

Evaluation of behavioral characteristics and diseases incidence of the English Bulldog

Annamaria Ricciarelli*

Veterinary behaviorist - Italy

Abstract: Choosing a dog is a very important event and a careful consideration of the animal and the lifestyle of the future owner are necessary. The aim of this research was to gather information from the owners of bulldogs to detect the presence of behaviors that are undesirable and possible susceptibility of these animals to develop organic diseases. For the following research were recruited 40 dog owners to whom it was administered, anonymously, a questionnaire about dog behavior and possible diseases. The preliminary data of this survey describe the Bulldog dogs as very active and less trainable: 77% of the owners said their dog is very nervous and excitable, makes too many greetings to return home (52.5% often), jumps over them (often 17.5%) or over other people (often 30%). The 82.5% of the subjects also pulls on the leash and do not obey the commands (sit, down, stay, etc.), neither respond to the call.

A statistically significant difference was observed between males and females with regard to the behavior of “jumping up to other people”, expressed from 95.8% of males compared to 68.8% of females ($\chi^2 = 5.52$; $p = 0.019$) and “staring an object” expressed by 62.5% of males compared with 25% of females ($\chi^2 = 5.41$; $p = 0.020$). These behaviors may be a result of mismanagement of the animal but we cannot exclude the possibility that they are part of the “normal” ethogram of the breed, characterized by a remarkable persistence of neotenic characters. A ritual of exaggerated greeting, especially at the return home of the owner, can be a symptom, often misunderstood, of a separation anxiety. Another very frequent behavior in the English bulldog is licking that occurs at parts of the body and the mouth of the owner. As for the organic diseases reported in bulldogs, the results have not shown a high incidence, except for skin problems, reported in 65% of animals and eye diseases. In conclusion, the results of this research may be useful in understanding some aspects of the behavior of bulldogs and then provide advice to future owners for a proper management of this dog, improving his welfare.

Key Words: bulldog; behavior; disease.

* *Corresponding Author:* annamariaricciarelli@gmail.com

Introduction

Choosing a dog is a very important event and a careful consideration of the animal and of the future owner's lifestyle is necessary. Beyond the individual characteristics, morphological and behavioral, accurate and deep breed predispositions exist and they must be known in order to allow the development of a balanced and satisfactory relationship between human beings and dogs. Adequate information given the owner at the puppy adoption, about the management of the animal, also related to the particular characteristics of the breed, can help to reduce behavioral problems presented by the dog in adulthood (Gazzano et al., 2008a; Gazzano et al., 2008 b).

The domestic dog displays greater levels of morphological and behavioral diversity than have been recorded for any land mammal (Clutton-Brock, 1995).

Currently, about 350 different breeds of dogs are recognized by Kennel Clubs around the world (Wilcox & Walkowicz, 1995; Spady & Ostrander, 2008) with an incredible level of diversity: breeds

differ in phenotype, in terms of overall body size, coat color, length and texture, head shape, leg length, and dozens of other attributes.

The most striking behavioral variation observed in dogs is that observed across breeds (Scott & Fuller, 1965; Ruefenacht et al., 2002; Svartberg & Forkman, 2002; Hart & Miller, 1985; Hart, 1995; Takeuchi & Mori, 2006). In their study, for example, Scott and Fuller (1965) examined interbreed differences of four breeds and they found differences about reactivity, trainability and problem-solving abilities.

The owner-directed-survey approach is commonly used to assess canine behavioral attributes (Goodloe & Borchelt, 1998; Podberscek & Serpell, 1997; Serpell & Hsu, 2001), capitalizing on the expertise of owners and caregivers in the evaluation of their own dogs. By combining the responses of many independent owners and caregivers, individual bias can be overcome (Jones & Gosling, 2005). This approach is less useful for characterizing individual variation but excellent for studying breed-specific behavioral variation.

The aim of this research was to gather information from the owners of bulldogs, by using a questionnaire, to detect the presence of undesirable behaviors and possible susceptibility of these animals to develop organic diseases.

Materials and methods

For the following research, an anonymous questionnaire, with closed or half-closed answers, was administered to 40 dog owners. The questionnaire was divided into 4 sections: a section about dog (sex, age, reproductive status, origin) and owner (sex, age, level of education, profession) data, a third section regarding the dog behavior and a final part about organic pathologies presented by the animal. The questionnaires were collected between the months of April and May 2015; all animals were, at the time of the survey, older than a year. Statistical analysis of the data was performed with the χ^2 test.

Results

The sample of animals consisted of 23 males (1 castrated) and 17 females (5 neutered), aged between 12 and 71 months (mean 31.55 ± 15.69). The females were neutered between 7 and 24 months. Dogs were chosen mainly as pets; 9 of them for canine exhibitions; 47.5% of them lived with other animals (dogs, cats, birds, turtles). The 85% of the dogs had not attended a basic training course. All dogs were from Italy, with the exception of a subject of USA origin. Thirty-six subjects were purchased from breeders, three from privates and one from a shelter.

The owners were aged between 20 and 65 years (mean 39.92 ± 10.79); 60% of them were women; for the 37.5% of respondents this was the first experience with a dog. Owners education consisted of middle school diploma (30%), high school diploma (52.5%); 12.5% were graduates and 5% had attended post-graduate studies; 32.5% were employed, 22.5% self-employed and workers, 2.5% students.

Table 1 shows percentages for different answers provided by the owners about dog behavior.

Table 1. Percentage of responses provided by the owners on the behavior of the dog.

Questions	Often	Sometimes	Never
Urinating indoors in large quantities	10.00%	15.00%	75.00%
Urinating in the house in small quantities	0.00%	25.00%	75.00%
Defecating in the house	2.50%	25.00%	72.50%
Making too many greetings to the owners when they return	52.50%	35.00%	12.50%
Jumping up to the owners (not on their return)	17.50%	57.50%	25.00%
Jumping up to other people	30.00%	55.00%	15.00%
Digging	0.00%	5.00%	95.00%
Escaping from home	0.00%	5.00%	95.00%
Not obeying the commands (sit, down, etc.)	7.50%	60.00%	32.5%
Not coming back when it is called	12.50%	45.00%	42.5%
Licking objects	12.50%	57.5%	30.00%
Licking parts of people's bodies	7.50%	32.5%	60.00%
Licking insistently the mouth of the owner	0.00%	25.00%	75.00%
Licking persistently other body parts of the owners	2.50%	52.5%	45.00%
Chasing vehicles / bicycles / persons	2.50%	5.00%	92.5%
Eating anything on the street	5%	12.50%	82.5%
Eating their own feces	0.00%	2.50%	97.5%
Eating feces of other dogs	0,00%	2.5%	97.5%
Barking if left alone	2.50%	17.50%	80.00%
Destroying items if left alone	10.00%	20.00%	70.00%
Barking insistently (not alone)	0.00%	15.00%	85.00%
Destroying (not alone)	0.00%	22.50%	77.50%
Pulling on a leash	22.50%	60.00%	17.5%
Licking insistently	7.50%	62.00%	30.00%
Staring an object	5.00%	42.50%	52.5%
Following the shadows	0.00%	20.00%	80.00%
Turning on itself	0.00%	7.50%	92.50%
Chasing its tail	0.00%	5.00%	95.00%
Repeating some action insistently	0.00%	27.50%	72.50%
Mimicking sexual intercourse	2.50%	65.00%	32.50%
Being very agitated and excitable	17.50%	60.00%	22.50%
Chasing cats	5.00%	30.00%	65.00%
Barking at other dogs	2.50%	30.00%	67.50%
Groping to bite other dogs	2.50%	7.50%	90.00%
Piloerection when he meets other dogs	2.50%	12.50%	85.00%
Growling at other dogs.	12.50%	85.00%	2.50%
Aggressive behavior if you put your hand on the head	0.00%	2.50%	97.50%
Aggressive attitudes when he is required doing something that he does not want	2.50%	2.50%	95.00%
Aggressive behavior when scolded	2.50%	5.00%	92.50%
Not like being caressed	0.00%	5.00%	95.00%
Showing fear of the veterinarian/veterinary clinic	5.00%	22.50%	72.50%
Not liking the entry of people, mostly strangers, in its territory	10.00%	17.50%	72.50%
Defending one or more objects (e. g. toys, food bowl)	0.00%	22.50%	77.50%

A statistically significant difference was observed between males and females with regard to the behavior of "jumping up to other people", expressed from 95.8% of males compared to 68.8% of females ($\chi^2 = 5.52$; $p = 0.019$) and "staring an object" expressed by 62.5% of males compared with 25% of females ($\chi^2 = 5.41$; $p = 0.020$).

Table 2 shows percentages for different answers provided by owners about the presence of organic disease in the sample of dogs examined.

Table 2. Percentages of presence of organic disease in the sample of dogs examined.

Questions	Percentage of affirmative answers
Unilateral deafness	-
Bilateral deafness	-
Partial deafness	-
Total deafness	-
Aortic Stenosis	2.50
Aortic stenosis Pulmonary	-
Cardiomyopathies	-
Other Cardiac Problems	2.50
Dermatitis	65.00
Hypersensitivity	10.00
Cyst	7.50
Skin tumors	-
Other Dermatological problems	2.50
Adverse drug reactions	-
Hypothyroidism	-
Other endocrine problems	-
Pyloric stenosis	-
Colitis	-
Intestinal obstruction	-
Bloat	-
Frequent diarrhea	2.50
Other problems Gastro-intestinal	2.50
Dysplasia / dislocation of the mandible	-
Arthritis	-
Spondylosis	-
Elbow dysplasia	-
Hip dysplasia	12.50
Dysplasia of the knee	-
Palatolabioschisis	-
Frequent fractures	-
Dislocation of the elbow	-
Other Problems Musculoskeletal	2.50
MCT	-
Melanoma	-
Cutaneous hemangioma	-
Istocitoma	2.50
Fibroid	-
Gingival / oropharyngeal tumor	-
Osteosarcoma	-
Brain cancer	-
Thyroid cancer	-
Testicle / breast / uterus / ovaries cancer	-
Other cancers	-
Neuropathies	-
Epilepsy	-
Meningitis	-
Other Neurological Problems	2.50
Entropion	10.00
Ectropion	27.50
Lacrimal gland prolapse	27.50
Blindness	-
Corneal ulcers	7.53
Conjunctivitis	30.00
Other ocular problems	2.50

Questions	Percentage of affirmative answers
Renal problems	3.50
Urinary problems	10.00
Stenosis Nostrils	2.50
Lung Cancer	-
Other problems Respirators	2.50
Otitis	16.00
Vaginal hyperplasia	-
Cryptorchidism	-
Monorchidism	5.00
Genital tumors	2.50
Other reproductive problems	2.50

Discussion

The analysis of data, although referred to a numerically reduced sample, has resulted in interesting information on the behavior of the bulldog that can be useful for the proper management of the animal to reduce the incidence of frequent behavioral problems. In fact, it has been demonstrated that correct behavioral counseling provided to the owners of puppies can reduce the incidence of unwanted behaviors in adults (Gazzano et al., 2008a).

The use of the questionnaires provides easiness of data collection, although there is some subjectivity in these assessments, because the different experience that the owners have with dogs (Bennett & Rohlf, 2007; Tami & Gallagher, 2009).

The preliminary data of this survey describe Bulldogs as very active and less trainable dogs; 77% of the owners said their dog is very nervous and excitable, makes too many greetings to return home (52.5% often), jumps over them (often 17.5%) or over other people (often 30%). The 82.5% of the subjects also pulls on the leash and do not obey the commands (sit, down, stay, etc.), neither respond to the call.

These behaviors may be a result of mismanagement of the animal: owners who do not know the basics of canine behavior and learning theory may well have inadvertently reinforced behaviors that are undesirable in adult dogs (Gazzano et al., 2013). It is indeed very easy to reinforce etepimeletic behaviors of the puppy, such as jumping on people and other manifestations of greeting that, persisting into adulthood, become problematic.

It must also consider that many Bulldogs born with a caesarean section and the breeder mainly carries the puppy care, while the bitch does not spend much time with the puppies. The special management of the English Bulldog, which has not similar cases in other breeds, can cause alterations in the patterns of attachment between the bitch and the puppies; young animals may be more oriented towards people and they cannot benefit from the presence of the mother and of important educational interactions with her.

We cannot exclude the possibility that these behaviors are part of the “normal” or, rather, “typical” ethogram of the breed, characterized by a remarkable persistence of neotenic characters.

The neoteny interferes on many aspects of the biology of dogs (McGreevy & Nicholas, 1999), giving rise to many canine breeds, differing in physical and behavioral characteristics, as trainability. Coren (1994) sustains that dog breeds can be ranked high (for example Australian Cattle Dogs, Labrador Retrievers, and German Shepherds) or low in trainability (for example Greyhounds, Mastiffs and Staffordshire Bull Terriers). The high degree of paedomorphosis could then explain many of the aforementioned undesirable behaviors, such as poor trainability, playfulness and excessive destructiveness, presented, at times, from 22.5% of subjects in the presence of the owner and 30% of the dogs when they are left alone, in addition to frequent objects biting.

A ritual of exaggerated greeting, especially at the return home of the owner, can be a symptom,

often misunderstood, of a separation anxiety. This behavior must be carefully considered with others that are indicators of this pathology, such as the inappropriate elimination of urine and feces in the house and the excessive request of attention.

Many eliminatory disorders are also related to the management of the animal (Voith & Borchelt, 1982). Dogs who have reached the age of six months defecate once or twice a day and urinate three or four times a day; the opportunity of a frequent urination prevents the bladder to completely fill and reduces the likelihood of accidents, especially in dogs that are excited or frightened (Overall, 1997).

In English Bulldogs, there are diseases such as cystitis, urinary calculi or congenital malformations of the ureters; for this reason, it is always important to perform a careful differential diagnosis.

Organic diseases like parasites, bacterial or viral gastroenteritis and ingestion of foreign bodies (frequent phenomenon in the English bulldog), food intolerances or rapid changes in diet can cause altered defecation. We also need to consider the skeletal alterations because a dog with pain localized to the hindquarters can manifest reluctance to crouch to eliminate. The changes in lifestyle of the owner can induce a behavioral modification of elimination in dogs. Another very frequent behavior in the English bulldog is licking that occurs at parts of the body and the mouth of the owner. Licking is a normal behavior of the dog but in some cases, it may progress to a pathological behavior. It is not always easy to distinguish a normal grooming activity from a continuous search for contact with the body. We consider parameters like changes in behavior (the dog licks much more or much less than before), the objective observations (e.g. licking every night about the same time, licking the side until it tears the hair), the reactions of the owners (it is annoying, obnoxious and it makes a noise going on for a long time). The first thing to rule out is extra behavioral diseases, especially dermatological, very common in the English Bulldog, as it can be seen from the data collected with the questionnaire. Excessive licking behavior must be carefully controlled as it can lead to the onset of licking granulomas that seem to fall within the profile of obsessive-compulsive disorder (OCD). In 60% of cases they are, in fact, solved with a treatment anti OCD (Shanley & Overall, 1992). Animal OCD are similar to humans and are susceptible to the same treatments with drugs that inhibit the reuptake of serotonin (Hewson et al, 1998). Other behaviors that may herald OCD were detected frequently in the sample considered: 47.5% of the dogs stared an object, 20% caught the shadows and 27.5% insistently repeated some action.

Given these results, it is necessary that the bulldog owners be trained to properly manage their pet, avoiding situations where these behaviors may occur, as in the case of frustration, stress or conflictual behavior.

Another undesirable behavior shown by Bulldogs is mounting. The mount is a normal canine behavior if it's manifested in sexual and social contexts. The dog may show a mount against people for sexual frustration, sexual presence of odors in the environment, anxiety, boredom, attention seeking, replacement behavior and hierarchical conflicts (Horwitz et al., 2009).

Two other behaviors to be monitored are the aggression towards dogs and others animals. Again proper management of the animal can make a difference and allow peaceful coexistence of the dog with conspecifics and with other animals.

As for the organic diseases reported in the Bulldog, the results have not shown a high incidence, except for skin problems (reported in 65% of animals) and eye diseases. A separate discussion deserve the respiratory diseases, significantly reduced in the sample. A recently published study showed a difference in the recognition and perception of the respiratory clinical signs in dogs affected by Brachycephalic Obstructive Airway Syndrome (BOAS): well over half of affected dog owners reported a high frequency and severity of clinical signs in their dogs, without perceiving them as a problem (Packer et al., 2012). For this reason, we cannot exclude that respiratory diseases are more frequent in the sample than the owners have reported.

In conclusion, the results of this research may be useful in understanding some aspects of the behavior of the English Bulldog and then provide advice to future owners for a proper management of this dog, improving his welfare.

References

- Bennett P.C., Rohlf V.I. Owner-companion dog interactions: relationships between demographic variables, potentially problematic behaviors, training engagement and shared activities. *Appl. Anim. Behav. Sci.* 2007; 102: 65-84.
- Borchelt P.L., Voith, V.L. Classification of animal behavior problems. *Vet. Clin. North Am. (Small Anim. Pract.)* 1982; 12: 571-585.
- Coren S. *The intelligence of dogs.* 1994 Bantam, New York.
- Clutton-Brock J. Origins of the dog: Domestication and early history. In "The Domestic Dog, Its Evolution, Behavior and Interactions with People". J. Serpell (Ed.), CUP, Cambridge (1995), pp. 7-20.
- Gazzano A., Mariti C., Alvares S., Cozzi A., Tognetti R., Sighieri C. The prevention of undesirable behaviors in dogs: effectiveness of veterinary behaviorists' advice given to puppy owners. *J. Vet. Behav. Clin. Appl. Res.* 2008a; 3: 125-133.
- Gazzano A., Mariti C., Sighieri C., Ducci M., Ciceroni C., Mc Bride E.A. Survey of undesirable behaviors displayed by potential guide dogs with puppy walkers. *J. Vet. Behav. Clin. Appl. Res.* 2008b; 3: 104-113.
- Gazzano A., Zilocchi M., Massoni E., Mariti C. Dogs' features strongly affect people's feelings and behavior toward them *J. Vet. Behav. Clin. Appl. Res.* 2013; 8: 213-220.
- Goodloe L.P., Borchelt P.L. Companion dog temperament traits. *J. Appl. Anim. Welf. Sci.* 1998; 1: 303-338.
- Hart B.L., Miller M.F. Behavioral profiles of dog breeds. *J. Am. Vet. Med. Assoc.* 1985; 186: 1175-1180.
- Hart B.L. *Analysis of Breed and Gender Differences in Behavior* (1995). (Cambridge: CUP).
- Horwitz D., Mills D., Heath S. *BSAVA Manual of canine and feline behavioral medicine.* Debra F. Horwitz and Daniel S. Mills eds. 2009.
- Hsu Y., Serpell J. A. Development and validation of a questionnaire for measuring behavior and temperament traits in pet dogs. *J.A.V.M.A.* 2003; 223: 1293-1300.
- Hewson C.J., Luescher U.A., Parent J.M., Conlon P.D., Ball R.O. Efficacy of clomipramine in the treatment of canine compulsive disorder. *J.A.V. M.A.* 1998; 213: 1760-1766.
- Jones A.C., Gosling S.D. Temperament and personality in dogs (*Canis familiaris*): A review and evaluation of past research. *Appl. Anim. Behav. Sci.* 2005; 95: 1-53.
- McGreevy P.D., Nicholas F.W. Some Practical Solutions to Welfare Problems in Dog Breeding. *Animal Welfare.* 1999; 8: 329-341.
- Packer R., Hendricks A., Burn C. Do dog owners perceive the clinical signs related to conformational inherited disorders as 'normal' for the breed? A potential constraint to improving canine welfare. *Animal Welfare.* 2012; 21: 81-93.
- Podberscek A.L., Serpell J.A. Aggressive behaviour in English Cocker Spaniels and the personality of their owners. *Vet. Rec.* 1997; 141: 73-76.
- Ruefenacht S., Gebhardt-Henrich S., Miyake T., Gaillard C. A behavior test on German shepherd dogs heritability of seven different traits. *Appl. Anim. Behav. Sci.* 2002; 79: 113-132.
- Scott J., Fuller J. *Genetics and the Social Behavior of the Dog* (1965). (Chicago: University of Chicago Press).
- Serpell J.A., Hsu, Y. Development and validation of a novel method for evaluating behavior and temperament in guide dogs. *Appl. Anim. Behav. Sci.* 2001; 72: 347-364.
- Shanley K., Overall K. Psychogenic dermatosis. In: Kirk R.W., Bonagura J.D. eds. *Current Veterinary Therapy XI.* Philadelphia Saunders, 1992.
- Svartberg K., Forkman B. Personality traits in the domestic dog (*Canis familiaris*). *Appl. Anim. Behav. Sci.* 2002; 79:133-155.
- Spady T., Ostrander E. Canine behavioral genetics: pointing out the phenotypes and herding up the genes. *Am. J. Hum. Genet.* 2008; 82:10-8.
- Tami G., Gallagher A. Description of the behaviour of domestic dog (*Canis familiaris*) by experienced and inexperienced people. *Appl. Anim. Behav. Sci.* 2002; 3-4: 159-169.
- Takeuchi Y., Mori, Y. A comparison of the behavioral profiles of purebred dogs in Japan to profiles of those in the United States and the United Kingdom. *J. Vet. Med. Sci.* 2006; 68: 789-796.
- Wilcox B., Walkowicz C. *Atlas of dog breeds of the world.* T.F.H. Publications, Neptune City, NJ (1995).

Valutazione delle caratteristiche comportamentali e dell'incidenza di malattie del Bulldog inglese

Annamaria Ricciarelli

Medico Veterinario esperto in comportamento animale - Italia

Sintesi

La scelta di un cane è un evento molto importante e richiede un'attenta valutazione dell'animale e dello stile di vita del futuro proprietario. Lo scopo della presente ricerca è stato quello di ottenere informazioni, dai proprietari di bulldog, riguardanti la presenza di comportamenti indesiderati e la possibile predisposizione degli animali di questa razza a sviluppare patologie di natura organica.

Per lo studio sono stati reclutati 40 proprietari di Bulldog inglesi a cui è stato somministrato, in forma anonima, un questionario riguardante il comportamento del cane e le sue possibili patologie.

I dati preliminari di questa indagine descrivono il Bulldog inglese come un cane molto attivo e poco addestrabile. Il 77% dei proprietari ritiene che il proprio cane sia molto nervoso ed eccitabile; il 52,5% afferma che, spesso, salta loro addosso o sopra altre persone. L'82,5% dei cani, inoltre, tira al guinzaglio e non esegue i comandi di base.

Una differenza statisticamente significativa è stata osservata tra maschi e femmine per quanto riguarda i comportamenti di "saltare addosso alle persone", espresso dal 95,8% dei maschi contro il 68,8% delle femmine e di "fissare un oggetto", manifestato dal 62,5% dei maschi contro il 25% delle femmine.

Questi comportamenti possono essere il frutto di una cattiva gestione dell'animale ma non si può escludere che siano parte del "normale" etogramma della razza, caratterizzata da una notevole permanenza di caratteri neotenici.

Un rituale di saluto esagerato, specialmente al ritorno a casa del proprietario, può essere un sintomo, spesso non riconosciuto, di ansia da separazione.

Un altro comportamento espresso frequentemente dal Bulldog inglese è il "leccamento" indirizzato verso parti del corpo o verso la bocca del proprietario.

Per quanto riguarda le patologie organiche, i risultati di questa indagine non ne hanno rilevato un'elevata incidenza, ad eccezione dei problemi dermatologici, segnalati dal 65% degli intervistati, e di quelli oculari.

In conclusione, i risultati di questa ricerca possono essere utili nel comprendere alcuni aspetti del comportamento del Bulldog inglese e quindi nel fornire ai futuri proprietari consigli per una corretta gestione dell'animale, migliorandone il benessere.