

Test of social dominance in dogs

**Anton Hvozdič, Jana Kottferová, Jorge da Silva Alberto, and
Miloslav Ondrašovič**

*University of Veterinary Medicine, Department of Environmental Protection, Košice, Slovak
Republic*

**HVOZDÍK, A., J. KOTTFEROVÁ, J. S. ALBERTO, M. ONDRAŠOVIČ:
Test of social dominance in dogs. Vet. arhiv 73, 237-246, 2003.**

ABSTRACT

This paper presents the theoretical basis of the test of social dominance according to Campbell. The aim of the study was to draw attention to the need for an exact understanding of social behaviour of dogs during their ontogenesis. This is linked to the prediction of social dominance in adult dogs from their early ontogenesis, as well as to their social adaptation to a new breeding environment. It also contributes to a reduction in the risk of abnormal forms of behaviour and behavioural problems in the man-dog relationship. The study deals with the basic questions of the social behaviour of dogs with regard to the test method. The present test contributes to a deeper penetration of applied ethology into veterinary medicine and practice. It also creates additional space for future research of this complex testing approach of social behaviour in dogs.

Key words: dog, ethology, social behaviour, social dominance, Campbell's test

Introduction

The dog is a definitely formed social animal species exhibiting a high degree of sensitivity and perceptive-cognitive intelligence. At the present time, as a consequence of an intensive desire to own a dog, this statement becomes an optimal model of psycho-social man-animal relationship (HVOZDÍK, 1997).

* Contact address:

Dr. Anton Hvozdič, MVD, PhD, Department of Environmental Protection, University of Veterinary Medicine, Komenského73, 041 81 Košice, Slovak Republic, E-mail: kottfer@uvm.sk

ISSN 0372-5480

Printed in Croatia

Veterinary ethology, as a topically developing specialisation in veterinary medicine, deals with the significance of social behaviour in dogs. Its development in the ontogenesis of dogs has its regularities which are a decisive factor in the formation of a behavioural profile of an animal with regard to breed, sex, and individual disposition. Therefore, the increased attention by specialists devoted to this problem is not surprising (HART and HART, 1985; CAMPBELL, 1986; O'FARREL, 1987; CAMERON, 1997; NETTO and PLANTA, 1997; BROUČEK, 2002).

The object of our study is focused on this area. We made an effort to draw attention to an exact understanding of the social behaviour of puppies, one that can serve as a prediction factor of social dominance in adulthood.

The outline problem. The most serious aspect of the existence and co-existence of dogs with men appears to be their social dominance. This is a question of the dominant position in the social relationships over other dogs or men. Therefore, the potential owner or dog breeder should make an effort to cope with the social hierarchy of dogs. When the ethological and zoopsychological approach is correct, the dog spontaneously respects the dominant position of the man, and its own submissive position.

The situation becomes undesirable when the man fails to respect the foregoing, and the dog, through its social dominance, loses the power to regulate its social behaviour and therefore, because of that predisposition, behavioural problems arise (POTENZA, 1994; WESTHUIZEN, 1994).

The aggressive behaviour of dogs, related to their dominance, aggression and territorial behaviour, is one of the most frequent and serious problems met in breeding and veterinary practice. Such situations often end by dogs attacking other animals and people, not excluding family members. With the present expansion in dog breeding, incidents involving biting become not only an ethological, but also a psychological, universal, and ethical problem (SCOTT and VOITH, 1986; HVOZDÍK, 1999).

The reasons presented above indicate that in the selection of a dog one should also consider development of its social dominance and early ontogenesis. Conventional criteria of dog's adoption (function, breed, aesthetics, original environment, health status, etc.) do not guarantee that the dog will fulfil in its adulthood to the owner's expectations. The practice

indicates that the ethological and zoopsychological regularities of the social behaviour of dogs are frequently underestimated. This can be reliably compensated by the application of an exact form of understanding of the social disposition of puppies. For this purpose, the test of social dominance in the early ontogenesis of dogs has been used successfully (CAMPBELL, 1985).

In this context, the role of a veterinarian has to be mentioned. His/her present position, professional-social order as well as the global-civilisation relationship man-nature, postulate it into new professional, philosophical, psychological and ethical categories. Regarding the slow penetration of ethology and zoopsychology into veterinary medicine and practice, finding solutions to abnormal forms of dog behaviour, and consulting with a number of veterinarians, appears to constitute a complicated puzzle (HVOZDÍK, 1998).

Therefore, the theoretical and practical mastering of the Campbell's test is a precondition for its utilisation in practical veterinary medicine and in stimulation of research and scientific studies on dog behaviour.

Materials and methods

The Campbell's test is recommended for dogs 7-8 weeks old, i.e. during their sensitive-developmental period (imprinting). Its significance consists in the help that this test provides towards the ethological and zoopsychological adaptation of dogs to a new environment after their adoption, and creating conditions for suitable psycho-social relationship with the owner, other people, as well as with other animals. Prevention of deviant behaviour and its problematic forms should also be mentioned (CAMPBELL, 1985).

One person performs the test in a defined, isolated environment, new to the respective puppy. Additional criteria are: reduction of disturbing stimuli of visual and acoustic character, and keeping other people at a distance. Manipulation of the puppy should be non-violent, calm and should not be accompanied by verbalisation (addressing, encouraging, etc.). If the puppy urinates or defecates it should be considered a natural reaction and should be accepted. The test is not time-demanding as 6-8 puppies can

be tested in one hour. Its evaluation, however, requires professional expertise and sufficient time. During the test, the puppy's behaviour is recorded in the form of ethographs. An optimum alternative is to record the whole test with a camcorder to be able to review the behavioural forms and to evaluate them (Table. 1).

The test alone includes five basic procedures that investigate the following: social affinity, social locomotion, social restriction, social haptics, and elevating motility. The individual components of the test are performed continuously.

1. *Social affinity.* Immediately after careful localization of the dog in the testing space we take a step back towards the entrance into the testing field. We kneel, clap softly and observe the reaction of the puppy to this stimulus in the form of motivation to come to us with a lifted or turned-down tail, or its total ignorance of the test stimulus. At the end of this procedure we test the degree of social favour, dependence or total independence on man. Score: s.

2. *Social locomotion.* The puppy is localised in the centre of the testing field. We leave the puppy there and walk away taking slow steps; it is very important that the dog should observe our steps. The puppy should follow us. Completion of one circle in the testing field is classified positively. The significance of the test procedure is to evaluate the dog in its social imitation and dependence. Score: dd.

3. *Social restriction.* Remaining in the test field, we again kneel, carefully place the puppy on its back and fix it by one hand in the chest region for 30 seconds. The intensity of its defensive reaction (intensity of its motions, biting, vocalisation) or, on the other hand, its resignation, is observed. The aim of this part of the test is to determine the degree of its dominance, social or physical submission. Score: dd.

4. *Social haptics.* We kneel and lightly slap the puppy on the dorsal part of its head, and by an independent touch we partially press it to the ground; then, for 30 seconds pass the hand gradually over the dorsal part of its body as far as the tail. The intensity of its reaction to the stimulus, which is either positive (aversion) or negative (apathy) is observed. The degree of social dominance of the puppy is tested. The socially dominant animal manifests itself by a motoric restlessness, vocalisation and biting.

Submissive manifestations acquire the form of hand licking, or else the puppy does not react at all. Score: s.

5. *Elevating motility*. The puppy is held by both hands in the chest region and is lifted to a height of about 20 cm. In this situation the dog is totally without control. The test is classified as the dominance either of the puppy or the experimenter. In the first case, an intensive effort to escape (biting, movement protest without vocalisation) is observed. Score: d.

After completing the last part of the test, individual scores are summed up and evaluated.

Results

Evaluation of test with regard to the ethological perspectives of the dog.

1. Two or more reactions of a puppy with a score of “dd”, combined with “d” and “s”: tendency to dominant aggression, which presents a risk to the man in mutual contact. For such a type of the dog it is not recommended to select a breeding environment that includes older people or families with small children. On the contrary, a breeding environment respecting the specific predisposition of the dog (dominant owner with an adequate approach to the animal) could positively influence genesis of the social behaviour of the dog, which is a suitable type for territory protection (area of the house) against objective danger.

2. Three or more reactions with the score of “d”: disposition to a pronounced social dominance of the dog and capability of fast learning (perceptive-cognitive intelligence). These dogs are suitable for a demanding training process but require an owner with orientation on the ethological regularities of dogs, as well as an individual with an intensive interest in owning such a dog. Conversely, there is a risk of problematic behaviour, with non-regulated social and aggressive aspects. Contact with children may present a risk.

3. Three or more reactions by the puppy with a score of “s”: such dogs are classified as behaviourally universal. In this case, an environment with owners of older age, undemanding owners, and families with more children is recommended. Such dogs are known for their good adaptability.

Table 1. An ethograph of social dominance in puppies

Basic procedures	Score of the tested puppy
1. Social affinity	
spontaneous arrival, jumping, lifted tail	dd
willing arrival, lifted tail	d
arrival, tail down	s
ignoring stimulus	i
2. Social locomotion	
spontaneous locomotion, lifted tail, motion along and between legs	dd
willing locomotion, lifted tail, motion along legs	d
locomotion, tail down	s
hesitant locomotion, tail down	ss
ignoring stimulus	i
3. Social restriction (30 seconds)	
extreme protection, fighting, biting, vocalisation	dd
strong protection, fight	d
strong protection finished before the time limit	s
ignoring stimulus	i
4. Social haptics (30 seconds)	
jumping, effort to escape, biting, vocalisation	dd
jumping, effort to escape	d
huddling, oral touch of hands	s
rolling motions, oral touch of hands	ss
ignoring stimulus	i
5. Elevating motility (30 seconds)	
extreme protection, biting	dd
intensive protection	d
intensive protection, finishing before the time limit	s
ignoring stimulus	i
Final score	dd, s
	d, s
	s, s
	ss, s
	i, s

4. Two or more reactions of the stimulating type “ss”, in particular with a combination of other parts of the test: predisposition of such dogs to considerable submission. These dogs are characterised by high hypersensitivity and emotional instability. They require a sensitive approach and continuous social stimuli (praise, communication, etc.). This is an ethologically and zoopsychologically safe type of dog also in an extreme breeding environment (more children, animals). Social dominance with aggressive manifestation is induced only by intensive stimuli (caused by pain).

5. Two or more reactions of the “i” type: the puppy does not react to the stimuli, especially to social ones (locomotion, haptics, affinity). These dogs are socially maladaptable animals reacting unexpectedly to routine stimuli. Considerable risk arises with dogs that exhibit combination of scores “dd” and “s”, or “i”. In these dogs neurotic phobias and anxiety are recorded. An environment with children is contraindicated with this type.

If any contradictory combinations, such as “dd s” or “ss s”, are recorded it is necessary to repeat the test in a new environment. If the situation is unfavourable, the puppies cannot be socially evaluated and require subsequent ethological examination (Table 1).

Discussion

The Campbell’s test of social dominance in dogs retains a standard place in applied ethology. This is so despite the fact that the validity of results and their interpretation require high professional expertise. On the other hand, we have to remember that the tests used in behavioural sciences, including the human field (psychology, sociology), require in general a specific approach with a global estimation of an individual.

First, it has to be emphasised that behavioural variability of the dog’s ontogenesis, together with changeability of other factors (breed, climatic, genetic, and social past of the dog), provide only a predictability character to the results, which cannot be accepted as an unchangeable behavioural status of the dog. Their reliability is directly proportional to the professional level of the testing person. In this case, the veterinary ethologist represents the optimum solution. The test can also be applied in veterinary practice

provided that the respective veterinarian has knowledge of the ethological minimum.

Here, some additional notes appear necessary. Marked differences were observed in the behaviour of puppies after testing, including results and their manifestations under conditions of their own litter, to which they were returned immediately following the test. One of the explanations for this can be that every litter has its specific social hierarchy. This means that in some cases sociability is higher and in others lower. In other words, the dog can achieve a high score in a test, but this is not confirmed in its own litter because the index of sociability of the litter is very high and the tested dog cannot assert itself within it. However, there are reverse situations. Therefore, before recommending a dog to its future owner it appears desirable to carry out ethological observations under the conditions of its own litter, before and after the test.

A clinical interview with the original owner by means of completing an etho-questionnaire would contribute to the validity of the test (HVOZDÍK, 1999). This is also indicated with a potential owner who can disclose his/her motivation for puppy selection and the reasons for application of the test. On this basis of this we can determine the personal-psychological profile of the future owner, including the social structure of its family and the respective breeding environment (O'FARREL, 1997; HVOZDÍK, 2000; BROUČEK, 2002).

We should also comment on the number of test procedures (5) in the Campbell's test. BEAUDET (1993) tested 7-month and 16-month old puppies in the same way. Comparison of the results failed to show significant correlations between age categories. Therefore, he did not confirm prediction of social behaviour by this test.

In this sense YOUNG (1988) drew attention to the number of test procedures. In her opinion playful behaviour also indicates social dominance. With this form of behaviour the puppy is exposed to the spontaneous stimuli adequate to its age. She also warned that passivity can be also a precursor of aggression.

FOX (1982) pointed to spontaneous locomotive activity, which could become significant in extended test procedures. In his opinion there is a direct correlation between locomotive activity and social behaviour.

Conclusion

There exist considerable research results concerning the Campbell's test. A serious challenge is presented to applied ethologists in drawing up research programmes of such a character in order to obtain a deeper qualitative and global insight into the regularities of the social behaviour of dogs.

References

- BEAUDET, R. (1993): Social dominance evaluation: observations on Campbell's test. *Bull. Vet. Clin. Ethol.* 1, 23-25.
- BROUČEK, J., M. UHRINČAT, C. W. ARAVE, T. H. FRIEND, S. MIHINA, P. KIŠAC, A. HANUS (2002): Effects of rearing methods of heifers during milk replacement period on their postweaning behaviour in the maze. *Acta vet. Brno* 71, 509-516.
- BROUČEK, J., P. KIŠAC, Š. MIHINA, M. UHRINČAT (2002): Vzájomné vyciavanie hovädzieho dobytku. *Agriculture* 48, 2, 85-98
- CAMERON, D. B. (1997): Canine dominance associated aggression: Concepts incidence and treatment in a private behaviour practice. *Appl. Anim. Beh. Sci.* 52, 265-274.
- CAMPBELL, W. E. (1985): *Behaviour Problems in Dogs*. American Veterinary Publication, Inc., California, Santa Barba, p. 306.
- CAMPBELL, W. E. (1986): The effects of social environment on canine behaviour. *Canine Behaviour* 2, 113-115.
- FOX, M. W. (1982): Socio-ekological implications of individual differences in wolf - litters: a developmental and evolutionary perspective. *Behaviour* 41, 298-313.
- HART, B. L., L. A. HART (1985): *Canine and Feline Behavioural Therapy*. Philadelphia. Lea and Febiger, p. 265.
- HVOZDÍK, A. (1997): Etologické a psychologické vzťahy medzi človekom a psom. *Slov. vet. čas.* 6, 317-320.
- HVOZDÍK, A. (2000): Etologické problémy psov. *Slov. Vet. čas.* 6, 307-310.
- HVOZDÍK, A. (1999): Dominantná teritoriálna agresivita u psa. *Veterinárství* 1, 16-18.
- HVOZDÍK, A. (1998): Filozofická, psychologická a etická funkcia veterinárneho lekára v podmienkach súčasnej spoločnosti. *Slov. Vet. čas.* 2, 93-96.
- HVOZDÍK, A. (2002): Etologická a psychologická analýza pohryznutia ľudí psami. *Veterinárství. Infovet* 4, 28-30.
- NETTO, W. J., D. J. U. PLANTA, (1997): Behavioural testing for aggression in domestic dog. *Appl. Anim. Beh. Sci.* 52, 243-263.
- ODENDAAL, J. (1990): *Dogs and cats*. Tafelberg Publishers Ltd, Cap Town. p. 138.
- O'FARREL, V. (1987): *Manual of Canine Behaviour*. BSA, West Sussex.

- POTENZA, A. (1994): Dog bites recorded in the Alexandra health. *Companion* 2, 15-18.
- SCOTT, L., V. VOITH (1986): Dominance aggression of dogs towards people: behaviour profile and response to treatment. *Appl. Anim. Beh. Sci.* 16, 77-88.
- WESTHUIZEN, CH. (1994): The most common causes of dogs attacks. *Companion* 5, 15-18.
- YOUNG, M. S. (1988): Puppy Selection and Evaluation. In: *Dogs Companions or Nuisances*. Public Seminars, Weeerrabee Veterinary Clinical Centre, Princes, Highway.

Received: 4 June 2002

Accepted: 10 July 2003

HVOZDÍK, A., J. KOTTFEROVÁ, J. S. ALBERTO, M. ONDRAŠOVIČ:
Test društvene prevlasti u pasa. *Vet. arhiv* 73, 237-246, 2003.

SAŽETAK

U radu su iznesene teoretske osnove testa socijalne prevlasti prema Campbell-u. Cilj istraživanja bio je usredotočiti pažnju na potrebu egzaktnog razumijevanja psećeg socijalnog ponašanja tijekom njihove ontogeneze. To je povezano s predviđanjem socijalne dominacije u odraslih pasa od njihove rane ontogeneze jednako kao i njihove socijalne adaptacije na nove uzgojne uvjete. Ovo također doprinosi smanjenju rizika od abnormalnih oblika ponašanja i problema ponašanja u odnosu čovjek - pas. Rad daje odgovore na osnovna pitanja socijalnog ponašanja pasa s obzirom na korištenu metodu. Ovaj test doprinosi boljem razumijevanju primijenjene etologije u veterinarskoj medicini i praksi. On također otvara dodatni prostor za buduću primjenu kompleksnog testiranja socijalnog ponašanja u pasa.

Ključne riječi: pas, etologija, socijalno ponašanje, socijalna prevlast, Campbell-ov test
