

# Protocol for expert report on animal welfare in case of companion animal cruelty suspicion

## *Protocolo de perícia em bem-estar animal para diagnóstico de maus-tratos contra animais de companhia*

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### Abstract

Animal welfare expert reports may support court decisions when animal abuse or maltreatment is suspected. The objective of this work is to adapt animal welfare assessment protocols to identify companion animal abuse. The proposed protocol includes four indicator categories: nutritional, comfort, health and behavioral. To reach the overall conclusion regarding the situation evaluated, the final decisions for each group of indicators, classified as inadequate, regular and adequate, must be integrated into a single result, which will be the final welfare degree. This protocol employs a simple integration method, based on thresholds for inclusion in each of the five animal welfare degrees reported as overall conclusion for the assessment: very low, low, regular, high or very high welfare. Low and very low degrees are considered non-acceptable and are reported as abuse or maltreatment. Regular welfare is considered acceptable if corrective measures are assured. High and very high degrees are considered desirable for animal welfare. The protocol allows differentiation of animal welfare status to better decide whether an animal is under abuse, maltreatment or negligence. We hope that the refinement of the recognition of crimes against animals, especially considering cases where no physical lesion is present, coupled with a standardized protocol will improve perception of animal suffering, facilitate the field work of those involved in this type of investigation, and offer a contribution to the improvement of animal welfare in our society through proper action and crime reduction.

**Keywords:** Abuse. Animal law. Animal welfare. Indicators. Maltreatment.

### Resumo

As decisões judiciais sobre casos de maus-tratos contra animais podem ser subsidiadas por laudos de peritos em bem-estar animal. O objetivo deste trabalho foi adaptar protocolos de diagnóstico de bem-estar animal para a identificação de maus-tratos contra animais de companhia. O protocolo é composto por quatro conjuntos de indicadores: nutricionais, de conforto, sanitários e comportamentais, os quais devem ser classificados em inadequados, regulares e adequados. As decisões finais para cada conjunto de indicadores devem ser integradas em um único resultado, o qual será o grau final de bem-estar. O protocolo utiliza uma forma de integração simplificada, baseada em limites para a inclusão em cada um dos cinco graus de bem-estar, descritos como: muito baixo, baixo, regular, alto e muito alto. Graus de bem-estar baixo e muito baixo são considerados inaceitáveis e devem ser descritos como maus-tratos. Grau de bem-estar regular é considerado aceitável se medidas corretivas forem asseguradas. Graus de bem-estar alto e muito alto são considerados desejáveis para o bem-estar animal. O protocolo permite a diferenciação do grau de bem-estar em escala compatível para a decisão em relação à ocorrência de maus-tratos. Esperamos que o refinamento das formas de identificação de crimes contra animais, especialmente nos casos nos quais não existem lesões físicas, juntamente com um protocolo padronizado, possam aprimorar a percepção do sofrimento animal, além de facilitar o trabalho de campo das pessoas envolvidas nestas investigações, oferecendo assim uma contribuição para incrementar o bem-estar animal, por meio de ações adequadas e de redução da criminalidade.

**Palavras-chave:** Indicadores. Legislação. Maus-tratos. Negligência.

### Introduction

While the relationship between humans and animals is expected to be positive, there are some negative forms of interaction, such as animal abuse or maltreatment cases. In Brazil, Federal Environmental Act 9605 (BRASIL, 1998), is the main norm for animal

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protection; stemming directly from the Federal Constitution, Chapter 225 (BRASIL, 1988). However, complex disputes commonly develop during lawsuits for human misconduct against animals. In such scenarios, animal welfare expert reports may represent a strategy to support court decisions when animal abuse or maltreatment is suspected. These reports may elucidate the impact of a given case on animal welfare, contributing to adequate decisions regarding the existence of animal suffering and human neglect, ill-treatment, abuse or cruelty against animals.

It is relevant to consider that neglect is the most common form of animal abuse and it can be more generally defined as the failure to provide for an animal's need (MERCK, 2013). Neglect cases are more difficult to prosecute than intentional aggression, so the effects of intentional aggression on the victim may be easier to document and the intentionality of the offense is more clearly recognized (PHILLIPS; LOCKWOOD, 2013). Therefore, welfare assessment may be appropriate to identify animal abuse, and especially helpful for situations of neglect and offenses other than physical injury.

Welfare degree should be objectively assessed in order to provide required information for best ethical decisions in a given situation (BROOM; MOLENTO, 2004). Non-invasive assessment methods are required and should be continually developed, tested and validated (WALKER et al., 2009). The use of structured approaches for welfare assessment may facilitate animal welfare diagnosis (YEATES; MAIN, 2009). Most welfare assessment work has been conducted with production animals. Thus, it is important to consider how welfare diagnosis protocols and methods are used in this animal category, so that these better studied strategies may be adapted and employed for animals subjected to other scenarios, such as animals subjected to ill-treatment or abuse. One such approach is the Welfare Quality protocol (WELFARE QUALITY, 2009), which was developed through European funding to objectively assess

the welfare of farm animals. This protocol defines welfare criteria, which reflect what is meaningful to the animal as understood by animal welfare science. We propose that expert reports on animal welfare be equally based on a scientific concept and its indicators. Another specific protocol for companion animals is the Shelter Quality. The protocol was developed with the aim of providing a valid, reliable and practical tool for assessing dog welfare in long-term shelters. The measures were selected to assess specific welfare criteria, reflecting management procedures (management-based measures), housing environment (resource-based measures) and direct welfare outcomes (animal-based measures) (BARNARD et al., 2014). Morton (2007) describes a hypothetical strategy for assessing poor and good welfare, attributing scores to positive and negative aspects of an animal's well-being, using predefined categories and a simple scoring route, adding these scores into an overall welfare score.

As our ability to assess animal welfare develops and considering the need for technical assistance during the identification of crimes against animals, the objective of this work is to adapt animal welfare assessment protocols to identify companion animal abuse. The major goal is that this protocol be valuable to contribute to a decision regarding the occurrence of crimes against companion animals. In addition, the protocol may be useful for different species after careful adaptation.

### **Developing the protocol for expert reports in animal welfare**

The protocol here proposed is based on the animal welfare concept proposed by Broom (1986) and on the Five Freedoms concept (FAWC, 1993). The Five Freedoms, although developed for farm animals, can be applied to companion animals and represent a combination of both mental state and external parameter approaches. The protocol was inspired by the Welfare Quality (WELFARE QUALITY, 2009)

and includes four indicator categories: (1) nutritional indicators, (2) comfort indicators, (3) health indicators, and (4) behavioral indicators. The final welfare degree will be a product of the integration of these indicators. The protocol is composed of non-invasive animal-based measurements, individually taken, considering also observations from the environment and the resources available to the animal. In order to present each section objectively, species-specific information are presented considering investigation of suspicion of cruelty mostly against dogs, the most common species involved in formal complaints in our region (HAMMERSCHMIDT; MOLENTO, 2012). However, the protocol is robust enough for use in any vertebrate species, only requiring adaptations on species-specific indicators.

According to Butterworth, Mench and Wielebnowski (2011), when a new method for assessment is proposed, four fundamental questions must be considered: Is it practical? – in relation to duration and costs for execution; Is it valid? – the information produced tells something “real” about the animal’s welfare; Is it repeatable? – two or more assessors give the same answer or score when assessing the same animal; Is it robust? – the measurement should not be influenced by external factors. Thus, the proposed

protocol was developed to be practical, especially considering assessment time and costs, not involving laboratory tests or other costly measurements. The validity of the proposed protocol will be built on the initial reliability conferred by the knowledge of the Welfare Quality validity (BOTREAU; VEISSIER; PERNY, 2009; DALMAU et al., 2009), and it will depend on multiple uses across time. Repeatability is favored by the level of detail in each measurement, as it provides less complexity for each individual indicator and consequently less variation across different evaluators. Training before use seems important to increase repeatability, in addition to basic animal welfare knowledge. Effort is employed in the control of external influences, especially by centralizing the assessment on outcomes, i.e., measurements taken directly in the animals.

## Animal welfare assessment

### *Nutritional indicators*

This group of indicators is designed to provide information regarding hunger, thirst and malnutrition (Box 1). These indicators are essential in any welfare evaluation, since eating and drinking are natural behaviors with high survival impact (KYRIAZAKIS; TOLKAMP, 2011).

Box 1 – Nutritional indicators for the expert report on animal welfare as support for court decisions in cases of suspected animal cruelty – Curitiba – 2014

<p>1. Body condition score (1-5): _____</p> <p>2. Availability of fresh water: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>3. Feed: <input type="checkbox"/> Commercial Ration <input type="checkbox"/> Homemade <input type="checkbox"/> Other: _____</p> <p>4. Frequency: <input type="checkbox"/> 1x/d <input type="checkbox"/> 2 x/d <input type="checkbox"/> 3 x/d <input type="checkbox"/> Other: _____</p> <p>5. Water trough condition: <input type="checkbox"/> Clean <input type="checkbox"/> Partially clean <input type="checkbox"/> Dirty</p> <p>6. Feed trough condition: <input type="checkbox"/> Clean <input type="checkbox"/> Partially clean <input type="checkbox"/> Dirty</p> <p>Comments: _____</p> <p>Nutritional state: <input type="checkbox"/> Inadequate <input type="checkbox"/> Regular <input type="checkbox"/> Adequate</p>
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Prolonged hunger may be identified by body condition scoring (STAFFORD, 2006), which is one of the nutritional indicators proposed. Ideally, species-specific scales of body condition score should be employed, when available (PATRONEK, 1998). A more general approach may be employed, considering variation from 1 to 5, 1 representing an extremely thin animal and 5 extremely obese (MERCK, 2007). The scoring relies on the evaluation of the amount of adipose tissue in the regions of the insertion of tail, spinal processes, ilium, ischium and ribs. Recognition of severe malnutrition is relatively straightforward and veterinary involvement is usually restricted to those cases involving gross neglect (MUNRO; MUNRO, 2008). Cases of undernutrition may be caused by total feed restriction, low quality feeds, inadequate feedstuff, intermittent feed provision or lack of animal appetite; all of these require further investigation. Thus, the type and amount of feed offered, and frequency of offering are included as components of nutritional indicators. One limitation of these indicators is that they are dependent on report by the person maintaining the animals; thus, the context and other relevant indicators must be taken into consideration for this analysis.

Thirst may be verified by the observation of fresh water source available to the animal, thus our protocol includes this verification of water availability on the

premises where the animal is kept. Severe water deprivation correlates with disease, physiological imbalances, poor welfare and, eventually, death (KYRIAZAKIS; TOLKAMP, 2011). Merck (2013), for crime investigation scenarios, clearly states the importance of evaluating water and feed sources.

Our protocol proposes an objectively defined evaluation of feed and water trough cleanliness, adapted from the Welfare Quality for cattle (WELFARE QUALITY, 2009), that classifies water troughs as clean, partly dirty, and dirty (Figure 1). Feed and water troughs must be clean, and these criteria are present in other protocols as well, such as those from Royal Society for the Prevention of Cruelty to Animals - RSPCA (2011).

A final decision regarding nutritional indicators is based on the information from each indicator. For animals with body condition score a full point lower than the ideal or for the absence of fresh water during observation, nutritional indicators are considered inadequate. This group of indicators is considered regular when feeding presents limitations, which may be related to frequency of feeding, quality of feed, body condition score higher than the ideal and problems in feed or water trough cleanliness. Nutritional indicators are considered adequate when body condition score is ideal, fresh water and adequate feed are available, feeding frequency and quality are adequate, and feed and water troughs are clean.

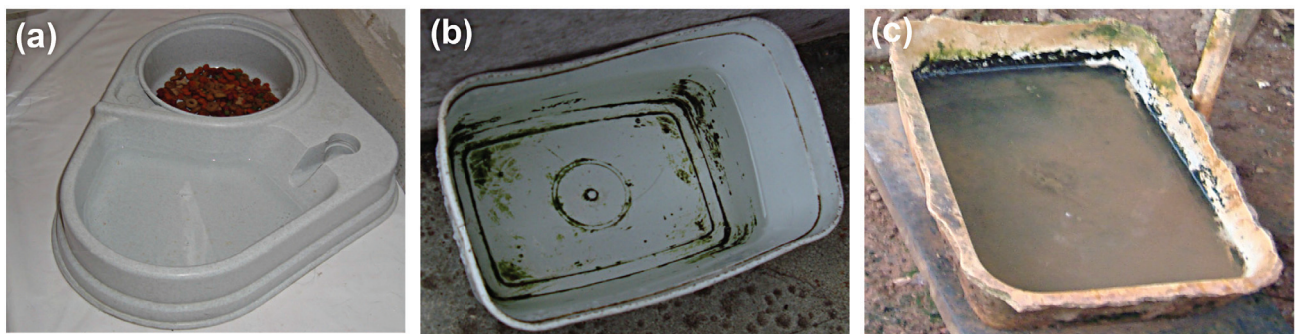


Figure 1 – Examples of (a) clean – clean water and clean container at the moment of inspection, (b) partly dirty – clean water and dirty container at the moment of inspection, and (c) dirty – dirty water and dirty container at the moment of inspection - classifications as nutritional indicators in the protocol for expert report on animal welfare as support for court decisions in cases of suspected animal cruelty

Source: (HAMMERSCHMIDT, 2011)

### Comfort indicators

Comfort indicators are evaluated to check whether the animal is free from discomfort, using mostly environment-based information, such as shelter provision and the type of contact surfaces offered (Box 2). The RSPCA protocol (RSPCA, 2011) states that the environment offered to the animal must protect them from physical and thermal discomfort, by offering access to a comfortable resting area, flooring adequate to the species and the presence of shelter. The first step involves the description of the environment where the animal is kept. Pet dogs and cats, for instance, may be kept inside or may be allowed to go outside. All relevant information that may collaborate to understand how adequate the environment is for the animal as compared to the species minimum body care behavioral needs as well as comfort requirements must be collected.

Shelter is an important aspect of environmental quality in relation to thermal comfort (PATRONEK, 2004; PETHERICK, 2007), since it influences the ability to cope with environmental temperature,

humidity and other climate factors, such as direct sunlight exposure. Thus, shelter provision and its condition must be assessed (Figure 2). In relation to contact surfaces, it is important to check if comfortable lying surfaces are available to the animal (Figure 3a and b), as well as if overall substrate in contact with the animal is adequate (Figure 3c). Cats, for example, spend a large portion of their day either resting or sleeping, so it is important that the rest areas have comfortable surfaces (ROCHLITZ, 2005).

The possibilities for body movement must be addressed and these must guarantee body care functions needed to avoid discomfort (Figure 4). Short running are included here, inasmuch as they are essential for proper muscle and joint health maintenance (DEFRA, 2009). However, these opportunities are also essential as behavioral components of welfare, and could be included within the behavioral indicators just as well.

It is also important to verify the number of animals within the same enclosure, since apparently spacious areas may actually be limiting when many animals are

Box 2 – Comfort indicators for the expert report on animal welfare as support for court decisions in cases of suspected animal cruelty – Curitiba – 2014

<p>7. Permanent shelter: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>8. Shelter adequately protects from rain and sun: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>9. Environmental temperature range: ____ Is it within comfort zone for the species: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>10. Comfortable surface for lying: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>11. Enclosure allows short running: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>12. Number of animals per species within enclosure:</p> <p>13. Enclosure or restriction type: <input type="checkbox"/> Household <input type="checkbox"/> Loose in backyard <input type="checkbox"/> Chained <input type="checkbox"/> Kennel</p> <p><input type="checkbox"/> Other: _____</p> <p>14. Is there an alternate environment: <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, percentage of time used: _____</p> <p>15. Contact surfaces: <input type="checkbox"/> Soil <input type="checkbox"/> Grass <input type="checkbox"/> Concrete <input type="checkbox"/> Wood <input type="checkbox"/> Tiles <input type="checkbox"/> Other: _____</p> <p>16. Contact surfaces are adequate to the needs of the animal: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>17. Environment cleanliness: <input type="checkbox"/> Bad <input type="checkbox"/> Regular <input type="checkbox"/> Good <input type="checkbox"/> Excellent</p> <p>Comments: _____</p> <p>Comfort state: <input type="checkbox"/> Inadequate <input type="checkbox"/> Regular <input type="checkbox"/> Adequate</p>
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Figure 2 – Examples of (a) adequate shelter, (b) inadequate shelter, and (c) shelter absence, to be evaluated for the assessment of comfort indicators in the protocol for expert report on animal welfare as support for court decisions in cases of suspected animal cruelty

Source: (HAMMERSCHMIDT, 2011)



Figure 3 – Examples of (a) presence and (b) absence of comfortable surface for lying, and (c) overall substrate contact surface adequacy and cleanliness as comfort indicators in the protocol for expert report on animal welfare as support for court decisions in cases of suspected animal cruelty

Source: (HAMMERSCHMIDT, 2011)



Figure 4 – Examples of locomotion classification as (a) ideal, freedom to move within safe premises, no access to unsupervised areas, (b) moderately restricted by rope, and (c) severely restricted in kennel, as comfort indicators in the protocol for expert report on animal welfare as support for court decisions in cases of suspected animal cruelty

Source: (HAMMERSCHMIDT, 2011)

present. Even for pets living inside the house, if the number of animals surpasses environmental capacity, the result will be negative for each individual animal.

Environmental cleanliness is assessed as bad, regular, good or excellent. Neglect cases often have

environments that are malodorous, filthy, and cluttered with hazardous material, with urine and feces covering most surfaces (MERCK, 2007).

Final decision regarding comfort is reported as inadequate when no shelter is provided, temperature

is out of the comfort zone for the species, and there is no suitable surface for lying, when short running is not possible, or cleanliness is bad. Regular comfort condition is present when shelter is inadequate, surface for lying is present but inadequate in relation to the species characteristics, and other moderate inadequacies, such as moderate movement restrictions that interfere with comfort behaviors and regular cleanliness condition. Final decision as adequate comfort is attained when shelter, lying surface, thermal comfort and cleanliness are all adequate.

### **Health indicators**

The assessment of health indicators aims to identify pain, disease or injury through physical exam of the animal as well as data requested from the person responsible for the animal (Box 3). Physical health evaluation is probably the most evident welfare measurement (DAWKINS, 2003).

The majority of health indicators are animal-based (Box 3), such as pain indicators, since pain may considerably modify animal behavior (MANTECA VILANOVA, 2009). This protocol includes pain-related behavioral measurements, such as hunched back (Figure 5a), standing/sitting positions and limping, to identify animals in pain. According to Viñuela-Fernandez, Weary and Flecknell (2011), the use of behavior changes to identify pain has been given increasing emphasis. An animal in pain may roll, hide, and/or vocalize (MERCK, 2007) and, consequently, it is important to consider these behaviors during health diagnosis. Limping is a common welfare problem for many animal species and, according to Manteca Vilanova (2009), may be both intense and chronic.

Diseases in general constitute important welfare restrictions, since they are often associated with negative experiences such as pain, discomfort or distress (ROUSING; BONDE; SORENSEN, 2001) or

Box 3 – Health indicators for the expert report on animal welfare as support for court decisions in cases of suspected animal cruelty – Curitiba – 2014

18. Hunched back: <input type="checkbox"/> Yes <input type="checkbox"/> No	19. Pain signs during palpation: <input type="checkbox"/> Yes <input type="checkbox"/> No
20. Standing/sitting positions altered: <input type="checkbox"/> Yes <input type="checkbox"/> No	
21. Locomotion: <input type="checkbox"/> Normal <input type="checkbox"/> Limping <input type="checkbox"/> Severe limping	
22. Body secretions: <input type="checkbox"/> Yes <input type="checkbox"/> No Where: _____ Description: _____	
23. Mucosal color: <input type="checkbox"/> Normal <input type="checkbox"/> Anemic <input type="checkbox"/> Hyperemic <input type="checkbox"/> Jaundice	
24. Hydration: <input type="checkbox"/> Normal <input type="checkbox"/> Light dehydration <input type="checkbox"/> Severe dehydration	
25. Feces: <input type="checkbox"/> Normal <input type="checkbox"/> Diarrhea	
26. Fur: <input type="checkbox"/> Pale <input type="checkbox"/> Matted <input type="checkbox"/> Shiny <input type="checkbox"/> Hairless areas	
27. Ectoparasites: <input type="checkbox"/> Yes <input type="checkbox"/> No Description: _____	28. Itchiness: <input type="checkbox"/> Yes <input type="checkbox"/> No
29. Lesions or injuries: <input type="checkbox"/> Yes (Mark and describe in the drawing) <input type="checkbox"/> No	
30. Scars: <input type="checkbox"/> Yes (Mark and describe in the drawing) <input type="checkbox"/> No	
31. Vaccinated: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Outdated	
32. Dewormed: <input type="checkbox"/> Yes Last dose: _____ <input type="checkbox"/> No	
33. Unsupervised access to outside: <input type="checkbox"/> Yes - How often: _____ <input type="checkbox"/> No	
Comments: _____	
Health state: <input type="checkbox"/> Inadequate <input type="checkbox"/> Regular <input type="checkbox"/> Adequate	

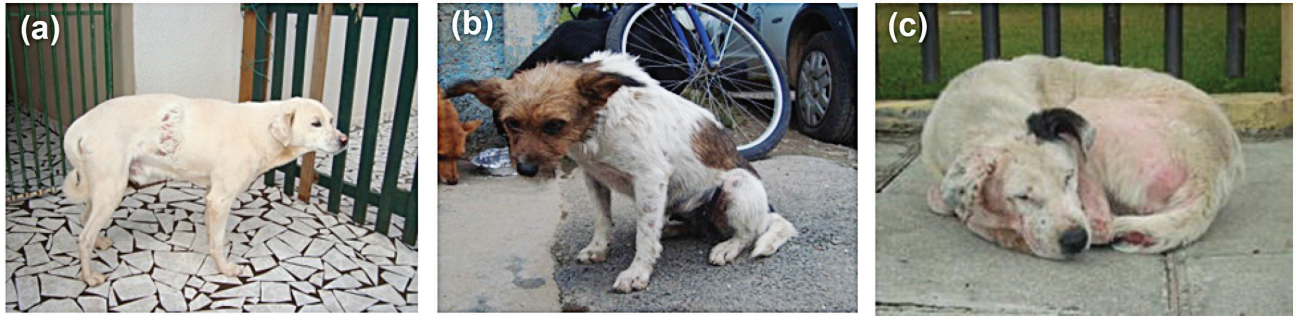


Figure 5 – Examples of potential signs of (a) pain, with hunched back, (b) malaise or apathy, and (c) ectoparasites, e.g. *Sarcoptes scabiei*, as health indicators in the protocol for expert report on animal welfare as support for court decisions in cases of suspected animal cruelty

Source: (HAMMERSCHMIDT, 2011)

feelings of illness such as nausea, pruritus and malaise (YEATES, 2012). Thus, our protocol includes relevant indicators to identify signs of clinical disease, which are specifically conceived to be robust and readily measurable in field conditions.

Other health indicators include observations of pathological body secretions, such as nasal abnormal secretions, mucosal color, hair condition, feces characteristics, presence of ectoparasites (Figure 5c) and body hydration condition. Hydration may be estimated by the skin elasticity, associated with the capillary refill time. Dehydration is a clear sign of prolonged thirst (WEBSTER, 2005), and in specific scenarios may be a critical indicator. For instance, it is an essential indicator in suspicion of ill-treatment of urban draft horses, since these animals are frequently worked for long periods without access to any source of water. It is important to consider all indicators in an integrated fashion, since some physiological signs may only be relevant to welfare assessment when combined with other information. When indicators are suggestive of disease or other health impairment which require further investigation, the animal must be taken to a veterinary clinic or hospital.

Skin lesions or injuries may constitute a cause for pain and suffering, compromising the animal welfare (COCKRAM; HUGHES, 2011), and thus the protocol includes clinical exam for them, with detailed registration of their characteristics, extension and location within the schematic design of the

animal body surface. When an animal is hurt, it normally licks or somehow tries to clean the area, and this may potentially remove important evidence during assessment (MERCK, 2007). Merck (2007) also emphasizes that it is important to consider non-accidental injury whenever clinical signs do not match with the story told by the owner or caregiver. In some scenarios, such as working and farm animals, some lesions or scars are typically found due to persistent inadequate conditions. These include lesions due to poor horse harness, which are potentially associated with chronic pain, such as commissures of lips, hock and carpal lesions (PRITCHARD et al., 2005).

Besides indicators related to pain, disease and injury, the protocol includes information related to the existence of health risks to the animal, such as lack of disease prevention and unsupervised access to the outside. In the case of dogs, for example, unsupervised access to the street exposes the animal to a variety of health hazards, such as car accidents, aggression from other animals and people, and infectious diseases, which may negatively impact welfare (THORNTON, 1992). In relation to cats, there is no consensus about semi-owned cats and its welfare implications (TOUKHSATI; BENNETT; COLEMAN, 2007; TOUKHSATI et al., 2012).

Final decision regarding health is reported as inadequate when animals present hunched back, palpation pain, severe lameness, disease or evidence of painful injury. Regular health condition is present



when moderate lameness or non-painful injury is present, when animals are not vaccinated or not dewormed, or when dogs are allowed to go outside unsupervised. Final decision as adequate health is reported when the animal presents no sign of pain, injury or disease, and has received adequate vaccination and worm prevention management and is not left outside without supervision, in case of dogs.

### **Behavioral indicators**

Behavioral indicator data are partly based on the assessment of the possibilities to express natural behavior, as assessed by information on the environmental items available to the animal, and partly on direct behavioral observations. In addition, behavioral indicators include information used to assess predominant valence of feelings experienced by the animal (Box 4). It is important to consider time restrictions usually present in practical situations, which do not allow for complete ethograms to be made; however, behavioral observations are central to welfare assessment, even when only partial data collection is possible.

An important strategy to reduce the difficulties due to time constraints is to assess behavioral possibilities, given by resources available. A barren environment is necessarily linked to a limited behavioral repertoire (PETHERICK, 2007). Considering dogs and cats,

examples of relevant environmental resources associated to natural behavior are toys, shelter, wood or other gnawing or scratching material, among others. For cats, elevated platforms for sitting or lying are an important resource, since it is their natural behavior to use enclosure areas in a vertical fashion (ROCHLITZ, 2007). For the assessment of behavioral state in other species, it is essential to look for items required to perform natural behavior, giving priority to those behaviors considered highly motivated for the species.

An important group of input indicators, based on environmental resources, is the assessment of room availability for normal movement and natural behaviors to occur (Figure 6), which may be judged to be (1) adequate to allow for freedom of movement and expression of most natural behaviors, (2) inadequate with some restriction of movement and limited natural behavior expression, and (3) severely inadequate with important restriction of movement and restriction of most natural behaviors. The evaluation of these input indicators is completely related to knowledge on natural behaviors of the species, more specifically to highly motivated behaviors. It is in contrast to this knowledge that a decision is made in terms of the severity of inadequacies found. Also, according to Petherick (2007), the quality of space offered to an animal is directly related to the possibilities for



Figure 6 – Examples of space available to the animal for natural behavior, such as (a) freedom to move and express many natural behaviors, (b) moderate restriction by long rope, and (c) severe restriction by short chain as behavioral indicators in the protocol for expert report on animal welfare as support for court decisions in cases of suspected animal cruelty

Source: (HAMMERSCHMIDT, 2011)

Box 4 – Behavioral indicators for the expert report on animal welfare as support for court decisions in cases of suspected animal cruelty – Curitiba – 2014

34. What environmental resources are available for natural behavior to be expressed:  
 Toys  Others: \_\_\_\_\_

35. Resources available in relation to the behavioral needs of the species:  
 Adequate  Regular  Inadequate

36. Room available to the expression of natural behavior:  
 (1) Possibilities for the expression of most natural behaviors  
 (2) Some restriction for the expression of natural behaviors  
 (3) Major restriction for the expression of natural behaviors

37. Social contact with other individuals of the same species:  Yes  No

38. Social contact with individuals of other species:  Yes  No

39. Frequency of playful interaction with owner:  Everyday  Once a week  Never

40. Supervised walks (dogs):  Yes  No Description: \_\_\_\_\_

41. Evidence of abnormal behavior:  Yes  No Description: \_\_\_\_\_

42. Evidence of stereotypies:  Yes  No Description: \_\_\_\_\_

43. Animal attitude:  Alert  Apathetic

44. Attitude to human presence:  Happy  Aggressive  Unsure  Calm  
 Anxious  Other: \_\_\_\_\_

45 Attitude to owner presence:  Happy  Aggressive  Unsure  Calm  
 Anxious  Other: \_\_\_\_\_

46. Tail position in dogs:  
 High, wagging  High, vertical  High, horizontal  Low  Between legs

47. Tail position in cats:  High and shaking  High  Low  Tail swishing back and forth

48. Head position:  Higher than dorsal line  Lower than dorsal line

49. Direct eye contact with observer (you):  Yes  No

50. Back or tail piloerection:  Yes  No

51. Spontaneous proximity to humans:  Open willingness to follow humans  
 Hesitant to follow when solicited  Animal does not approach humans  
 Animal runs away or tries to hide

52. Vocalization in dogs:  Barking  Growling  Crying  Silent

53. Vocalization in cats:  Purring  Meowing  Growling  Hissing  Silent

Comments: \_\_\_\_\_

Behavioral state:  Inadequate  Regular  Adequate

the expression of natural behaviors and the space requirements depend also on the duration of animal maintenance in the enclosures. When an animal is kept within the enclosure for minutes or hours, a severe restriction of space is acceptable. On the other hand, when the animal is kept for months or years, space offered must be compatible with natural behavior.

As an animal-based indicator, the protocol includes the investigation on the expression of abnormal behavior. As suggested by Sherman (2010), abnormal behavior may include stereotypes, behaviors indicating frustration such as vocalization, and exacerbated agonistic behavior, considering that all vary according to duration and severity of suffering. Abnormal behavior may be difficult to measure due to time constraints usually present; however, any information available concerning this indicator is relevant.

Social contact with conspecifics and members of other species is also considered and constitutes an important indicator, since social isolation for some species such as dogs may be as deleterious as space restrictions for the welfare of the animals (HETTS et al., 1992). Even with cats, Feuerstein and Terkel (2008) found that by adding the presence of a dog to a sole cat in the house, the cat's quality of life can be improved. The protocol includes an interview on play activities with the animals, through interaction with owner or other animals within the enclosures. Play is considered an essential component of the dog-human and cat-human relationship (STAFFORD, 2006; BERNSTEIN, 2007) and this facilitates harmonic living with humans, besides enhancing the emotional link between owner and the animal. In this context, information on supervised walks is also requested for dogs. A dog needs regular exercise and regular opportunities to walk and run (DEFRA, 2009) and shared activities between a dog and its owner, as well as the attachment existent between them, all of which contribute to increase animal welfare (BENNETT; ROHLF, 2007).

Mental state approaches concentrate on attempting to evaluate the feelings and emotions of the animal (YEATES; MAIN, 2009), such as stress (BEERDA et al., 1997), pain (BUSSIÈRES et al., 2008; FITZPATRICK; SCOTT; NOLAN, 2006) and positive feelings (YEATES; MAIN, 2008). Assessment begins with the identification of the animal's attitude, checking whether the animal shows alertness or apathy. Apathy may be defined as a state of inactivity and lack of response to environmental stimuli in a fully conscious animal (MANTECA VILANOVA, 2009), and may constitute an animal welfare indicator related to disease or prolonged maintenance of the animal in a barren enclosure or in isolation.

Animal attitude is also assessed in relation to the presence of the assessor and of the owner (Figure 7), in order to identify predominant emotional state in the context of human-animal interaction, and the attitude is classified as happy, aggressive, unsure, calm or anxious. This classification is based on a group of indicators. For example, a dog may be classified as happy when exhibiting signals such as a positive interaction with assessor and owner, tail wagging and willingness to follow (Figure 7c). Thus, attitude assessment is combined with behavioral signs such as tail and head position, direct eye contact, piloerection, willingness to follow and vocalization. The joint assessment of these indicators collaborates to the identification of signs of fear and distress.

Fear is a primary emotion, which is useful for determining a response to a potentially dangerous stimulus (STAFFORD, 2006). It is a negative emotion, and when it is intense and prolonged it may be considered suffering (FRASER; DUNCAN, 1998). Animals responding fearfully indicate a present negative feeling which possibly depends on previously strained conditions, but in order to identify, prevent or solve welfare problems, this indicator cannot by itself meet the conditions presented (ROUSING; BONDE; SORENSEN, 2001). Animal behavior may further suspicion of ill-treatment or abuse, especially

when there is greater fear in the presence of the owner, apathy, depression of anxiety. An animal's fear or anxiety reactions may be severe and be expressed as vocalization, urination or defecation in the presence of the owner or caregiver. This can be tested by checking the animal's reaction to the absence of the owner or caregiver and again its reaction when they are called back to the scene. It is also important to keep in mind that the animal may respond positively to the presence of its owner, including tail wagging and licking, even after overt aggression (MERCK, 2007). A good indicator of fear in dogs is the tail position, tucked between the legs (BEAVER, 1994). Piloerection may be observed in dogs reacting in a defensive manner as well as in attack situations (BEAVER, 2001). Assessment of willingness to follow in dogs is also related to fear, since fearful dogs tend to run away. They also show fearful tail position (Figure 7a), keep their head down (Figure 7b) and do not establish direct eye contact with the assessor (PRESCOTT et al., 2004). Finally, the possibility to maintain contact with other people besides the owner is also observed, in order to help understand the risk of isolation and the negative feelings associated with this situation.

Final decision regarding behavior is reported as inadequate when environmental resources insufficient for natural behavior occur, when there

is severe space availability, when no social contact with conspecifics is possible or when there is social isolation, in the evidence of abnormal behavior, as well as when there is convincing evidence of fear or hesitation in the presence of the owner. Regular behavior condition is present when environment resources are partially satisfactory, when some space or behavioral restrictions are perceived, in the absence of positive events through playful interaction, and in the absence of supervised walks in the case of dogs. Final decision as adequate behavior is reported when environmental resources are sufficient, the animal has freedom of movement and is able to express most natural behaviors, there is social contact to other animals from the same species, there are regular positive events through playful interaction, regular supervised walks, absence of abnormal behavior and in the presence of a calm or happy animal.

### Was it a case of animal cruelty?

This protocol proposes the assessment of overall welfare into a five degree scale: very high, high, regular, low and very low animal welfare. Low and very low degrees are considered non-acceptable. Regular welfare is defined when some restrictions are observed, but the situation is considered acceptable if corrective measures are assured, which in turn will increase animal welfare. High and very high degrees

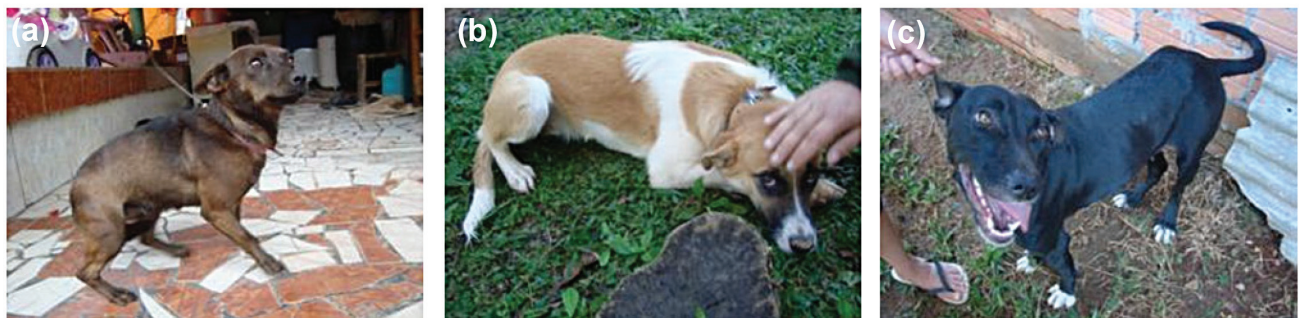


Figure 7 – Examples of animal attitude, such as (a) tail position – tail tucked between legs, suggesting fear, (b) head position – low head position suggesting fear, and (c) overall attitude – relaxed and alert animal, suggesting absence of negative feelings – as behavioral indicators in the protocol for expert report on animal welfare as support for court decisions in cases of suspected animal cruelty

Source: (HAMMERSCHMIDT, 2011)

are considered desirable, with small improvements possible for high welfare category. A final decision is attributed for each group of indicators based on each indicator assessed and classified in three levels according to adequacy of the findings. To reach the overall conclusion regarding the situation evaluated, the final decisions for each group of indicators must be integrated into a single result. This protocol employs a simple integration method, based on thresholds for the inclusion in each of the five animal welfare degrees reported as overall conclusion for the assessment (Figure 8). The overall conclusion of very low welfare will be reached when three or more groups of indicators were classified as inadequate or when open intentional physical aggression by the owner or caregiver is present, low welfare is reported when one or two groups of indicators are inadequate, regular welfare when two or more groups of indicators are considered regular and none is considered inadequate, high welfare when only one group of indicators is regular, and very high welfare when all groups of indicators are considered adequate.

Once the overall welfare degree of the animal is known, the animal welfare terminology may

be transposed to terminology employed by local legislation regarding animal protection, so that the protocol is directly useful for court decisions. It is our understanding that the animal welfare specialist is in the best position to translate the welfare assessment results into the relevant legal terms, and thus this protocol is only complete when a statement compatible to animal protection law is signed. In Brazil, the term embedded in Chapter 225 of the Federal Constitution is animal cruelty (BRASIL, 1988). The terms employed in the Federal Environmental Crimes Act (BRASIL, 1998), in the section on animal protection, are abuse, maltreatment, physical aggression and mutilation. Thus, to convert the animal welfare degree into legal Brazilian terms, we propose that all cases where the overall conclusion is low or very low welfare be considered animal maltreatment and regarded as a criminal offense.

## Conclusion

The protocol here described is designed to help court decisions regarding crimes against animals, as defined by Brazilian law, especially in those situations where animals are alive and an expert report is required.

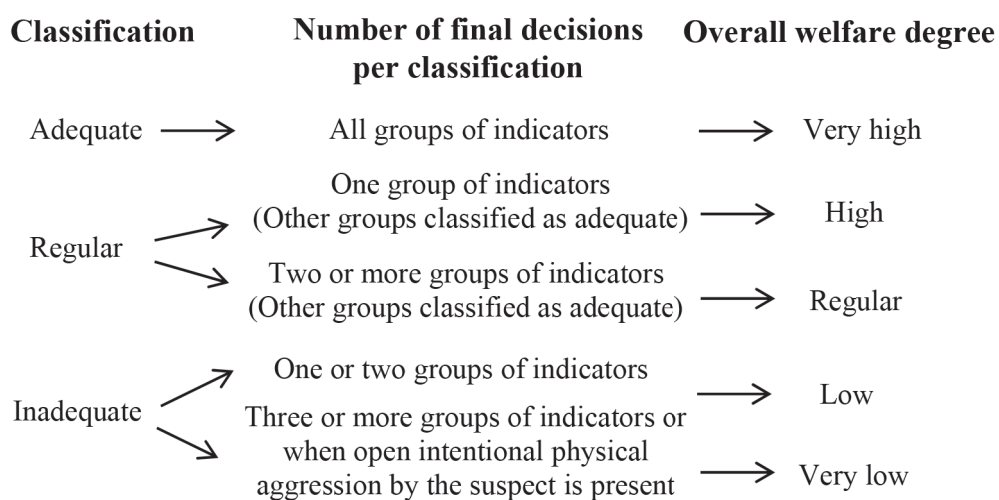


Figure 8 – Simple integration method, based on thresholds for the inclusion in each of the five animal welfare degrees reported as overall conclusion for the assessment: very low, low, regular, high or very high welfare

Source: (HAMMERSCHMIDT, 2011)

The protocol allows differentiation of animal welfare status to better decide whether an animal is under abuse, maltreatment or negligence; thus, the scale of the welfare diagnosis is gauged for scenarios where a decision regarding crimes against animals is required. The protocol was built to be objective and simple; however, it should be employed by professionals trained in animal welfare science. An abridged version may be produced to be employed by properly trained policeman, considering the complexity of animal suffering assessment.

### Animal welfare implications

We hope that the refinement of the recognition of crimes against animals, especially considering cases where no physical lesion is present, coupled with a standardized protocol will improve perception of animal suffering, facilitate the field work of those

involved in this type of investigation, and offer a contribution to the improvement of animal welfare in our society through proper action and crime reduction.

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