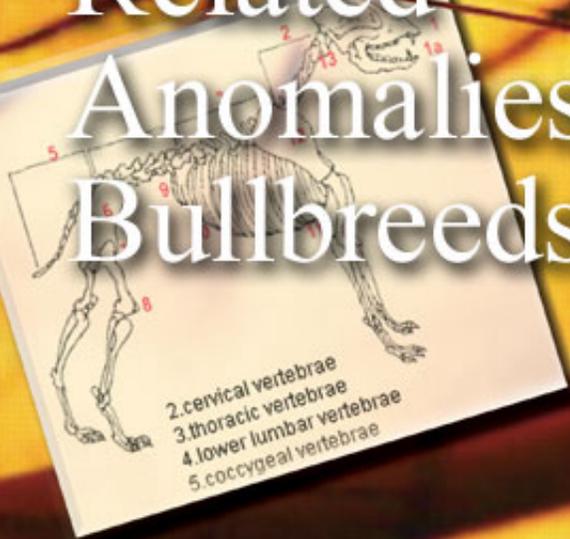


Spinal Abbreviation Related Anomalies in Bullbreeds



Scientifically speaking, we may accurately state that purebred dog breeding; in fact, all propagation of domestic species is a process of applied selective pressure. The wide genetic variability in canines allows for very dramatic applications of selective pressure resulting in breeds as visually differing as the Chihuahua, the Irish Wolfhound, the Whippet and the Bulldog. Moreover, some of the more dramatic physical characteristics of purebred dogs are the direct result of genetic mutations that occur randomly in nature. In equivalent human comparisons, these mutations are not considered positive as a

general rule since they are often accompanied by specific, negative physical manifestations. (For further comparative, technical study please review an Internet available article entitled “Constitutional Disorders of The Skeleton in Dogs and Cats,” by Peter F. Jezyk.) Because of primary differences in the physiology and psychology of the canine, dogs seem more capable of adapting to various genetic mutations. In fact, we can postulate that the most identifiable characteristics of certain purebred dogs are the result of otherwise random genetic mutations that were initially identified and inbred upon. Generations of concentrated breeding upon these mutations have inasmuch, engrained them phenotypically and genotypically into the breed standard packages of our modern purebred dogs. In the same breath, we will remind each of you that by reversing the selective pressure that maintains these alterations, we can diminish and eventually remove their inbred preponderance from the gene pool.

This study will not provide an in-depth discussion of the historical reasons that led to genetic mutations being identified and fixed into the gene pools of purebred dogs. Our goal, primarily, is to identify a particularly well-established, increasingly dangerous trend in the application of selective pressure toward excessive spinal abbreviations as evidenced through the pattern of Craniad Migration and the telescoping tail phenomenon. The resulting syndrome is particularly visible in the listed bullbreeds as we find them today. By promoting an awareness of the harm that appears to be emanating from just one underestimated trend, we hope to accomplish a broader perspective within the Fancy regarding the physical control we possess and must learn to responsibly appropriate regarding the application of selective pressure in dog breeding. Undoubtedly, most of the identified factors leading to spinal lesions in the bullbreeds can be found in varying degrees within other breeds of purebred dogs where consistent demands are being placed upon producing stock with unnatural and exaggerated spinal reductions. With

these understandings clearly in mind, let us proceed further into the study.

While an abbreviated or “bobtail” may occur randomly in canines, it is clearly not the norm. By applying selective pressure through directed breeding efforts, we have inbred a mutated tail abbreviation (commonly known in laymen’s terms as a “screwtail”) into certain bullbreeds to the degree that it has become status quo for those dogs, phenotypically and genotypically. Screwtails appear to be the result of malformed vertebrae in the coccygeal region of the spine that inhibit complete tail development in the neonate. Originally, the majority of specimens of the listed bullbreeds possessed straighter, longer and more finely tapered tails that did not manifest the characteristic screwtail. We therefore, must acknowledge the simple fact that the tail descriptions maintained within the following bullbreed standards continue to espouse an ancestral tail formation (the “straight tail”) that appears to have virtually disappeared! This is especially indicative of a negative trend in that the tail is considered a legitimate segment of the canine spine and the screwtail defect that abbreviates it abnormally can and frequently does signal further anomalies in the remainder of the spine. Nowhere is this truer than where the screwtail follows the deleterious recession pattern revealed in our study as “Cranial Migration” (the presumptuous migration of the tail toward the cranium.) Please understand that we are not discussing a docked tail nor any breeds whose tails are routinely docked. A docked tail has absolutely nothing to do with a genetic mutation. This study is limited to those somewhat dwarfed in appearance, brachycephalic dogs of Mollosoid ancestry that we refer to as the “bullbreeds” featured within our Non-Sporting group in America. Let us proceed with the study by offering the actual tail descriptions provided within the AKC breed standards:

Bulldog: “Tail – the tail may be either straight or “screwed” (but never curved or curly) and in any case must be short, hung low, with decided downward carriage, thick root and fine tip. If straight, the tail should be cylindrical and of uniform taper. If “screwed” the bends or kinks should be well defined, and they may be abrupt and even knotty, but no portion of the member should be elevated above the base or root.”

French Bulldog: “Tail – the tail is either straight or screwed (but not curly) short, hung low, thick root and fine tip; carried low in repose.”

Boston Terrier: “Tail – is set on low, short, fine and tapering, straight or screw and must not be carried above the horizontal. (*Note: the preferred tail does not exceed in length more than one-quarter the distance from set-on to hock.*)”

From a brief overview, the tail descriptions for these breeds indicate that either form (straight or screw) of tail type presents a perfectly acceptable abbreviation. Neither version appears preferable even in the modern, revised breed standards. All three standard descriptors come to the same conclusion that the tail, regardless of form, should be short, hung low with a thick root and tapering. The only mentioned, unacceptable version of naturally, abbreviated tail is described as “curved or curly.” In our own experience, we have only produced one French Bulldog with a “curly” tail and this puppy’s tail was somewhat elongated and tactile from birth. It could

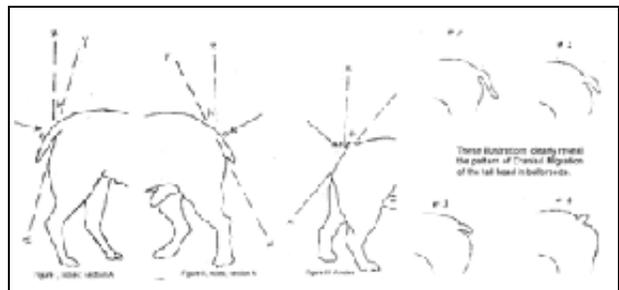


Illustration Notes, Section A.
Cranial Migration of the tail head with telescoping:

Figures I, II & III of the following sketches show a continued displacement of the tail head forward as the phenotype of the dog is modified due to selective

amusingly grip the fine bars of the puppy pen like a monkey to steady itself. As an adult, this tail was no longer tactile but remained in a permanent curl formation. Many dog breeds feature a curly tail but this tail formation, in itself, does not seem to predicate spinal malformations. When we consider that these breed standards actually embrace two opposing versions (straight vs. screw) of abbreviated tail, we must surmise that early breeders were diligently striving to produce a uniformly abbreviated tail but were obviously unable to analyze spines under x-ray to determine which would be the preferable form. In that era, it was not really possible, other than experientially; to recognize that the screwtail was signaling a potentially malformed vertebral package that could inadvertently apply the same mutational pressure at other areas of the spine. The early days of the bullbreeds are bygone, while before us lie new horizons and a generation equipped with the scientific ability to analyze not only the phenotypical results of selective pressure in dog breeding but the genes that produce these effects as well. This concept is an amazing and somewhat humbling prospect when we take it to heart.

Not a year goes by that we do not venture upon an article or two in the various Bulldog periodicals decrying the increasingly common, telescoping phase of screwtail, unhappily referred to by breeder's as "dirty tails." The telescoping phase can and frequently does accompany the pattern witnessed in Craniad Migration but may not be entirely restricted to the defective phenotype at maturity that defines Craniad Migration. Craniad Migration is limited to very short-bodied dogs whereas the screwtail can be found in dogs of these breeds possessing varying lengths and shapes of remaining spinal column. Owing to the instability of the compromised vertebrae within the screwtail itself, the appendage is subject to fracture and may heal with the tip inverted, typically while the puppy is maturing. This particular circumstance presents similar symptoms to and may be included within the telescoping tail phase.

Telescoping of the tail is most easily identified in mature dogs, where their tails have visibly rotated or 'telescoped' internally, frequently folding in upon themselves owing to the described kinks and bends, trapping the tail tip, feces and other debris inside the perineum. This situation can manifest serious physical consequences that require surgical intervention. Perhaps owing to their relatively more recent historical development as breeds or more refined structure, the telescoping tail phase is not yet as commonly seen in Frenchies and Bostons as in Bulldogs. Prior to having been officially advised of the pattern of Craniad Migration in bullbreeds by Dr. Sáenz, we recognized that pups in our breeding program lacking viable tails were often less viable elsewhere, structurally speaking. At maturity, these were typically dogs

phenotype of the dog is modified due to selective pressure applied by breeders seeking changes in proportions by abbreviating the legs and back. In Figure I "o" identifies the position of the anus and the straight line, "z-o" represents the perpendicular that touches the anus. The straight line "x-y" is the tangential to the zone that immediately surrounds the perineum. Alpha represents the acute angle formed by the two lines. Observe that alpha increases as the tail head moves forward. The problem with the preceding sequence of modifications in proportions is that they are typically accompanied by internal modifications in the vertebral column of the involved specimens. The appearance of hemivertebrae is resultant of continued shortening of the axial skeleton. Figure 1 indicates a normal tail placement. The position of the tail head at the end of the croup is low. Figure 2 indicates the effects of selective pressure applied by breeders to abbreviate the back and loin of the dog. The migration of the tail head forward, up and at the level of the croup is now visible. Figure 3 represents a much more malformed tail which is also showing signs of the latent phase indicated as "telescoping," or moving into the croup, as it further undergoes the process of Craniad Migration. The staging illustration showing four, consecutive tail positions further convey the dramatic results as telescoping of the tail head occurs. In Figure IV, the very malformed remnant of the tail tip is well on its way to utterly disappearing from sight as the Craniad Migration process forces the tail head ever closer to the cranium. The telescoping tail is not to be viewed as a merely morphological (external) trait, it is, in fact, a reflection of the deleterious changes actuating in the vertebral column that could impair and imperil the affected specimen.

that had flexibility problems and were subject to neck and back injuries leading to periodic spasm. By avoiding breeding stock with extreme abbreviations, we were able to maintain a relatively healthy line that was not overly prone to injury. Certainly, many significant factors are involved in canine husbandry but the evaluation process – the process of selecting sound, well-balanced, flexible specimens is essential to the correct use of selective pressure in successful breeding programs.

According to Dr. Sáenz' research, over the past two centuries breeders have used selective pressure to dramatically reduce the proportions of bullbreeds, primarily by shortening the legs, tail and back simultaneously. Concentrating on the back proper, the same selective pressure applied through reduction of the spinal column appears to gradually level the loin and begins to draw the tail head forward and over the croup toward the skull, as part of his well coined, "Craniad Migration Pattern." Coincidentally or simultaneously, the coccygeal vertebrae (already deformed owing to the screwtail mutation) may initiate the telescoping phase of recession into the point of insertion until the tail virtually disappears from view. By maturity, this telescoping phase in conjunction with Craniad Migration results in the appearance of the dog having outgrown its overly abbreviated spinal column leaving no space for the downward curvature of the croup and correct projection of the tail. The appearance of Craniad Migration in the mature dog always evidences a very short, flat topline devoid of proper curvature of the croup forcing the tail or more likely, tail depression to sit directly on the level of the back or topline, leaving the rear quarters to project profoundly behind. It is precisely as though a significant section of the topline (the sloping or curved croup segment) is conspicuously reduced or absent. Dr. Sáenz is further convinced that the screwtail mutation is a genetically separate but correlated factor in this syndrome. Selective pressure applied toward reducing the spines of canines has been long reported to induce the appearance of hemivertebrae in various places along the vertebral column. The seriousness of the effects of these abbreviations varies according to the spinal section where the abnormal vertebrae or lesions appear, forcing a reduction of the lumen of the medullar canal and a progressive atrophy of the medulla proper. When these lesions are found among the posterior thoracic vertebrae, they have been associated with atrophy of the rear leg muscles and ultimate paralysis. When found in the lumbar region, their presence has been linked to a loss of bladder and/or bowel control.

Craniad Migration in itself, or as part of a larger package of selective pressure related spinal abbreviations clearly heralds the presence of potential vertebral malformations. Since the screwtail, telescoping tail phase and Craniad Migration pattern (or their morphological results) are all externally visible, they can serve as key indicators from which to predict the presence and development of spinal lesions and thereby, assist us in identifying and removing affected dogs from the gene pool prior to breeding. The screwtail is apparent and palpable in the whelp and its progression into adulthood is easily tracked visually. Not all screwtailed dogs present spinal lesions, follow the pattern of Craniad Migration or undergo the telescoping tail phase, therefore, x-ray assessment creates an invaluable tool for determining breeding stock.

Regardless, current ethical protocol would suggest that between approximately six months and a year of age, all future breeding stock possessing a screwtail formation undergo spinal x-rays to determine suitability for further retention. (Because of the bullbreed's apparent susceptibilities to anesthetics, we highly recommend this be accomplished without sedation if at all possible.) At physical maturity, informed breeders can visually assess whether retained pups have begun developing the overt pattern of Craniad Migration of the tail head and further conclude whether the dreaded telescoping of the remaining coccygeal vertebrae has occurred. Since no ethical individual intentionally uses dogs for breeding prior to physical maturity, there should be little room for error with this selection methodology. Dr. Sáenz has noted a similar pattern of Craniad Migration in beef cattle as well, where breeders have

selected stock for compactness. As would be expected, he has not found this pattern in dairy cattle, where length of body is sought as an indicator of higher productivity. He relays that under conditions of Nature, the only pressure exerted on differing organisms is where a selective advantage for survival is gained, i.e., faster prey animals, more cunning predators or stronger specimens in general. Since no fad is ever involved in natural selection, in the few cases in which a mutation produces such negative factors, the carrier is quickly eliminated.

In many, turn-of-the-previous-century illustrations portraying the tails of bullbreeds, one will view a more natural, cone-like formation that is abbreviated to a point above the hock but otherwise straight and of normal, descending vertebral formation. This less complicated form was and remains, the “straight tail” referred to in the discussed breed standards. The screwtail, as a mutation, allows for a much more abbreviated appendage that seldom requires illicit docking. Docking is disqualifying in both the Boston and Frenchie breed standards. Since the vertebrae composing the screwtail are typically misshapen and kinked, they are often so malformed as to render the tail very nearly or totally immobile making it difficult to raise over the topline of the dog. Where the flexible roach over the spine and sloping croup were originally assigned to bring about the drop or gentle curvature of topline in both Frenchies and Bulldogs, thereby leading to a desirable, low tailset, it was also very difficult to breed consistently and remains thus. The abbreviated screwtail resolves both issues rather smartly. It pacifies the demand for a low tailset while helping to disguise flat and incorrect toplines found in many specimens of the roach or wheel-backed bullbreeds. In effect, a properly rendered topline that includes the ideal roach and curvature of croup, helps insure adequate length of spine in these breeds and therefore, contributes to the integrity of the spinal column. The Boston Terrier standard on the other hand requests a level topline while asking for the rump to curve gradually to the set-on of the tail, but does not demand an excessively short back, thus providing for an adequate length of spine. None of these breeds should ever possess a high tailset, which is precisely why the screwtail proves equally advantageous for all of them. Traditionally, any of these bullbreeds; otherwise lacking disqualifications with a sufficiently short

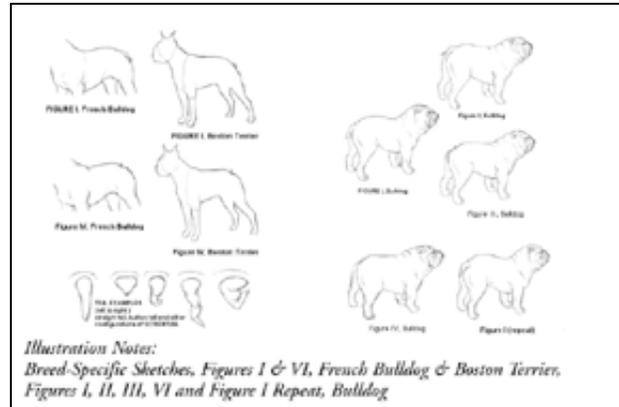


Illustration Notes:
 Breed-Specific Sketches, Figures I & VI, French Bulldog & Boston Terrier,
 Figures I, II, III, VI and Figure I Repeat, Bulldog

In the provided, breed-specific illustrations; Figure I, followed by breed titles; French Bulldog and Boston Terrier, were sketched directly from renderings or photographs provided as representative in each of the stated breeds current, illustrated standards. Figure IV of the same set shows only changes to the toplines and tails of dogs exhibiting both Craniad Migration and telescoping tails. The Bulldog sketches present a series of three stages of Craniad Migration and telescoping rendering only the topline and tail differing from Figure I (the ideal specimen sketched directly from the Bulldog Illustrated Standard.) The final pair of Bulldog illustrations (where Figure I has been repeated for contrast) presents an exaggerated specimen utilizing distinct morphological changes including more abbreviated legs and neck while leaving back length equal to the suggested version pictured in repeated, Figure I. The exaggerated version also depicts a dog with more substance and less angulation than considered ideal in order to clearly reveal the direction that these selective pressure alterations have been directed in recent decades. Please do not become engrossed with headpieces or unrelated physical details, as these may not be as adequately conveyed in the provided sketches. It is evident through the sketches that despite the fact that both the representative and affected dogs have the same basic proportions overall, the leveling of the back and loin and forced migration of the tail head forward serve to create an illusion that the

body, possessed of adequate substance and passable head could get by in a show ring if it sported a tight, little screwtail.

Clearly, all three bullbreed standards allow for and show no prejudice against the screwtail, therefore, it cannot be faulted in a show ring unless of course, it's formation or development clearly fails to properly address the standard descriptions that were provided earlier in this study. It's presence should, however, always be taken seriously in a breeding program if one is inclined to regard the current, scientific data. Obviously, dog judges must fault improper individual breed conformation and unsoundness. These three breeds should never be judged as if they are one and virtually the same canine despite similarities in their breed standards and in their phenotypes to varying extents.

mean for them to serve to create an illusion that the affected dogs are "shorter bodied," or more "compact." By virtue of the drawings, we can prove that these dogs are not proportionately more compact or shorter in actual length but rather, that their defective phenotypes primarily indicate reduced, cramped or otherwise malformed spinal segments witnessed via the various manifestations of the detailed syndrome. This illusion grows visually startling when we relax the more acute front and rear angulation, further abbreviate the appendages and add more substance to the specimen witnessed in Figure IV of the Bulldog. It is not that the illustrated standards have failed to convey "short backed, compact and rather short-bodied" examples but that the drive for excessive contrast between specimens has become altogether radically apparent.

Unfortunately, the very popular and populous screwtail hallmarking these breeds is distinctly associated with other spinal defects, according to the OFA. Our recent inquiry to the OFA specified whether any particular tail type was associated with spinal defects in dogs. The reply received stated, "Vertebral anomalies are seen most frequently in the screw-tailed breeds. However, OFA does not have sufficient data to estimate breed prevalences." G.G. Keller, D.V.M., MS, Diplomate ACVR, Chief of Veterinary Services, Orthopedic Foundation for Animals. Despite this confirmation, the screwtail will continue to remain incredibly popular as it is easy to breed compared to any other abbreviated form of tail and is far more liable to render the presence of the tail and any absence of correct topline, mutually discreet. As a mutation, it certainly appears to have several visual assets but may also be accompanied by a relentless bevy of vertebral defects manifesting elsewhere in the spines of affected dogs. Ignominiously intermingled amidst a larger package of spinal reductions, the screwtail mutation must be honestly acknowledged as the forerunner of the components recognized in this complicated syndrome. Clearly, it remains the most recognized of the listed morphological changes that are visual by-products of spinal abbreviation. The cumulative effects of these reductions are unmistakable on x-ray and debilitating for a consequential number of affected, purebred dogs of which these three breeds offer striking examples.

This initial study provokes several pertinent and fascinating questions. Can one breed for a less abbreviated dog elsewhere but retain the mutated screwtail and expect an otherwise normal spinal column on a consistent basis? Would there be fewer spinal malformations in dogs that possessed only straight tails of these particular breeds? Would docking straight tails prove healthier than continuing to breed screwtails? Would a concentrated attempt to produce specimens of less abbreviated spinal proportions in these particular breeds halt the escalating presence of Craniad Migration and eliminate the telescoping tail phase? Is it possible that these serious issues may be reduced to the far more simple matter of acquiring a broader (and perhaps, more humane) perspective of what constitutes "compact," "rather short bodied" and "short backed?" In reference to the provided breed sketches, we will mutually discover that the ideals of these descriptors may subsist more in illusion than fact and that their satisfaction exists primarily, "in the eye of the beholder." There are insufficient accumulations of scientific data to confidently approach the listed inquiries at present. It is quite evident, however, that continually applying selective breeding pressure toward spinal abbreviations

leads directly to the discussed, deleterious effects in each of the listed bullbreeds.

In these breeds we have noted that there are two common varieties of the screwtail formation. The first and least complicated is a basic screwtail formation that provides an obvious button appearance at the end of a very short but otherwise normal tail segment. Then there is a secondary screwtail formation presenting multiple segments of varying sizes and shapes that may or may not, bend, twist or otherwise kink. These tail formations should be well delineated with a thick root and fine tip as well as preferably mobile even in the mature adult. We would like to see that stubby portion of tail able to lift or wag at will even if the motion is quite limited. Additionally, we may encounter the previously detailed, latent phase involving the screwtail, which, under the direct pressure of excessive spinal reductions demanded of the back and/or loin, results in the external tail segment telescoping inward at or just prior to final, physical maturity. This worst-case scenario can be noticed in developing pups whose former, visible portion of projecting tail segment has telescoped at maturity to the degree that either there remains only a depression at the point of insertion or at best; a tiny tail tip, stub or even grouping of tail hairs. The telescoping tail phase is a veritable red flag signaling further missing and/or malformed vertebral segments elsewhere in the spinal column and is primarily witnessed in very short-bodied, mature dogs. If Craniad Migration of the tail is also engendered, the full impact of this insidiously destructive syndrome of spinal reductions, manifested through ensuing spinal lesions, can and frequently will cripple and thereby, reduce longevity in affected individuals of each of the mentioned bullbreeds.

This full-fledged syndrome has become miserably commonplace and it invariably results in some degree of vertebral lesion that will be visible on x-ray by maturity. Of critical significance is the fact that these lesions tend to restrict flexibility and reduce mobility owing to a loss of integrity within the spinal column. Many affected dogs will suffer vertebral instability owing to the malformed spine that can be readily damaged through injury, normal stresses such as pregnancy and the processes of aging. We have noted individuals within these breeds that are so compromised by the loss of vertebral integrity that their spines have spontaneously snapped during play, leaping from common surfaces such as furniture and during pregnancy. Furthermore, affected dogs are liable to prolapse rectally or vaginally under stress. The more typical scenarios one would expect to encounter in a show ring with less severely affected individuals could include (but are certainly not limited to) displays of varying degrees of visible inequality of the front or rear gaits according to the affected region(s) of the spinal column. Apparent or transient lameness that is often overlooked in these breeds should be far more carefully assessed. Due to injury or other stress, vertebral instability can lead to compression of the spinal cord provoking the myriad effects described by Dr. Sáenz earlier in this study, typified by compression-induced spasm of the neck, mid or lower back. Certain distinct degrees of inflexibility are telltale in affected dogs of these breeds. Breeders and judges alike should learn to carefully analyze these manifestations as a visual form of unsoundness. As breeders, if we studiously analyze the inability of a specimen to fully raise, lower or turn its head; lack of a flexibility in the midsection and any potential inequalities of gait in conjunction with a visible telescoping tail phase and/or Craniad Migration pattern, we may presume that there is a potential loss of integrity somewhere within the spinal column and should request a series of x-rays. Dogs exhibiting this syndrome at maturity, tend to be excessively abbreviated phenotypically and will consequently reveal one or more of the described symptoms of inflexibility.

It is certainly possible for both breeders and judges alike to begin initiating clear steps toward reducing the incidence of spinal defects in these breeds that are part and parcel of this syndrome. This can be accomplished by selecting dogs with standard correct rather than

exaggerated and demeaning forms of structure. Correct conformation would certainly include a properly roached/wheelbacked loin curving downward at the croup to finish with a low set tail (rather than just the presence – or absence- of a very short tail) as viewed in both Bulldogs and Frenchies. Correct conformational selection indicates Bostons with rumps curving to low-set tails that clearly do not manifest this syndrome as the result of an excessively abbreviated body. Positive choices in Bulldogs and Frenchies should present sufficient loin to place a roach upon, correct length and structure of hindquarters to project the roach upward and adequate neck and back length to allow the slight dip behind the shoulders. Properly addressing these breed standards will help insure that presented specimens possess a viable length of spine overall. Atypical (exaggerated) individual structure may tend to reduce mobility and contribute to a diminished longevity. Of great individual importance, judges must learn to gently examine the tails of these dogs to ascertain that they indeed, feature the designated forms assigned by their breed standards. According to the breed standards referenced, we should be able to see the suggested shapes as well as feel these dog's tails from point of insertion (root) to tip to verify that the entire tail is external. It is essential to note that the tails of mature dogs of these breeds do not recede over an excessively abbreviated loin and flattened croup toward the cranium or telescope inward. However, it remains completely unnecessary for judges to attempt internal examinations in order to evaluate tail roots and tips, since this practice is extremely uncomfortable for affected dogs. It is better to follow the tail from its base downward and gently palpate the direction of the tip. If you cannot easily locate the tail at all or it disappears from your fingers into the dog, 'nuff said! For the sake of the health of these breeds and as conscientious arbiters, we may compassionately decide to walk away from such specimens in the ring regardless of other stellar virtues. That act is formally known as applying "selective pressure" from within the show ring. As judges, we do not have the option of disqualifying specimens owing to a lack of visible or palpable tails, since the discussed breed standards do not grant that option. In an odd turn of events, it would almost appear that 'tail hunters' would prove more beneficial to the progress of these breeds than 'head hunters!'

At this point in our study, please consider a profound example of selective pressure related abbreviations and their subsequent results, as discovered in a French Bulldog that we owned. Some years ago we purchased a male puppy from an outside breeder. This dog was very short-backed even as a pup. He was presented to us lame on a front foot and remained so for months afterwards. We were told he had suffered a falling injury. In our somewhat natural and hardy environment, he quickly recovered and grew sound enough to finish rapidly. He was subjected to basic health testing and used at stud. Owing to our inexperience at that time with what we now recognize to be obvious manifestations of this spinal reduction syndrome, we were not aware that this dog's tail (while showing only minor Craniad Migration) had completely telescoped inward as a mature adult. We simply thought he had a very short tail but in fact, his tail had completely disappeared leaving the anus fully exposed. What remained was only a stub of projecting hairs where the tail should have been! He was an extremely compact dog of very handsome proportions but even in adulthood, he inexplicably threw one front foot outward. He continued to manifest that unequal front gait throughout his life.

One day this dog was playing in our fenced, wooded yard and leapt badly over a fallen log. He subsequently developed a neck spasm and we brought him into our vet for treatment. During the analysis, he was x-rayed from head to toe (he had previously only been x-rayed from the mid-body to the hips for evaluation purposes) and we discovered that he had multiple lesions in the thoracic region of his spine. Not only did the x-rays show a distinct scoliosis, he had fused, hemi and otherwise malformed vertebrae throughout that segment. Later, we had him evaluated at the University of Minnesota where we were told that he was

actually missing multiple vertebrae from his spinal column. He was not only short bodied he was literally short on spine! This dog did have some difficulty lowering his head to the ground and bending in the middle as a mature animal. As well, he could never breed a bitch naturally owing to an essential lack of flexibility. He was promptly placed into an understanding and adoring pet home and neutered. Unfortunately, these dogs remain prone to compression related spasm. There is also a predisposition for such dogs to develop premature arthritis as part of advancing, intravertebral disc disease. This scenario is not a rare and unusual complication of the breed at which we can gasp in horror. In reality, the discussed syndrome resulting in spinal malformation has become a daily and seemingly endless battle that breeders and buyers must face in all of the affected bullbreeds. Looming weightily before us are simple choices that can create an essential turning point where we individually refuse to participate in the continual demand for spinal reductions by addressing a higher call in the use of selective pressure as breeders and judges. Literally, we can order a halt to this progressive and negative trend in the discussed breeds. Admittedly, the bullbreeds are amongst these writers' favorite companions and we hope that they will always remain very close to our hearts and in our homes. Please understand that our motivation regarding this study bears no intent to criticize modern dog breeders or judges but rather, to simply create greater awareness of these issues and hopefully, spare future generations of beloved 'bullies' and their owners, unnecessary suffering and heartache. As a united and responsible Fancy, we are now enabled to frankly confront this encroaching syndrome with compassion and conscientiousness in our chosen role as primary caretakers of purebred dogs.

Credentials:

Braulio Sáenz holds a Doctorate in Natural Sciences from the University of Havana, Cuba (Sc.D.) and a Doctorate of Philosophy in Biology from Florida International University at Miami (Ph.D.) He is officially certified as a Senior Judge of dairy and beef cattle and of light breed horses by the Canadian University Service Organization. He bred German Shorthaired Pointers in Cuba from 1949 to the late 1960's, showing them to championships, Group and BIS wins multi-nationally. His professional work includes research and publications in Marine Biology, Zootechnics and Plant Pathology in Cuba, for the National Institute of Fisheries, the Ministry of Agriculture and the Academy of Science respectively. His experience as an Educator, both in Cuba and the US ranges from Sr. High to Post Graduate College courses that span a period of forty years. Dr. Sáenz has owned and promoted French Bulldogs in the show ring limitedly since 1988. Now semi-retired, he continues to be a competent and challenging speaker regarding various subjects including scientific concerns pertaining to purebred dogs. He and his lovely wife Dolores currently reside in Miami, Florida, USA. Carol Hawke is an AKC dog judge who has successfully bred French Bulldogs for nearly two decades. She holds an Associate Degree in the Science of Animal Husbandry.