July 1993 it became illegal in the UK for a lay person to dock a puppy’s tail, and an EEC provision

has been drafted to prohibit cosmetic operations. Nonetheless, the British Kennel Club still supports the practice of tail-docking. (p. 182)

Some kennel clubs, such as the British Kennel Club, are now becoming more enlightened and allowing natural ears and tails in breeds such as the Doberman pinscher, which has traditionally had cropped ears and a docked tail (British Kennel Club, 2001). However, judges are still responsible for selecting winners, and may still be drawn to the look of Dobermans with erect ears and stub tails, reinforcing breeders and owners for these types of cosmetic surgery.

### The Bulldog Example

In the 17<sup>th</sup> and 18<sup>th</sup> centuries, bulldogs were developed as the butcher’s working dog, to help control bulls (Coppinger & Coppinger, 2001, p. 248). Later, they were used in sport. Their legs were straight and their noses were of a suitable length to provide oxygen and cooling, allowing them to work (Coppinger & Coppinger, 2001, p. 228).

The modern bulldog is predisposed to over 44 known congenital diseases. This is compared to seven known congenital diseases in the border collie, which is still considered a working dog and has not yet been bred with exaggerated features (Linville, 2001).

In the modern bulldog, the head and neck are thick and heavy and the legs are bowed. Seventy percent of bulldogs tested by the Orthopedic Foundation of America had hip dysplasia, and none were reported to have excellent hips (Coppinger & Coppinger, 2001, p. 249).

The nasal bones have an extremely slow rate of development, remaining short. Because of the short nasal bones, other facial bones are pulled into awkward positions. The palate is pulled upward, so that the teeth stick out and the dog drools constantly. Bulldogs have a severe underbite, so have difficulty eating. There is no space for the bulldog to develop turbinate bones, so

there is less respiratory tissue covering these bones. As a result, bulldogs are unable to breathe properly and have chronically low blood oxygen levels. They also have less of the tissue that helps cool the brain, and so easily suffer heatstroke (Coppinger & Coppinger, 2001, pp. 305–306).

Bulldogs often require artificial insemination to breed. Due to the exaggerated head size of the pups, bulldogs have difficulty delivering young and often require caesarian section (Coppinger & Coppinger, 2001, p. 228).

The form of the bulldog has changed dramatically in the past century. Bulldogs have lost the features that allowed them to work and breed normally. The form in which they are now bred, with difficulty breathing, eating and running, appears to be terribly uncomfortable for the dog.

### Solutions

The plasticity of the domestic dog is truly amazing. However, we should keep the interests of the dog in mind when choosing to breed extremes, and do our best to ensure that our desire for a certain appearance does not cause discomfort or suffering for the dog. “Value should be placed on what the dogs can do, how healthy they are, and how they feel. The real value of the pet dog, the companion dog, and the service dog is their behavior” (Coppinger & Coppinger, 2001, p. 324).

To avoid unnecessary discomfort and suffering in dogs, the dog-loving community should come together with a goal of improving all breeds. Everyone can play a role toward this effort.

Researchers and scientists can document known relationships between physical and mental traits (Mackenzie et al., cited in Willis, 1995, p. 62). Veterinarians, certified animal behaviorists and other educated professionals can make clear recommendations to breeders and kennel clubs to ensure the health and comfort of the dogs produced.

Kennel clubs can open their studbooks for a “periodic infusion of new genetic material” carefully chosen to strengthen each breed (Bragg, 2006, p. 5; Peck, 2003). Breed standards can be modified to support the comfort and health of the dogs produced, maintaining endearing features but not to an extreme that causes health problems or discomfort. Surgical procedures such as tail docking, ear cropping and other types of unnecessary cosmetic surgery can be disallowed for the show ring. Physical certification against identifiable genetic issues such as hip dysplasia and eye diseases can be a prerequisite for the show ring. Behavioral evaluation can also be a prerequisite for the show ring, to avoid proliferation of temperament and performance problems (Serpell, 1995b, p. 259). Show ring judges can be encouraged to disqualify nervous or aggressive dogs, “regardless of physical beauty” (Willis, 1995, p. 61).

Breeders can aim to improve a breed’s temperament and function, rather than its appearance. Basic education in behavior and genetics, perhaps toward a breeder’s certification, may help breeders make more informed decisions when planning litters.

Dog guardians can seek reputable breeders to avoid supporting puppy mills and backyard breeders. Dog guardians can boycott breeds that are known to have physical problems, to avoid supporting show ring fads.

Societies can establish laws to curb puppy mills and backyard breeding, and to encourage responsible breeding practices. Societies can offer certification for breeders, to encourage basic education in behavior and genetics. Societies can also establish laws to prevent suffering caused by unnecessary cosmetic surgery, such as tail docking, ear cropping and ear implants.

If these steps are taken, we can celebrate the health, beauty and companionship of dogs for many generations to come. “No other species, domestic or wild, has ever become so inextricably involved in our lives and our affections as dogs have” (Serpell, 1995b,

p. 261). It is our responsibility, as an intellectual species, to ensure that dogs are healthy, fit and comfortable in their own skins.

## References

- American Society for the Prevention of Cruelty to Animals (2006). *Puppy mills*. Retrieved March 19, 2006, from [http://www.aspca.org/site/PageServer?pagename=cruelty\\_puppymills](http://www.aspca.org/site/PageServer?pagename=cruelty_puppymills)
- Beaver, B. V. (1999). *Canine behavior: A guide for veterinarians*. Philadelphia: Saunders.
- Bradshaw, J. W. S., & Nott, H. M. R. (1995). Social and communication behaviour of companion dogs. In J. Serpell (Ed.), *The domestic dog: Its evolution, behaviour and interactions with people* (pp. 115–130). New York: Cambridge University Press.
- Bragg, J. (n.d.). *Purebred dog breeds into the twenty-first century: Achieving genetic health for our dogs*. Retrieved March 19, 2006, from <http://www.netpets.com/dogs/healthspa/bragg.html>
- British Kennel Club (2001). *The Kennel Club breed standard: Working dogs: Dobermann pinscher*. Retrieved March 19, 2006, from <http://www.the-kennel-club.org.uk/discoverdogs/working/w848.htm>
- Cavalier King Charles Spaniel Club (2002). *History of the breed*. Retrieved March 19, 2006, from <http://www.thecavalierclub.co.uk/breed/history.html>
- Chihuahua (dog)*. (2006). Retrieved March 19, 2006, from [http://en.wikipedia.org/wiki/Chihuahua\\_%28dog%29](http://en.wikipedia.org/wiki/Chihuahua_%28dog%29)
- Collie eye anomaly*. (2006). Retrieved March 19, 2006, from [http://en.wikipedia.org/wiki/Collie\\_eye\\_anomaly](http://en.wikipedia.org/wiki/Collie_eye_anomaly)
- Coppinger, R., & Coppinger, L. (2001). *Dogs: A startling new understanding of canine origin, behavior, and evolution*. Chicago: The University of Chicago Press.
- Great Dane*. (2006). Retrieved March 19, 2006, from [http://en.wikipedia.org/wiki/Great\\_Dane](http://en.wikipedia.org/wiki/Great_Dane)
- Hart, B. L. (1995). Analysing breed and gender differences in behaviour. In J. Serpell (Ed.), *The domestic dog: Its evolution, behaviour and interactions with people* (pp. 65–77). New York: Cambridge University Press.
- Hubrecht, R. (1995). The welfare of dogs in human care. In J. Serpell (Ed.), *The domestic dog: Its evolution, behaviour and interactions with people* (pp. 179–198). New York: Cambridge University Press.
- Humane Society of the United States (2002). *Get the facts on puppy mills*. Retrieved March 19, 2006, from [http://www.hsus.org/pets/issues\\_affecting\\_our\\_pets/get\\_the\\_facts\\_on\\_puppy\\_mills/index.html](http://www.hsus.org/pets/issues_affecting_our_pets/get_the_facts_on_puppy_mills/index.html)
- Kingstone, S. (2004). Brazilian dogs go under the knife. *BBC News*. Retrieved March 19, 2006, from <http://news.bbc.co.uk/2/hi/americas/3923099.stm>
- Lindsay, S. R. (2001). *Applied dog behavior and training: Vol. 2. Etiology and assessment of behavior problems*. Iowa: Iowa State Press.
- Linville, R. L. (2001). *Breed predisposition to disease and congenital conditions*. Retrieved March 19, 2006, from <http://www.petstation.com/drbob-dog-breed-diseases.html>
- Peck, G. (2003). *Is Crufts damaging our dogs?* Retrieved March 19, 2006, from <http://www.parkvets.com/petsandvets-damageddogs.html>
- Presberg, C. (2006). *The border collie museum*. Retrieved March 19, 2006, from [http://www.gis.net/~shepdog/BC\\_Museum/Permanent/BC\\_Looks\\_Health.html](http://www.gis.net/~shepdog/BC_Museum/Permanent/BC_Looks_Health.html)
- Puppy mill*. (2006). Retrieved March 19, 2006, from [http://en.wikipedia.org/wiki/Puppy\\_mill](http://en.wikipedia.org/wiki/Puppy_mill)
- Robins, S. (2005). More pets getting nipped and tucked: Cosmetic surgeons balance medical needs with owners' egos. *MSNBC*. Retrieved March 19, 2006, from <http://www.msnbc.msn.com/id/6915955/>
- Rosettes to ruin: Making & breaking dogs in the show ring*. (n.d.). Retrieved March 23, 2006, from <http://www.terrierman.com/rosettestoruin.htm>
- Serpell, J. (1995a). From paragon to pariah: Some reflections on human attitudes to dogs. In J. Serpell

- (Ed.), *The domestic dog: Its evolution, behaviour and interactions with people* (pp. 245–256). New York: Cambridge University Press.
- Serpell, J. (1995b). The hair of the dog. In J. Serpell (Ed.), *The domestic dog: Its evolution, behaviour and interactions with people* (pp. 257–262). New York: Cambridge University Press.
- Willis, M. B. (1995). Genetic aspects of dog behaviour with particular reference to working ability. In J. Serpell (Ed.), *The domestic dog: Its evolution, behaviour and interactions with people* (pp. 51–64). New York: Cambridge University Press.

**© 2007 IIACAB. This journal may be printed once, for personal use only and may not otherwise be copied or transmitted in any manner in part or in full without permission from the Managing Editor. Quotes of fewer than 200 words are allowed as long as the source is properly cited.**