

“He may well be the most extreme example of genetic manipulation in the entire canine world.”

— FROM THE BULLDOG CLUB OF AMERICA'S *THE BULLDOG: AN ILLUSTRATED GUIDE TO THE STANDARD*

massive head

Birth difficulties: Puppies are delivered by cesarean section because their characteristically large heads can become lodged in the mother's birth canal.

extremely short face

Breathing problems: Structure leads to noisy, open-mouth breathing; snoring; panting; drooling; exercise intolerance; vomiting; and difficulty eating due to compressed or narrowed air passages.

Sensitivity to heat: A stout muzzle, an underbite with pinched or clogged nasal passages, and an abnormally small trachea make it difficult for the English bulldog to pant sufficiently to cool himself down.

heavy wrinkles

Fold dermatitis: Unusual or excessive facial skin folds can lead to infection if not cleaned regularly.

massive, undershot jaw

Abnormal dentition: The jaw structure gives the bulldog abnormal placement, number, and development of teeth.

heavy, thickset, low-swung body

Hip and elbow dysplasia: Developmental malformation or subluxation of joints can lead to limping and chronic pain.

The Purebred Paradox

Is the quest for the “perfect” dog driving a genetic health crisis?

by CARRIE ALLAN

In the days leading up to the annual Westminster Kennel Club Dog Show, the hotels around Madison Square Garden in New York City fill up with owners, handlers, and hundreds of purebred dogs. They come from around the country, spiffed up and ready to shine: prancing white poodles with their fur teased into towering pompadours, basset hounds with their ears held up in shower caps to keep them from dragging on the ground, bright-eyed Chihuahuas peering eagerly out of fancy carriers.

For these show dogs, who must be registered with the American Kennel Club, this is the Oscars—“the symbol of the purebred dog, in show rings as well as in millions of television homes across America,” according to its marketers. They vie for a hierarchy of awards: best of breed, best in group (sporting, herding, hound, toy), and, most prestigious of all, best in show.

In an interview filmed during the show this February, Kimberley Meredith-Cavanna explained the criteria that she and other judges consider when determining how closely these premium pooches match the “ideal specimen” prescribed by each breed’s parent club. “We’re looking to see what its head should look like, its eye set, its proportions, its size, how the dog moves, and how it should be built,” she said.

While it may seem as though contestants are competing against each other, they are actually judged against standards written by the clubs and ratified by the AKC: Are this dog’s ears long enough to make her an ideal beagle? Is that one’s head big enough to make him a prime example of English bulldog-ness? Does this Rhodesian ridgeback have the correct symmetrical ridge of hair along her spine?

Watching the lively animals in the ring, how can a dog lover not be charmed? Westminster and other shows like the annual AKC/Eukanuba Championship have a loyal following among breeders and casual dog lovers alike.

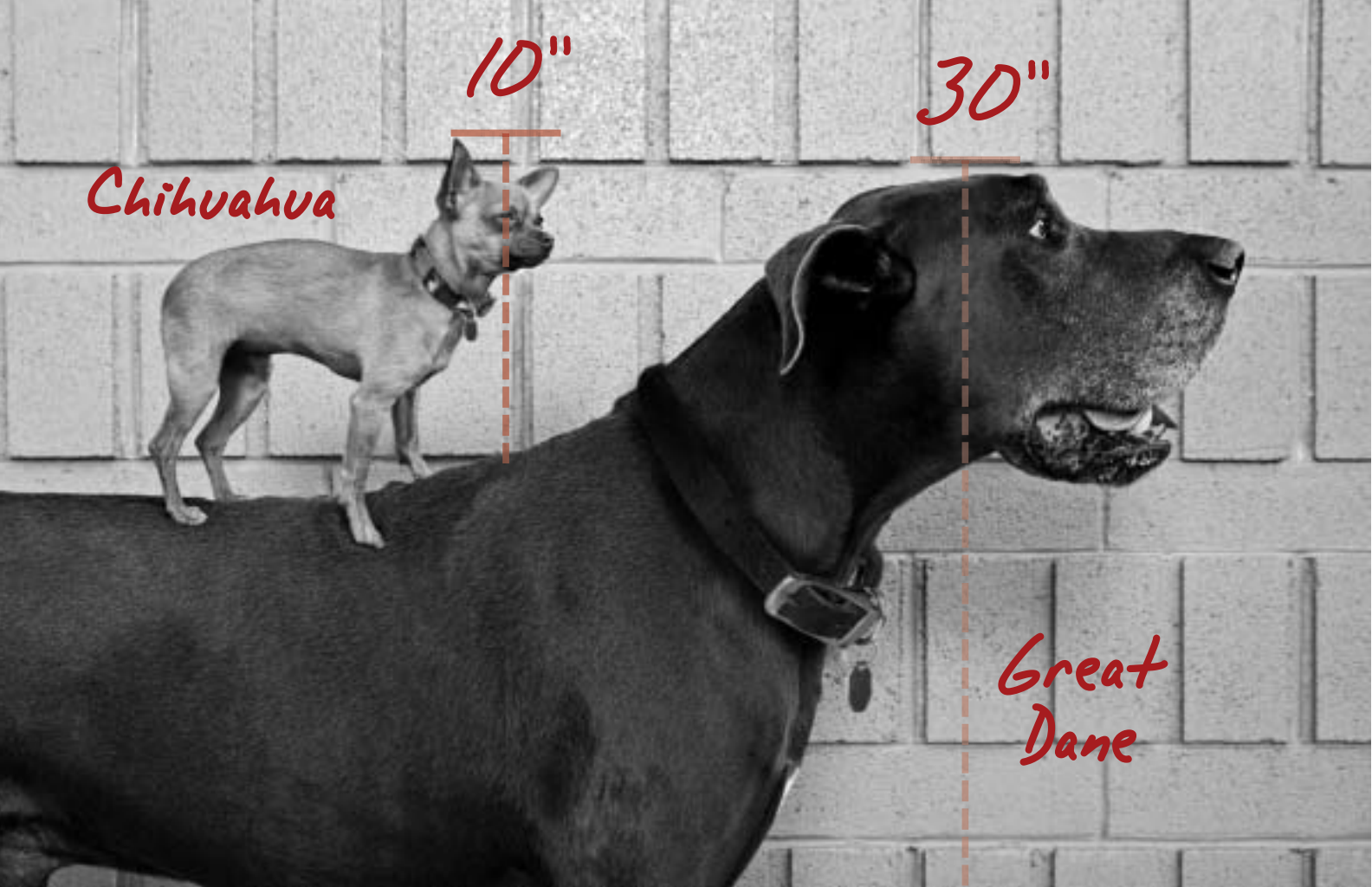
But the shows are not without their critics. Though the dogs who compete at Westminster are beautiful and most are likely healthy, the rise of such spectacles—and judging measures that in some cases emphasize appearance over welfare—has been blamed for a host of genetic health problems facing scores of breeds today.

Brachycephalic (or short-faced) breeds like bulldogs and pugs suffer from breathing problems; Great Danes and other large dogs from joint problems; long dogs like dachshunds and basset hounds from back problems; wrinkly-faced dogs like boxers and shar-peis from skin and eye problems. And due to prolific production to meet public demand, the most coveted dogs tend to have the most genetic disorders; Labrador retrievers, who’ve topped the AKC’s popularity list for 19 years, are prone to around 50 inherited conditions.

The stories of those who fall in love with these animals, only to watch them suffer, are often heartbreaking. On New Year’s Eve, Janice Pfeiffer’s dog Daisy suddenly “started yelping really loud,” says the New Hampshire resident. “It turned out she had a seizure, and she recovered from the seizure on the floor, and crawled into a corner and just looked glassy-eyed.”

An MRI revealed the painful truth about the Cavalier King Charles spaniel Pfeiffer had bought at a pet store: At less than a year old, Daisy had syringomyelia, a condition in which





fluid-filled cavities occur within the spinal cord near the brain. In severe cases, a dog's brain swells beyond the space provided by her skull. Some studies have indicated that, due to its prevalence in the breed's gene pool, 30 to 70 percent of Cavaliers will develop the condition.

THE GENETIC HISTORY OF MAN'S BEST FRIEND

Once upon a time, people believed that purebred dogs were naturally healthier than mixed breeds. How have we arrived at a point where it may be safer to presume the opposite?

Like humans, dogs are diverse in appearance—perhaps one of the reasons we love and identify with them. But that wasn't always the case.

All dogs share ancestry with the wolf, but since their domestication at least 15,000 years ago, they've been selectively bred by people to assist with herding, hunting, and—in the case of the Pekingese—warming the laps of Chinese emperors. For the better part of canine history, the physiques of breeds were driven by dogs' role as working animals, a classic example of the dictum that form follows function.

As that role diminished and pet keeping became common, dogs began to be bred more for appearance. You can see the resulting diversity any time you go to the dog park and watch an amorous Chihuahua trying to make time with an embarrassed St. Bernard, while a baffled Afghan and whippet look on. They're all dogs—but if you didn't know that, you might believe they were different species.

The thought wouldn't be unreasonable. A recent study in *The*

American Naturalist compared the diversity in the dog to that across the entire order carnivora. They found more difference between the skulls of a Pekingese and a collie than between those of a walrus and a coati, a South American member of the raccoon family.

Left to their own devices, dogs will be dogs—and will eventually intermingle enough to level out extreme differences within the species. Natural selection ensues and hybrid vigor results: Witness the similar color and size of mutts in Mexico and other countries where they're allowed to roam. To protect particular characteristics, though, breed enthusiasts have long guarded a highly controlled process, regulating genetic lines and creating registries that stipulate which animals can be bred to produce more of the same type.

But therein lies the problem: The more limited the number of mates, the greater the chance a dog will be bred with a relative who shares similar genes. Genetic diseases are caused by recessive genes, so a good gene from one parent will trump a bad gene from the other. But if both parents have a bad gene—such as one that predisposes them to hip dysplasia or blindness—the likelihood of a sick puppy increases.

“What happens when you have a small and inbreeding population is that the probability of two negative recessive genes finding each other increases as the gene pool chokes down to a smaller and smaller pool,” says Patrick Burns, a *Dogs Today* columnist who frequently writes about genetic health issues on his blog, Terrierman's Daily Dose.

A closed registry that allows no “new blood” into the mix exacerbates the problem, he argues: “In many AKC dogs, the

founding gene pool was less than 50 dogs. For some breeds, it was less than 20 dogs.”

STANDARD PROBLEMS

This year’s Westminster champion, a Scottish terrier named Sadie, hails from one of these tiny gene pools and is “very heavily inbred,” says Burns. The limited ancestry for AKC-registered Scotties, he adds, helps explain why 45 percent die of cancer.

“We do not need to have a closed registry to keep a breed,” Burns says, pointing out that breeds existed long before there was an organization to track them. “We did not create the dogs we love in a closed registry system—we have only ruined them there.”

Some breeders would doubtless disagree with Burns on this issue. But the inherent difficulties of protecting the health of a breed within a closed registry are exemplified by a project undertaken by the Basenji Club of America, which has in the past requested that its stud book be opened temporarily to bring in healthier animals.

Genetic problems in registered Basenjis were detected in the 1970s, when many of the small curly-tailed dogs known for being “barkless” began suffering from hemolytic anemia. After a test for the disease was developed, breeders tried to protect the gene pool through euthanasia of affected dogs, says club president Sally Wuornos. But eliminating dogs with hemolytic anemia left a much smaller number of registered Basenjis. And many of the remaining animals now displayed a different problem, a kidney disease called Fanconi syndrome. By addressing one disorder, the breeders had unwittingly amplified another.

Instead of repeating past mistakes and culling Fanconi carriers, the club received the AKC’s permission to open the Basenji registry to dogs from countries with no AKC-accepted registry. Since then, Basenji lovers have brought dogs back from isolated areas in the Congo and successfully integrated these healthy animals into the breeding pool.

Obtaining such permission to bring in new genes is unusual. Many breeders and clubs employ less dramatic measures: They pair mates who are healthy. They keep dogs with known disorders out of their breeding stock. They insist on conducting available genetic tests.

Yet in spite of these efforts, purebred health problems have continued and in some cases worsened. While genetic testing has made precautionary measures possible for some breeds in recent decades, people have been breeding dogs for centuries. Much damage has already been done. The modern German shepherd provides a classic example: One of the breed’s primary disorders, hemophilia, is thought by most experts to have spread almost entirely through the descendants of a single popular stud dog born in 1968 in Europe.

Though veterinarians learn about such problems in school and see them in their practices, even they are sometimes still surprised by their prevalence. When veterinarian Paula Kislak adopted retired



corneal dystrophy



degenerative disc disease



renal cortical hypoplasia



lymphangiectasia



Fanconi syndrome



ear disease



syringomyelia

racing greyhounds, she assumed the breed “at the very least was physically strong because it was being bred for athleticism,” she says.

But because many racing greyhounds are killed when they cease performing on the track, few people knew of their genetic issues. As her dogs aged, “they were getting some really serious conditions in a proportion that was much higher than ... the general population,” says Kislak, a member of the Humane Society Veterinary Medical Association’s leadership council. “The oncologists were seeing a lot of osteosarcoma. In fact, 50 percent of the greyhounds I’ve had have died of some sort of cancer.”

A SHOT ACROSS THE BOW

While pet owners have been dealing with these issues relatively quietly for decades, the documentary *Pedigree Dogs Exposed* recently brought them to the forefront.

Broadcast in the U.K. in 2008, the film was critical of the Kennel Club, the British equivalent of the AKC, and showed purebreds with a range of health problems. Among its revelations: The 2003 champion of Crufts, the country’s most prestigious dog show, was a Pekingese who had to be photographed sitting on ice blocks because his flat face made him so prone to overheating. The film showed images of certain breeds in the early 20th century alongside pictures of the same breeds today, demonstrating how a century of selecting for looks had lengthened the back of the dachshund, rounded the skull of the bull terrier, and dropped the hindquarters of some German shepherds into an almost froglike stance.

The filmmakers interviewed the RSPCA’s chief veterinary adviser, Mark Evans, who noted that his group was extremely concerned about “the very high levels of disability, deformity, and disease in pedigree dogs.” According to the documentary, sickly purebred dogs were costing British owners 10 million pounds a week in veterinary fees.

In response, the Kennel Club and the Dogs Trust—a charity that, along with the RSPCA, had been critical of the club’s policies—jointly commissioned an independent inquiry led by Cambridge University professor emeritus Sir Patrick Bateson. The resulting report largely confirmed the documentary’s findings, concluding that inbreeding, selecting for extreme characteristics, and the practices of mass breeding facilities known as puppy mills were negatively impacting dog welfare.

Describing the tension at the heart of the issue, Bateson wrote, “To the outsider, it seems incomprehensible that anyone should admire, let alone acquire an animal that has difficulty in breathing or walking. Yet people are passionate about owning and breeding animals which they know and love, even though the animals manifestly exhibit serious health and welfare problems.”

Britain’s Kennel Club has since banned the registration of puppies from closely related parents (matings of fathers and daughters, for example) and revised many breed standards, adding language to emphasize health and soundness, says the group’s public relations manager, Heidi Ancell.

Many of the standards, she says, were amended to ensure they don’t encourage extreme features. The Pekingese standard now specifies that a “muzzle must be evident.” The bulldog’s standard calls for a “relatively” short face, stipulating that pinched nostrils and heavy wrinkles over the nose should be severely penalized

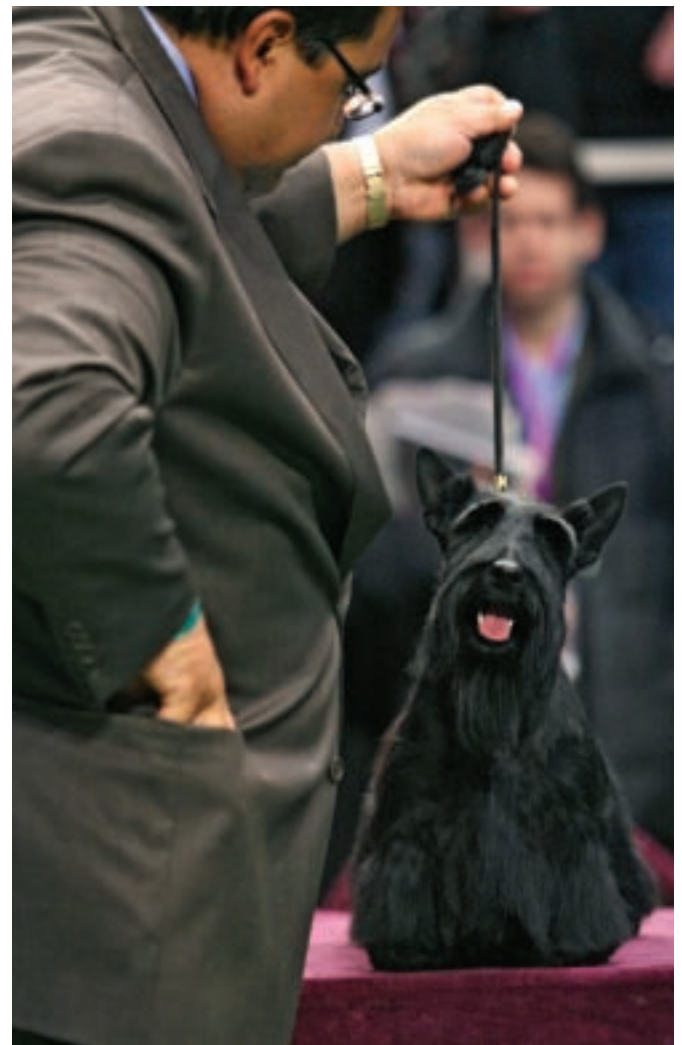
by show judges—who have in the past rewarded high marks for such features.

Some breed clubs have welcomed the changes; others have protested. But in the United Kingdom, at least, there seems to be momentum for change. Whether that momentum will gather steam in the U.S. remains to be seen.

BREEDING DISCONTENT

The AKC and its member breed clubs have devoted considerable effort to improving the health of purebreds, in part by funding research to find the genetic markers tied to certain disorders. In 1995, the AKC launched the AKC Canine Health Foundation, a charitable organization that raises funds to support canine health research; the AKC gives the foundation \$1 million in annual funding.

Dedicated breeders have also made significant strides, says veterinarian Fran Smith, citing the success in correcting a disorder known as collie eye anomaly. “In order to have that pretty collie head shape, it doesn’t leave as much room in the skull for a particular eye shape,” says Smith, who serves on the AKC’s Canine Health and Welfare Advisory Panel and is president of the Orthopedic Foundation for Animals. “But collie breeders—the serious collie breeders—



Gabriel Rangel shows Sadie, the Scottish terrier who won best in show at this year’s Westminster Kennel Club Dog Show. The breed is prone to multiple types of cancer; some studies indicate Scotties are 20 times more likely than other breeds to develop carcinomas of the bladder.

have made a huge impact in selecting for dogs who have the correct eye shape without that eye problem.”

But the test for collie eye anomaly was developed only five years ago, and plenty of collies were bred before then. Many have been afflicted with retinal disease; many still end up blind.

Smith doesn't blame written breed standards as much as people's interpretation of those standards. What needs correcting, she says, is “this idea that if one wrinkle is good, then 12 wrinkles is better. If a 4-pound Chihuahua is good, then a 1-pound Chihuahua would be spectacular.” It's a trend that even prompted *Consumer Reports* to issue a warning in 2003, telling readers that the “demand for ever-more-perfect purebred dogs has concentrated bad recessive genes and turned many pets into medical nightmares.”

Many of the disorders affecting dogs aren't as visually dramatic as the scenes of yelping and pain shown in the British documentary, says Stephanie Shain, senior director of The HSUS's Puppy Mills Campaign. But they're no less awful when they lead to shorter, less comfortable lives for the dogs. “[This is about] the dog who's going to die when she's 8 rather than when she's 12,” says Shain. “It's the dog who's not going to be with her person for as long as she should be.”

In the end, genetic tests are one of the only ways puppy buyers can protect themselves; the Canine Health Information Center, jointly sponsored by the AKC and the Orthopedic Foundation for Animals, serves as a central repository for information about dogs who've been screened for genetic disease; its database is accessible to consumers and breeders. Consumers can also check AKC registration papers for health certification numbers indicating that a puppy's parents have been tested.

But many puppy buyers aren't likely to find such proof: Plenty of disorders aren't even detectable yet, and the AKC does not require breeders to test for those that are.

Responsible breeders who value breed health over profits have an interest in accurate testing and reporting. But there's nothing to compel less conscientious hobbyists and commercial puppy millers who would rather avoid the costs.

Moreover, the AKC has not publicized any plans to encourage its member clubs to update their breed standards, and the organization continues to register puppies from the matings of closely related dogs.

The latter allowance is especially problematic, Bateson says. He notes that the immune systems of inbred dogs do not function as well, “which explains why pedigree dogs run up such large veterinary bills and are twice as likely to get cancer as outbred dogs.”

The issue goes beyond inbreeding. Quality control is an important part of any good business but is largely absent from dog breeding, says Jerold Bell, clinical associate professor of genetics at Tufts Cummings School of Veterinary Medicine, who serves on the AKC's Canine Health and Welfare Advisory Panel.

The AKC is unlikely to make testing mandatory, Bell notes, adding that such a requirement would drive less responsible breeders to simply register their puppies elsewhere: “They won't miss a beat in terms of what they're doing.”

Recent history has proven his point. In 2000, the AKC instituted a requirement that any male dog bred more than seven times would have to have a \$40 DNA test. The policy inspired a boycott of AKC

registration by breeders in Iowa and Missouri, two states where puppy mills thrive. The Iowa Pet Breeders Association urged members to register dogs through alternative organizations, according to news reports.

With the rise of these competing registries over the past few decades, the AKC—still the nation's most prestigious—has observed a change in the perceived value of its name.

“Before, AKC represented purebreds and everyone wanted an AKC puppy,” says Bell. “But now you don't need AKC to be purebred.” He believes that if the AKC continues to encourage testing and to push the message that AKC-registered dogs are healthy and screened, the organization will be able to rebrand itself as the registry for healthy purebreds.

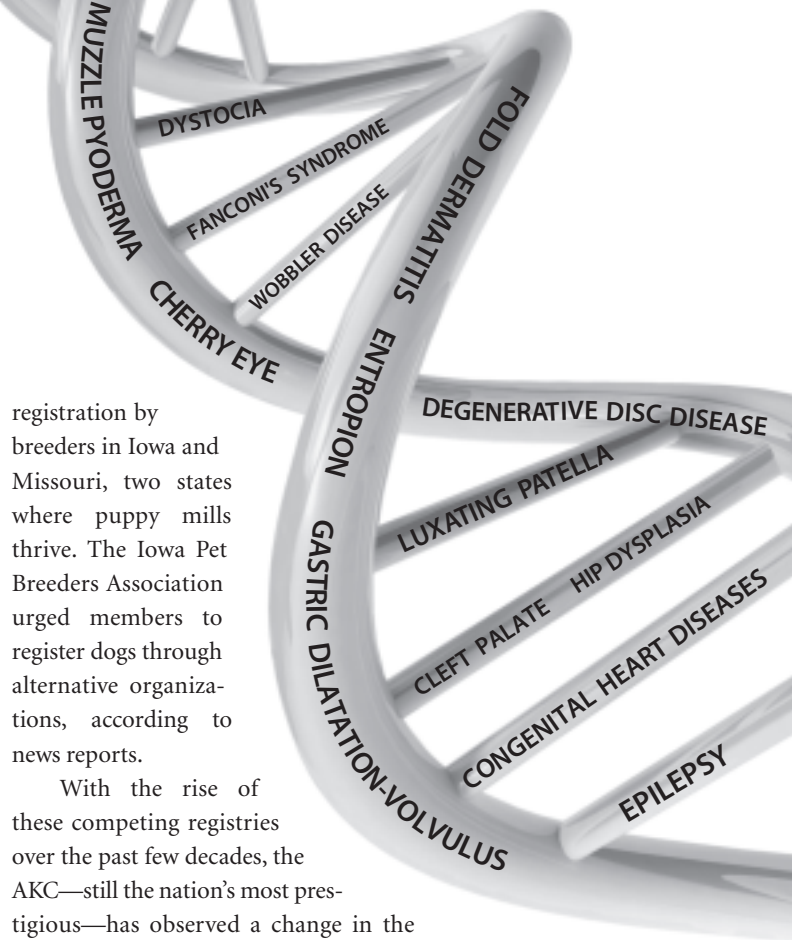
A MORAL TIGHTROPE

But for all the effort the AKC devotes to that messaging, the organization shies away from the kind of tangible consumer advice offered by experts like James Serpell, a professor at the University of Pennsylvania's School of Veterinary Medicine who has long studied the effect of genetics on dog behavior.

“Step one,” Serpell says, “is never buy a puppy from a pet store. ... What people don't realize is that you can buy a registered pedigree dog from a pet store [that] ... was bred and produced at a puppy mill where there is virtually no regulation of breeding practices whatsoever.”

The AKC's website provides helpful guidance for making more informed choices, advising pet seekers to find responsible breeders. The group also recommends that breeders meet and screen potential buyers—a practice that suggests a commitment to ensuring the dogs end up in loving homes.

But even as the AKC preaches good behavior, its practice of courting registrations from “high volume breeders” undermines the advice. This revenue source drives the organization to stop short of advising people to avoid pet stores, most of which don't screen buyers and frequently sell dogs from puppy mills that subject parent animals to lifelong confinement in barren cages. And the AKC's promotions encourage more such breeding: In April, for example,



Among the 3,000-plus dogs The HSUS helped rescue from puppy mills last year, many suffered health problems. Mass breeding facilities like this one in Washington state typically keep parents in dismal, cramped conditions and don't conduct health testing. Anyone seeking a healthy purebred should avoid purchasing from pet stores, which provide a big market for mill-bred puppies.



it launched “Dollar Deal Days,” which allows breeders who register 11 litters or more in nine months to register the 11th for only a dollar.

Some AKC members have fought to reduce the influence of puppy millers. The minutes of a September 2006 meeting document a skirmish. Patricia Laurans, a representative from the German Wire-haired Pointer Club of America, questioned the AKC’s plan to form a relationship with Petland, a pet store chain largely supplied by the Hunte Corporation, a large puppy broker. In 2009, Petland was investigated by The HSUS and sued by consumers who had bought sick dogs.

“I would like to call attention to every single Parent club’s ... code of ethics that says we will not sell to pet stores,” Laurans was quoted as saying in the transcript. “I would like to call attention to the fact that, from my humble belief, we are selling our birthright for a few shekels.”

The most thorough response came from David Merriam, a representative from the Duluth Kennel Club and vice chairman of the AKC’s board of directors, who pointed out that the AKC’s coffers had long been lined with money from breeders of all sorts. As long ago as 1981, 96 percent of the group’s income came from registrations. “That money did not come only from the Fanciers or the Sport,” he said. “That money came from all the dogs ... which means it was the backyard breeders, and it was the commercial breeders.”

If he applied his personal standards, he said, the AKC’s registry—and consequently its revenue—would be tremendously reduced, resulting in significant reductions of the organization’s services. “I think if we go that direction, the American Kennel Club will not exist 100 years from today,” Merriam said.

In spite of his warning, the delegates voted to recommend that the AKC board drop its pursuit of an official relationship with Petland.

But since then, there have been signs that puppy mill money has proved too tempting. The AKC is opposing a ballot initiative in Missouri that would crack down on puppy mills by requiring higher standards of care and limiting the allowable number of breeding dogs to 50. What’s more, in 2009, an anti-puppy mill activist obtained a description of an AKC-copyrighted software program designed for use in pet stores. The program, Puppy Registration & Inventory Management Extranet, was intended to make it as easy and seamless as possible for stores to sell AKC registration along with dogs.

The document ended up in the hands of *The Dog Press*, a web publication for dog breeders and fanciers that lamented the ease with which users of the program would be able to obtain AKC registration for pet store puppies—and to process their “returns.”

“Customers have 21 days in which to return the puppy and that too is easily handled through the PRIME program,” wrote *The Dog Press*. “Gone is the breeder-instilled commitment to a new puppy. Gone is the traditional breeder support. The sales-aid return policy can lead to unnecessary stress, mismanage [sic], or abuse of puppies.”

When editor-in-chief Barbara Andrews queried the AKC about whether the software was in use, a club official called it an “internal business matter” and declined further comment, according to *The Dog Press*. (The AKC declined to answer specific questions posed by *All Animals* as well, though officials did refer us to veterinarians Bell and Smith, who serve in an advisory capacity to the organization.)

SOUL SEARCHING FOR DOG LOVERS

Many within the AKC and its affiliated breed clubs are obviously committed to the health and welfare of dogs. Yet the organization’s continued attempts to support itself with registration fees from puppy mills surely conflict with its efforts to brand AKC dogs as healthy and sound.

And some purebred lovers who’ve been through the economic and emotional wringer have had enough.

Soon after Karin Shulin of Westlake, Ohio, got her Doberman at a local pet store, she found out that the 6-month old puppy had cardiomyopathy—a common condition in the breed—that had already resulted in a stage 3 heart murmur. “I spent thousands,” says Shulin. “I think I put the new wing on my vet’s house.”

She still has a hard time talking about what happened to Ranger. “Last April he was out playing with my other dogs and he just dropped dead,” she says. “It was horrifying.”

Though Shulin has owned Dobermans since she was a child and has worked with local breed rescue groups, she says she’s “done with purebreds.”

But that’s a hard stance to take if you love the loping gallop of a golden retriever, the pep of a poodle, the fire of a German shep-

herd. For breed enthusiasts, and for dog lovers who delight in the diversity of the species, all of this may mean some soul-searching.

Some of the ways humans hurt animals are clear and easy to see, but others are more subtle—and more difficult to address. Dogs, perhaps more than any other species, have become entangled in our sense of self. Today, many Americans regard their dogs as substitute children; they can also become symbols of identity or status or power. And there's likely nothing wrong with that, as long as it doesn't compromise the animals' well-being.

Few animals exemplify the dichotomy of the human-canine relationship like the celebrated white bulldogs who have long patrolled the sidelines at University of Georgia football games. The adorably ugly "Ugas" are venerated by Georgia fans and have achieved national fame: In 1997, Uga V appeared on the cover of *Sports Illustrated*.

But in November 2009, Uga VII died suddenly of a heart attack at age 4. His two most recent predecessors, Uga VI and Uga V, also died of heart failure, though they were much older.

Their health problems were in no way due to poor treatment. Their owners, the Seiler family, provided the dogs with excellent medical care. Ever since Uga II collapsed panting during a hot practice in 1967—an episode the dog survived, but that left him mostly deaf—the family has been particularly careful to attend to the dogs' health during games, providing them with air-conditioned doghouses and bags of ice to lie on.

These are necessary strategies for caring for a breed gone awry. English bulldogs have trouble breathing and are prone to heat stroke; most can neither mate nor give birth naturally due to the size of their heads. And according to the Orthopedic Foundation for Animals, more than 30 percent of bulldogs suffer from elbow dysplasia, and more than 70 percent from hip dysplasia.

Frank Seiler isn't overly troubled by the breed's problems; he and his family have simply learned to treat them. And any dog chosen to take on the mascot role undergoes special surgery to prepare him for the gig.

"We have these dogs operated on when they're less than 1 year



UGA VII keeps cool in his sideline doghouse during a football game in August 2008. Beloved by the University of Georgia community, the dogs have been part of the school football tradition since 1956—but the last three have died of heart failure.

old," he says. "... They go in and clear out the breathing passage under gentle anesthesia, and from that point they don't have breathing problems. They don't even snore."

That kind of devotion to helping the dogs live a more normal life is admirable. But should dogs have to go through surgery simply to function as dogs? Is this what we want for our best friends? ■

Tips for Finding a Healthy Purebred

At The HSUS, we're big fans of adoption. By going to a local shelter or rescue group, you stand a good chance of both saving a life and finding a purebred—after all, they make up an estimated 25 percent of dogs in shelters.

When you can't find the dog you're looking for, however, responsible breeders are another option; they are devoted to their animals' well-being and committed to placing them in loving homes. And if every shelter dog were adopted and every puppy mill were shuttered, there would still be a need for good breeders to supply dogs to American households.

Whether you decide to get your next dog from a shelter or a breeder who treated her parents like part of the family, here are smart ways to stack the deck in favor of finding a healthy pup.

► **DO YOUR RESEARCH.** Want a particular kind of dog? Check out the available dog health resources, such as the Canine Health Information Center (caninehealthinfo.org) and the Canine Genetic Disease Network (caninegeneticdiseases.net), to learn about what disorders your chosen breed may be prone to, as well as what genetic tests are available.

► **CHECK WITH A RESCUE GROUP.** These groups know their favored breeds and are generally forthright about both their great qualities and the challenges they face. Not only will they try to find you a great dog who needs a home; they'll be able to give you tips on any health issues the breed is prone to.

► **CHOOSE A RESPONSIBLE BREEDER.** How can you tell? A good breeder lets you check out the place where she's raising the puppies—frequently, her own home. She socializes her pups and doesn't place them too early. She asks you lots of questions and is concerned about where her dogs are going. She's able to provide papers that show not only the pup's heritage but any genetic screening that was done on his parents. And she makes you promise to bring the dog back if you ever become unable to care for him.

► **BE REALISTIC.** Sometimes, no matter how good a dog's breeder was, no matter how carefully her parents were screened, she will get sick. There aren't yet tests for all the genetic disorders out there, so now and then even the best of breeders get a sad surprise (and if one of their puppies does get sick, even years later, they will want to know). For dog owners, it's good to have some money socked away in case the worst happens—and that goes for owners of purebreds and mutts alike.

► **CONSIDER ADOPTING AN OLDER DOG.** Millions of adult dogs are in need of homes—and it is often easier to assess the health and temperament of an already mature companion. An added bonus is that these animals are usually housetrained and have passed the destructive teething and hyperactivity stages.

► **FOR MORE INFORMATION** on responsible puppy-buying, go to humanesociety.org/puppy.