Preface

Dear Delegates,

In behalf of the ESVCE board I welcome all delegates to the 18th meeting of the European Society of Veterinary Clinical Ethology (ESVCE), which is held in conjunction with the 2nd annual meeting of the European College of Animal Welfare and Behavioural Medicine) – ECAWBM (formerly ECVBM-CA) and the 20st annual meeting of the Swiss Society of Veterinary Behavioural Medicine (STVV).

ESVCE not only encourages and aims to facilitate co-ordination of research and other contributions to knowledge related to diagnosis, therapy, prevention, and control of behaviour problems in animals; ESVCE also aimes to further the education in veterinary clinical ethology and to encourage communication and co-operation within its members and with other behaviour oriented organizations.

Our annual congress - giving an overview about the state of the art in the field - plays an important role for achieving these goals. Once a year many delegates come together from all over the world for learning, discussions, meeting old friends and finding new ones.

The congress would not ne possible without our sponsors. A big thank you goes to them but also to all helpers. I will not start naming them all as for sure I will forget someone …. But especially the STVV folks deserve our thanks for organizing a congress in this wonderful venue.

And of course I thank all delegates: with your participation you make this meeting an event. I wish you an interesting and pleasant stay in Martigny and hope you will enjoy the congress.

Barbara Schöning

ESVCE President

Dear Delegates,

On behalf of the ECAWBM I would like to welcome all delegates of the 2nd annual meeting of the ECAWBM, which will be held in conjunction with the 18th annual meeting of the ESVCE and the 20th annual meeting of the STVV. We particularly want to thank the work done by the local organizing committee, the participation of presenters and the contribution of all our sponsors. We wish you all a wonderful meeting.

Jaume Fatjó

President of the ECAWBM

Dear delegates

20 years ago, various veterinarians with a special interest in clinical ethology founded our society , the STVV. I am sure that they are very happy about the fact that an international congress is being held here today.

This is the region where Barry lived, the famous St. Bernard dog, one of those animals that played a special role for humans. According to legend, he saved over 40 persons from freezing to death in the mountains. This was in the 19th century.

Meanwhile knowledge in animal training grew; many more dogs have been trained to save human lives. On the other hand, we also understand that we too play an important role for our animals and we have realised that clinical ethology is a significant field in veterinary profession and science.

We wish all delegates a great and memorable event. We hope that they will learn a lot of interesting information about new research in this field and will make the most of the opportunity to meet other delegates and exchange their views.

Ruth Herrmann

STVV President

INCREASING THE PREDICTABILITY OF THE OWNER'S DEPARTURE IN THE TREATMENT OF SEPARATION ANXIETY PROBLEMS

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Keywords: dog, separation anxiety,stress, predictability, departure cues

Background:
Separation anxiety is one of the most common canine behaviour problems and may have negative effects on animal welfare, as it may lead to relinquishment of the dog and cause a chronic stress response. Additionally, it has been shown that dogs with separation anxiety are more likely to have a negative cognitive bias than control dogs.
The treatment of separation anxiety meets with variable success. It has been suggested that one of the factors contributing to the anxiety response of dogs suffering from this problem is their anticipation of the owner's departure, which is based on the dog having learnt the association between the actual departure and a number of cues that precede it. Therefore, advice commonly given to owners of dogs with separation anxiety is to provide those very same cues to the dog when departure will not follow, so that the ability of the dog to anticipate the actual departure is reduced. As far as we know, the effectiveness of this strategy has never been tested and, in fact, it may be against currently held theories of the psychological aspects of the stress response. According to these theories, lack of predictability is a stressor in itself and previous studies in other species have shown that when individuals may predict the occurrence of an aversive stimulus, the magnitude of the stress response is reduced.

Objective:
The objective of this paper is to suggest an alternative to the classical treatment of separation anxiety based on increasing predictability instead of reducing it by maintaining the contingency of the departure cues and the actual departure. A practical approach to increase the predictability by using two different cues (one for actual separations and another one for training sessions) will be presented and its efficacy will be discussed according to clinical experience.

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ADAPTIL COLLAR REDUCES REACTIVITY IN BEAGLE

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Key words: pheromone,dog, fear,barking

Introduction:
A 2 year old male neutered Beagle mix (21kg) presented due to barking and aggressive displays toward unfamiliar people since he was adopted 5 months prior to presentation. He would not settle when frequent visitors came to the home. He would bark and react to people seen on walks. He displayed anxiety characterised by crouching, freezing, scanning, lip-licking, growling and refusing food. The family tried reprimanding verbally, startling by clapping and yanking on a choke collar. He barked while he was in the yard restricted by a wireless containment system (shock collar). Despite repeated interactions with a neighbour; he barked, piloerected and refused treats every time.

Diagnosis:
Anxiety related reactivity to unfamiliar people.

Therapy recommendations:
1) Avoidance of situations which may provoke anxiety.
2) Family to study his body language and the "ladder of aggression (Sheppard 2009)
3) Reconcile[a] (Fluoxetine 1.1mg/kg PO SID) (Dodman 1996)
4) ADAPTIL[b] collar (Tod 2005)
5) Easy Walk[c] Body Harness

Discussion:
At 6 week recheck, the family reported improvement and reduced reactivity to unfamiliar people. He was reported to be more relaxed, pleasant and less irritable. During the first month he did not "bristle" or bark when the neighbour or the mail man approached. The family did not replace the ADAPTIL collar at one month as recommended and the family noted the dog became more irritable and reactive. As soon as the expired collar was replaced, the pleasant demeanor resumed. He then began taking and eating the treats from the mailman and the neighbour. Although he still barks in the yard, the intensity is reduced. The owner reported his bark seemed more animated and "beagle-like" (Pongracz 2006, Yin 2002).

Conclusions:
The ADAPTIL collar may be effective component of multimodal therapies for reactive, anxious dogs.

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[a] Reconcile®, Elanco Animal Health, Indianapolis, IN
[b] ADAPTIL®, Ceva Santé Animale, Libourne, France
[c] Easy Walk Harness, Premier Pet Products Midlothian, VA

PRELIMINARY RESULTS FOR A NEW BEGINNING: STRUCTURALLY MODIFIED F3 AND SOCIAL FACILITATION IN MULTICAT HOUSEHOLDS

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Key words: multi cat households, potentialised F3, social facilitation

Introduction:
The management of social relationship between cats in multi cat households represents a challenge for both owners and vets. Thanks to recent research giving access to a better understanding of the mechanisms underlying the effects of F3, a modified F3 (pF3 "Potentialised F3"), designed to increase the tolerance to social interactions, has been synthesised. This study evaluates the efficacy of pF3 for the management of social conflicts in multi cat households.

Materials and methods:
Sixteen households of aggressive feline housemates participated in this a multicentre, double blinded placebo-controlled study conducted at seven veterinary clinics. At inclusion (T0), the treatment (placebo or verum, electric diffusers) and a standardised behavioural programme were proposed for 1 month. Aggression and affiliation between cats were assessed by owner completion of two Analogical Visual Scales (AVS). Evaluation was performed every 10 days (T0, T1, T2, T3). Post-treatment evaluation was obtained by phone, 1 month later (T4).

Results:
Results showed that there was a significant improvement (increase of AVS score) between the T0 and T3 scores for the two groups of treatment (AVS aggression: df=3 F=4.24; p=0.01; AVS affiliation: df=3 F=5.49; p=0.003; ANOVA). There were no significant differences between the two groups of treatments at T0 (AVS aggression: Z=0.868; p=0.385; AVS affiliation: Z=-0.172; p=0.862; Mann Whitney Test). At T3 there was a higher score in the verum group than in the placebo group for the two AVS (mean AVS aggression: verum=6.4; placebo=5.5; mean AVS affiliation: verum=7.02 placebo=4.93). At follow up, 30 days after the treatment was discontinued, owners confirmed that the situation was stable in the verum and placebo group.

Discussion:
The preliminary results suggest that pF3, "Potentialised F3", could improve social facilitation in multicat households. Such promising results also open a new era for pheromonotherapy.

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PREVALENCE OF FEARFUL AND ANXIOUS BEHAVIOURS IN DOGS IN THE UNITED STATES

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Keywords: fear, anxiety, prevalence, noise phobias

Materials and methods:

An online survey of 1201 owners of 1960 dogs was used to profile fearful and anxious behaviours in dogs (USA). The survey was conducted by a market research company, using a random sample of its panel of participants in the United States with a minimum of 1 and no more than 5 dogs living indoors with their family.[a,b]

Results:

Fear/anxiety was reported in 29% of dogs and 41% of dog owning households. Based on an estimated dog population in 2010 of 77.4 million dogs, nearly 23 million dogs were affected.

17% reported noise fears, 13% separation anxiety, and 5% each generalized anxiety, travel anxiety, and repetitive behaviours (spinning or licking). Of 337 cases of noise phobias, 86% were to thunderstorms, 74% fireworks and 41% vacuum cleaners. Most common signs were shaking, trembling and cowering with noise phobias and generalized anxiety and clinging to owners and barking with separation anxiety.

Single dog households reported significantly more problems 44% (n=663) than multi-dog households 22% (n=1297) [X^2 (1, N = 2330) = 187.76, $p < 0.00001$]. Incidence significantly increased with age from 22.5% (n=599) for dogs 3 years and under to 36.5% (n=662) 8 years and over [X^2 (1, N = 1261) = 29.84, $p < 0.00001$]. There were no sex differences. There was no significant difference between intact and neutered males, but significantly more anxiety in spayed females 46% (n=788) than intact females 23% (n=241) [X^2 (1, N = 1005) = 13.15, $p < 0.0003$]. However, whether neuter preceded the onset of anxiety was not determined.

Of dogs with noise phobias, 18% had separation anxiety, 7% generalized anxiety and 12% repetitive behaviours. Of dogs with separation anxiety, 41% had noise phobias, 17% generalized anxiety and 25% repetitive behaviours.

54% of respondents had not attempted correction because they felt it was: unnecessary (71%); not treatable (29%); too expensive (13%); or too time consuming (6%), Of 270 respondents that attempted correction 71% used behaviour modification, 54% avoiding stimuli, 33% medication, followed by music, sound muting, CD recording, natural therapy, visual muting, thundershirts, static capes and pheromones. Of 353 respondents, the source of advice was veterinarian 67%, internet 43%, dog owners 37%, trainer 22%, TV 12%, and behaviourists 11%. Most helpful was the veterinarian 30% and least helpful TV 3%.

Discussion:

From this study it is estimated that fear and anxiety problems affect 23 million United States dogs, with costs of treating anxiety at one billion dollars per year including property damage of 240 million.[c]

a. Survey conducted March 2011 by GMI Inc, Washington, DC
b. Commissioned by Thundershirt Company
c. Analysis by economist Kevin Babyak MS, PhD, Philadelphia

THE IMPACT OF THE OWNER'S PRESENCE ON THE EMOTIONAL HOMEOSTASIS AND COPING STRATEGY OF DOGS DURING THE SOCIALLY ACCEPTABLE BEHAVIOUR TEST

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Keywords: behavioural test, SAB, emotional homeostasis, coping strategy, owner's presence

Introduction:
Studies of several species demonstrated that behaviour of social animals when tested alone does not reflect the individual's behaviour when it is in its group (mouse: Sherwin, 2003; primates: Olsson and Westlund, 2007). The presence of a social partner can alleviate the impact of stressors on the recipient's emotional homeostasis (Cohen and Wills, 1985).
In De Meester *et al.* (2011) the posture and behavioural strategy of 171 dogs in the Socially Acceptable Behaviour Test was examined. Factor analysis revealed that the presence and absence of the owner explained 64% of the variation in test scores. Five clusters of dogs were identified that showed a small or more dramatic lowering of their body posture in the absence of the owner compared to the owner's presence.

Materials and methods:
In this study the effect of the owner's presence and absence on the emotional homeostasis and coping strategies of the dogs within clusters was further analysed. The presence of behavioural elements grouped into the categories: stress signals, avoidance behaviour, fleeing behaviour, biting behaviour, comfort seeking behaviour, explorative behaviour, play behaviour and contact seeking behaviour were scored using video recordings of the tests and analysed using Poisson regression.

Results:
The dogs in clusters 1 to 4 displayed significantly less ($P < 0.05$) stress signals in the owner's presence and significantly more ($P < 0.05$) exploratory behaviour. No statistical differences in stress signals and exploratory behaviour ($P > 0.05$) were observed in the dog of cluster 5, although these dogs displayed a confident body posture in the owner's presence and a highly fearful body posture in the owner's absence. Biting in the owner's absence increased significantly ($P < 0.05$) in all clusters.

Discussion:
From this study it can be concluded that the extent to which the presence of the owner alleviates the impact of stressors and influences the coping strategies displayed varies between clusters.

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EMERGENCE OF BEHAVIOURAL PROBLEMS IN PUPPIES YOUNGER THAN 6 MONTHS OLD

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Key words
Dog, emotion, emotional system, Panksepp

Aim
The aim of this study was to undertake a preliminary analysis of the reported severity of different problems with a view to exploring their possible mechanistic basis at a behavioural control level.

Materials and methods
A retrospective survey of dog owners who had taken part in puppy classes over an 8 year period was completed by 825 respondents and lasted from February 2011 until May 2011. The age of the dogs at the time of the survey was from 6 months until 9 years old. The survey consisted of an online questionnaire concerning the intensity of 18 aspects of their dog's behaviour up to the age of 6 months.
To investigate the underlying structure of responses, data were reduced using a principal component analysis with a varimax rotation. A three factor solution was suggested from the initial scree plot and the interpretation of loadings was based on a threshold value of 0.40. Factor One consisted of: i) Chewing of household items, ii) Play-biting, iii) House training issues, iv) Jumping up, v) Digging, vi) Counter surfing/food stealing, vii) Chasing problems, viii) Escaping problems and ix) Hyperactivity. Factor Two consisted of: i) Aggressive behaviour towards family members, ii) towards unfamiliar people, iii) towards other dogs, iv) around food/possessive aggressive behaviour and v) Noise sensitivities with vi) Chasing problems, vii) Escaping problems and viii) Hyperactivity cross loading on this factor as well. Factor Three consisted of: i) Problems when left puppy alone, ii) Separation problems and iii) Barking problems.

Results
The extracted factors were examined by three veterinary behaviourists familiar with the "Affective Neuroscience" approach (*sensu* Panksepp 1998) to the regulation of behaviour and they agreed that the structure could be explained in terms of a common relationship between the emergent behaviour clusters with a given emotional system for each factor. Problems related to Factor One were associated with incentive seeking, Factor Two with aversion avoidance, and Factor Three with attachment.

Discussion
These results give evidence to common emotional systems underlying the emergence of clusters of behaviour problems in puppies, suggesting management should focus primarily on regulating emotional arousal rather than behavioural control.

References

Panksepp J., 1998, Affective neuroscience: The foundation of human and animal emotions., Oxford University Press

SELF MUTILATION IN A SHETLAND SHEEPDOG: PSYCHOLOGICAL OR NEUROPATHIC?

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Key Words
canine, self-mutilation, compulsive disorder, neuropathic pain, fluoxetine, trazodone, gabapentin,

Case presentation

"S" is a 12 year old, neutered male, Shetland sheepdog presented to the Behaviour Service at the Melbourne Veterinary Specialist Centre for self-mutilation of his feet. He had initially been referred to the dermatology service where his differential diagnoses were acral (self) mutilation syndrome due to neuropathic or psychogenic causes. He was treated with bandaging his feet, an Elizabethan collar, amoxicillin-clavulanic acid, gabapentin, fluoxetine and phenobarbitone. Previous treatment with clomipramine did not reduce his chewing.

Diagnosis

A full examination and behavioural consultation revealed that "S" had removed or damaged most nails on his left and right hind feet, and damaged and caused ulcerations on his forefeet. His owner reported that he chewed at his feet constantly unless he had an Elizabethan collar on and had his feet bandaged. "S" was diagnosed with an anxiety disorder leading to a compulsive disorder. It was not possible to rule out neuropathic causes for his chewing.

Treatment

Treatment consisted of continuing the fluoxetine and gabapentin but weaning him off the phenobarbitone. Behaviour modification and environmental management (continuing to bandage his feet and using the Elizabethan collar) were also started. Trazodone was added to the treatment plan after 8 months and after 18 months "S" has improved to the point that he no longer chews at his feet.

Discussion

Anxiety disorders, which include compulsive disorders, may be caused by abnormal serotonin function. Many respond to medications used in treating anxiety disorders. In this case, effective medications were fluoxetine, gabapentin and trazodone (Landsberg, Hunthausen et al. 2004; Gruen and Sherman 2008; Plumb 2011). Management also requires attention to behaviour modification (Overall and Dunham 2002). Compulsive disorders may show as repetitive goal directed behaviour, for example self-mutilation. Neuropathic disorders may be caused by many aetiologies including viruses, malignancies, autoimmune disorders and injuries. In animals they may show as biting, scratching or growling at the area affected by the neuropathy or the referred sensation. This makes determination of the underlying problem difficult, especially if it is non-progressive. Neuropathic causes for self-mutilation should be included on the differential list in these cases.

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Evaluating Enrichment Strategies in Kenneled Dogs

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Keywords: laboratory enrichment, canine, kong, tug-a-jug

Introduction:

Enrichment is important for quality of life of research animals. When providing toys in a research setting, the issues include appeal, safety, durability and the need to standardise enrichment protocols, so as not to be a confounding variable.

The objective was to evaluate three different toys for appeal, durability and safety in group housed and individually housed dogs. Based on findings in a previous study we compared the Tug-a-Jug (Premier Products, Midlothian, VA) to two "rubber" toys, Kong (Kong Company, Golden, CO) and Squirrel Dude (Premier Products, Midlothian, VA)[1]

Materials and methods study 1:

Laboratory beagles (N=15; mean age 9 yrs; 9M, 6F) were given one of three toys baited with food. On the first day 10 individually housed dogs were given rubber toys and 5 run housed dogs were given Tug-a-jugs. On the second day 5 of the individually housed dogs were given Tug-a-jugs and 5 group housed dogs were given rubber toys. A technician recorded findings at hourly intervals for 5 hours to evaluate 1) interaction with toys 2) food remaining 3) durability and 4) housing issues.

Results:

Ninety percent (18/20) of dogs immediately interacted with the toys. The other two dogs were individually housed and given Tug-a-jugs. Both had interacted immediately with the Squirrel Dude on Day 1. Food remained in none of 5 Kongs, 2 of 5 Squirrel Dudes and all 10 Tug-a-jugs.

No problems were noted in the group housed dogs given tug-a-jugs; however, when given rubber food filled toys the next day, the study was discontinued due to aggression in adjacent runs.

For the following tests 20 beagle dogs were then evaluated (mean age 10 yrs; 12 F/8 M). For each trial, a technician recorded findings at hourly intervals for 5 hours.

Materials, methods, and results study 2:

In a crossover design, eight dogs (4 per run) were given empty Kong or Squirrel Dudes with toys also provided in adjacent runs. Over two days there was initial interest in the toys in only about ½ the dogs and no sustained interest.

Materials, methods and results study 3:

Next 4 dogs in each of two runs using a crossover design, were given food filled Kongs or Squirrel Dudes. Dogs in adjacent runs were also given toys. All but one dog with each toy showed initial food interest. However, when food was refilled hourly, there was greater interest in Kong toys (13 interactions) than the squirrel dudes (19 interactions). On the first day there

was possessive aggression in the dogs with Kong toys, necessitating removal of the aggressor for the balance of the two day trial.

Materials, methods and results study 4:
Four group housed dogs were then given food filled tug-a-jugs with no toys in adjacent runs. All 4 dogs interacted with the toy immediately and throughout the 5 hours. There was no aggression in the run or the adjacent runs.

Discussion:
In summary Kong toys appeared to provide the best option for individually housed dogs but resulted in possessive aggression in group housed dogs. In addition aggression was noted from dogs in adjacent runs when food filled rubber toys were given. No aggression was noted with "empty" Kong or Squirrel Dude toys but there was little interest. All toys were durable through the duration of the trial. Therefore the tug-a-jug appears to be preferable for group housed dogs

References:
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IMPULSIVE AGGRESSIVE DOGS: DIAGNOSIS AND THERAPY

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Key words: impulsiveness, aggression, dogs

Introduction

Numerous psychiatric disorders can contain *impulsiveness* as a symptom, leading to difficulties in diagnosis and treatment of the patient. In domestic dogs, impulsivity is implicated in a range of problem behaviours that result from a lack of self control.
The aim of the present study was to develop a specific treatment protocol for impulsive aggressive dogs. Since aggressive impulsive individuals show a decreased ability to tolerate delay of reinforcement, therapy might be a hard step in behavioural medicine.

Materials and methods

Dogs with a diagnosis of impulsive aggressive behaviour were selected from amongst a population of dogs referred for behavioural consultation.
The group was composed of 10 dogs, 8 males and 2 females, age 1-7 years old. Four of them showed impulsive aggressive behaviours toward other dogs as well as humans.
All dogs were behaviourally and clinically assessed at V_0.
Behavioural and cognitive therapies were used to improve self-control and decrease impulsiveness: sit and stay relaxation programmes, play under control, interactive sessions with humans and dogs. Drug therapy was applied when necessary, inside the global therapeutic strategy and according to monoaminergic budget.
Dogs were checked at V_1 (after 15 days ± 3), V_2 (after 30 days ± 3), V_3 (after 60 days ± 3) and followed-up after 60 days ± 3.

Results

Six dogs showed a satisfactory improvement, two dogs were re-homed and in two cases euthanasia was suggested. Results showed that these clinical cases required a specific therapeutic approach.

Discussion

These findings agree fairly well with previous data on the neurophysiology of impulsiveness in dogs. Impulsitivity, defined as “acts related to inadequate self-control or impaired impulse control” or incapacity to delay response”, has not to be confused with dominance related aggression.
Since impulsive aggression might be really dangerous in terms of its consequences (injuries toward humans and/or other dogs) the dog has to be carefully supervised and specific safety precautions should be applied.

IMPROVING ANIMAL WELFARE THROUGH APPROPRIATE ATTACHMENT AND EARLY LIFE EXPERIENCES

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Keywords:
Welfare, early development, attachment, adaptation.

Introduction

The Five Animal Freedoms (Brambell 1965) are regarded as influencing the development of Animal Welfare Regulation and Ethics. Despite this crucial improvement, we still observe, in livestock, pet, lab and zoo species, some behavioural and physiological disorders characteristic of chronic stress and severe deterioration of social skills. The aim of this review was to approach one of the possible causes for such disorders.

Review

This is a review, focused on: dog, horse, pig, cattle, chicken, turkey, parrots (grey and amazons) which have been selected because these species are reported as displaying signs consistent with such disorders. For each of these species, we have described their conditions of life and compared the efficacy of the methods used for treatment and prevention.

Cannibalism, bites or beak shots targeted to different parts of the body, inability to mate, self-traumas, and other various stress-related signs (autonomic disorders, stereotypies), are some "trans-specific" signs. One of the common points shared by all these animals is their beginning in life: conception by artificial insemination, assisted parturition or hatching in incubators, early separation from the mother, hand-rearing by humans and development with conspecifics of the same age are commonly practiced in commercial settings and zoos. Literature about prevention and treatment has investigated the effect of early contacts with adults of the same species, handling, enriched environments and treatment with anxiolytic effects (drugs, nutraceuticals, semiochemicals) on stress-related signs. All those data suggest a major role for the disturbance of early development and mother-offspring relationship.

Discussion

In the 60s, Bowlby described the crucial role of primary attachment in the development of emotional balance and social skills and confidence. The studies and clinical reports, used for this review, suggest that the quality of attachment and early experiences, also have a significant influence on the efficacy of the immune system and the technical performances. Such arguments should be able to influence regulation and breeding methods. Taking into account the behavioural aspects of animals' early life must not be seen as surpassing the reasonable and practical limits of ethics and welfare regulation, but as a valuable part of hygienic management.

THE WELFARE OF WILD ANIMALS: TIME TO REVISIT THE "NO RESPONSIBILITY" MORAL CONTRACT?

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Keywords: wild animals; welfare; moral responsibility

Introduction:
In considering how far animal welfare improvements could or ought to go, the welfare of animals owned by man has been the subject of legislation for over a century and, recently, considerable research effort has led to the evolution of detailed advice in order for owners to behave responsibly towards livestock and pets. But could or should this ethical stance now be extended to wild animals?

Debate:
A number of wildlife species – game animals in particular - (and their habitats) are managed to variable degrees and the concept has evolved that the managers of such animals assume a degree of responsibility for their welfare, often commensurate with the extent of management. Historically, wild animals have not been the subject of welfare consideration though there have been numerous conservation actions (often species-specific) to promote the survival of animals, either in their native habitat or by translocation form a threatened area. While consideration of the welfare of such animals has often not been iterated, for the animals themselves this must be an important factor relating to their quality of life. Given the recent promotion of quality of life aspects for livestock in the FAWC report from October, 2009, it is appropriate to evaluate whether this concept could - or indeed should - be applied to wild animals in general and, in particular, wild animals undergoing conservation actions. Given the universal recognition of anthropogenic impacts on the global ecosystem, few if any species or populations are immune from the impact of man; can then the widely-held concept of taking no responsibility for the welfare of wild animals still apply?

Discussion:
If wild animals become the subjects of our moral responsibility, a suitable framework to assess welfare will need to be developed (an example will be given) and veterinarians and ethologists have leading roles to play.

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A REVIEW OF THE USE OF THE WELFARE QUALITY® PROTOCOL ON PIG FARMS

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Keywords: animal-based measures, animal welfare assessment, growing pig

Introduction:

One kind of decision that has to be taken in relation to welfare assessment concerns whether or not the data are methodologically and statistically robust enough to use (Broom, 2010). Furthermore, the assessment should be applicable and valid in a wide range of farming systems (Blokhuis, 2008).

Materials and methods:

The feasibility, sensitivity, validity and repeatability of several animal-based measures of the Welfare Quality® (WQ®) protocol for growing pigs were evaluated on commercial farms. A total of 23,700 pigs from five production systems were assessed. Several statistical models (e.g.GLMM; PCA) were applied to model quantitative and qualitative data.

Results and Discussion:

The overall WQ® protocol for growing pigs on farm was easy to perform on intensive conventional farms and required little input from the farmers; however, it involved an average time of 6h and 20min per visit.

Important differences between production systems were established based on animal-based measures of feeding and housing. In contrast, health measures did not differ significantly between the five production systems studied. Regarding the fourth welfare principle labeled "Appropriate Behaviour", negative and "positive" social behaviours as well as the qualitative behaviour assessment (QBA) were sensitive to changes in the housing and management of pigs; in contrast, no differences were found between extensive and intensive reared pigs in the expression of exploratory behaviour and in human-animal relationship. The high occurrences of negative social behaviour recorded in intensive conditions were clearly an indicator of poor welfare; however, interpretations of variations in the frequencies of "positive" social behaviour and exploration were not straightforward.

The QBA appeared useful to discriminate farms on the basis of the expression of natural behaviour. Studying repeatability from a discriminative perspective, only moderately soiled body and the human animal relationship test were consistent over a long period of time. Unless the assessment related only to the relative ranking of a farm within the same visit, the QBA was not consistent over time.

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DEVELOPMENT OF A SENSOR-BASED HEALTH MONITORING SYSTEM (RUMIWATCH) FOR COMBINED AUTOMATIC MEASUREMENT OF RUMINATION, FEED INTAKE, WATER INTAKE AND LOCOMOTION IN DAIRY COWS

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Keywords: automatic measurement, health monitoring system

Introduction:
Rumination activity and feed intake are important non-invasive measurable parameters of ruminant health. Still a reliable method for automatic measurement of individual jaw movements when ruminating and feeding is not yet available. For this reason a newly developed health monitoring system for dairy cows (RumiWatch) at research station Agroscope Reckenholz-Tänikon ART, Switzerland, aims at the early identification of metabolic problems in ruminants.

Materials and methods;
The sensor-based system enables automatic measurement of rumination, feed intake, water intake and locomotion. It incorporates a noseband sensor, data logger with on-line data analysis, pedometer and evaluation software. The data are transmitted wireless or using a SD Memory Card to a computer operating the evaluation software. The low-energy system has a focus on long-term (months to several years) operating time at minimized energy consumption. Automatic measurement of behavior parameters is based on a generic algorithm without animal specific learning data. Detailed on-line analysis enables quantification of total ruminate time, number of boli and chews per bolus while ruminating. Equivalent analysis is conducted for additional parameters (feed intake, locomotion).
For validation of automatic measurement the evaluation data were analysed in comparison with direct observation and video observation of high-yielding dairy cows.

Results:
First results show that the concordance of automatic and visual evaluation was $R^2 = 0.7908$ for rumination jaw movements and $R^2 = 0.7691$ for eating jaw movements. The mean value of deviations ($p < 0.05$) between visual and automatic counting of rumination jaw movements was -0.56% with a standard deviation of 3.86%. For eating jaw movements the mean value of deviations was 4.25% with a standard deviation of 8.5%.

Discussion:
The current RumiWatch health monitoring system is suitable for research and advisory purposes. Going through further stages of development it can contribute to an improved management of animal health to secure animal welfare and profitability of dairy farming.

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ANIMAL EMOTIONS AND WELFARE: DEVELOPMENT OF A TEST TO ASSESS COGNITIVE BIAS IN PIGS

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Keywords:
pigs, animal welfare, emotions, cognitive bias.

Introduction:
The aim of the study was to develop a test to assess cognitive bias as an indicator of emotional state in pigs.

Materials and methods:
Thirty-six male pigs (41.47 ± 1.535 kg body weight) were individually trained during 18 sessions to discriminate between a bucket with (A) or without (NA) access to chopped apples according to its position (left or right) in a 34 m^2 test pen. Afterwards, each animal was subjected individually to an experimental session, where the bucket was placed on a central situation. Both training and experimental sessions finished 30 seconds after the pig ate or tried to eat apples or 10 minutes after the pig entered the pen, which was marked with semicircular lines on the floor from 1m to 5m away from the bucket. The time to cross each line, the time to contact the bucket, the time to eat or try to eat apples and the number of vocalizations and freezing events (defined as a pig stopped for more than 2 seconds without showing exploratory behaviour) were recorded.

Results:
The training sessions showed that both time to contact and time to eat significantly differed in the A and NA positions ($P<0.001$). Pigs learnt from session 14 if food was in a A or NA position ($P<0.05$).Three methods were used to classify pigs as having a positive (PB) or negative (NB) cognitive bias, depending on whether they took more or less time in the experimental session compared to the 2 last training sessions. If the mean time of each pig was used, pigs were classified as 48.39% PB, 9.68% NB and 41.93% could not be classified (NC). If standard error was added or deducted from this mean, NC decreased to 29.03%, whereas 54.84% were PB and 16.13% NB pigs. If population mean was used, the pigs were classified as 87.09% PB and 12.91% NB.

Discussion:
These preliminary results revealed that after training sessions, pigs could predict the availability of food in a bucket depending on its position. Moreover, this suggests that decision making and behaviour of trained pigs in front of ambiguous situations may be useful to classify them according to its affective state, although a big percentage of the animals can remain in an intermediate situation, not clearly PB or NB.

CASE REPORT: ROLE OF CAT APPEASING PHEROMONE IN THE RESOLUTION OF CONFLICT BETWEEN FAMILIAR FELINES

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Key words: feline aggression, affiliative behaviors, cat appeasing pheromone

Case presentation:
Long term follow-up on familiar housemate felines (age 4 and 5.5 yrs) recovering from a redirected aggression event (cat outside home in 2009) revealed the cats were responding well to an ongoing behaviour programme (Reconcile, Feliway, Composure and DS/CC) and affiliative interactions included: limited near-nose touches, brief periods of sleeping in the same room and cuffed swats.[1] The author speculated Cat Appeasing Pheromone (IRSEA, France) would further reduce tension and promote affiliative relationships.[2]

Treatment and results:
CAP diffusers were used for two one-month periods. The owner kept journals and noted an increase in cat-cat proximity, more tolerance of agnostic displays, quicker recovery following encounters and overall reduced tension, during the periods of CAP. Sleeping proximity was maintained at within 6" of each other but duration increased to 30 minute periods during the first CAP period and to 1-2 hours multiple times per week during the second CAP period.

The cats were reported to be more social with familiar people. Both cats were napping or sleeping with the owners more often and for a longer duration. Cats are noted to solicit more attention from people (bunting and purring). Both cats visited the people in bed during the night more often. The cats appeared friendly and happy and were described as "kitten-like".

During the 2 month long non-CAP period, there was an increase in hissing, swatting, tail-twitching, lashing and chasing similar to pre-CAP activities. No injuries occurred. One of the cats developed mats on the hind quarters. The periods sleeping with people were reduced in frequency and duration. The cats did not solicit or invite human attention as much as they did during the CAP periods.

Discussion:
Cat Appeasing Pheromone may facilitate feline relationships and may also enhance feline relationships with human companions. The effect on human relationships may be secondary to eased tension between housemate cats.

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ENVIRONMENTAL ENRICHMENT – HOW A CAT-FRIENDLY GARDEN CAN IMPROVE WELFARE.

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Keywords: cat , environmental enrichment, garden, welfare

Case presentation

Peggy, Domestic shorthair , Female spayed, 9 years and Leo Domestic shorthair, Male castrated, 12 yrs, are owned by a middle aged couple and have lived in France for 9 years. One year ago, one week after moving back to Belgium, both cats and their owner were attacked near their home by a dog that was off lead, resulting in severe physical trauma.

Problem description

Despite several measures inside the home and a big garden that has been fully secured against dogs, the cats remain recumbent for most of the day and are reluctant to set foot outside: they will immediately flee to the house. The referring veterinarian stresses the need for Leo to move more frequently in order to help his bowel emptying.

Clinical exam

At the time of the consultation, Leo is diagnosed being blind on the right eye and having partial vision on the left eye. As a consequence of his fractured pelvis, he suffers from osteoarthritis as well as constipation. Peggy was found physically healthy.

Diagnosis and therapy

While the cat owners attributed the behavioural inhibition of both cats to the dog attack, the behavioural exam revealed that the cause was in fact multifactorial and related to a hypo stimulating environment (1 ,2) as well as to the clients' perceptions (3, 4). Implementation of cat-friendly environmental changes resulted in both cats exploring the garden within a week.

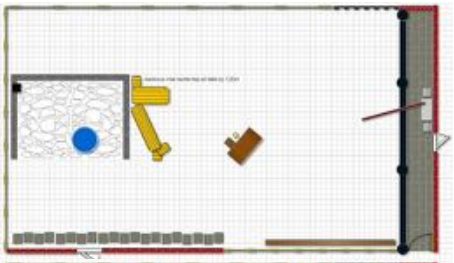

Fig 1. Garden at time of consultation

Absence of hiding places and large area to cross before reaching elevated positions resulted in reluctance of cats to enter the garden for the last year.

Fig. 2 Suggested environmental enrichment

Physical structures, plants, giving the cats the opportunity to retreat and hide at different heights, resulted in both cats exploring the garden on a daily base.

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STATISTICAL MODEL FOR URINE SPRAYING BEHAVIOUR IN DOMESTIC CATS

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Keywords: cat; spraying; statistical model

Introduction:

Cats are popular pets probably due to the expectations that they will always eliminate in a litter box (Horwitz, 2002), but frequently they begin to soil outside, including spraying. Spraying occurrence is dependent on several variables, making it difficult to understand and measure the relation between them. The main purpose of this study was to calculate the probability of spraying, through a statistical model.

Materials and methods:

Through a questionnaire, data about environmental and individual aspects was obtained. Considering the type of variables, the logistic regression model was chosen (Hosmer & Lemeshow, 2000). The final model was written with the variables with each coefficient, i.e., the "weight" that they have on the occurrence of spraying.

Results:

Logit($\hat{\pi}$)=-11,811+4,736 s*ex proportion*$_{(more\ females)}$-3,943 *litter box type*$_{(open)}$+2,4 *fear*$_{(no)}$+2,944 *cats aggression*$_{(no)}$+5,937 *cats aggression*$_{(yes)}$+3,212 *sex*$_{(female)}$-4,712 *source*$_{(street)}$-6,554 *source*$_{(private)}$+4,389 *litter box proportion*$_{(same\ number)}$+3,422 *play*$_{(30\ min\ to\ 1h/day)}$+64,482 *cats' density*. If the sign is positive, the variable category increases the probability; if it is negative the effect is the opposite. If it is not verified then that portion counts 0, but if it is verified that portions equals the coefficient. The obtained value for the continuous variable, cats' density, is multiplied for the correspondent coefficient.

Discussion:

The study reinforces the importance of individual and environmental aspects on the occurrence of spraying. Multifactor statistical models may provide a more complete and integrated analysis of animal behaviour than more commonly used univariate and bivariate methods. This approach can reduce the subjectivity of several analyses and future studies can take advantage of this approach.

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A PROPOSED NEW APPROACH TO TEACHING VETERINARY BEHAVIOURAL MEDICINE.

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Keywords: Veterinary behavioural medicine; Animal care professionals; Teaching

Introduction:
Behaviour medicine has been a veterinary specialty for about three decades. Practicing evidence-based medicine by veterinarians in this field has enabled it to progress sharply. Despite this fact, the public and many animal care workers still do not understand what it is, and how it differs from the work of other animal behaviour professionals.
In this paper, two emerging trends in veterinary behavioural medicine are emphasized as a basis for a new approach to teaching it to veterinary students and to veterinary clinicians. Furthermore, this approach may be used for introducing the concept of behavioural medicine to other animal care professionals.

Description of teaching approach:
The first trend was emphasized at the 2010 North American Veterinary Medical Educational Consortium, which stated that "expertise in animal behaviour should be considered a foundational competency in veterinary medical education". The second is the fast-evolving recognition, through clinical research, of the impact of behaviour on physical health, as well as that of physical health on behaviour of animals.
Despite the above, many professionals still feel that "behaviour" is distinct from "medicine", estranging veterinarians and students from applying behavioural skills in clinical practice; and directing the public to seek help for behaviour problems from sources other than the veterinarian.
A new perspective is proposed for teaching the concept of "behaviour medicine" to veterinary students, clinicians and other animal-care professionals. This concept regards "behaviour" as a body system, similarly to other body systems with a distinct anatomy and physiology. This system is in constant interaction with other body systems, and is inseparable from them. Pathologies of various etiologies may occur within this system, manifesting as behavioural disease. Thus, to be skilled in general veterinary medicine, both student and clinician must study the anatomy, physiology and pathophysiology of the behavioural system along with the studies of the other body systems

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ANALYSING THE BEHAVIOUR OF DOGS AFFECTED AND UNAFFECTED BY SEPARATION ANXIETY DURING A BEHAVIOURAL CONSULTATION: PRELIMINARY RESULTS

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Keywords: anxiety, dog, separation, video recording

Introduction:

Separation related problems combined with anxiety are one of the most common reasons for requiring a behavioural consultation in dogs. The aim of this study was to assess, during consultation, whether the behaviour displayed by dogs affected by this problem was different from that of unaffected dogs.

Materials and methods:

The first hour of 16 behavioural consultations carried out at the Department of Physiological Science (Pisa, Italy) was observed. Eight dogs displayed separation anxiety (3 males, 5 females) and 8 dogs displayed neither signs of anxiety nor separation problems (4 males, 4 females). For each dog, duration and occurrence of 7 social behaviours, 18 non social behaviours and 3 types of vocalisation were analysed. The behaviour of anxious and non-anxious dogs was compared using the t test ($p<0.05$).

Results:

Exploration resulted statistically higher in non-anxious dogs (seconds: 826.62±270.62 vs 356.62±270.62; t=-2.866; p=0.012); whilst anxious dogs displayed more nose licking (seconds: 28.25±13.62 vs 10.62±11.99; t=2.748; p=0.016) and visual orientation to the owner (seconds: 115±116 vs 35.62±25.02; t=1.892; p=0.079) It was also observed that behaviours related to discomfort were displayed by a higher number and with a higher occurrence in anxious dogs, although the high inter-subjective variability did not lead to statistically significant differences.

Discussion:

Results show that anxious and non-anxious dogs behave differently during the behavioural consultation, the first ones showing several signs of discomfort even in the owner's presence. There preliminary data suggest that analysing dog behaviour during the consultation can help the diagnostic process of separation anxiety, integrating the information concerning the dog at home alone.

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HELPING CHILDREN TO UNDERSTAND DOG BEHAVIOUR: THE "DOG AS A FRIEND" EDUCATIONAL ANTHROZOOLOGY PROJECT

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Keywords: behaviour, children, dog, educational anthrozoology

Introduction:
Educational anthrozoology is common in Western schools, although few studies demonstrated its usefulness (Mariti et al., 2011). The aim of the current research was to assess the effectiveness of a project developed for 10 year old children.

Materials and methods:
Students (n=398; 22 classes) in the fourth grade attended two 45-minute lectures focused on: puppy development (importance of each phase, especially socialization), canine communication (posture of fear, excitement, relax etc), and prevention of dog bites (situations to be avoided). All children completed a 20 multiple-choice item questionnaire addressing topics covered in the lectures. In order to compare the baseline to the learned knowledge, group A (n=217) and B (n=103) filled in the questionnaire before the lectures and two weeks after the attendance to the project. Then, to verify the persistence of the learning, group C (n=45) and D (n=33) completed the questionnaire immediately after the lectures and again 10 weeks later.
Group A and C, besides attending the theory teaching, undertook activities with a dog, approaching and stroking the dog under the supervision of the authors. The number of correct answers were analyzed using the X^2 test ($p<0.05$).

Results:
It was found that children answered better two weeks after the lectures than before attending them, more for group A (statistically significant improvement for 13 questions out of 20) than for B (10/20). For most questions which gave no statistically significant results, children were able to answer very well (>75%) even before the project. Moreover, children of group C answered statistically better than group D immediately after attending the project (1 question out of 20) and 10 weeks later (3/20), especially for questions about puppy development.

Discussion:
Results show that projects of educational anthrozoology are effective in increasing children's knowledge about dogs. The presence of a dog seems to slightly increase its effectiveness and the persistence of learned knowledge.

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COGNITIVE DYSFUNCTION IN ELDERLY DOGS: CLINICAL IMPROVEMENTS LINKED TO THE USE OF A DIET WITH A SPECIAL CONTENT OF MEDIUM CHAIN FATTY ACIDS (PRO PLAN SENIOR +7)

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Keywords : cognitive, dysfunction, dog, diet.

Introduction:
Experimentally, a diet (PURINA PRO PLAN® Senior 7+) compensating for reduced cerebral glucose metabolism by transferring energy in the form of medium chain fatty acids (caprylic acid and capric acid) has been shown to lead to significant improvements in the performance of dogs (beagles between 7.5 and 11.6 years old) on tests of their learning ability, visual-spatial orientation and attention span.

Case study:
This case study describes the results obtained in two old dogs (Doubay, neutered female pitbull terrier, 12 years old / Luna, neutered female Spaniel-type cross-bred dog, 14 years old) with symptoms suggestive of different forms of canine cognitive dysfunction syndrome.
Irrespective of their individual aetiologies, both clinical pictures greatly improved following the single action of administering a diet supplemented with medium chain fatty acids. In both cases, the beneficial effects could be seen within a month of starting the new diet.
In the case of Doubay, a marked improvement was obtained after the administration of PURINA PRO PLAN® Senior 7+, whereas neither propentofylline nor the earlier diet specifically for elderly dogs had had any visible effect.
With Luna, the new diet performed well, whereas the administration of selegiline had not led to any noticeable changes.
The improvements in the condition of Doubay and Luna seem to offer clinical confirmation of the experimentally demonstrated effectiveness. Moreover, the improvements noted in the two dogs do not seem to have been limited to the areas evaluated experimentally (learning abilities, visual-spatial orientation and attention span), but rather included other cognitive and functional abilities.
Doubay and Luna were kept on an uninterrupted diet of PURINA PRO PLAN® Senior 7+, and their conditions remained improved throughout the subsequent evaluation period (16 and 5 months respectively) compared with their respective situations before the diet was introduced. This suggests that a lasting effect can be expected when using such a dietary approach.
To date, the safety of this type of diet has been evaluated in a study that used dietary supplements consisting of 0, 5, 10 and 15% medium chain fatty acids for 90 days in beagles and showed no toxic effects[10].
As the beneficial effects were apparently maintained well beyond 90 days, it would be desirable to ensure the absence of harmful side-effects (e.g. ketoacidosis) in the longer term.

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WHEN WELFARE IS COMPROMISED BY LEGISLATION

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Part I: Horses

Keywords: Legislation, welfare, horses, Irish Travellers, equine passports

Introduction:

In Ireland, horses are bred primarily for performance and sport rather than for consumption. Irish Travellers, a minority ethnic community, have deep rooted culture with horses and own/breed an unknown number of horses annually (Collins et al., 2012). These traditionally have been bought/ sold at fairs providing social interaction and additionally, tourist attractions.
However, over the last three years numbers slaughtered rose from 2002 horses in 2009, to 7009 in 2010. This coincides with recession; where both horse value and incomes have reduced creating difficulties for many owners and breeders/herd-owners.

Issue of registration:

Enforced compulsory equine registration and micro-chipping was introduced in 2009 to comply with EU legislation (Commission Regulation (EC) No 504/2008).
The Department of Agriculture in Ireland requires all herd-owners to register lambs, calves, piglets and foals at birth. The animal identification and movement system (formerly CMMS) model which gives traceability to bovines can identify and track an animal for the duration of its life. It is highly successful. The cost to register a lamb, piglet or calf is less than €5.
The cost to register a foal presently is approx €90 (veterinary fees, registration fees, micro-chip) and rises depending on pedigree/stud book fees, value it may not have. As a central database does not exist, this costly but fragmented system means it is not possible to follow an equine from birth to death unlike a bovine.
The consequences of this legislation are:

a. Reduction in traditional horse fairs leading to negative impact on Traveller and rural communities
b. Financial burden on horse breeders
c. Law abiding citizens have possibly become non compliant

Discussion:

Legislation has to be reasonable to facilitate compliance and enforcement. The current system is experiencing problems because it is not financially viable in a country which is in the throes of austerity. For some the choice may be between feeding the animal rather than buying it a passport.

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Commission Regulation (EC) No 504/2008
www.agriculture.gov.ie/farmingsectors/horses/equineidentificationdocumentspassports

Part II Dogs

Keywords: Legislation, dogs, excessive barking, welfare

Introduction:
Legislation supports animal protection and welfare. However, poor legislation may mitigate against both animal and owner in some circumstances causing reduced welfare. An example of this is the Control of Dogs Acts 1986 an 1992 (Ireland) which legislate for nuisance barking.
Natural justice requires that defence and prosecution evidence are accorded the same level of consideration. However, this act assumes culpability on the part of the dog owner if the court is satisfied that it "appears" that a nuisance has been created by excessive barking. Excessive barking is not defined, is interpreted by the Judge on the day and the dog can be seized and/or destroyed. Furthermore the complainant may not be required to provide evidence of noise levels. Evidence may be scarce or non-existent.

Case:
A complaint about a 2.5 year old King Charles spaniel was brought under section 25 (2) of the Control of Dogs Act 1986, excessive barking. The owners had lived amicably beside their neighbours for 35 years with no prior complaints. They received 7 days notice to appear in court, they were given a month to reduce any barking and reminded by the judge that the dog could be destroyed. Distraught, they purchased a shock collar. They then had a veterinary assessment and were referred for a behavioural assessment which showed the dog was non-vocal preferring to elicit attention by pawing, was non-reactive and urine marked territory in response to other dogs barking when left outside in the back garden. The dog was videoed when left alone.

Discussion:
This mischievious use of legislation by the complainant had a negative impact on the welfare of the dog and on that of the whole household. The female owner experienced health compromises. Both owners lost time at work and experienced financial cost. The dog began to exhibit signs of anxiety and was treated with behavioural therapy and the use of a DAP's collar.

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Part III. Parrots

Keywords: welfare, animal behaviour, legislation, parrots, learned helplessness

Introduction:
Will welfare legislation ever be able to cope with the demands placed upon it by pet shops? In Ireland, The Protection of Animals (Amendment) Act (Irish Statue Book, 1965), did not envisage the range of pets now on offer, their needs or the manner in which they might be exploited. Birds fare poorly, with parrots often used as an attraction for shops.

Case:
A blue and yellow macaw: housed in very poor conditions (an unsuitable cage positioned at the entrance of a pet shop, an inadequate diet, no toys or protection and poor hygiene). Children were observed to regularly pull its tail and poke items at it through the cage bars. Cork County Council veterinary officer had remit for this premises. He requested guidelines for the parrot's welfare which were provided to him. No action was taken.

A month later the parrot's situation had deteriorated. An unsuitable dowel perch had been replaced by a metal rod of approximately a quarter inch in diameter which was even less appropriate; the bird was crouched at the bottom of its cage, unresponsive and crying. It was exhibiting behaviour indicative of learned helplessness (Walsh and Muser Leyvraz, 2010). The veterinary officer was again contacted but would only inspect the parrot if a complaint were lodged to the Gardaí. His request was complied with. The issue was brought to the attention of the senior veterinary officer, who took no action. After approximately 9 months, the macaw vanished from the pet shop; the current state of the bird is unknown.

Discussion:
The law does not require that County Council veterinary officers should be qualified in animal welfare and behaviour, nor that they should seek and defer to such advice from experts with appropriate post-graduate qualifications in the behaviour/welfare field. This means that appropriate action may not be taken to ensure optimal welfare of animals.

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THREE DIFFERENT STRATEGIES FOR IMPROVE THE SUCCESSFUL OF ADOPTIONS

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Introduction:
Unwanted behaviours can cause problems for the adoption of relinquished dogs. The aim of this study was to apply three strategies in order to improve the number and the success of the adoptions.

Keywords: behaviour, shelter, adoption, behavioural problems, enrichment, socialization, training, education program, relinquished dogs.

Materials and methods:
In the first shelter (plan1), the strategy was based on an education programme for the owners. In the second shelter (plan 2), an obedience programme was planned and in the third one (plan 3), the strategy was based on enrichment environment.
In plan 1, we worked with 10 owners (study group) comparing with 8 owners (control group). In both groups we evaluated, using a control test, the presence of behavioural problems, the methods used by the adopters, and the behavioural knowledge. Plan 2 was applied to 9 dogs. The aim was to compare their behaviour in the shelter and how they responded to different orders at the beginning and at the end of the programme. Plan 3 was carried out with 21 dogs, 10 in an enrichment group and 11 in a no enrichment group. The evaluation of the results was performed through a test to be completed by the adopters.
The three works were carried out for 2 to 3 months. The results were assessed using a Chi Square analysis.

Results:
We found out from developing plan 1 that, the behavioural problems were decreased in the treatment group, and the knowledge of the adopters about their dogs' problems increased. Applying plan 2, the unwanted behaviours decreased whereas good behaviours for the situations evaluated increased. Plan 3 resulted in animals displaying less fear ($p = 0.0382$) and less aggressive competitive male subjects from the treatment group ($p = 0.0261$).

Discussion:
In conclusion, the three strategies have proven effective separately, so we think that combining the plans could lead to synergistic results.

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INTRODUCING LANDSCAPE AND SOCIAL ELEMENTS IN PLAY THERAPY FOR DOGS

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Keywords: dogs, play, landscape, social skills

Introduction:

Nowadays much is asked from the adaptability and flexibility of our domestic dog. Stress, anxiety and problems of adaptation are the result, often reinforced by the fact that they interact increasingly less with fellow dogs and are allowed little space to explore their environments freely.

Animal Services (Belgium) uses a specially developed play and introduction field to re-socialise dogs with severe behavioral problems. The main aim is to reduce stress and anxiety in the dog, after which important basic (social) skills (can) be taught.
This playing field distinguishes itself from most others by introducing two elements: the use of mature and socially skillful dogs and a diverse landscape. The latter, consisting of little hills, water pools, and alleys through bushes and grass, contributes on the one hand to offer the dogs an inviting and challenging environment to play in, while on the other hand it offers the dogs a sense of security that is needed while playing with each other.
To interrupt play the dogs can make use of the little hills and pools of water and to test each other's agility and speed, tunnels, alleys to run through, and obstacles are ideal. If not yet ready to have contact dogs have sufficient places to hide.

Discussion:

Play is important, but it has to be organised. To guarantee physical and psychological security, structured elements of landscape and mature, socially skillful dogs bring together what dogs need in this respect.

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GROUPING DOGS IN A PUBLIC SHELTER FROM SÃO PAULO, BRAZIL – PRELIMINARY RESULTS

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Keywords: dog; shelter; bites; grouping; environmental enrichment; behavioral modification

Introduction:

Dog Population dynamics in shelters often requires the grouping of individuals and changes to the composition of those groups. Group housing of dogs, mainly in pairs, has positive effects in human-animal relationships, behavioural health, adoption rate and adoption success. Nevertheless, grouping dogs was one of the major issues for the Zoonoses Control Center (ZCC) staff due to the seriousness of problems associated with dog fighting. We developed a protocol to maximise the positive effects and reduce the negative effects associated with grouping dogs. The goal of the study was to develop a protocol to improve grouping of dogs in the context of shelters that could be implemented not just for grouping dogs but also as a strategy of periodic environmental enrichment.

Materials and methods:

The protocol was divided into 4 phases that allowed the use of environmental enrichment (occupational, social, nutritional and sensorial) and behavioural modification (systematic desensitisation and counter-conditioning). Phase one allowed recognition between dogs at a distance; phases two and three focused on progressive approach; and in phase four, dogs were grouped and located in a kennel. In coupling the dogs, we tried to mix dogs of different sex with similar size. Before grouping, dogs were trained to sit and to walk without pulling, using procedures described by Luescher and Medlock (2009), however, instead of using the Gentle Leader ®, we used a rope to make a head collar with functionality similar to that of the commercial product.

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Discussion:
Our aim was to create a simple protocol that could easily be incorporated into daily shelter routines. Having implemented this protocol to form 30 pairs of dogs, there were no fights involving bites. The protocol could be implemented not just to grouping dogs but also as a strategy of periodic environmental enrichment. Further studies could be conducted to evaluate the impact of the protocol in the success of adoptions.

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TEACHING ANIMAL WELFARE AND ETHICS: AN OPEN DISCUSSION

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Keywords: Animal Welfare; Ethics; Teaching

Teaching of animal welfare:

Animal Welfare (AW) is inherent to veterinary medicine. However, it has not been a traditional component of the veterinary *curricula*, which is largely limited to health and productivity[1]. AW emerged as a scientific discipline during the decade of the eighties, having evolved very rapidly[2]. This fact, together with the growing interest of the general public, made evident the need for formal inclusion of AW in the training of veterinarians[3]. Nevertheless, AW has received limited academic attention because there is a general assumption that it is implicitly taught in other disciplines. As a result the information is delivered in a disperse manner and in a variety of contexts. There is little consistency and no opportunity to interconnect concepts. The result is generally a superficial comprehension which is detrimental as a good understanding of AW is essential to prepare veterinarians to be skilled professionals for example in areas such as diagnosis, treatment and pain management[4]. Currently teaching AW means preparing for new contexts where veterinarians will develop their work[5] and meeting the recommendations discussed in the OIE Global Conference on Animal Welfare[6].

Teaching of ethics:

Although Ethics is considered a fundamental discipline, as defined in the Directive 2005/36/EC, there is no clear definition about the way of teaching it nor a description of the competencies that the veterinarian should have. The way that Ethics should be integrated in the *curricula* of the Veterinary Faculties in not a straightforward issue[7]. The teaching of ethics facilitates: 1. Promotion of the appropriate attitude directed to animals, clients and other professionals; 2. Provision for students of tools and capacities to recognise and deal with ethical dilemmas; and 3. Improvement of the way in which the general public perceives the Veterinary profession[8]. If the ways in which Ethics is taught in different European Universities are analysed it is likely that many approaches will be found. It is important to have discussion regarding the most appropriate approach to the teaching of Ethics but it is also necessary to determine a suitable syllabus for this discipline which is as important as its conceptual framework.

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Risk assessment: who should do it and how are these people educated/trained – Examples from Germany

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Key words: risk assessment, dog, aggression, education of testers

Introduction:
Assessing the risk a dog might pose for owners or third parties, is of vital importance for both dog welfare and reduction of harm for others. The dog's welfare might be influenced as the assessment will bring about decisions on measures like muzzle or lead or, in extreme cases, euthanasia. Risk assessment via temperament tests and/or owner questionnaires in general is by now well established (Jones and Gossling, 2005; Hsu and Serpell, 2003), though the different tests reliability and validity is still under discussion (Taylor and Mills, 2006). One important factor influencing reliability and validity is the tester himself, who has to guarantee that the test follows a standardised protocol (Diederich and Giffroy, 2006). To serve both safety and welfare issues during and as a consequence of the test, the tester should have contemporary "state of the art" knowledge in ethology, learning biology, physiology and veterinary medicine at large. In parallel the tester should have sufficient practical knowledge in dealing with dogs, testing and training them.

The situation in Germany:
This introduction will give an overview on how testers in Germany are licensed – who is allowed to act as an expert witness for risk assessment in the course of a Dangerous Dogs Act (DDA) case and which stipulations they have to meet. In all German states vets with a specialisation in animal behaviour or veterinary behavioural medicine are licensed to conduct temperament tests without any further auditing. Other vets can be licensed when they prove special and intensive ethological knowledge and have attended some tests as an observer. A problem field sometimes is the licensing of non-vets who then can test dogs without a vet being present. This group comprises mostly of biologists and dog trainers at large. They also have to prove ethological knowledge and had to observe some tests before becoming licensed. The question will be discussed whether temperament testing should be done always by vets or at least with a vet present.

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RISK ASSESSMENT: WHO SHOULD DO IT AND HOW ARE THESE PEOPLE EDUCATED/TRAINED – EXAMPLES FROM FRANCE

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Key words: risk assessment, dog, law, bites,

In France, a breed-specific law has been in existence since 1999 and mainly aimed at Pitbull- and Mastiff type dogs. This law makes it illegal to sell, to import or even to give some breeds of dogs but not to own them. For the first group, dogs cannot be in public places and it is compulsory for them to wear a leash and a muzzle. People with criminal records are not allowed to own such a dog, which shows that the law is directed more to people than to dogs and aims to prevent the use of dogs as weapons.
Serious concerns both in terms of animal welfare and in relation to the probability of increasing a lack of sociability of the dogs under the law have been raised.
After some accidents involving children, the government wanted to extend the number of breeds covered by the legislation but canine professional people came together to underline the necessity of risk assessment. Legal risk assessment has only been defined by the law first in 2007, then detailed in 2008. There were many discussions but, finally, only the veterinary profession has been entrusted with the task of risk assessment.

Every veterinarian who wanted to practice legal risk assessment had only to declare it to authorities and was put on an official list.
No specific education was required and no formal design of the evaluation has been imposed.
Nevertheless, Zoopsy, our veterinary behaviourist organisation, proposed to the veterinary profession to create a two-day specific course which has been endorsed by the General Veterinarian Union (Snvel), Order of the Veterinarians, Companion Animal Continuing Education Association (Afvac) and Veterinary Schools. 2000 veterinary surgeons followed this course in 52 sessions within a two-year period.
There have been very few issues concerning these evaluations since they started and this new role for the veterinary profession has led to increased visibility of the vet as a good partner for dealing not only with risk assessment but also with any behavioural issue.
A survey, run by Zoopsy and the National Epidemiology Institute, underlined that the breed specific law was not relevant. Risk assessment for any biting dog receives strong support from all professional people involved in canine education, shelters and politics.
Legitimacy of the veterinary surgeon is no longer questioned and the ability of this profession to take the initiative and provide continuing education has been highly appreciated.

Dog training and behavior rehabilitation

Because it is quite easy to anticipate the escalation of bad reactions in dogs, whether these responses are devoted towards the owner or other people, future dog trainers must become learning and behavioral technicians and cannot just teach a dog how to sit and stay without focusing on how the dog emotionally receive the information.

The dog trainer has to control the impact of the training on the dog behaviour and to understand that the main thing never lies in the way dogs behave, but in the way we react to their behavior.

If one might be able to separate the dog trainer and the behaviorist in their action, he won't be able to do so in their knowledge.

In my daily practice, I am facing with dogs that are anxious, scared, fearful, agressive towards their congeneres or merely facing with dogs that have behavior problems unspotted because still clearly unexpressed. A dog trainer must be able to pick these problems out before they become a big problem for the environment, to put into practice and adapt his learning skills in accordance with the dog, but also in accordance with its owner. For all these reasons, we cannot separate training and behaviour skilss.

But in the same time, neither the owner nor the trainer can control everything, but in order to act and reduce bad behavior they must focus on socialization learning, which includes the fundamentals (approach, contact, stimulations and proximity), and teach the owner the consequences of their behavior towards their dogs. A dog trainer must commit himself that the dog and its owner take pleasure in training and that the dog is given physical, mental and emotional respect.

When specialized in behavior rehabilitation, the dog trainer knows that starting a rehabilitation program is always a hazardous job, with heavy responsabilities, a job that demands an ethological knowledge, a great skill in learning techniques, an empathy towards the owner, a deep practical experience and an optimal cooperation between the owner and all other professional structures. We must acknowledge that it is very difficult to gather all these conditions.

So we have to work on the cause :

To train and inform the owners on how dogs learn and behave,
To professionalize the dog trainer's skills wether specialized or not in behavior rehabilitation,
To learn how to cooperate between professional authorities and associations.

What's a dog trainer
by Catherine Collignon

A dog trainer is a professional who :

- daily drives the dog owners to help them to approach the best way their dog behaviour,

- delivers information to the dog owners on the way dogs learn, by helping them though simple plans to research the balance between their routine and the necessary needs of the dog, leading to a peaceful and preventive cohabitation,

- knows how to make the dog adopts the right behaviour regarding his home and family while preserving the quality of the Relationship,

- masters both the ethology of the dog and the scientific foundations of the learning process, which enable him to foresee the evolution of a behaviour,

- knows the nature of behaviour problems and thus is competent in spotting them,

- knows the limits of his competence and…

- always adopts a professional approach by refering and working with other professionals.

A dog trainer always devotes himself in the contents of his training courses :

- To socialize the dogs to humans,
- To socialize the dogs to other dogs,
- To teach the owners how to communicate with their dog,
- To make the owners realize and accept the potential limits of their dog in his adaptation to the environment,
- To teach the owners to control their dog,
- To always respect the emotional and physical nature of their dog,
- To teach the dog which is the good behaviour to propose to get what he wants,
- To always respect his customer thoughout the working process,

The dog trainer can also be specialized in behaviour rehabilitation.

His work, on the basis of his skills in behaviour and learning, lies with finding what motivation makes a dog change his behaviour. This will lead to the dog behaviour modification and to restore the dog/owner relationship.
Thus the dog trainer's approach is not based on the diagnosis that belongs to the veterinarian profession.

Puppy Classes in Switzerland

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The Swiss Kennel Club in Switzerland has been training people to manage puppy classes for many years. The training consists of a course and theoretical and practical exam. Of course some things have been changed / adapted over the years and some priorities have also shifted.

Some data

Kennel Club Puppy classes are held in fenced in areas. It must be possible to fence off areas as need be for different groups of puppies. A class lasts for a maximum of one hour. The puppies are between 10 – 16 weeks old. There are strict rules concerning number of trained people that have to be present to control the class. Good adult dogs are welcomed as "teachers". Play is an important part of a puppy class. In Switzerland dog owners take their puppy to a puppy class once perhaps twice a week for one hour. So when we run puppy classes we have to focus on priorities. Owners must not only know what points we are focussing on but must understand why we are doing this and why they must do this.

Priorities

- Build up / reinforce the puppies trust in its owners
- Socialise with all kinds of different types of people (learn to like and trust people)
- Socialise with all kinds of different types of dogs (play, win and loose, learn body language etc.)
- Learn / practice self-control (bite inhibition, keep still)
- Meet strange objects, sights and noises together with other puppies
- Give owners important information (normal dog behaviour, self-control, housetraining, learning theory, meeting dogs and people etc.)
- Begin to teach owners to watch out for good behaviour and reward it
- Do small exercises like recall, look and sit
- Important: Recognise problems, suggest solutions or send owners on to specialists (people in charge have to have a lot of knowledge and experience to the early signs of problems)

Like any system this type of puppy classes has its advantages and disadvantages. It also depends very much on the knowledge and ability of the trainers. We always say it is better not to go to a puppy class than to go to a bad one!

So what is important?

As we know puppies learn very quickly and this includes undesirable behaviour. One experience can be enough! So we have to keep an eye on the class at all times and really look for first signs of problems. We have to be aware that with one hour a week we do not have enough time to do very much. Especially not to make up for what has been missed during the first weeks of a puppy's life. As need be puppies must get extra attention and special treatment (e.g. puppies that suffer from a deprivation syndrome or hyperactivity). Being able to raise awareness and offer individual help within a good atmosphere is one of the biggest advantages of a puppy class.

The Saint Bernards of the Hospice

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The hospice of the Great Saint Bernard Pass was founded in 1050 by Bernard de Menthon, Archdeacon of Aosta, as a refuge for travellers. Dogs have been present at the hospice for about the last 320 years. The use of the dogs to plough a path through the snow and to find people lost or disabled in the snow began around 1750. The famous Barry I was a puppy when Napoleon crossed the Pass in 1800. Barry I saved the lives of about 40 people. Since then, one dog at the hospice was always called Barry.

The Saint Bernard became a defined breed since 1850. The demand from England for Mastiff-type dogs with lots of loose skin resulted in breeding excesses. Controversies over the standard ensued, but all countries except for England and the US breed according to the Swiss standard that requires a leggier, lighter and dryer working dog with tight eye lids, relatively closed lips, and without excessive wrinkling.

The Fondation Barry was founded in 2005 to continue the kennel of the Hospice. It is emphasising the breeding of healthy, long-lived, and agile working Saint Bernards. It owns about 30 dogs, but breeds only around three litters per year with stringent selection of breeding stock.

Worldwide, Saint Bernard fanciers are organised in the World Union of Saint Bernard Clubs. In addition, some countries (Germany, Denmark, and Switzerland) enter data on their dogs in Dog Base, a software instrument of the German TG Verlag. The following analyses were performed on data in this data base, using Open Stat 2008 by Bill Miller.

Life expectancy and causes of death:
About one quarter of the dogs die of "old age" at almost 11 years of age (10.74, SD 1.62). The main non-accidental cases of death are tumours (22% of deaths), especially bone cancer (over 50% of tumors or 12% of deaths) and gastric dilation volvulus (GDV, 14% of deaths). The mean age of death to non-accidental causes was 8.49 (SD 2.82).

Hips:
The percentage of radiographed dogs that are free of hip dysplasia (HD) has increased from around 10% in 1978 to about 55% in 2010 (correlation coefficient 0.93, slope 1.41, $p<0.001$). Another 30% are "suspect" of HD, so that now around 85% of dogs have normal hips.

Elbows:
The percentage of radiographed dogs free of elbow dysplasia (ED) has increased from around 55% in 1994, to about 91% in 2010 (correlation coefficient 0.88, slope 2.23, $p<0.001$). Another 6% have ED 1, so that about 97% of dogs have healthy elbows.

Disease:
There are no good disease data available, but skin disease and reproductive problems (need for caesareans) are prevalent.

Our dogs on the Great Saint Bernard Pass maintain their humanitarian tradition. No longer needed or suited as rescue dogs, they provide enjoyment to visitors who can pet them, take them on walks and for children, ride in a dog-drawn carriage. But their roles go beyond this:

Some of our dogs regularly visit schools, retirement homes or hospitals, and homes or camps for children with health issues. Recently, we very successfully conducted our first camp for children with behavioural issues, using our dogs as therapy dogs. We believe that the continuation of this humanitarian tradition gives the Saint Bernard a “raison d’être” and safeguards their physical and mental soundness for a long time to come.

Sound sensitivities in dogs

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The term "sound sensitivity" describes a range of presenting complaints relating to the problematic behaviour of a pet associated with exposure to sound, which does not prejudge the underlying motivational-emotional basis of the condition. The term "sound sensitivity" also allows for the recognition of at least three elements to the response to a sound, any of which may form the basis of a complaint from an owner. There is the initial perception of the sound, which may result in a startle response such as jumping, especially if the sound is sudden or unexpected in some way; there are also two strategic behavioural elements following the deeper processing of the sound: the possible decision to monitor the situation, which may result in behaviours like hypervigilance, and the possible adoption of an attempted coping strategy with certain consequences, for example hiding. It is useful to identify from where within this process, the signs of most concern to the owner originate, so that management strategies can be prioritised accordingly. The terms "fear" and "phobia" are often used inter-changeably or the term "phobia" used simply to describe a more severe fear. However, a fear is typically an adaptive response, which helps to protect the animal from unpleasant events, whereas a phobia is a maladaptive response which is often ungraded or poorly graded, (i.e. the magnitude of the response is unrelated to the potential threat). This lecture describes a rational approach to the assessment, differentiation, intervention and monitoring of sound sensitive cases, based on recent research findings.

20 years of experience at my Puppies school

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Key words : Puppy school socialisation learning pleasure

I explained how to prevent behavior problems in my puppy training school.

Socialization puppies / acquisition autocontrols: attractiveness / variety of the education(teaching) practises(has a practice): Courts(Yards) inside the veterinary cabinet(office), alternated by exits(releases) socialization-education (city, station, park). Teacher education: 4 hours of theory and direct interactive questions. Support(follow-up session) long term: a weekly course(price), duration of two / three months. Presence of a competent co-educative grown-up dog (interactions and show).

Education: trained(formed) educators framing(supervising) the group, the personalized interventions, the possibility of working on the clicker. Varied teachings / playful learnings(apprenticeships).

Learning(Apprenticeship) of the reading of the dog, know how to recognize the soothing signals, know how to act in the conflicts between puppies. Homework(duties) given to masters(teachers) and verified. Listening of people, personalized program, helps in difficult cases …

Detection of behavioral pathologies, the advice(councils) to treat(handle) them (syndr. hardship, Hs-Ha etc.).

Attractive price(prize), development of customer loyalty. Pleasure of puppies later in consultation

Socialization with other races / sizes: the big learn to manage youngs with sweetnesses and youngs and their owners not to be afraid of big … Contact of puppies by all masters(teachers) (exchange of puppies to learn(teach) better.).

Learning(Apprenticeship) of the cleanliness, the solitude, the meeting, the preparation for the difficulties of the adolescence with implementation of a relational frame(executive).

Questionnaire of follow-up of every master(teacher) (what he liked, what was missing , would have wished, of what its puppy thought of his(her) school. All feedback are taken into account to improve. Possibility to come to together(family members, partner, etc..) with the same dog in order learn the same (the same speech, the learnings(apprenticeships), the techniques).

SEPARATION ANXIETY DISORDERS FOUND TO BE HEMISPHERIC CORTICAL ABIOTROPHY IN A FOUR YEAR OLD WIREHAIRED FOX TERRIER

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Key words:
Anxiety disorders, hemispheric cortical abiotrophy, behaviour, fox terrier

Introduction:
In humans cortical atrophy is a neurodegenerative disease which affects old people and leads to a dementing syndrome involving distinct neuropsychological deficits. In dogs, abiotrophy is usually found in young individuals from Terriers breeds, Labrador Retrievers, Border Collies, Gordon Setters or Australian Kelpies, and affects the cerebellar cortex instead of the hemispheric cortex and is mostly revealed by ataxia signs.

Case description and diagnosis:
A 4-year-old male Wirehaired Fox Terrier evaluated for behaviour disorders related to separation anxiety at the age of one developed compulsive disorders and hyperactivity crisis. During one year, with behavioural tasks and medical treatments, the behaviour of the dog improved. The second year the dog did not respond anymore and developed some compulsive disorders with neurovegetatives issues. The clinical behavioural consultation and biochemical analysis were unremarkable. The third year, after invading symptoms of hyperactivity, magnetic resonance imaging showed a moderate cortical atrophy possibly due to cortical abiotrophy

Treatment:
After of a mild improvement with clomipramine (2 mg/kg q12h) and changement to fluoxetine (2 mg/kg q12h) the unwanted behaviours disappeared during one year. The compulsive behaviours of the second year did not respond to behavioural modifications nor to fluoxetine or carbamazepine. After the MRI potassium bromide was given to decrease hyperactivity but the positive effect lasted only 10 days. The dog had to be euthanized.

Discussion:
Behavioural disorders and organic diseases can be related. This case could help to have better screening, understanding and management of separation disorders which are not improving and their possible connection to this kind of neurological diseases.

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CAN HORSES DISCRIMINATE PEOPLE BY THEIR FACES?

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Keywords: horse, visual discrimination

Introduction:
This experiment examines whether horses are able to discriminate people by only using facial cues.

Material and methods:
Fifteen warm-blooded horses, 7 mares and 8 geldings, of different ages were used. Each horse had to choose between two unfamiliar female individuals. The testing area was an outside ring of 25m by 16m known to the horses. The people were placed behind two identical wooden boards, so that only their faces were visible. A laminated photo of the body of a person in overalls with a white background was attached to each board. The purpose of this treatment was to exclude all stimuli other than facial recognition. After a training period designed to condition the horses to approach the positive stimulus (person x), a preference test was carried out. Released from a starting point at 16m, the horse was free to choose which person to go to, but was only rewarded when choosing person x. If the horse chose the person y (negative stimulus) it was guided back to the starting point.

Results:
None of five horses in a provisional test reach the criterion of 85% right choices on 12 trials.

Discussion:
This suggests that horses cannot discriminate people by facial cues, although this could also be explained by a lack of training. Previous research showed that cows need multiple cues, like face and height, to succeed. Nonetheless, one study concluded that horses could discriminate between photos of people, but here the whole face, including the hair, was visible.

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AN ESTIMATION OF DOG BITES AMONG YOUNG PEOPLE IN THE CITY OF MADRID

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Keywords: dogs, bites, unintentional injuries.

Introduction:
Dog bites are considered to be one of the most frequent causes of unintentional injuries in the paediatric population. Few studies on the epidemiology of dog bites exist in Spain. A study was designed to estimate the occurrence of dog bites in the autonomous community of Madrid.

Materials and methods:
Basic questions on dog bites were included in the 2011 SIVFRENT self-administered questionnaire for young people (a surveillance system aimed to detect risk factors for non-transmissible diseases in young people). As a result, 1711 valid questionnaires from 15-16 years-old citizens were obtained**.**

Results:
Twenty seven per cent of respondents said that they had suffered at least one dog bite. Seventy per cent of these respondents had suffered 1 or 2 dog bites. The average age when the injury occurred was 9.5 years-old. Most injuries were caused by a familiar dog (78%). Two thirds of incidents occurred within the household. Fifty per cent of incidents did not require any kind of treatment and sixteen per cent required professional medical assistance.

Discussion:
Dog bites appeared to be a common cause of unintentional injuries among the studied population. The most common scenario involves an owned, familiar dog inside the household. Most dog bites did not require medical attention and this could be an indication of the degree of severity. Further studies are needed to explore the prevalence and risk factors for dog bites in Madrid.

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A SURVEY OF THE BEHAVIOR OF BELGIAN SHEPHERD DOGS: ARE THE VARIETIES DIFFERENT?

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Keywords: behaviour, Belgian Shepherd, breed, dog.

Introduction:
The Belgian Shepherd Dog is a breed recognised by the Fédération Cynologique Internationale with 4 varieties: Groenendael, Laekenois, Tervueren, and Malinois.
The aim of the current research was to assess whether the varieties behave differently one from another.

Materials and methods:
The survey was carried out using a questionnaire filled in by 88 Belgian Shepherd owners: 33 Groenendael (G: 66.7% females and 33.3% males), 30 Tervueren (T: 72.0% females and 28.0% males), and 25 Malinois (M: 66.7% females and 33.3% males). Forty-seven multiple-choice items about dog behaviour were asked. Data obtained for the three groups were compared through the X^2 test ($p<0.05$).

Results:
Results showed that the varieties differ for some of the analysed behaviour. In detail, Groenendal dogs seem to show a lower arousal, as they were reported to exhibit the following behaviours less than other varieties: exaggerated greeting to owners returning home (G 57.6%, M 88.0%, T 73.3%; $X^2=6.542$; $p=0.038$), digging (G 15.2%, M 48.0%, T 30.0%; $X^2=7.378$; $p=0.025$) and raising hair when meeting other dogs (G 24.2%, M 60.0%, T 46.7%; $X^2=7.863$; $p=0.020$). Malinois dogs instead displayed the following behaviour more: scavenging (G 12.1%, M 36.0%, T 13.3%; $X^2=6.250$; $p=0.044$), coprophagia (G 6.1%, M 24.0%, T 3.3%; $X^2=7.342$; $p=0.025$), raising hair when meeting other dogs, and defending the territory (G 36.4%, M 64.0%, T 30.0%; $X^2=7.169$; $p=0.028$). Moreover Malinois dogs showed less fear of thunderstorms (G 39.4%, M 20.0%, T 50.0%; $X^2=5.317$; $p=0.070$) and loud noises (G 39.4%, M 20.0%, T 53.3%; $X^2=6.403$; $p=0.041$).

Discussion:
These preliminary results suggest that the varieties of Belgian Shepherd Dogs differ both morphologically and behaviourally, especially for Malinois versus other varieties (as already suggested by Svartberg, 2006). However, differences observed may be more related to dog management rather than to genetics. Further research should be carried out to clarify this point and investigate other possible affecting factors such as dog sex.

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EFFECT OF AGE AND SEVERITY OF COGNITIVE DYSFUNCTION ON TWO SIMPLE COGNITIVE TASKS IN COMPANION DOGS

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Keywords:
Canine; aging; cognitive dysfunction; memory; learning.

Introduction:
Dogs exhibit age-dependent losses in learning and memory as well as a progressive accumulation of neuropathology that parallels that which has been observed in normal human ageing and early Alzheimer's disease. These deficits have been extensively studied in the laboratory environment through a number of standard cognitive tasks (Adams et al., 2000; Tapp and Siwak, 2006; Cotman and Head, 2008), however appropriate tools for their assessment in veterinary clinic are still lacking (Head et al., 2008; Salvin et al., 2011). The aim of this study was to evaluate the effect of age and the severity of cognitive dysfunction syndrome (CDS) on two simple cognitive tests conducted in a clinical setting.

Materials and methods:
A short-term memory task (STM) and a problem solving task (PST) (Coren, 1994) were administered to young (<9 years, n=19), cognitively unimpaired aged (≥9 years, n=31), and cognitively impaired aged (≥9 years, n=37) dogs. Classification of cognitive status was carried out using an owner-based questionnaire, and in the impaired group, dogs were categorised as having either mild or severe CDS (González-Martínez et al., 2011). Distribution of the studied variables was assessed by Chi-square test or Fisher´s exact test. Average differences in the STM total score were assessed by Mann-Withney U test.

Results:
During the STM task, the young dogs were able to locate the food quicker and with more success than the aged groups ($p<0.01$). Among the aged groups, dogs with severe CDS exhibited the poorest performance compared to those suffering from mild CDS or their healthy counterparts as noted by the STM total score ($p<0.05$). In the PS task, the young dogs performed better than the aged dogs in locating the food, but there were no differences as a function of CDS severity.

Discussion:
The STM task may help to better characterise cognitively affected dogs in the clinical setting. The use of this or similar tasks in CDS diagnosis will require further investigations in the field.

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A SURVEY OF CATS' BEHAVIOUR AT THE VETERINARY CLINIC

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Keywords: cat, behaviour, veterinary clinics.

Introduction:
This study was aimed at evaluating cat behaviour at veterinary clinics.

Materials and methods:
Data obtained by 1111 multiple choice item questionnaires filled in by cat owners were evaluated.

Results:
It emerged that most cats realised they were going to the veterinary clinic (77.8%), while they were still at home (51.5%), in the car (21.2%), when they got to the waiting-room (27.3%). Only 26.8% of cats appeared calm in the waiting-room, whilst others showed signs of fear/anxiety (42.1%), restlessness (27.7%), and aggression (4.8%).
Entering the consulting room seemed to be unpleasant for 43.7% of cats. Before examining the animals, 71.6% of veterinarians petted them, 28.4% called them by name, and 5.8% gave them treats, 10.4% did nothing to make the visit less stressful. During the examination 55.5% of cats got annoyed but accepted to be handled, 22.8% tried to escape, 15.0% were calm, and some cats (8.8%) showed aggression towards the veterinarian. When food was offered, 47.4% of cats refused it, only 23.4% accepted it.
Concerning the clinical handling, 30.6% of animals disliked to be handled on the belly, 22.7% the tail, 11.4% genital area, 9.6% the mouth, 7.4% the claws, 6.8% the ears, 4.0% on top of the head.
The most disliked treatments were injections (34.2%), temperature measurement (32.2%), blood sampling (23.0%), dressing wounds (19.7%), ear examination (11.7%), eye examination (6.9%), X-ray (4.2%), auscultation (4.1%), and ultrasonography (3.6%).
Cats usually did not show preferences for veterinarians' gender (83.5%), but women were preferred by those who expressed a preference (7.8% versus 3.7%; X^2=12.827; p=0.000).
After a painful treatment or surgery, 73.1% of cats changed their behaviour towards the veterinarian. Moreover, 58.2% of owners believed their cats associated the veterinarian with a negative event.

Discussion:
Results suggest that veterinarians should improve their knowledge of cat ethology to ensure cat welfare at the veterinary clinic.

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THE CADAVER DOG: PHENOTYPICAL ANALYSIS OF BEHAVIOUR

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Keywords: Cadaver dog, behaviour evaluation, breed reactivity, Human Remains Search activity

Introduction:
The aim of the present research was to evaluate the behavioural patterns in working cadaver dogs.

Materials and methods:
7 specifically trained dogs (6 Labrador Retrievers; 1 Italian Wolfdog) for human remains search (HRS) activity were singularly video-recorded during 21 HRS tests in standardied conditions (3 sessions). 3 different odorous samples were used (decomposing teeth, decomposing soft-tissues, decomposing blood). Frequency(N) and lasting (s) of the scanned behaviours were calculated. Dog posture and handler behaviour were considered to verify handler dog interaction and response. An anamnestic-behavioural report was filled for each dog. SAS ® statistic package was applied to data analysis: MEAN and NPAR1WAY procedure were applied; the analysis of variance was carried out using a Kruscal-Wallis one-way ANOVA. Dogs sex and breed, Odorous sample, wind speed and direction and test order were considered sources of variance.

Results:
The obtained results list an objective sequence of naturally expressed quantitative behaviours during HRS activity. A strong influence of genetics on trained dogs was recorded, thus breed and sex showed the most significant effect on dogs HRS behaviours.

Discussion:
Objective studies of breed and sex specific behaviours in HRS, such as the preliminary one we are presenting, could improve training success and limit training costs and results variability. Furthermore the constant measurements of environmental and atmospheric variables should become a common practice before every HRS activity.
According to our results; the handlers could be able to modify through the comprehension of dog's behaviour a better way to carry on the HRS.

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TRAVEL-RELATED PROBLEMS IN DOGS AND OWNERS' MANAGEMENT: AN ITALIAN SURVEY.

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Keywords: behaviour, car, dog, travel

Introduction:

Most owners will need to take their dogs in the car at some time (Gandia Estellés and Mills 2006), both for daily mobility and travelling for leisure purposes (Wöhr and Erhard 2004). Some animals adapt quietly to the journey, but others may display problems such as stress (Farca and others 2006, Cannas and others 2010), fear (Gaultier and Pageat 2003; Wöhr and Erhard 2004), anxiety (Benchaoui and others 2007), and motion sickness (Frank and others 2006).

The aim of this study was to quantitatively assess dogs' response to journey by car, and owners' interventions to cope with possible related problems.

Materials and methods:

A convenience sample of 907 dog owners filled in a multi-choice item questionnaire. Participants were recruited in 30 Italian veterinary clinics and by personal contact. Interviewees had to be a person actively involved in transportation of a dog. Descriptive statistics was obtained by 6 questions and possible associations among answers were examined by a χ^2 test ($p<0.05$).

Results:

On the whole sample, 23.8% of dogs responded/had responded negatively to car journey.

For dogs reported as problematic during car transport, 96.3% of owners did not administer any substances; the remaining used drugs (1.3%; e.g. maropitant), dog appeasing pheromones (1.1%), Bach's flowers (1.1%), or homeopathic remedies (0.2%). Among those dogs that were treated with substances, only 35.3% were reported to be improved.

Almost half of owners (48.7%) did not seek any advice, while respondents who asked or were going to ask for help (51.3%) preferred to refer to veterinarians (68.7%), behaviourists (30.3%), dog trainers using gentle methods (using positive reinforcement: 22.2%); smaller but still relevant percentages referred to people having the same problem (11.1%) or dog trainers using non-gentle methods (eg choke collar, prong collar, shock collar, and/or physical punishment: 4.0%).

Dogs who responded negatively to the journey were more likely to show unwanted behaviours (yelping, trembling, freezing, resisting, trying to escape, barking, and excitement) before getting in the car (11.0% versus 3.9%; $\chi^2=12.012$; $p=0.001$).

Dogs reacting negatively to car transportation tended to show negative responses to travelling by bus (8.35% versus 1.0%; $\chi^2=3.451$; $p=0.063$); while there was no association between responses to car and train (11.1% versus 5.1%), and nor between responses to car and boat (2.0% versus 0.0%).

Discussion:

As travelling with dogs is an increasingly common phenomenon, collecting data about their responses is important in order to prevent and to solve possible problems. Veterinarians are seen as a respected source of information and they can help owners to improve dog welfare.

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EFFECTS OF SPACE ALLOWANCE ON THE BEHAVIOUR OF RESCUE SHELTER DOGS – A PILOT STUDY

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Keywords: dog, space allowance, behaviour

Introduction:
Studies on the effect of pen size on the behaviour of dogs in kennels have given contradictory results (Taylor and Mills, 2007). Especially in "no-kill" situations, space can become a limited commodity and this can potentially affect dogs' welfare. The aim of this pilot study was to assess the effects of space allowance on shelter dogs' (*Canis familiaris*) behaviour.

Materials and methods:
Ten mixed-breed medium-sized neutered (6 males, 4 females) dogs were involved in this study (age 1 to 8 years; permanence in the shelter 1 to 8 years). They were housed in pairs, fed once daily at 08:00, pens were cleaned at 09:00, while dogs were exercised.
During treatment A (4 weeks) dogs were housed in pens consisting of an indoor area (approximately 1.5 m x 2.0 m=3.0 m^2) and a covered outdoor area (approximately 1.5 m x 4.0 m=6.0 m^2; total pen size=9.0 m^2). During treatment B (4 weeks) they were housed in enclosures resulting from connecting two pens next to each other, by means of removing the confining side pen wall (total pen size=18.0 m^2). Two pairs experienced first treatment A then treatment B, while three pairs experienced first treatment B then treatment A.
Dogs were observed for 12 minutes every hour from 10:30 to 13:30 once weekly, using a scan sampling recording method every 20 seconds, and several behaviours were assessed.
The Wilcoxon test was used.

Results:
Dogs were more active ($Z_{(9)}$= 2.1; p = 0.04), during treatment B than during treatment A. In particular, they looked around actively more ($Z_{(9)}$ = 2.2; p = 0.03) and had more positive social interactions ($Z_{(9)}$ = 2.5; p = 0.01).

Discussion:
It is concluded that a 18.0 m^2 space allowance could be more beneficial to dogs than a 9.0 m^2 one.

Reference:
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THE PERCEPTION OF DOMESTIC DOGS (*CANISFAMILIARIS*) BITING "OUT OF CONTEXT": A STATISTICAL APPROACH.

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Introduction:
In planning adequate prevention and treatment, it is important to identify whether dog behaviour is ethologically normal or not. An aggression can be considered "out_of_context" if it is disproportionate to the situation (e.g., for type of bite, causes, behavioural sequences). The subjective nature of such perception notwithstanding, it is critical to identify factors associated with veterinarians judging aggressions as "out_of_context", because legal measures depend on this. This study aimed to investigate survey reported differences between dogs whose bite had been identified by the vet as "out of context" and dogs whose bite was not.

Materials and methods:
One hundred and ninety-three dogs (64.2% intact males, 7.3% neutered males, 18.7% intact females and 9.8% neutered females, aged 5.84±3.48 years) with a history of having bitten were studied.
Owners' answers to standardised questions on the incident, dog and management, and dogs' behavioural responses (on arrival at the consulting room and during standardized manipulations performed during the veterinary examination) were analysed by Logistic Regression with link function logit and classification tree (on 127 biting and 30 control dogs).

Results:
The bite was considered (on the basis of owners' answers on the incident) out of context by the visiting vet in 59.6% of the cases. Most subjects reacted quietly to the visit, but hair sampling and being lifted and placed on the visiting table triggered aggressive responses in 41.9% and 19.7% of the dogs, respectively.
Dog male gender (Coef=1.1090, SE=0.5609, Z=1.977, P=0.048), bite type (Coef=-2.8495, SE=0.8543, Z=-3.335, P=0.0008), injured body part (Coef=1.5972, SE=0.7955, Z=2.008, P=0.044), nearness between the dog and the victim (Coef=2.5153, SE=0.9688, Z=2.596, P=0.009), the victim being with other people (Coef=-1.1068, SE=0.5404, Z=-2.048, P=0.041), dog running after the victim (Coef=5.0763, SE=0.1.6678, Z=3.044, P=0.002) enhanced the probability that the event was deemed "out_of_context".

Discussion:
It is concluded that some characteristic of the dog and of the situation could influence the perception of a dog as biting "out_of_context".

CORRELATION BETWEEN NEUROTRANSMITTER LEVELS AND ANXIETY-RELATED BEHAVIOURS IN CATS

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Keywords: neurotransmitters, anxiety, aggressiveness, cat behavioural problem

Introduction:
The present study aims to evaluate the existing correlations between neurotransmitter levels and anxiety-related aggressive behaviour.

Materials and methods:
22 adult cats (age > 6months; no pharmacological therapy for behaviour problems) were grouped according to three different levels of aggressive behaviour: Group 1 (N=11): rare aggressive attacks, anxiety and aggressive-related behaviour problems reported by the owner; Group 2 (N=4): frequent aggressive attacks (n attacks > 12/year); Group 3 (N=7): control, no aggressive attacks reported by the owners. An accurate questionnaire focusing on anxiety and aggressive behaviour was filled in for every subject and evaluated by a DVM certified Specialist in Veterinary Behavioural Medicine. Blood samples were collected in EDTA for all the subjects for neurotransmitters analysis (standard blood processing procedures for HPLC neurotransmitter analysis were applied). HPLC analysis was carried out for the following neurotransmitters: Dopamine precursor LDOPA, dopamine DA, noradrenalin NA, adrenalin A, serotonin SE levels in plasma and platelets; 5-hidrossiindolacetic acid HIAA (serotonin metabolite) and Homovanillic acid (dopamine metabolite) in platelets. SAS ® statistic package was applied to data analysis: FREQ, MEAN and NPAR1WAY procedures were applied; the analysis of variance was carried out using a Kruscal-Wallis one-way ANOVA.

Results:
The results indicate that during the history taking session, the origin of the cat, age at weaning and human family structure are very helpful in aggressive behaviour evaluation, furthermore nervousness, shyness and fearfulness related information are closely linked to anxiety related problems. Higher levels of NA (pg/ml), DA (pg/ml), LDOPA plasma (pg/ml), LDOPA platelet (pg/ml) were found in Control group ($P \leq 0.05$). A correlation between neurotransmitter concentrations and anxiety related behavioural problems has been calculated.

Discussion:
The obtained results suggest, in particular, that the reduction in platelet DA levels could be related to aggressive behaviour towards animals and human beings. Further analysis is needed to improve the knowledge of the complex relations between nervous system and behaviour. In addition the investigation of the genetic basis of behaviour could supply powerful tools in the understanding of anxiety and aggressiveness in companion animals.

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ASSESSING THE PREVALENCE OF BEHAVIOURAL PROBLEMS IN RESCUE SHELTER DOGS – A PILOT STUDY

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Keywords: dog, behavioural problems, rescue shelter

Introduction:
Behavioural problems are an important cause of dog relinquishment to shelters and of complaints after adoption. Entrance and stays in shelters can further alter dogs' behaviours and enhance the probability of displaying behavioural problems. Nonetheless, data on the prevalence and characteristics of behavioural problems in dog shelters are sparse; we therefore assessed the prevalence of behavioural problems among shelter dogs and compared different methods of behavioural assessments.

Materials and methods:
Shelter staff were asked to provide simple histories for all 428 dogs in three Italian shelters. Signalment and the past and current expression, type, and time of onset of behavioural problems, were all recorded. Additional methods of assessment included: two blind observers, one non-blind observer, one blind observer videotaping a standardised approach, and veterinary behaviourists assessing the dogs from the outside of the pen during a single shelter visit. Initial validation of these measures was analysed by comparing behavioural observation outcomes among a randomly-selected subsample with both (a) continuous behavioural and scan sampling recording methods as well as (b) a validated test (Valsecchi et al., 2001).

Results:
Overall prevalence of problem behaviours was 58%; the most frequent of which were fear-related problems (37%). Only 4% of the dogs assessed with behavioural problems acquired said behaviours after long-term stays (from 1 month to 1 year after admittance) in the shelter. The agreement between assessment methods was moderate (from 77% between history and temperament test, to 56% between history and blind non-expert observers).

Discussion:
We therefore advise using a combination of different diagnostic methods when assessing behavioural problems among shelter dogs until their relative validities and reliabilities are more firmly established.

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Reference:

Valsecchi, P., Barnard, S., Stefanini. C. and Normando, S. (2011) Temperament test for re-homed dogs validated through direct behavioral observation in shelter and home environment. Journal of Veterinary Behavior: Clinical Applications and Research 6, 161-177

CHARACTERISTICS OF BITING DOMESTIC DOGS (*CANIS FAMILIARIS*) IN PADUA MUNICIPALITY (VENETO, ITALY) - A PRELIMINARY STUDY

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Keywords: dog, biting incidents, prevalence

Introduction:

As dog bite accidents towards people have increased there have been several attempts to adopt preventive measures in Italy. With the last ministerial decree, the dangerous dog-breed list was abolished and anybody who owns a biting dog must attend specific courses and, if necessary, undertake veterinary behavioural therapy.

Since an understanding of behavioural and circumstantial characteristics of dog bites could lead to more effective prevention strategies (Reisner et al., 2011), the aim of this study was to describe the characteristics of biting dogs and incidents in Padua municipality.

Materials and methods:

One hundred and ninety-three domestic dogs (64.2% intact males, 7.3% neutered males, 18.7% intact females and 9.8% neutered females) with a history of having bitten were studied. Owners of biting dogs were asked to answer to standardised questions on their dogs' characteristics, management, and incidents' characteristics, during the compulsory rabies control veterinary visit.

Results:

The dogs' mean age was 5.84±3.48 years (mean±SD), they were mixed-breed (47.7%), medium or large size (76.2%). Attacks towards people were involved in 155 biting incidents, whereas 38 were inter-dog aggression cases. Incidents occurred mainly in places known by the dogs (91.7%) such as owner residence, victims were known by the dogs (53.5%) and injuries were not serious (73.6%).

The reason for the biting incident was seldom evident to the victim and the owner of the dog, but most victims were bitten while actively approaching the dog (77%). When a reason was known, being bitten while forcing an unwanted interaction with the dog (15.5%) or trying to separate dogs which were fighting (10.4%) was relatively common.

Most incidents (89.1%) were deemed unpredictable and devoid of warning signals, but when owners were asked to describe the dogs' behaviour before biting, they described 17.1% of the dogs as barking, 9.3% as growling, 6.2% as staring at the victim and 5.2% as frightened.

Reference:

Reisner, I.R., Nance, M.L., Zeller, J.S., Houseknecht, E.M., Kassam-Adams, N. and Wiebe, D.J. (2011) Behavioural characteristics associated with dog bites to children presenting to an urban trauma centre. Injury Prevention 17(5), 348-353

An estimation of dog bites among young people in the city of Madrid

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Introduction

1 The dimension of the problem

Dog bites are considered one of the most frequent causes of unintentional injuries in the paediatric population[1,2]

Epidemiological data is influenced by several factors, including the source of information, cross-cultural and socio-economic differences[3]

2 Main sources of information

3 Aims of the study

A study was designed to estimate the occurrence of dog bites in the paediatric population in the city of Madrid

Materials and Methods

SIVFRENT-J

A surveillance system aimed to detect risk factors for non-transmissible diseases in young people from the metropolitan area of Madrid

Conducted annually since 1996

In the year 2011 the SIVFRENT included for the first time the issue of dog bites (6 questions)

A sample from public and private schools

2000 students 15-16 years old

Self-administered questionnaire

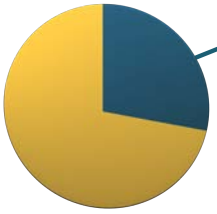
Physical activity	Diet	Addictions
Sex habits	Road safety	**Accidents**

Completion time - 35 min

Standard error estimated with STATA 10.0

Results

Have you ever been bitten by a dog?



Yes **27,45 %**
Std Err 1,25

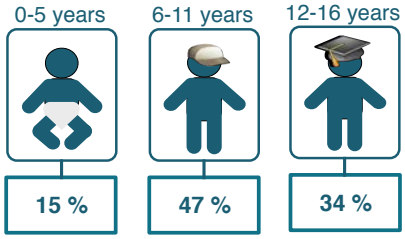
N = 1700

How many times?

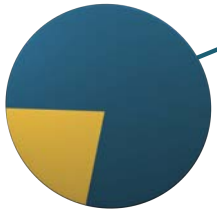
N = 552

How old were you when you were bitten?

N = 552



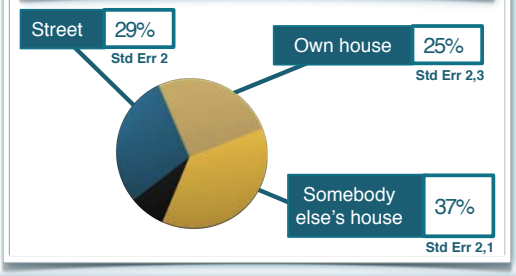
Was the dog familiar to you?



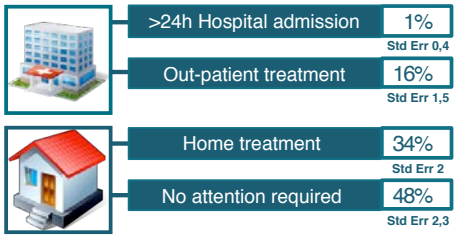
Yes **78 %**
Std Err 1,6

N = 552

Where did the incident occur?



Did you need medical attention?



Discussion

In accordance with previous studies, dog bites appeared to be a common cause of unintentional injuries among the studied population[1,2].

The commonest scenario involves an owned, familiar dog inside the household.

Most dog bites did not require medical attention and this could be an indication of the degree of severity.

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A survey of the behavior of Belgian Shepherd Dogs: are the varieties different?

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Keywords: behaviour, Belgian Shepherd, breed, dog

Introduction

In Belgium, at the end of the 1800s, there were a great many herding dogs, whose type was varied and whose coats were extremely dissimilar. In order to rationalise this state of affairs, some enthusiastic dog fanciers formed a group and sought guidance from Prof. A. Reul of the Cureghem Veterinary Medical School, whom one must consider to have been the real pioneer and founder of the Belgian Shepherd Dog. On September 29th, 1891, the Belgian Shepherd Dog Club (Club du Chien de Berger Belge) was founded in Brussels. By April 3rd, 1892, a first detailed breed standard had already been drawn up, but the type and temperament had been established by 1910 (F.C.I.-Standard No 15/ 19.04.2002 /GB).

Although it had been selected as a shepherd dog, nowadays this breed is employed in many activities such as guarding, police dogs for patrol and detection, and sport (e.g. agility, obedience, and mondioring). However the number of Belgian Shepherd Dogs as pets is growing (Aubry, 1977; Bossi, 1977; De Wailly & Varlet, 1994; Surget, 2002).

Within the breed 4 varieties are recognized: Groenendael, Lakenois, Tervueren, and Malinois.

Aim

The aim of the current research was to assess whether the varieties of Belgian Shepherd behave differently one from another.

Subjects, materials and methods

The survey was carried out by using a questionnaire filled in by 88 Belgian Shepherd dog owners recruited by personal contacts. They owned the following varieties: 33 Groenendael (G: 66.7% females and 33.3% males), 30 Tervueren (T: 72.0% females and 28.0% males), and 25 Malinois (M: 66.7% females and 33.3% males).

Forty-three multiple-choice items about dog behaviour and their frequency of display (often, sometimes or never; see table 1) were asked, plus 3 questions concerning dogs' fear (see fig. 1). Data obtained for the three groups were compared through the X^2 test ($p<0.05$).

Results

Results showed that the varieties differ for some of the analysed behavior. In detail, Groenendal dogs seem to show a lower arousal, as they were reported to exhibit the following behaviours less than other varieties: exaggerated greeting to owners returning home (G 57.6%, M 88.0%, T 73.3%; X^2=6.542; p=0.038), digging (G 15.2%, M 48.0%, T 30.0%; X^2=7.378; p=0.025) and raising hair when meeting other dogs (G 24.2%, M 60.0%, T 46.7%; X^2=7.863; p=0.020). Malinois dogs instead displayed the following behavior more: scavenging (G 12.1%, M 36.0%, T 13.3%; X^2=6.250; p=0.044), coprophagia (G 6.1%, M 24.0%, T 3.3%; X^2=7.342; p=0.025), raising hair when meeting other dogs, and defending the territory (G 36.4%, M 64.0%, T 30.0%; X^2=7.169; p=0.028). Moreover Malinois dogs showed less fear of thunderstorms (X^2=5.317; p=0.070) and loud noises (X^2=6.403; p=0.041). (see fig. 4)

Discussion

These preliminary results suggest that the varieties of Belgian Shepherd Dogs differ both morphologically and behaviourally, especially for Malinois versus other varieties (as already suggested by Svartberg, 2006). The Belgian Shepherd dog has been selected since the beginning to be both a guardian and a herding dog. According to Ortega (1993), for the varieties with long hair (Tervueren and Groenendael) more attention has been paid to morphology and to maintain original attitude for shepherding; while for Malinois the goal of selection has been to obtain dogs prone to detection and defense. This difference could explain why Malinois dogs are very energetic, quick, and vigilant; these characteristics are appreciated qualities for working dogs, but they may be excessive and difficult to be managed in an urban environment, where such dogs can become very sensitive and reactive (Ortega, 1993). Genetics appears to play a role in noise sensitivities (Levine, 2009), that could explain why varieties have a great difference in showing fear of loud noises and thunderstorms.

However, differences observed may be also related to dog management. Further research should be carried out to clarify this point and investigate other possible affecting factors such as dog sex and bloodlines.

Conclusions

Potentially new owners should be advised by breeders, veterinarians and animal behaviourists about behavioural characteristics of different canine breeds and even varieties within breeds, as a correct match between dog and owner features reduces the risk of unsuccessful adoptions.

QUESTIONS	Groenendal Often	Groenendal Sometimes	Malinois Often	Malinois Sometimes	Tervueren Often	Tervueren Sometimes
1 Urinating in the house in big amount	3.0%	12.1%	0.0%	4.0%	0.0%	10.0%
2 Urinating in the house in small sprays	0.0%	3.0%	0.0%	8.0%	0.0%	10.0%
3 Defecating in the house	3.0%	18.2%	0.0%	12.0%	0.0%	0.0%
4 Jumping over owners when they come back home	24.2%	33.3%	16.0%	72.0%	43.3%	30.0%
5 Jumping over owners (not when just home)	12.1%	42.4%	12.0%	32.0%	23.3%	33.3%
6 Jumping over other people	12.1%	39.4%	8.0%	28.0%	6.7%	43.3%
7 Digging	6.1%	9.1%	4.0%	44.0%	3.3%	26.7%
8 Escaping from home	3.0%	18.2%	4.0%	4.0%	0.0%	3.3%
9 Not obeying basic commands (sit, down etc.)	3.0%	42.4%	0.0%	32.0%	3.3%	26.7%
10 Not answering to the recall	6.1%	36.4%	0.0%	32.0%	3.3%	26.7%
11 Chewing objects	9.1%	36.4%	12.0%	52.0%	6.7%	20.0%
12 Chewing on owners' body parts	0.0%	27.3%	0.0%	28.0%	0.0%	20.0%
13 Insistently licking owner's mouth	6.1%	12.1%	8.0%	28.0%	16.7%	16.7%
14 Insistently licking owner's other body parts	12.1%	15.2%	4.0%	20.0%	3.3%	30.0%
15 Chasing vehicles/bikes/people	6.1%	21.2%	4.0%	28.0%	10.0%	20.0%
16 Scavenging	6.1%	6.1%	8.0%	28.0%	3.3%	10.0%
17 Eating his/her own faeces	0.0%	6.1%	0.0%	8.0%	0.0%	6.7%
18 Eating faeces of other dogs	0.0%	6.1%	4.0%	20.0%	0.0%	3.3%
19 Barking when left alone	3.0%	45.5%	4.0%	40.0%	0.0%	43.3%
20 Destroying when left alone	9.1%	18.2%	4.0%	16.0%	0.0%	20.0%
21 Insistently barking (not when left alone)	6.1%	12.1%	8.0%	24.0%	0.0%	26.7%
22 Destroying (not when left alone)	0.0%	9.1%	0.0%	12.0%	0.0%	3.3%
23 Pulling on the leash	18.2%	27.3%	16.0%	40.0%	10.0%	40.0%
24 Insistently licking him/herself	3.0%	18.2%	8.0%	20.0%	0.0%	23.3%
25 Having a fixed idea on something	0.0%	9.1%	0.0%	16.0%	0.0%	16.7%
26 Shadow chasing	0.0%	0.0%	0.0%	4.0%	0.0%	3.3%
27 Circling	0.0%	15.2%	4.0%	8.0%	0.0%	6.7%
28 Chasing his/her tail	0.0%	6.1%	0.0%	4.0%	0.0%	0.0%
29 Insistently repeating an action	0.0%	9.1%	0.0%	20.0%	0.0%	6.7%
30 Mounting	0.0%	39.4%	4.0%	20.0%	3.3%	26.7%
31 Being very excitable and restless	6.1%	60.6%	28.0%	44.0%	23.3%	46.7%
32 Chasing cats	12.1%	48.5%	40.0%	20.0%	16.7%	50.0%
33 Barking at other dogs	15.2%	51.5%	16.0%	52.0%	20.0%	50.0%
34 Attempting to bite other dogs	6.1%	15.2%	4.0%	28.0%	3.3%	40.0%
35 Raising hair when meeting other dogs	3.0%	21.2%	16.0%	44.0%	10.0%	36.7%
36 Growling at other dogs	3.0%	33.3%	8.0%	44.0%	6.7%	46.7%
37 Reacting aggressively when touched on the head	6.1%	3.0%	0.0%	4.0%	0.0%	3.3%
38 Reacting aggressively when forced to do something he/she does not want	3.0%	6.1%	0.0%	12.0%	0.0%	3.3%
39 Reacting aggressively when scolded	0.0%	3.0%	0.0%	0.0%	0.0%	0.0%
40 Disliking to be stroked	3.0%	12.1%	4.0%	0.0%	3.3%	3.3%
41 Showing fear of veterinarian/clinic	6.1%	18.2%	4.0%	20.0%	6.7%	40.0%
42 Disliking people, especially strangers, entering his/her territory	3.0%	33.3%	16.0%	48.0%	0.0%	30.0%
43 Defending an object	3.0%	21.2%	4.0%	40.0%	6.7%	26.7%

***Tab. 1**: percentages of BS and control dogs showing the investigated undesirable behaviours.*

Fig. 1: Malinois during an attack (Mondioring)

Fig. 2.: Tervueren herding a flock of sheeps

Fig. 3: Groenendal lowering from an helicopter (rescue dog of the C.N.S.A.S.).

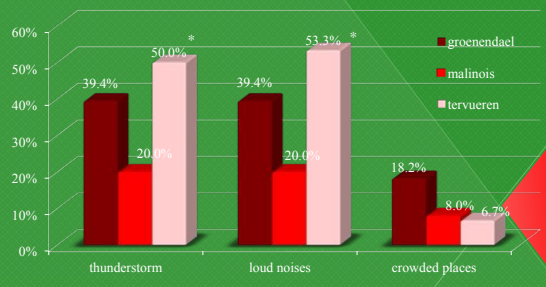

***Fig. 4:** percentages of BS dogs rieties showing fear of thunderstorms, loud noises and crowded places (* for p<0.05).*

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Effect of age and severity of cognitive dysfunction on two simple cognitive tasks in companion dogs

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Introduction

Dogs exhibit age-dependent losses in learning and memory as well as a progressive accumulation of neuropathology that parallels that which has been observed in normal human aging and early Alzheimer's disease. These deficits have been extensively studied in the laboratory environment through a number of standard cognitive tasks however appropriate tools for their assessment in veterinary clinic are still lacking.

Objective

The aim of the present study was to evaluate the effect of age and the severity of cognitive dysfunction syndrome (CDS) on two simple cognitive tests conducted in a clinical setting.

Material and Methods

A short-term memory task (STM) and a problem solving task (PS) were administered at baseline and 6 months later to three groups of companion dogs:

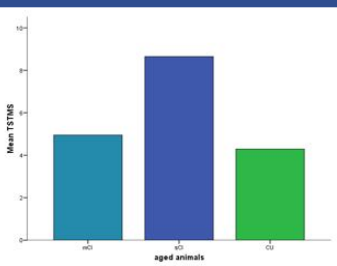
- **YG**: young (1-9 y)
- **CU**: cognitively unimpaired aged (≥9 y)
- **CI**: cognitively impaired aged (≥ 9 y)

Classification of cognitive status was carried out using an owner-based questionnaire, and in the impaired group, dogs were categorized as: having either mild (mCI) or severe CDS (sCI).

Distribution of the studied variables was assessed by Chi-square test or Fisher´s exact test. Average differences in the STM total score were assessed by Mann-Withney U test.

Main findings

- During the STM task, the young dogs were able to locate the food quicker and with more success than the aged groups ($p<0.01$).
- Furthermore dogs showing severe CDS showed the poorest performance as compared with those suffering from mild CDS or their healthy counterparts.
- In the PS task, the younger dogs again performed better than the aged dogs in getting the food, but there were not differences as a function of CDS severity.



Graphic: mean of TSTMS for aged groups (CU, sCI, mCI)

Medical assessment In order to exclude any other medical disorder with similar symptoms to CDS.

Intact aged dog

Aged dog with mild CDS

Aged dogs with severe CDS

Cognitive assessment By means of an owner-based observational questionnaire which included a number of behavioural and cognitive items.

Test procedures

Test were carried out in a consulting room at each veterinary teaching hospital. Both testing rooms contained furniture that did not hinder the way. The same person at each university conducted both tests. The design of these tests was based on previously published non-validated tests aimed at assessing canine intelligence (Coren, 1994).

•Short-term memory (STM) task

The aim of this test was to check memory by assessing the ability of the dog to remember the location of food for a short period of time.

The owner was instructed to put the dog on leash in the center of the room. The tester was placed in front of the dog (at 60 cm approximately) and showed him/her a small cube-like piece of food (ham). Then, the tester moved back while slightly shaking the hand containing the food as well as keeping visual contact and verbal communication with the dog, and placed the food in a corner of the room. Once there, the tester stared pointing the food for a few seconds (2-3 sec) in order to increase the visual processing time for the dog. Afterward, the owner was asked to leave the room with the dog on leash and to wait outside for 15 sec. Therewith they came again into the room and the dog was placed out of leash in the center, allowing him/her exploring freely for 1 min. Neither verbal cues nor gestures noting the location of food were displayed by the owner or the tester. The procedure was conducted until a maximum of three times. When a dog successfully completed one trial (i.e., found the food), then the test was concluded. Otherwise the test was subsequently repeated. The total STM score (TSTMS) was the sum of the points obtained along the trials spent to obtain food (ranged from 1 to 12 points).

• Problem solving (PS) task

The aim of this test was to assess the ability of an animal to obtain food by manipulating an object.

The tester showed a piece of food (ham) allowing the dog sniffing and even licking the hand that contained the food. Then, the food was placed on the floor and covered with a translucent plastic box (without lid and turned upside down) allowing the dog to obtain the food during a 2 min period. In this case, the owner was asked to encourage the dog to search the food and even to point the box. This test was performed only once.

Table: Distribution of qualitative variables in the different groups during the short-term memory (STM) and the problem solving (PS) tasks.

Abbreviations in (P) line indicate significant differences with corresponding groups (capital letters: P<0.01; lower case letters: P<0.05).

Task	Variable			YM (*n*=19)	CU (*n*=31)	CI (*n*=37)	mCI (*n*=20)	sCI (*n*=17)
				n (%)				
STM	Classification (first trial)	1 pt	The dog goes directly towards the food	16 (84.2)	10 (32.3)	8 (21.6)	5 (25.0)	3 (17.6)
		2 pts	The dog searches the food and finds it within a maximum of 1 min	2 (10.5)	10 (32.3)	8 (21.6)	7 (35.0)	1 (5.9)
		3 pts	The dog searches the food but does not find it within a maximum of 1 min	1 (5.3)	4 (12.9)	3 (8.1)	1 (5.0)	2 (11.8)
		4 pts	The dog does not make any attempt to search the food	0 (0.0)	7 (22.6)	18 (48.6)	7 (35.0)	11 (64.7)
			(*P*)	CU,CI	YM	YM		Cu
	Trials to success (finding the food)	1 trial		18 (94.7)	20 (64.5)	16 (43.2)	12 (85.7)	4 (66.7)
		2 trials		1 (5.3)	3 (9.7)	2 (5.4)	1 (7.1)	1 (16.7)
		3 trials		0 (0.0)	2 (6.5)	2 (5.4)	1 (7.1)	1 (16.7)
PS	Classification	1 pt	The dog tries to get the food and obtains it within a maximum of 2 min	17 (89.5)	16 (51.6)	13 (35.1)	7 (35.0)	6 (35.3)
		2 pts	The dog tries to get the food but does not obtain it within a maximum of 2 min	2 (10.5)	8 (25.8)	8 (21.6)	4 (20.0)	4 (23.5)
		3 pts	The dog sniffs the box but does not try to get the food	0 (0.0)	4 (12.9)	14 (37.8)	8 (40.0)	6 (35.3)
		4 pts	The dog does not make any attempt to get the food	0 (0.0)	3 (9.7)	2 (5.4)	1 (5.0)	1 (5.9)
			(*P*)	cu,CI	ym	YM		

A survey of cats' behaviour at the veterinary clinic

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Key Words: cat, behaviour, veterinary clinics.

INTRODUCTION

An animal's fear and anxiety upon entering the veterinary clinic and the correlated problems are a well known welfare issue (Palestrini, 2009). The sensitivity of cats to their environment and their responses to threatening stimuli have potentially important implications for veterinarians (Griffith et al., 2000; Pageat & Tessier, 1997; Overall et al., 2005), making it difficult to guarantee appropriate care and well-being of the animal and safeness of the staff (Palestrini, 2009; NAVC PGI, 2005).

AIM

The aim of the current study was to evaluate cat behaviour and welfare at the veterinary clinic, their responses to the veterinary surgeon and the approach modalities of the veterinarian.

MATERIALS, METHODS AND SUBJECTS

Data was collected by using a purposely prepared 37 closed item questionnaire administered to cat owners in 20 Italian veterinary clinics. Questionnaires were properly filled in by 1111 cat owners. For the current study, answers to 16 questions were analysed to obtain descriptive statistics.

RESULTS

It was found that most cats realized they were going to the veterinary clinic (77.8%), while still at home (51.5%), or in the car (21.2%), or when they got to the waiting room (27.3%).
Only 26.8% of cats appeared calm in the waiting room, whilst others showed signs of fear and anxiety (42.1%), restlessness (27.7%), and aggression (4.8%).
Entering the visiting room seemed to be unpleasant for 43.7% of cats.
Before making a clinical examination, 71.6% of veterinarians petted the cats, 28.4 % called them by name, and 5.8% gave them treats. A small but relevant percentage did nothing to make the visit less stressful (10.4%).
Behaviours displayed by cats during the examination are shown in **Fig. 1.**
When food was offered, 47.4% of cats refused it, 29.2% of them were suspicious, and only 23.4% accepted it.

Fig. 1: Behaviours displayed during the visit

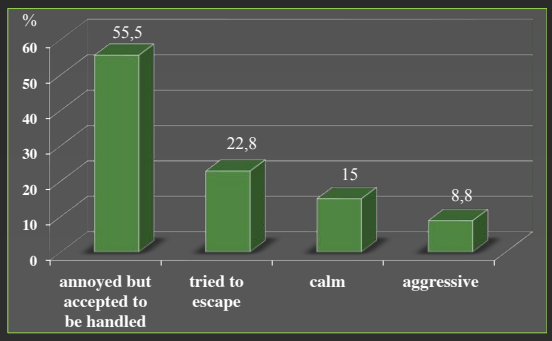
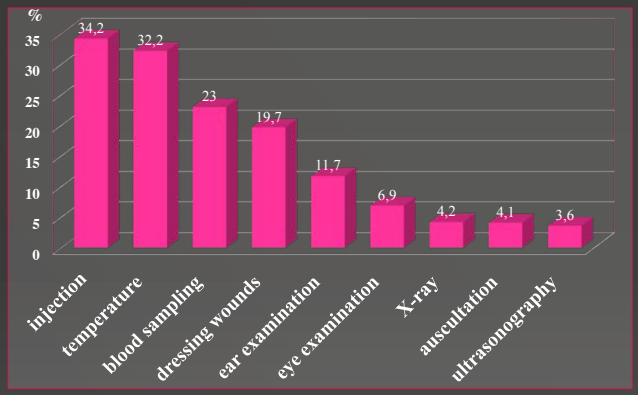


Fig.2: Most disliked treatments



Concerning the clinical handling, animals disliked to be handled at: 30.6% belly, 22.7% tail, 11.4% genital area, 9.6% mouth, 7.4% claws, 6.8% ears, and 4.0% on top of the head.
The most disliked treatments are shown in **Fig. 2.**
For most owners the pet-veterinarian relationship was positive (50.3% good and 6.8% very good), while for 25.4% it was not good and for 17.5% it was conflicting. Cats did not usually show preference for veterinarian gender (83.5%), but women were preferred by those who expressed a preference (7.8% *versus* 3.7%; X^2=12.827; p=0.000).
After a painful treatment or surgery, 73.1% of cats changed their behaviour towards the veterinarian. Moreover, 58.2% of owners believed that their cats associated the veterinarian with a negative event.
Returning home after a clinical visit, 41.5% of cats were calm, 26. 5% shocked, 16.7% scared, 14.0% restless, and 3.5% aggressive. After being hospitalised at the veterinary clinic, 47.7% of owners found their pet upset, 9.1% terrified, and 5.5% aggressive. After a surgery or veterinary visit, the behaviour of 34.4% of animals worsened during any transportation.

DISCUSSION

The results of this study suggest that the veterinary clinic was perceived by the majority of cats as an unpleasant place, and many cats displayed fear and anxiety before going to the veterinary clinic, in the waiting room, during the examination and also when returning home. Many treatments, even very common ones, were likely to be unpleasant and the cats had different parts of the body where they disliked to be handled. When cats had unpleasant or painful experiences at the hospital or felt they had no way out of the situation, they associated the veterinarian with the negative event and became more difficult to handle over time and to transport (Palestrini, 2009; Hetts et al., 2004; Overall et al., 2005). From this survey it emerged that a small but relevant percentage of veterinary surgeons did nothing to make the visit less stressful and that the veterinarian-pet relationship was not satisfying for many cat owners. It is possible that owners don't bring their pets to the hospital for routine checkups and vaccinations in order to avoid stressing their animals, and animals that cannot be easily and safely handled cannot always be provided with quality medical care (Palestrini, 2009; NAVC PGI, 2005). In the light of this, veterinarians and their staff should be trained how to humanely approach and handle feline patients without using restraint techniques that stress the cat in order to obtain the best results for examination, diagnostic testing, and treatment (as already suggested by NAVC PGI, 2005).

CONCLUSIONS

Results suggest that veterinarians should improve their knowledge of cat ethology to ensure cat welfare at the veterinary clinics; owners education (Hetts et al., 2004) and staff education could be useful in preventing stress related behaviours in feline patients.

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TRAVEL-RELATED PROBLEMS IN DOGS AND OWNERS' MANAGEMENT: AN ITALIAN SURVEY

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Keywords: behaviour, car, dog, travel

Introduction

Most owners will need to take their dogs in the car at some time (Gandia Estellés & Mills 2006), both for daily mobility and travelling for leisure purposes (Wöhr & Erhard 2004). Some animals adapt quietly to the journey, but others may display physical and/or behavioural problems during and before the journey, such as stress (Farca et al. 2006; Cannas et al. 2010), fear (Gaultier & Pageat 2003; Wöhr & Erhard 2004), anxiety (Benchaoui et al. 2007), and motion sickness (Frank et al. 2006). Despite the importance of the topic, little research has been done until now (Gandia Estellés & Mills 2006).

Aim

The aim of this study was to quantitatively assess dogs' response to journey by car, and owners' interventions to cope with possible related problems.

Materials and methods

A convenience sample of 907 dog owners, recruited in 30 Italian veterinary clinics and by personal contact, filled in a multi-choice item questionnaire. Interviewees had to be a person actively involved in the dog transportation. Descriptive statistics were obtained by 6 questions and possible associations among 3 answers were examined by a χ^2 test ($p<0.05$).

Results

Percentages of dogs reported to positively and negatively respond to travelling by car are shown in Fig. 1.

For dogs reported as problematic during car transport, the majority of owners did not administer any substances (see Fig. 2). Among the dogs treated with substances, only 35.3% were reported to be improved.

Almost half of owners (48.7%) did not seek any advice in case of problems displayed by their dog, while respondents who asked or were going to ask for help (51.3%) preferred to refer to veterinarians (68.7%), behaviourists (30.3%), dog trainers using gentle methods (i.e. based on positive reinforcement, such as toys, food etc.: 22.2%); smaller but still relevant percentages referred to people having the same problem (11.1%) or dog trainers using non-gentle methods (i.e. based on positive punishment, e.g. choke collar, prong collar, shock collar, and/or physical punishment: 4.0%).

Dogs who responded negatively during the journey were more likely to show unwanted behaviours (yelping, trembling, freezing, resisting, trying to escape, barking, and excitement) before getting in the car (11.0% *vs* 3.9%; $\chi^2=12.012$; $p=0.001$).

Dogs reacting negatively to car transportation tended to show negative responses to travelling by bus (8.3% *vs* 1.0%; $\chi^2=3.451$; $p=0.063$); while there was no association between responses to car and to train (11.1% *vs* 5.1%; $\chi^2=0.401$; ns), and nor between responses to car and to boat (2.0% vs 0.0%; $\chi^2=0.122$; ns).

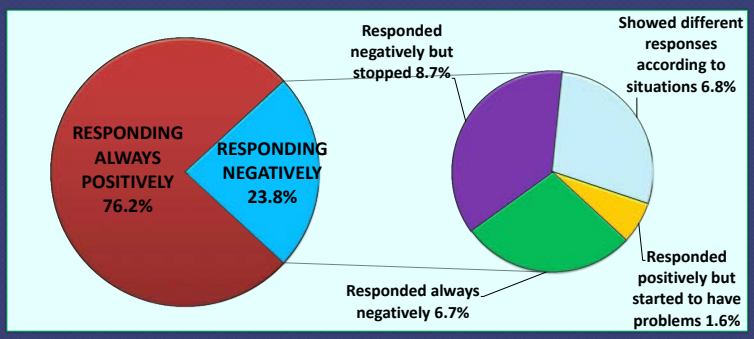

Fig. 1. *Percentages of dogs reported to respond positively and negatively (negative responses included restlessness, hypersalivation, vomiting, panting, barking, yelping, trembling, freezing, being down, scratching/destroying to exit, insistent licking, diarrhoea, urinating).*

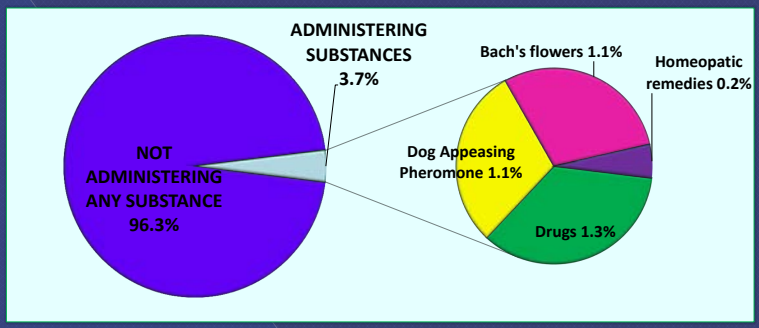

Fig. 2. *Percentages of owners who administered/did not administer substances (and type of substance) to cope with their dog's problems. Among drugs maropitant, acepromazine, other sedative or antiemetic drugs were used.*

Discussion

Travelling with dogs is an increasingly common phenomenon and results of this survey showed that a high number of dogs display problems, approximately one in four. Other remarkable results consisted in a low number of: dogs stopping to react negatively; owners seeking advice and administering substances to help their dog to cope with the journey; dogs reported to be improved thanks to the use of substances. Therefore, as a "easy" and "spontaneous" solution is not common, owners should be recommended to deal with the problem from its onset (Mariti et al. 2012) and to cope with possible treatments in a more accurate way.

Veterinarians are seen as a respected source of information and they can help owners to improve dog welfare. Unfortunately in the present study a small but relevant percentage of respondents claimed that they had referred to or would refer to dog trainers using non-gentle methods, even though aversive methods in education and training can lead to serious negative consequences (Roll & Unshelm 1997; Beerda et al. 1998; Schilder & Van der Borg 2004).

Negative response during the journey and unwanted behaviours before getting in the car could be associated, probably due to dogs anticipating what is going to happen, such as going to the veterinary clinic (Pierantoni et al. 2010), or dogs could be afraid of the car itself. Finally, it is possible that the predisposition to display negative responses to transportation by both car and bus (but not other means of transport) is due to the similarities in such means, but further studies are needed to clarify this point.

Conclusions

Results of this survey show that travel-related problems are very common in dogs and that several factors affect them. This data helps understand how owners can prevent and solve such problems, improving dog welfare.

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The perception of domestic dogs (*Canis familiaris*) biting "out of context": a statistical approach

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INTRODUCTION

In planning adequate prevention and treatment, it is important to identify whether dog behaviour is ethologically normal or not. An aggression can be considered "out_of_context" if it is disproportionate to the situation (e.g., for type of bite, causes, behavioural sequences). The subjective nature of such perception notwithstanding, it is critical to identify factors associated with veterinarians judging aggressions as "out_of_context", because legal measures depend on this.

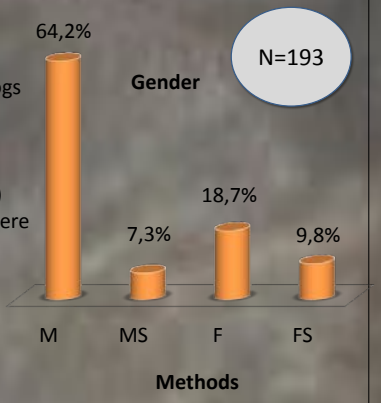
AIM

This study aimed to investigate survey reported differences between dogs whose bite had been identified by the vet as "out of context" and dogs whose bite was not.

MATERIAL AND METHODS

Subjects

One hundred and ninety-three dogs (64.2% intact males M, 7.3% neutered males MS, 18.7% intact females F and 9.8% neutered females FS, aged 5.84±3.48 years) with an history of having bitten were studied.



Methods

•Owners answer to standardized questions on the incident, dog and management.

•Dogs' behavioural responses on arrival at the consulting room and during standardized manipulations performed during the veterinary examination were collected.

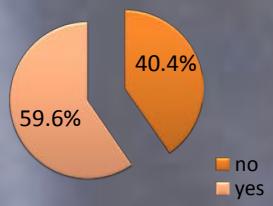
Data Analysis

Data were analysed by Logistic Regression with link function logit and classification tree (on 127 biting and 30 control dogs)

RESULTS

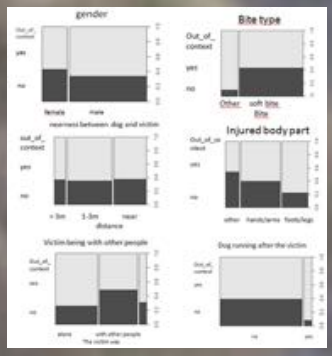
Bites considered 'out of context'

The bite was considered (on the basis of owners' answers on the incident) out of context by the visiting vet in 59.6% of the cases



Most subjects reacted quietly to the visit, but hair sampling and being lifted and placed on the visiting table triggered aggressive responses in 41.9% and 19.7% of the dogs, respectively.

Dog male gender, bite type, injured body part, nearness between the dog and the victim, the victim being with other people, dog running after the victim enhanced the probability that the event was deemed "out_of_context".



dog male gender	(Coef=1.1090, SE=0.5609, Z=1.977, P=0.048)
bite type	(Coef=-2.8495, SE=0.8543, Z=-3.335, P=0.0008)
injured body part	(Coef=1.5972, SE=0.7955, Z=2.008, P=0.044)
nearness between the dog and the victim	(Coef=2.5153, SE=0.9688, Z=2.596, P=0.009)
the victim being with other people	(Coef=-1.1068, SE=0.5404, Z=-2.048, P=0.041)
dog running after the victim	(Coef=5.0763, SE=0.1.6678, Z=3.044, P=0.002)

CONCLUSIONS

It is concluded that some characteristic of the dog and of the situation could influence the perception of a dog as biting "out_of_context".

EFFECTS OF SPACE ALLOWANCE ON THE BEHAVIOUR OF RESCUE SHELTER DOGS – A PILOT STUDY

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Studies on the effect of pen size on the behaviour of dogs in kennels have given contradictory results (Taylor and Mills, 2007). Especially in "no-kill" situations, space can become a limited commodity and this can potentially affect dogs' welfare.

AIM

The aim of this pilot study was to assess the effects of space allowance on shelter dogs' (*Canis familiaris*) behaviour.

M&M

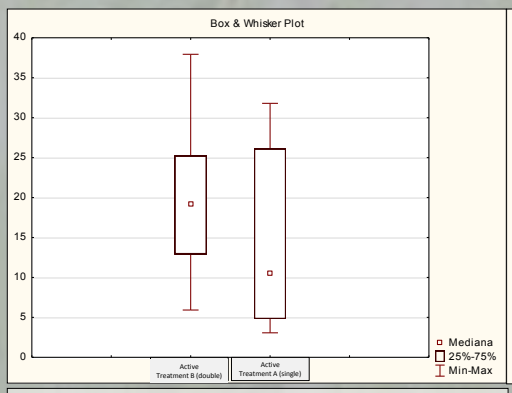
Ten mixed-breed medium-sized neutered (6 males, 4 females) dogs were involved in this study (age 1 to 8 years; permanence in the shelter 1 to 8 years). They were housed in pairs, fed once daily at 08:00, pens were cleaned at 09:00, while dogs were exercised.

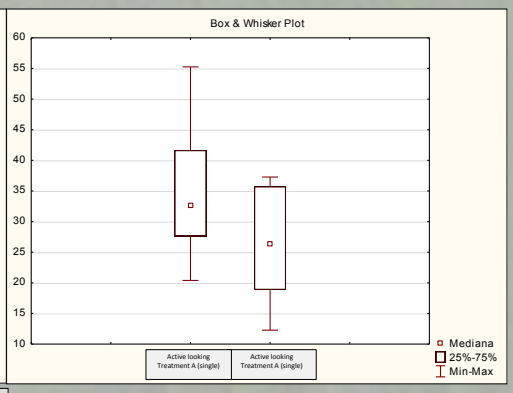
During treatment A (4 weeks) dogs were housed in pens consisting of an indoor area (approximately 1.5 m x 2.0 m=3.0 m^2) and a covered outdoor area (approximately 1.5 m x 4.0 m=6.0 m^2; total pen size=9.0 m^2). During treatment B (4 weeks) they were housed in enclosures resulting by connecting two pens next to each other, by means of removing the confining side pen wall (total pen size=18.0 m^2). Two pairs experienced first treatment A then treatment B, while three pairs experienced first treatment B then treatment A.

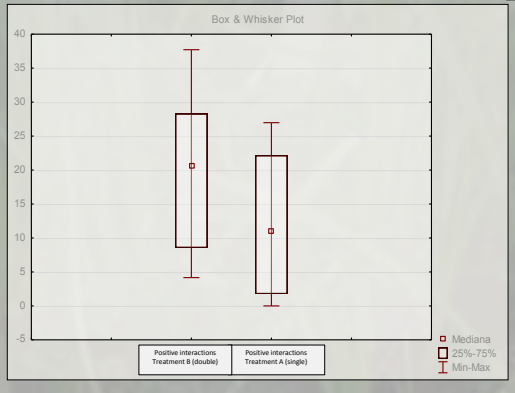
Dogs were observed for 12 minutes every hour from 10:30 to 13:30 once weekly, using a scan sampling recording method every 20 seconds, and several behaviours were assessed. The Wilcoxon test was used.

RESULTS

Dogs were more active ($Z_{(9)}$= 2.1; p = 0.04), during treatment B than during treatment A. In particular, they looked around actively more ($Z_{(9)}$ = 2.2; p = 0.03) and had more positive social interactions ($Z_{(9)}$ = 2.5; p = 0.01). Visibility, inactivity, barking, locomotion and maintenance and agonistic activities were not different







CONCLUSIONS

It is concluded that a 18.0 m^2 space allowance is more beneficial to dogs than a 9.0 m^2 one.

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CHARACTERISTICS OF BITING DOMESTIC DOGS (*CANIS FAMILIARIS*) IN PADUA MUNICIPALITY (VENETO, ITALY) - A PRELIMINARY STUDY

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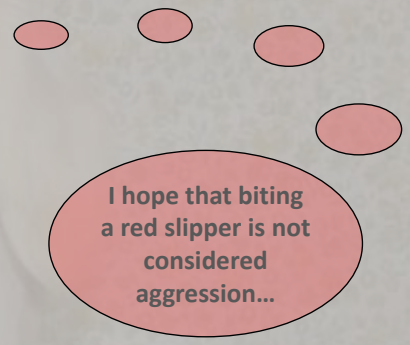
As dog's bite accidents towards people have increased, in Italy there have been several attempts to adopt preventive measures. With the last ministerial decree, the dangerous dog-breed list was abolished and anybody who owns a biting dog must frequent specific courses and, if necessary, undertake veterinary behavioural therapy. Understanding of behavioural and circumstantial characteristics of dog bites is important as it could lead to more effective prevention strategies (Reisner et al., 2011),

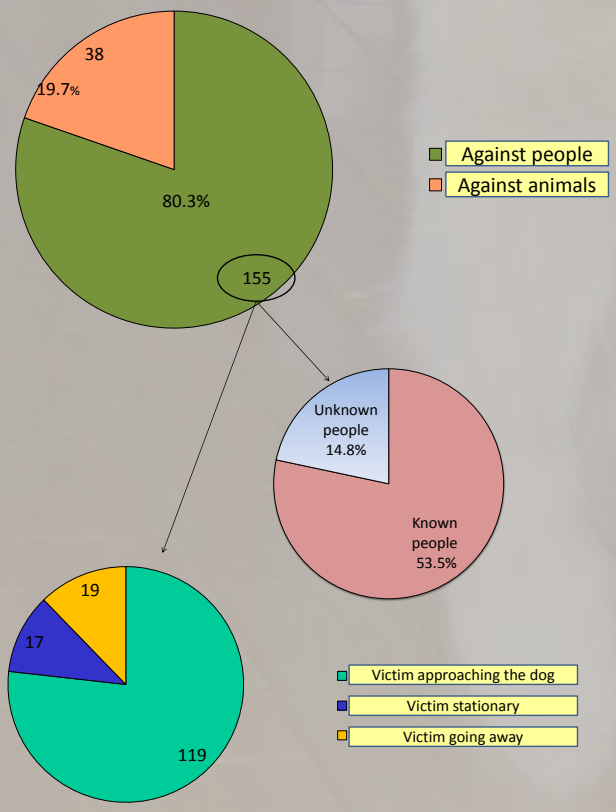
AIM

The aim of this pilot study was was to describe the characteristics of biting dogs and incidents in Padua municipality.



M&M

One hundred and ninety-three domestic dogs (64.2% intact males, 7.3% neutered males, 18.7% intact females and 9.8% neutered females) with an history of having bitten were studied. Owners of biting dogs were asked to answer to standardized questions on their dogs' characteristics, management, and incidents' characteristics, during the compulsory rabies control veterinary visit.



RESULTS

Dogs' mean age was 5.84±3.48 years (mean±SD), were mixed-breed (47.7%), medium or large size (76.2%). Attacks towards people were involved in 155 biting incidents, whereas 38 were inter-dog aggression cases. Incidents occurred mainly in places known by dogs (91.7%) such as owner residence, victims were known by dogs (53.5%) and injuries weren't serious (73.6%).

The reason for the biting incident was seldom evident to the victim and the owner of the dog, but most victims were bitten while actively approaching the dog (77%). When a reason was known, being bitten while forcing an unwanted interaction with the dog (15.5%) or trying to separate dogs which were fighting (10.4%) was relatively common.

Most incidents (89.1%) were deemed unpredictable and devoid of warning signals, but when owners were asked to describe the dog's behaviour before biting, they described 17.1% of the dogs as barking, 9.3% as growling, 6.2% as staring to the victim and 5.2% as frightened.

REFERENCE
Reisner, I.R.; Nance, M.L.; Zeller, J.S.; Houseknecht, E.M.; Kassam-Adams, N.; Wiebe, D.J. 2011. Injury Prevention 17(5):348-353

ASSESSING THE PREVALENCE OF BEHAVIOURAL PROBLEMS IN RESCUE SHELTER DOGS: A PILOT STUDY

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Behavioural problems are an important cause of dog relinquishment to shelters and of complaints after adoption. Entrance and stays in shelters can further alter dogs' behaviours and enhance the probability of displaying behavioural problems. Nonetheless, data on the prevalence and characteristics of behavioural problems in dog shelters are sparse.

AIM

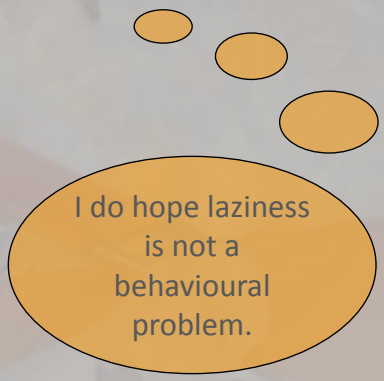
The aim of this pilot study was to assess the prevalence of behavioural problems among shelter dogs (*Canis familiaris*) and to compare different methods of behavioural assessments.

M&M

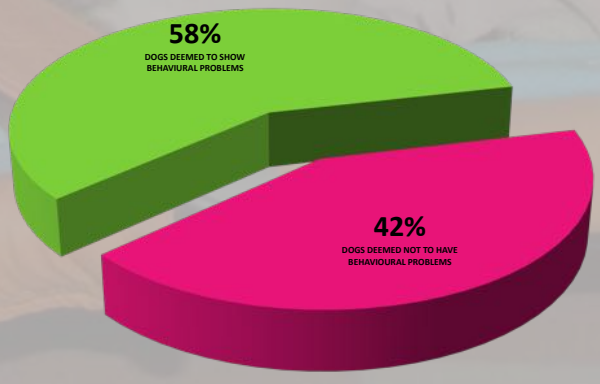
Shelter staff were asked to provide simple histories for all 428 dogs in three Italian shelters. Signalment and the past and current expression, type, and time of onset of behavioural problems were all recorded. Additional methods of assessment included: two blind observers, one non-blind observer, one blind observer videotaping a standardized approach, and veterinary behaviourists assessing the dogs from the outside of the pen during a single shelter visit. Initial validation of these measures was analysed by comparing behavioural observation outcomes among a randomly-selected subsample with both (a) continuous behavioural and scan sampling recording methods as well as (b) a validated test (Valsecchi et al., 2001).

RESULTS

Overall prevalence of problem behaviours was 58%; the most frequent of which were fear-related problems (37%). Only 4% of the dogs assessed with behavioural problems acquired said behaviours after long-term stays (from 1 month to 1 year after admittance) in the shelter. The agreement between assessment methods was moderate (from 77% between history and temperament test, to 56% between history and blind non-expert observers).



PREVALENCE OF BEHAVIORAL PROBLEMS ACCORDING TO HISTORY



CONCLUSIONS

We therefore advise using a combination of different diagnostic methods when assessing behavioural problems among shelter dogs until their relative validities and reliabilities are more firmly established.

REFERENCE
Valsecchi, P., Barnard, S., Stefanini, C. & Normando, S. (2011) Temperament test for re-homed dogs validated through direct behavioral observation in shelter and home environment. *Journal of Veterinary Behavior: Clinical Applications and Research*, *6*, 161-177.

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