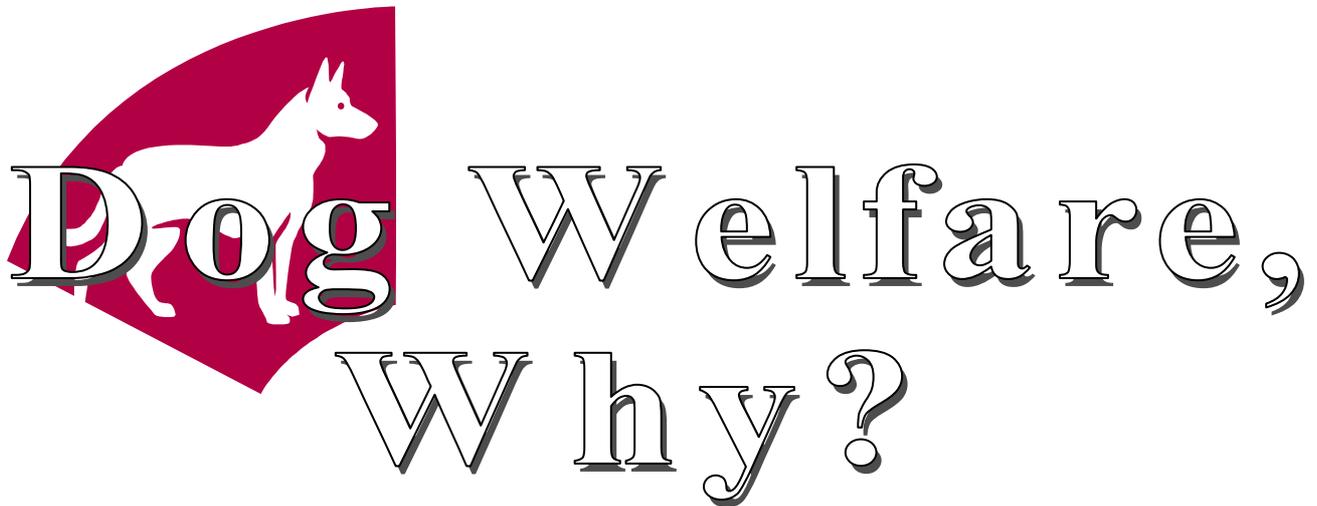


MSc Animal Biology and Welfare

The title "Dog Welfare, Why?" is displayed in a large, white, serif font. The word "Dog" is partially overlaid by a red silhouette of a dog's head and neck, which is the same graphic used in the top right logo.

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Course : Master of Science Animal Biology and Welfare
Date : April 2006

Acknowledgements

The project members would like to thank Mrs. Eline Teygeler, Mr. Edward Virginia, Mrs. H.A.M. Jet Bijen – Veldhoen, Mrs. drs. Joanne van der Borg, Mr. Just de Wit and Mrs. Marjan v.d. Hage for the time and informative talks we had with them.

Further we would like to thank Mr. Tonnie Achterkamp and Mr. Paul Overgaauw from the PVH for giving us the opportunity to work on this subject and their advise.

Also, many thanks to Gert-Jan Duives for his guidance and advice during this project.

HAS Den Bosch 2006

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Summary

The goals of this project were threefold; Define existing problems that threaten the welfare of pet dogs in the Netherlands; Give suggestions on how to create awareness of these problems; lay out guidelines for using the found information on a website. The first step was defining the concept dog welfare that is used throughout the report, concluded was that dog welfare has to include the physical status, mental status and naturalness of the dogs. Building on this the five freedoms were used to define the ideal image of dog welfare.

Several problem-areas were defined; genetics, health, environment and behaviour. Besides this the report looked at anthropomorphic views and how these affect the welfare of the dog. Concluded is that the occurrence of genetic problems is a major threat on the welfare of the Dutch dog population. The prevalence of genetic diseases is very high and is usually caused by breeding on exaggerated exteriors and inbreeding. Inbreeding is done to select on certain characteristics, effectively isolating the genetic population. As a result we see breeds with respiratory distress due to brachycephaly, spinal problems due to extreme long backs and chronic skin diseases due to extreme wrinkled skin. There are also multiple problems in extreme large or extreme small dogs. This type of breeding also promotes unwanted character traits in dogs like anxiousness and aggressiveness. Dog-owners and potential dog-owners are not sufficiently aware of these problems and continue to buy these dogs. The problem is made worse by the importing of many dogs from Eastern Europe where the breeders have only economical motives and will breed what the market asks without considering the welfare of their animals. A better understanding of these problems and education of the public what to look for when buying a dog will help to solve this problem.

Other health problems that were looked into involved those that are mostly caused by insufficient knowledge of the owner on how to prevent these, think about skin problems, oral problems, infections with internal parasites and nutritional problems. Dog owners should be sufficiently educated to know of the existence of these and how to prevent them. The subject of stress was also discussed, stress can be caused by various factors, both physical and psychological and, especially, when existing over a longer period of time will negatively affect the well being of the dog. There are various behavioural symptoms that point out that the dog is experiencing stress. Owners should be familiar with these and have a basic knowledge on how to deal with this situation.

Environmental factors also contribute to the welfare of the dog. It is most important that the dog is sufficiently socialised as a puppy so it will not be afraid of normal environmental stimuli. Even when this is the case situations can occur where the dog is afraid and feels stressed as is often seen with thunderstorms and fireworks. The owner must understand that this fear affects the welfare of his/her dogs and should try to rectify this. Other environmental factors that contribute to the welfare of the dog are the amount of space available for the dog and the opportunities for exercise and social contacts with other dogs or humans. The environment, where the dog lives can also be used to stimulate the dog and prevent boredom. Especially in those cases where dogs are left alone for longer periods of time this is necessary. One can think about hiding food in the room or giving toys that the dog will be busy with. It is also possible to enrich the environment by providing olfactory stimulation or auditory stimulation. Further the owner must always make sure that the dog is safe in its habitat, e.g. poisonous substances must be kept out of reach and on warm days the dog should have access to the shade. Leaving the dog alone in the car on a warm day can be fatal.

Behavioural problems will negatively affect the welfare of both dogs and humans; many dogs are still euthanized because of this. The most common serious problems are aggression to

both humans and other dogs and separation anxiety. Aggression is an especially difficult problem because there are different types of aggression, e.g. fear or dominance and many factors that contribute to occurring aggression e.g. breed, gender, age, attitude of the owner and previous experiences. Owners with dogs that have serious aggression problems should not hesitate to seek professional help. Owners should be familiar with the body language of the dog so they can recognise for example signs of fear or dominance in an early stage where it is much easier to change the behaviour of the dog. Separation anxiety is seen in dogs that do not want to part from the owner, when left alone they will show various signs of heavy stress indicating that their well-being is impaired. Often this can be cured with behavioural therapy but in severe cases it is possible to combine the therapy with medicines. Again owners should be able to recognise the symptoms, preferably in an early stage, and know how to handle the dog.

Anthropomorphism can lead to welfare problems because people project their own needs, emotions and thoughts onto the dog. Effectively treating the dog as a human, this can cause behavioural problems, such as dominance aggression and health problems.

The rules and regulations in the Netherlands do not have any specific regulations regarding the keeping of dogs as companion animals. The “Gezondheid en welzijnswet voor dieren” (Health and welfare law for animals) does also apply for companion animals but most regulation is aimed at production animals. The government has stated that the responsibility for dog welfare lies in the sector and that, at the moment, they are not willing to make new regulations.

The report also looked into other methods that could heighten the awareness of problems concerning dog welfare. It was concluded that the most important actors in the dog network are already employing various regular methods. These include the use of flyers, websites, magazines, posters and events. But evidently this is not enough. Most people agree that the ignorance of many dog owners is a threat to dog welfare. And in the Action plan “Gedeelde Zorg” offered to the ministry the 23rd of March by the “Forum Welzijn Gezelschapsdieren” this was one of the spear points. In this plan many valid recommendations towards improving awareness have been made. Besides this it is believed that the personal contact between (potential) dog owners and breeders, local trainers and veterinarians are of much use in educating owners. At this moment it is especially the local trainers that are not fully involved in initiatives to educate on dog welfare while they could play a very important role. And it is advised to rectify this.

Introduction

This report is the end-result of the project “Dog Welfare Why?” This project has been undertaken as a part of the Masters Course Animal Biology and Welfare, offered at HAS Den Bosch in cooperation with Writtle College and Universities of Essex. The report has been written following the conditions of the Platform Verantwoord Huisdierenbezit (PVH) (the Platform For Responsible Pet ownership).

Companion animals play an important role in society, the fact that there are 1.8 million dogs in the Netherlands proves this. For the most part these are animals that have no other function than to provide people with companionship. Companion animals also have a positive influence on the health of humans. Dogs have proven to play an important role in the development of children, decreasing absences due to illness and doctor visits and the treatment of behavioural problems. For elderly people with a tendency to grow lonely, animals improve socialisation, reduce stress and keep the owner moving. In Australia researchers discovered that pet-owners use considerably less healthcare thereby saving the healthcare services hundreds of million of euros (Headey, 1999).

So dogs provide humans with better welfare, but how about the welfare of these dogs? Does society return the favour? It is believed that this is not always the case and that many welfare problems exist in the population of Dutch companion dogs. Mostly without dog owners being aware of this. This report will:

- Define existing problems that threaten the welfare of pet-dogs in the Netherlands
- Give suggestions on how to create awareness of welfare problems in Dutch (potential) dog-owners.
- Provide easy access to information on dog-welfare by laying out guidelines for a website concerning dog-welfare for the PHV.

The main part of this project will concentrate on defining existing welfare problems and give advice on which part of this information should be available to the public on a website. How the information could be presented will also be discussed. It is clear that a website is in some ways a limited tool and other possibilities to create awareness in dog owners will be considered using the Rapid Appraisal of Agricultural Knowledge systems (RAAKS) methodology. What this methodology exactly is will be explained in the appropriate chapter.

Dog-owners are a very large and diverse group and reaching all individuals by one method is not possible. The target group of the planned website will be “the average” dog-owner that is not an expert on dogs but is interested in information that can help improve his/her dogs life. He/she is also responsible enough to look for help when they encounter problems. These are the people that do not have a sufficient level of knowledge but are willing to learn. For this group a good website will be a very effective tool as they will not need much encouragement to start actively looking for information. The website also has to act as an intermediate to provide people with addresses of professionals that can help them with problems that cannot be solved via a website.

Dog-owners that do not have these “drive” to reach out for help or information or may not even agree that their dog has a problem, can not be reached through a website. For this group other approaches will be needed.

What will further be discussed in this report? To make sure everybody knows what is meant by the concept of dog welfare the first chapter will explain what the definition of dog welfare will be that is used throughout the report. Shortly the subject animal welfare as found in literature will be considered and how this information is or is not, applicable to the dog as a pet animal. It will also state what elements are essential in a dogs' life to speak about good welfare. The next six chapters contain information about different subjects that can be a threat to dog welfare. The information presented in these chapters will represent the most common welfare problems in the area considered, less common problems will only be included if they are considered to be highly imperative to dog welfare. Information discussed will include problems that dog owners are likely to encounter themselves or/and should be able to prevent. Chapter two is divided into two parts. The first part concentrates on welfare problems caused by breeding, specifically genetical disorders found in true-breeds. The second part focuses on health problems that are often caused by neglect or insufficient knowledge of the owner. Chapter three looks into the influence the environment of the dog has on its welfare status and how dog-owners can improve upon this. Chapter four is called behaviour and training and looks at what impact behavioural problems and different methods of training can have on the welfare of dogs. In chapter five the subject will be anthropomorphism and how this human-attitude can pose a problem to dog-welfare. It will show that anthropomorphism can lead to some problems described in the previous chapters. Chapter six then describes the existing rules and regulations in place to protect dog welfare and will make clear why it is important for dog-owners to be aware of these regulations.

The seventh chapter looks into methods to find solutions for the second goal, creating awareness of welfare problems using Rapid Appraisal of Agricultural Knowledge System (RAAKS). RAAKS analyses the existing use of the Knowledge and Information System (KIS) surrounding dog welfare and the important actors that play a role in this. Its main focus will lie with the current information streams towards the dog owner. Based on this, advice will be given on how to improve the exchange and utilization of knowledge and information

After each chapter a short summary will be given in bullet points that will state which information from the chapter should find its way on the website. To be used alongside this report a companion piece is available "Dog welfare on the website," This piece will go into further detail on how the information from this report will be used on the website and in which form. The welcoming text for the website is also available here.

All the information in this report originates from interviews with people that are working or otherwise involved in the dog sector and literature research. Literature references can be found at the end of every chapter. The information about the organisations and people that were contacted are available in appendix 1.

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Chapter 1 “What is Dog Welfare”

The question what is dog welfare is not an easy question to answer and different people have different ideas about this. Before looking at the concept of dog welfare though the concept of animal welfare must be clear.

Scientific research on 'animal welfare' began because of ethical concerns over the quality of life of animals both by the public and several scientists. Especially the use of experimental animals was in question, later the ethical concerns also included production animals and nowadays it is understood that the welfare of companion animal should also be considered.

The concept of animal welfare started out with two important elements

- Physical status (fitness)
- Mental status (feelings)

Later a third concept was introduced

- Naturalness (telos)

Fraser in 1997 stated the three ethical concern that nowadays are commonly expressed regarding the quality of life of animals, all three elements are present.

- *animals should lead natural lives through the development and use of their natural adaptations and capabilities*
- *animals should feel well by being free from prolonged and intense fear, pain, and other negative states, and by experiencing normal pleasures*
- *animals should function well, in the sense of satisfactory health, growth and normal functioning of physiological and behavioural systems* (Fraser, 1997)

He further recognizes that problems often arise when the animal cannot adapt to the challenges posed by its current environment. Every animal has physical and behavioural strategies, learned or inherited, to deal with challenges from its environment. These challenges can range from predators, to temperature changes and local diseases. When the animal is put into an environment where it cannot adequately respond to these challenges welfare is impaired. A dog that is set loose in the wilderness will probably not survive as he lacks adequate surviving strategies and does not know how to handle the new environment. Problems will also develop when inherited characteristics are so deeply ingrained into the personality of the animal that not being able to express these behaviours will impair welfare. A dog will need social contact, even when everything that he needs to comfortably live is provided. The need for social contact is so much a part of being a dog that living without will cause serious behavioural disorders.

The next step is to measure the welfare of the animal in question to see in how far their situation complies with these standards. How can welfare be measured?

Although the physiological and behavioural changes that can indicate poor welfare are generally agreed upon, using these measures in practice sometimes yields results that are hard to interpret. Many things can influence test results, the type of unpleasant stimulus to which the animal is exposed; when and for how long exposure occurs; the animal's psychological state, e.g. does it feel that it is in control. Ultimately interpreting welfare measures involves subjective judgement, which will be influenced by the nature of our concern for the animal under consideration. (Mason, 1993). People will find it easier to state that a chimpanzee is bored than that a snake feels bored. Sandoel argues that it is not possible to discuss animal welfare by being completely objective because that what science tries to measure are subjective experiences such as pain, boredom, pleasure and expectation. (Sandoel, 1992)

1.1 In practice....

Connected to this a system is developed which is now commonly used to assess welfare in animals, mostly production and zoo-animals. Various countries also use the five freedoms in their welfare regulations. This system names five freedoms for animals, if these freedoms are fully available for the animal it is said that welfare is optimal. These freedoms are similar to the ethical concerns stated in the first part. Though most commonly used in other animals this system can be used for dogs. When using this remember that measuring an animals' status in relation to these freedoms is not straightforward and may be very problematic in some cases.

The five freedoms are:

1. freedom from thirst, hunger and malnutrition
2. freedom from discomfort
3. freedom from pain, injury and disease
4. freedom from fear and distress
5. freedom of expressing natural behaviour

(Webster, 1994)

Freedom from thirst, hunger and malnutrition

Dogs should have unlimited access to fresh and clean water. The food given should be of good quality, with all necessary nutrients present and sufficient amounts of food should be given, taking into consideration breeds, life stage etc. A large problem connected to this is dogs that do get enough food but the food does not comply with the nutritional need of the dog. For example there are dogs that are fed human food. Sometimes connected to this but not always is another large problem in today's society, overweight dogs. Dogs that are overweight are susceptible to a large number of health problems.

Freedom from discomfort

This is mostly connected to the environment and housing of the dog. As most pet-dogs are kept in the house this will mostly not be a problem. The climate will be controlled and even the ground will mostly be quite comfortable. The dog must have access to a comfortable resting place where he will feel safe and will not be disturbed.

Freedom from pain, injury and disease

Dog owners must keep their dog physically healthy. When the dog is sick or injured, the owner must make sure that vet attention and/or medicine are available. Breeders must try to avoid health problems caused by poor breeding and inherited disease. Further the owner is also required to make sure the environment where the dog lives is safe so the dog, for example, will not have access to poisonous substances.

Freedom from fear and distress

Fear and distress are common problems found in dogs, different situations can result in either of these. The clearest examples are fear of fireworks and thunderstorms. Inadequate socialisation can also result in a dog that is afraid of novel things or humans. Appropriate training and socialization can reduce this.

Freedom of expressing natural behaviour

This freedom is especially problematic to measure in dogs so more attention to this freedom will be given than to the other four. This point talks about natural behaviour, in most animals natural behaviour is defined by the behaviour exhibited by individuals of a species that are living in a natural environment. There are no dogs living in natural environments though

which means this is not possible. The closest relative of the dog in the wild, the wolf, is not the same species so many differences in behaviour exist. Much of the body language and communication we observe in wolves can also be observed in domestic dogs, although it may be less refined or different depending on the breed and experience of the dog. Many of the behaviours are diluted and just pieces of what are whole chains of behaviour in wolves. (Keegans, no date)

It would be better here to talk about species own behaviour. Though this brings us to the next problem, science does not know what exactly constitutes species own dog behaviour so it is difficult to class this freedom. Research done by Miklosi, comparing wolfs and dogs reared in the same way showed that dogs will prefer the contact with humans over the contact with other dogs. Wolves always went to another wolf first. He uses this as one of the points to argue that dogs are through evolution genetically predisposed to seek contact with humans (Miklosi, 2001). It can be argued that the natural environment of a dog is the living with humans and that contact with humans is a vital part of the dogs' life. (Topal, 2005 and Miklosi, 2001) Though science does not yet has all the answers on this there is sufficient information available about factors that are important for dog welfare and owners should be familiar with these. Some of these are in short, the need for a stable home-condition, a clear hierarchy and understandable rules. One of the most important, so not the most important thing is being able to express social behaviour, either through contact with other dogs or humans.

Use on the website...

- Make use of the concept of dog welfare because it combines the various aspects that make a healthy happy dog. Health is not more important than behaviour and vice versa. All aspects in a dog life must be at optimal standards to ensure that the life of the dog is satisfactory. Owners have to be aware of this coming together of different factors and treat their dog accordingly.
- Do not use the words five freedoms like this on the website without a further explanation as people may make connections with animal rights activists' organisations.
- Translate the five freedoms into needs of the dog, the need for good food, exercise etc.
- State that welfare problems of dogs are mostly hidden problems because the public thinks that dog in general have a good life.

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Chapter 2 Genetic and health problems

Animals should be physically and mentally healthy. The existence of health problems lowers the welfare status of an animal and can also be a stressor on the animal. Further prolonged stress can cause immune diseases and hormonal diseases, which again lead to health problems. There are many diseases and health problems to be found in dogs. This chapter is divided into two sections, genetic problems and health problems. Though the section on genetic problems mainly discusses health issues such as inherited disorders and existent genetic problems, breeding and trading issues are also brought to attention. The second section looks at some of the health problems that can be caused by neglect or ignorance of the owners.

2.1 Genetic problems

Dogs have been heavily selected for particular traits of body size, conformation, coat, temperament and behaviour for a long time and they display greater phenotypic diversity than any other mammalian species (Brooks and Sargan, 2001). As a consequence of the selective breeding, pure breed dogs have many genetically inherited disorders. This section firstly shows various issues associated with selective breeding; such as problems related to exaggerating exteriors, decreasing vitality, dangerous animals and the genetic diseases that frequently occur in particular breeds. Following these, the breeding and trading issues are addressed.

Particular specialised dog types have been established through relative inbreeding, and breed-lines recognised for show purposes have often been deliberately genetically isolated. Inbreeding often causes hereditary problems. Normally genetic defects can occur in small frequencies in all species both animals and plants, and in these cases occurrence in one percent of the population are considered very rare. However in closed populations such as pure breeds, the percentage can rise to more than 10 percent of the population.

The selection of exaggerated exterior causes several abnormalities on the body structure. For example, in small breeds, the size of the brain cannot adapt as quickly as the other parts of the body, a consequence of this is the occurrence of open fontanels. In large breeds many leg and spinal disorders are found.

Beside these abnormalities in body structure, the exterior of the animals also causes many health problems. Extreme brachycephalic structure in certain breeds such as Pug and Bulldog can cause respiratory distress. Extreme long backs in Dachshunds and Basset Hounds can lead to spinal problems. Rimpled skin leads to chronic skin infections. All these dogs need extra care or attention to maintain healthy conditions.

As the level of inbreeding is growing, the vitality of most breeds is decreasing. Increasing sensitivity to infectious diseases, low reproductive functions, and shortened lifespan often occur. For example, the Cavalier King Charles Spaniel has health problems more than three times as much as the Staffordshire Bull terrier or the Border Collie in the first 5 year of their life. (Werkgroep hond 1, 2005)

Inbreeding also causes an increasing percentage of dogs showing nervous and frightened characteristics. Research shows that 10 percent of Golden Retrievers and over 16 percent of Dalmatians genetically have these characteristics (Werkgroep hond 1, 2005).

In addition to the problems above, there are more than 400 canine genetic diseases known and reported at the moment. Genetic inherited diseases are divided into two groups of inherited patterns, which are simple (monogenic) and complex (polygenic) inheritance. Simple inherited diseases are transmitted easily with explosive eruptions. Examples of diseases of simple inheritance are:

- central nervous system defects: epilepsy
- eye diseases: progressive retinal atrophy (PRA), cataract, glaucoma (Brooks and Sargan, 2001)

Complex inheritance has low heritability and is much harder to get rid of. Examples are hip dysplasia and other skeletal abnormalities, cardiomyopathies and congenital cardiac malformations.

Many breeds have more than 30 reported genetic diseases, although most defects are rare in the breed overall (Brooks and Sargan, 2001). The percentage of health problems in pure breed dogs based on queries of owners will be found in Appendix 2.

Although many genetic inherited diseases are already present at birth, others become apparent or increase in severity later in life. For example in the case of PRA, many owners do not recognise the disease until eyesight has severely weakened or been lost, because there are no externally obvious changes to the eyes.

Leppanen *et al* in 2000 evaluated dog owners' knowledge of canine inherited diseases and the present screening and control programs in Finland. The results show that dog owners highly value health related matters and well being, and the programs of screening and control inherited diseases are considered to have a positive effect on the prevention of inherited diseases. It is also reported that dog owners estimate that their own knowledge could be better but they believe in the veterinarians' and dog breeders' ability to inform them. The problem with these genetic disorders is that the dog owners and breeders are not always aware that there is a problem. It is generally accepted that some breeds only get 8 years old. And as such these problems can almost be called a hidden welfare problem. Though it is believed that, as in Finland, dog-owners in the Netherlands also place much importance on the health of their dogs, nobody wants a dog with problems. Increasing the awareness of people that these are problems has to be the first step towards solving the problem.

Now screening and registration of some inherited diseases are going on in the Netherlands. Genetic-counselling programs for breeders are also being developed. A study evaluating the use of the genetic-counselling program for boxer dog breeders reported that the most important criteria used by breeders to select sires are 60% on exterior characteristics and 52% on known progeny (Van Hagen *et al*, 2004). Authors concluded that although breeders hesitated to put long-term population interest above short-term personal interest, they acknowledge the value of the counselling especially to reduce the frequency of a disease such as epilepsy. Breeders should take into account the prevention of inherited disease rather than exterior characteristics. Genetic-counselling programs can support them and should be spread and commonly used by breeders. However there is a population of pure breeds without pedigree papers. The above survey, screening and registration are only for purebred dogs with papers. Gubbels and Scholten in 2002 pointed out that it is not expected to see fewer health problems and a higher well being on these dogs without pedigree. There are no health surveys organised for the "look-a-like Labrador Retriever".

There is another issue in the Netherlands. A lot of dogs are imported from other countries and often used for breeding. Most of these dogs are poorly bred with no concerns about the welfare or genetic problems of these dogs. Furthermore these dogs suffer stress due to the transport from Eastern Europe to the Netherlands. However, it is almost impossible to distinguish those dogs from the Dutch bred ones, and there is no existing regulation that can stop the import of these dogs. People must be aware that buying these dogs and breeding with them can spread genetic diseases and will encourage the breeders and traders involved in this trade to continue.

There are various issues related to breeding and genetic problems and what is discussed here may only be the tip of the iceberg. All of these threaten the welfare of dogs and their quality of life. One of the main problems is that people are not aware that there is a problem and when they know about the problem they do not realise the scale on which these problems exists. Though the public has been getting more aware of these problems in the latter years more knowledge is still necessary.

Although scientific research and survey should be continued, all of the stakeholders must understand what genetic diseases are and what they can do to reduce these problems. Especially breeders play an important role in the struggle with genetic problems. They should breed dogs with more emphasis on health and behavioural traits rather than on exteriors. In addition, all the people who breed and sell dogs must have a sufficient level of knowledge. They should give the future owners correct information about the breed and help new owners choose suitable dogs. They must be responsible for the dogs they sell. Organisations, breeders, and traders should work together to exchange knowledge and support each other.

2.2 Health problems

There are many disease and health problems in dogs. Firstly this section focuses on stress. Understanding the stress and its meaning is very important when considering the welfare of animals. Stress can be the cause of many health problems and behavioural problems that will eventually lead to serious welfare problems. This is also true in the other direction, health and emotional problem will cause stress, which makes the animal more susceptible for other problems. This situation will turn into a vicious circle. Because of the importance of stress in welfare problems there will be a relatively large part dedicated to this.

Secondly some of the most common health problems are discussed, which are skin problems, oral problems, internal parasites, and nutritional problems. These topics are chosen among a list of health issues because they are commonly seen but can be prevented by owners. Each topic is addressed with examples of problems that can be caused by incorrect care or insufficient attention. Dog owners are required to care for their dogs daily to keep them healthy.

2.2.1 Stress and diseases

Stress is the recognition by the body of a stimulus, in other words, the biological response elicited when an individual recognizes a threat to its homeostasis (Moberg, 2000). The stimulus/threat is a stressor. Stressors can originate from both a physical or psychological source. Anything around us can be a stressor and whether something is a stressor or not varies within individuals. For example environmental factors such as temperature and humidity, disease, strenuous exercise, reproduction and growth can be physical stressors, and fear, flight, a changing environment, transport, shows and a visiting to the veterinarian can be psychological stressors. Stress is not always negative for animals including humans. Animal is presented with a series of problems that must be tackled in normal life (Webster, 1994). Suffering (distress) occurs when the problems are too severe or too complex to deal with or are prolonging over long period of time.

The basic mechanism of stress response is that when the animal perceives a stressor by the central nervous system, it activates the hypothalamic-pituitary-adrenal (HPA) axis resulting in the secretion of steroid hormones such as cortisol from the adrenal cortex, and the sympathetic pathway resulting in release of catecholamines such as adrenaline and noradrenaline from the adrenal medulla. This response is the body's attempt to counteract the stressor and re-establish homeostasis to survive. This results in increased availability of energy, increased oxygen intake, decreased blood flow to areas not necessarily for movement,

and inhibition of digestion, growth, immune function, reproduction, pain perception, enhancement of memory and sensory function.

Beerda *et al* in 1998 reported that dogs showed increased restlessness, oral behaviours, yawning, open mouth and a moderate lowering of the posture when they experienced moderate stress in a social setting. A very low posture may indicate intense acute stress, which was supported by the saliva cortisol level. Beerda, *et al*, in 1999a also concluded in the study of behavioural responses to chronic stress that a low posture and increased auto grooming, paw lifting, vocalizing, repetitive behaviour, and coprophagy may indicate chronic stress in dogs, and those can help to identify poor welfare. Another study by the same authors concluded that basal salivary and urinary cortisol measurements are useful for the assessment of chronic stress, and of poor welfare in dogs (Beerda *et al*, 1999b). These studies show scientific evidences that dogs suffer from stress and that behavioural patterns can help identifying dogs in chronic stress situations.

When the stress responses that are mentioned above are prolonged, and results in chronic stress, the animals may face health problems and behavioural disorders. A dog with good welfare should be free from distress, however not free from all stress. This further means that the dog owners has to be familiar with the behaviour of a dog that is stressed and can recognise the symptoms, so something can be done to solve the problem.

2.2.2 Skin problems

Skin diseases are very common disease in dogs. Skin problems are usually uncomfortable and very stressful for dogs because of the itchiness, soreness, and pain. It can be a both physical and mental stress. The most common skin problem seen in dogs is infectious dermatitis caused by bacteria and yeast, but is usually secondary to other underlying diseases such as an allergy and an infection by external parasites. Ear infections caused by bacteria, yeast and mites are also often seen in lop-eared dogs. Though some skin diseases such as allergies and auto-immune skin diseases are impossible to avoid, some of the skin problems can be prevented or reduced by appropriate care and keeping free from external parasites. In this section 'hot spot' and external parasites, which are also frequently seen in dogs, are shortly described as examples of the preventable skin problems.

Hot spot is a common name given to an acute moist dermatitis (Case, 2005). These are warm, painful, swollen lesions in the skin that exude pus and have a very distinctive odour. The skin lesions appear suddenly and enlarge rapidly, often within a few hours. Then its rapid advance surprises most of owners. Hot spots are more common in breeds of dogs that have a dense woolly undercoat such as Collies, German Shepherds, and Retrievers. Hot spots often occur before shedding, when dead moist hair is trapped next to the skin. Some initial trauma to the skin such as scratching and biting because of fleas, trauma by clipper blades, and an abrasion can be a trigger. Bacteria can easily grow on the areas in which the hair is matted, poorly groomed, or damp.

Dog owners have to pay attention to the presence of external parasite such as fleas, ticks, and mites. These are obviously unhealthy for both humans and animals. Although some infestations are very light and cause mild signs of discomfort, many external parasites can cause severe pruritus, skin lesions leading to other skin diseases such as bacterial infectious dermatitis, and allergy dermatitis. In addition, some external parasites are carriers of internal parasites and a variety of infectious diseases not only for dogs but also for humans.

These are only examples of skin problems that can be seen when owners do not pay enough attention to the condition of their dogs. Daily care and contact with dogs such as grooming

and touching can reduce an occurrence of skin problem, and give a chance to find external parasites. Moreover, these contacts can help finding other problems on the skin in an early stage of the diseases.

2.2.3 Oral problems

The major oral problems in dogs are periodontal diseases such as gingivitis and pyorrhoea. Owners often do not realise the problem itself, oral malodour of the dog can be the first clinical sign of an oral disease. Periodontal disease is increasingly common and more severe in middle age and elderly dogs (Case, 2005). Although dogs of all sizes can suffer periodontal disease, it appears to be most prevalent in small and toy breeds. The drastically reduced jaw size and crowding of teeth in small dogs may be predisposing factors. Periodontal disease causes discomfort and pain to the dogs, sometimes eating difficulty. Some dogs will show a decreased interest in bones or hard biscuits and may decrease food intake or stop eating. Furthermore, if periodontal disease is untreated for a long time, it will lead to bacteremia. It is reported that chronic bacteremia due to periodontal disease might cause serious damages of other organs in the body such as kidneys, cardiovascular system, lungs, and immune system (De Bowes *et al*, 1996). Preventing periodontal disease is important for not only the affected part but also the general health of dogs.

Periodontal disease is primary caused by the formation and persistence of dental plaque on the surface of the teeth (Gorrel, 1998). Dental plaque is composed of bacteria and its metabolic by-products, oral debris, and salivary components. Over time, salivary calcium salts are deposited on the plaque, producing tartar. Gingivitis occurs when plaque and tartar form at the neck of the tooth, leading to inflammation and tissue damage. Further tissue damage occurs due to the proliferation of anaerobic bacteria under the gums. Consequently, supporting connective tissues and adjacent bone in affected areas are weakened, and teeth become loose and may fall out.

Mature plaque cannot be removed by normal actions of the dog's tongue or by rinsing the mouth. Mechanical abrasion from chewing or teeth brushing is necessary for effective plaque removal. When a dog already has periodontal problems, veterinary dental cleaning is necessary. The most effective way of preventing periodontal diseases is a frequent tooth brushing at home, especially dogs of the small breeds. Only dental care products formulated for dogs should be used, and human toothpaste is not appropriate for dogs. To do home care, dogs must be trained and familiar with letting their tooth to be brushed.

The type of the diet also influences the dental condition in dogs. In general, feeding dry dog foods and hard treats increases opportunities for chewing and the tooth abrasion. In contrast, feeding exclusively canned food does not have this benefit and so may be a contributing factor to the accumulation of plaque and tartar. Though the texture of the diet is an adjunct to reduce the plaque, it cannot prevent periodontal disease (Gorrel, 1998). The only effective approach for preventing the development of periodontal disease is regular tooth-brushing at home.

The primary approach for preventing the development of periodontal disease are a program of regular brushing at home, periodic veterinary dental treatment, and providing foods carefully chosen, chewing materials, and bones.

2.2.4 Internal parasites

Internal parasites can be found in various organs of the dog's body, where they complete part or all of their life cycle and extract nourishment from the host (Case, 2005). There are various kinds of parasites and their distributions are different from the region or the countries. The

most common internal parasites found in dogs are intestinal (gut) parasites. However, owners are hardly aware the presence of these internal parasites because these are not always visible.

The four most commonly seen types are roundworms, hookworms, whipworms, and tapeworms (Willard, 2003). Infection with these parasites is rarely a health problem in adult dogs, but can be very serious in young ones. In young dogs, a large number of parasites in the intestine cause malnutrition, impaired growth, emaciation, and sometimes death. Major symptoms are vomiting, diarrhoea, thick belly and dull coat. Although infection routes vary from the type of parasites, the major route is ingestion of eggs or larvae from the environment. Some parasites such as roundworms and hookworms can be transmitted by the placenta or mammary glands of the mother dog. Tapeworms need intermediate hosts such as fleas and lice. Dogs are infected when they ingest these intermediate hosts. This means that keeping dogs free of external parasites plays also an important role in the prevention of internal parasites.

Once a dog is infected, early and correct diagnosis and appropriate treatment can result in minimal adverse effects on health and complete recovery from the bad conditions. Unfortunately, identification is not always easy because adult worms release their eggs sporadically. Therefore it is essential to bring the dog's faecal sample to veterinarian as often as requested up to one year of age, and also a regular faecal check is important for adult dogs.

2.2.5 Nutritional problems

Good quality nutrition and a sufficient amount of feed are part of the basic factor in welfare of dogs. Probably most companion dogs are given enough to eat in these days. There are so many kinds of commercial dog feed, and most owners buy convenient, economy, and reliable commercial dog feed. Some people prepare a homemade diet. Though it depends on the individual which type of foodstuffs they choose, when homemade meals are fed to a dog, the recipe must be guaranteed to produce a ration that is complete and balanced for dogs. Owners should understand the nutritional needs of their dogs and select appropriate food that provides optimal nutrition and supports vitality and health for dogs. Feed should be chosen taking into consideration breeds, life stage, and lifestyle. Providing inappropriate nutrition and quantity of feed leads to nutritional disorders or illness, moreover, as mentioned above, some types of foodstuffs can affect oral conditions. Optimal nutrition is essential for normal growth and the maintenance of health and vitality throughout life.

Obesity is the most common nutritional problem in companion dogs. The fundamental cause in all cases of obesity is an energy surplus due to an imbalance between energy intake and energy expenditure (Case, 2005). Most overweight dogs tend to be fed excessive amounts of feed, highly palatable treats, and human foods. Often these dogs are also not given enough exercise. Energy needs vary per breed, life stage, lifestyle and also depends on whether the animal is neutered or not and on the level of activity of the dog. For example, if an old dog is fed the same amount of foods as if it was an active young, it will gain weight. Health problems that are associated with overweight conditions can develop when dogs are 10% or more above their ideal weight. Obese dogs have an increased risk of heart disease, osteoarthritis, and many other illnesses (Hawn, 2005). When obese dogs become old, they have a high risk of problems with movement because of diseases such as osteoarthritis, hernia of intervertebral disc, and spondylopathy. Obese dogs also live much shorter. Furthermore, surgical risk is increased in obese dogs. They have higher morbidity and mortality rates following surgical procedures.

Thus obesity does seriously decrease the welfare of dogs, and people should be aware of this. Due to the small sizes, it is hard for us to imagine how serious it is that small dogs get an

extra few kg. An extra 2.0 kg on a dog that should weigh 7.0 kg is equivalent to an extra 20.0 kg on a person who should weigh 70.0 kg (Hawn, 2005)!

Dogs cannot choose their foods, it 100% depends on owners. Therefore, owners have a responsibility in providing adequate foods.

The daily and appropriate care of dogs can prevent some of the health diseases and find problems before reaching a serious stage. Owners should realise their dog's unusual appearance, behaviour, smell and feel through daily care. Besides obtaining knowledge about dogs, taking their dog to the veterinary clinic for vaccinations and a health check at least once a year is one of the duties of the dog owner.

People have to realise that having a dog will mean paying veterinary bills. Dog owners spend an average of € 94,- a year on veterinary costs. The annual vaccinations will always have to be paid for but a dog can get sick or have an accident that will require veterinary attention. These costs can be quite high and people have to realise this when buying a dog. Not going to a vet in these situations is not acceptable and even punishable by law.

It is possible to insure the dog against these extra costs by taking a health insurance for animals. At the moment over 50.000 dogs in the Netherlands have a health insurance.

Use on the website...

- Explain the existence of genetic problems in breeds. These problems will almost always result in a lower quality of life for the dog and extra veterinary cost for the owner. It can also interfere with the purpose for which the dog has been bought. Dog buyers have to be aware that the puppy can have problems before buying a dog.
- State the fact that it is accepted by the public that some breeds only get an average 8 years of age. Stress on the website that this should not be accepted and that this is a welfare problem.
- Describe that stress is a large problem in dogs that people often do not recognise. The text should explain how people can recognise stress in their dog and how to respond to this.
- The common health problems that are discussed here should be brought under attention on the website as people are still not always aware of these.
 - Simple daily care of the dog as checking ears, teeth and coat can play a large role in the prevention of problems.
 - Preventing obesity by a good nutritional regime is very important because of the high prevalence of the problem and the serious consequences.
- State clearly that dogs will have veterinary costs in their life. People believe that vet costs are too high and for this reason come to late to the vet or will not go for preventive medication. In the end this will result in more costs. If they do not want or cannot pay these then they should not buy a dog. Dogs that will never see a vet in their life do not exist.

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Chapter 3 Habitat and Environment

When talking about the habitat and environment of companion dogs, the circumstances of these dogs are different from other animals such as farm and zoo animals, and other dogs in laboratory kennels. Companion dogs live with humans and in the humans' habitat and environment. Although dogs are expected to adapt to humans' lifestyle, they must be provided with an environment that will meet their needs. Places where they feel safe and will not be disturbed to rest should be provided, and there must be opportunities to meet their needs such as social behaviour, stimulation, and exercise. Most pet owners may think that they provide a suitable habitat to their dogs, but this may not always be the case. In the extreme dogs can even show undesired behaviour such as self-mutilation and other behavioural problems, which can indicate that they have problems with the environment around them. This chapter discusses the following subjects that often arise as problems these days. Knowing about these subjects will help the owners to avoid undesirable accidents and incidents and provide the appropriate habitat for their dogs. This leads to an improvement of the welfare of dogs.

- Socialisation and the environment
- Fear for fireworks and thunderstorms
- Available space and the need for exercise
- Environmental enrichment
- Poisonous substances around dogs
- Risks of warm weather

3.1 Socialisation and the environment

Socialisation is described as the process whereby an animal learns how to recognise and interact with the species with which it lives together. The animal has to become accustomed to non-threatening environmental stimuli and has to learn to ignore these. This is a natural process that animals need to survive in the wild. Otherwise the animal would expend too much energy with being afraid of non-threatening environmental factors. For example wolf cubs have only a few weeks to develop positive associations with their own kind and immediate environment, after which they become increasingly cautious about things and situations not previously encountered. This saves them from carelessly trotting up to something such as a snake and investigating it.

The nature of the companion dog is still comparable to this as puppies only have a limited time in which they are open to environmental stimuli and learn not to fear these. The problem for the companion dog is that it needs to become familiar with an enormous number of stimuli in a very short time to be able to live in and cope with the diversity of human world.

Appleby in 2004 reported that about 10 % (79 of 773 dogs) of dogs treated in his behaviour counselling practice in one year had had problems of fearfulness towards people or the environment due to a lack of early socialisation or habituation. 4.5% of these dogs were inept at relating to other dogs. These are only the cases in which the owner seeks help from a behavioural counsellor. There may be many more dogs that show a weakness of temperament or inability to cope with a particular situation that owners do not visit a therapist.

Thus the period during which puppies are with the breeder is the most important stage of socialisation in their life. It is known that adequate socialisation with other dogs, other species and environmental stimuli during this period will help prevent inappropriate behaviours later in life (Case, 2005). A lot of responsibility for a correct socialisation lies with the breeder, as

this is where the pup will spend the first weeks of its life. The breeder has to expose the puppy to different humans, children, men and woman. Inviting people to come and visit the pups and handle them is a good way to socialise dos with humans. If possible young pups should also be exposed to environmental stimuli as trucks and vacuum cleaners. Where this is not possible audiotapes of environmental sounds can be a good second.

3.2 Fear for fireworks and thunderstorm

There are some aspects that people cannot modify, these are found outside the home settings such as fireworks and thunderstorms. When dogs do not habituate enough to the environment or have a fearful character some dogs may show fear for fireworks. They will not want to go outside and sometimes these dogs will even show symptoms such as vomiting or diarrhea during these events. In the case of fireworks it is possible that the dogs will show fear behaviour even before December. As explained in the previous chapter, the activation of the HPA axis in response to stimuli will result in stress in all mammals. A study done in thunderstorm anxious dogs shows that saliva cortisol levels of dogs were increased 207% during the exposure to the sounds of thunderstorm, and these levels did not return to baseline within 40 minutes, and the dogs exhibited classic signs of fear (e.g. pacing, whining, hiding) (Dreschel and Granger, 2005). Therefore it can be concluded that the dogs with fear of fireworks or thunderstorms experience a high level of stress, and have impaired welfare. Owners should be aware that their dog feels fear and will be stressed.

3.3 Available space and the need for exercise

People might simply think that keeping a large breed dog in a small apartment constitutes poor welfare. If this owner takes the dog for a walk sufficient hours, it might be better than the same dog in a large house with only five minutes of exercise. Although the amount of exercise needed varies per dogs' sizes, breeds, and life stages, exercise, it is necessary for all dogs to maintain physical and also mental health. If a dog does not have enough exercise, it may be susceptible to stress, as a consequence various kinds of problems can arise. Taking dogs for a walk is important not only for the exercise but also to provide the dog with social and odour stimulation. Dogs can meet various novel things and other human and animals, which helps their socialisation. Moreover the olfactory sharpness of the dogs is well known and it is said that dogs perceive their world through 'nose pictures' (Case, 2005). Odours play an enormous role and must enrich the dogs' life.

3.4 Leaving the dog alone

Nowadays people lead very busy life and dogs are often left alone for long hours. Dogs are social animals, staying at home alone makes them bored. Boredom leads to undesired behaviour. Though the ideal situation is not to let a dog alone for more than a few hours, in most owners that is impossible, unless someone quits or changes his/her job for his/her dog. There are some things that can be done to alleviate boredom in the dog. Providing physical exercise in advance helps the dog sleep while being alone. Throwing food on the ground or hiding it in the room will keep the dog busy. Giving the dog something to chew such as toys, bones and a kong and also filling these toys with foods will let the dog spend times to chew and lick them. The last two ideas are commonly seen as environmental enrichment in zoos as well. However, these are not the solution. Owners have to remember that doing these things do not mean that it is all right to keep the dog alone eight hours everyday. In this case, the

owner should take the dog out before and after they go, or consider asking someone who is able to walk the dog, such as dog walkers and companies. Furthermore, some dogs may feel frustration and fear when they are left alone, and they will show separation-anxiety related behaviour, which will be, discussed more in following chapter.

3.5 Environmental enrichment

Many researches have been done on dog housing enrichment in laboratory and shelter kennels. These studies also can be applied to pet dogs. Graham *et al*, in 2005 investigated the influence of five types of olfactory stimulation (control, lavender, chamomile, rosemary and peppermint) on the behaviour of 55 dogs housed in a shelter. In this study dogs were exposed to the diffusion of essential oils for 4 hours a day for 5 days. It was observed that dogs spent more time resting and less time moving during exposure to lavender and chamomile than any of the other olfactory stimuli, and these odours also encouraged less vocalisation than other types of aroma. The diffusion of rosemary and peppermint into the dogs' environment encouraged significantly more standing, moving and vocalising than other type of odour. Authors suggest that lavender and chamomile appear particularly beneficial for relaxation. Wells *et al*, in 2002 reported the influence of five types of auditory stimulation (human conversation, classical music, heavy metal music, pop music and a control) on the behaviour of 50 dogs housed in a shelter. In the study, dogs spent more time resting and less time standing when classical music was played than when any of other stimuli were played. Exposure to heavy metal music encouraged dogs to spend significantly more time barking than did other types of auditory stimulation. Similar stimuli to these are available at home, so it may help to calm the dogs down though it may be not always be effective for all dogs. Individual differences exist in this. Other ideas of enrichment, which are mentioned in the section above, are also available. However, remember that the most essential enrichment for the dogs is interaction with the owners.

3.6 Poisonous substances around dogs

When the environments where dogs live both inside and outside of the house are considered, there are many substances that are poisonous for dogs. Unfortunately, accidents that dogs are poisoned often happen. Owners have to know common poisonous substances for dogs. The most common poisonous substances found at home are human medications such as painkillers and medicines for cold, household cleaners, and rodenticides. Chocolates, onions, garlic, and chives, which are very popular food for humans, are also harmful for dogs. In addition to these, various plants are known as poisonous, for instance Azalea (Case, 2005). Especially young dogs are curious and explore everything that they find with their mouth, and all dogs are capable of eating plants or substances that are harmful for them. As for small children, owners have to keep all potential poisons out of reach of the dogs.

Thus people living with dogs will have to pay attention to their households to make sure there are no chances of any accident or undesired incident happening. The habitat will also have to be kept free of external parasites.

3.7 Risks associated with warm weather

Another issue regarding environment is heatstroke. Heatstroke can always be avoided by taking the right preventative measures. Unfortunately incidents of heatstroke in summer are

still reported quite often. When dogs are unable to get rid of excess heat through normal homeostatic mechanisms, body temperature rises and can rapidly become a medical emergency. It can be rapidly fatal. Common causes of heatstroke are leaving a dog in a car on a warm day, excessive exercise, or leaving a dog outdoors exposed to direct sunlight without shade. High humidity contributes to heatstroke because dogs are unable to evaporate enough water by respiration (Case, 2005). Generally, puppies and old dogs have less heat tolerance, and brachycephalic breeds are also vulnerable because they are more sensitive to respiratory distress when the rate of panting is increased in warm conditions. Owners should not leave the dogs under warm conditions without any shelter even it seems just a short time.

Companion dogs spend most of their life in their home with humans, however, they may be kept for various periods in breeding farms, boarding kennels (pet hotels), and quarantine kennels (Hubrecht, 1993). Even if the periods staying in those kennels are short, those housing should have good environments. Especially breeding farms are important because puppies are vulnerable to diseases and in this stage of their life should receive good socialisation. Pet hotels and quarantine kennels must be stressful for dogs, since they are separated from the owners in a novel environment. Enrichment of the housing and husbandry from the caretakers will influence very much to the dogs. The experience in those kennels can be a psychological trauma and may cause undesired behaviour. Thus the welfare standards in these facilities should be taken consideration.

In conclusion, people that are living with dogs will have to pay attention to their households to make sure there are no chances of any accident or undesired incident happening. The habitat will have to be comfortable and also kept clean and free of external parasites. Though there are various kinds of environmental aspects surrounding the dogs, gaining a basic knowledge of the dogs may help the owner to be aware of stress factors for the dog. Dogs can adapt to most environments when they are provided with appropriate training and socialisation. Owners have a responsibility to keep their dogs within a safe environment and avoid distress for their animals. Moreover the enrichment of the environment of the dogs does not mean just providing many toys or luxurious beds but also social stimulation such as interaction with the owners and the chance of going outside.

Use on the website...

- Explain that the dog will need a good socialisation. A lack of socialisation will cause fear for various things around the dog, which then leads to behavioural problems later in life. The puppy will have to get used to all kinds of people, other animals and environmental factors, e.g. inside; vacuum cleaner and outside; trucks. The dog will also have to get used to fireworks and thunderstorms.
- State issues associated with the environment that can be influenced by owners.
 - Exercise and play must be possible in the environment, as these are very important things for a dog. It satisfies behavioural needs and will strengthen the bond with the owner.
 - In the cases where the dog must be left alone, the environment can be enriched to prevent boredom in the dog, e.g. food can be hidden in the room or toys can be given with food hidden in this. Give tips on the website on how to prevent boredom.
 - Time spend with the owners in the form of exercise, going outside, or training is necessary.

- The owner must make sure that the environment is safe for the dogs, e.g. poisonous substances have to be out of reach of the dog.
- It is dangerous to leave a dog in enclosed spaces like a car or without shade in warm weather.

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Chapter 4 Behaviour and Training

When talking about welfare the importance of not only providing dogs with physical welfare but also with psychological welfare is mentioned repeatedly. Meeting the behavioural needs of the dog is a very important part when trying to provide the dog with good welfare. Modern science does not have detailed knowledge on what these behavioural needs precisely are. However available information should be sufficient to provide a dog with an acceptable to good level of welfare. More pets are euthanized and relinquished for behavioural problems than for health problems.

Not being able to meet the behavioural needs of a (individual) dog can lead to behavioural problems, for example look back at the dog from chapter two that is not allowed sufficient exercise, maybe because the owner works 20 hours a day. Besides the physical need for exercise a dog also has a psychological need for exercise. This dog has a big chance to become more excitable, nervous and as a result stressed. This scenario is even more likely if this dog is a Border Collie. In this case it is a straightforward case of a need of the dog and a direct consequence resulting from withholding that need. Usually when the restriction is lifted the problem will be solved. Not all problems related to behaviour and welfare are this straightforward though. Problems can also be induced by humans early in life; poor socialisation of puppies will result in dogs that are more fearful for strange humans and unknown situations and objects. Fear is always related to stress, which means that the welfare status of these animals is much more easily disrupted than that of well-socialised dogs.

Many of the problem behaviours people complain about in their dogs are in one way or another detrimental to the welfare of the dogs in question. Where this is always clear in the case of situations where fear and stress are involved there is one area where this is not clear and then we talk about non-fear induced aggression. (the dog is not showing aggressive behaviour because it is afraid). Here the aggressive action itself will not lead to a lowered welfare status. Amongst dogs aggression is an accepted behaviour to show and gain dominance and will in itself have no effect on the well being of the animal. It could even be argued that the welfare is heightened, as the dog is able to show “natural” social behaviour. But the consequences of this behaviour (especially aggression aimed at humans) can have an influence on the welfare of the dog in question. The communication between dog and human at this point will usually be damaged. The human in question is not sure how to respond and will often give conflicting signals to the dog. At this point stress can become a factor, as the dog does not know anymore what is expected of him. When this dog bites a human the situation becomes even worse as the relationship between dog and owner is compromised. This situation can eventually result in the dog being brought to a shelter.

Looking even further dog bites can also have consequences on the welfare of the entire dog population. Imagine that a law is passed which obligates every dog to be muzzled and on the leash all the time. At the moment there is a lot of attention in the Netherlands aimed at the occurrence of dog bites and it is a so-called “hot topic” in the media.

After having shown how aggression and other behavioural problems have an impact on the welfare of the dog, either directly or indirectly more will be discussed about the most common problem behaviours. From the interviews and articles it is concluded that the most common problems that dog owners face are:

- Aggression to other dogs
- Aggression to humans (both family and strangers)

- Not being able to be alone
- Other problems as fear of fireworks and thunderstorms. These will not be discussed in this chapter further as they are already mentioned in chapter two.

Besides these four there are numerous other problems related to behaviour as food aggression, and dogs that do not come when called, but as these are less “serious” it is chosen not to include these in the report. Information about these can easily be found in books that deal specifically with problem behaviour in dogs. Many of these other problems are a problem because humans do not like to see the behaviour but do not affect the welfare of a dog as much.

4.1 Aggression

Dog aggression is any behaviour meant to intimidate or harm a person or another animal. Growling, baring teeth, snarling, snapping and biting are all aggressive behaviours. Although aggressive behaviours can be normal for dogs, they are generally unacceptable to humans. From a dog's perspective, there is usually a reason for aggressive behaviour. Because humans and dogs communicate differently, misunderstandings can occur between the two species.

Aggression is not just the number one dog problem in the Netherlands but also in other countries. (Lund 1996, Guy, 2001, Kobelt, 2003) Aggression is, as already shortly mentioned, not one problem but can be divided into different types of aggression. For example in Brisbane Australia they found that in 223 cases of dogs presented to a specialist behavioural clinic, 87 were here for severe aggression (Blackshaw, 1991). The classes of aggression found in this research include dominance (31.6%), territorial (29%), predatory (12.3%), intermale (12.3%), sibling rivalry (7.9%), fear biting (6%) and idiopathic rage (0.9%). In this report intermale aggression and sibling rivalry will also be classed as dominance aggression as the cause in both cases is the fight for dominance. Though it is not known for sure if these percentages can be translated to a Dutch situation the mentioned types of aggression are also prevalent here with dominance and territorial on top. One thing that is good to mention here that the percentage of fear biting from this research seems very low, a percentage closer to that of dominance and territorial might better represent the Dutch situation. For better understanding look at what these different types of aggression are.

Dominance Aggression: Dominance aggression is motivated by a challenge to a dog's social status or to his control of a social interaction. Based on the outcomes of social challenges among group members, a dominance hierarchy is established. If the dog perceives his own ranking in the hierarchy to be higher than the owner, it is likely that he will challenge the owner in certain situations. Because people do not always understand canine communication, the owner may inadvertently challenge the dog's social position. A dominantly aggressive dog may growl if he is disturbed when resting or sleeping, or if he is asked to give up a favourite spot, such as the couch or the bed. Dominantly aggressive dogs are often described as "Jekyll and Hydes" because they can be very friendly when not challenged. Dominance aggression may be directed at people or at other animals. The most common reason for dogs in the same family to fight with each other is instability in the dominance hierarchy, this is also called sibling rivalry.

Fear-Motivated Aggression: Fear-motivated aggression is a defensive reaction and occurs when a dog believes he is in danger of being harmed. Remember that it is the dog's perception of the situation, not the actual intent, which determines the dog's response. For example, the

owner may raise his arm to throw a ball, but the dog, perceiving this to be a threat, may bite because he believes he is protecting himself from being hit. A dog can also be fearfully aggressive when approached by other dogs.

Protective, Territorial And Possessive Aggression: Protective, territorial and possessive aggression are all very similar, and involve the defence of valuable resources. Territorial aggression is usually associated with defence of property. However, the dog's sense of territory may extend well past the boundaries of "his" yard. For example, if the dog walks regularly around the neighbourhood and is allowed to urine-mark, to him, his territory may be the entire block. Protective aggression usually refers to aggression directed toward people or animals that a dog perceives as threats to his family, or pack. Dogs become possessively aggressive when defending their food, toys or other valued objects, such as Kleenex stolen from the trash.

Redirected Aggression: This type of aggression is relatively common, but is a behaviour that pet owners may not always understand. If a dog is aroused into an aggressive response by a person or animal that he is prevented from attacking, he may redirect this aggression onto someone else. A common example occurs when two family dogs become excited, bark and growl in response to another dog passing through the front yard. The two dogs, confined behind a fence, may turn and attack each other because they cannot attack the intruder.

Predation is usually considered to be a unique kind of aggressive behaviour, because it is motivated by the intent to obtain food, and not primarily by the intent to harm or intimidate.

Dogs differ in their likelihood to show aggressive behaviour in any particular situation. Some dogs tend to respond aggressively with very little stimulation. Others may be subjected to all kinds of threatening stimuli and events, and never attempt to bite. The difference in this threshold at which a dog displays aggressive behaviour is influenced by both environmental and genetic factors. This threshold can be raised using behaviour modification techniques. How easily the threshold can be changed is influenced by the dog's gender, age, breed, general temperament, and by whether the appropriate behaviour modification techniques are chosen and correctly implemented. Much emphasis is being placed by the media and governmental organisations on the fact that aggressive behaviour is genetically programmed. The fact that this is not the only problem is often overlooked. A dog that has a genetic predisposition for aggression but has always received the right handling and training might never show this tendency.

The results from a survey done in Denmark in the period 1987–1991 which wanted to determine in how far the breed of the dog is responsible for the behaviour they found marked differences in breeds. For example Cocker Spaniels seem to have a higher risks of aggression towards the owner and aggression towards strangers where Fox Terriers have a higher risk of general anxiety compared with the other breeds in the test. Compared with females, males seemed to have a lower risk of general anxiety and a higher risk of problems related to lack of training and all kinds of aggression. (Lund, 1996) In the previous mentioned situation in Australia it were the Bull Terriers and the German Shepherds that made up a large percentage of the group of dogs with aggressive problems though this may also have been due to a large number of these dogs being kept. Research done by Guisado in 2005 concluded that there is an additive genetic, and therefore, hereditary factor for dominant–aggressive behaviour in the English Cocker Spaniel with one of the factors found being that golden-coated dogs are more dominant. Svartberg also in 2005 looked at the occurrence of breed typical behaviour and

used four behavioural traits that are considered to be stable valid personality traits in dogs, e.g. these will stay the same the whole life of an dog (Svartberg, 2004). These traits are playfulness, curiosity/fearlessness, sociability and aggressiveness. Breed differences were studied using data from a standardized behavioural test from 13,097 dogs of 31 breeds from the Swedish dog population. The results suggest large differences between breeds in all of the investigated traits, even though there were within-breed variations (Svartberg, 2005) which again shows that aggressiveness is very much dependent on the breed of dog.

It is good to remember that aggression is bred into these breeds by humans (Vasb, 2005). Breed specific behaviours that have been respected and selected for over the centuries are now often viewed as unnatural or dangerous. Dogs were throughout the centuries bred as protectors and guardians of property, possessions and families. Dogs have also been used for thousands of years to track, chase and hunt both large and small animals. Humans breed dogs specifically for a tendency to be aggressive, for example Dobermans and German shepherds that are used in police work. Another problem caused by breeding can be seen in a breed as the Rottweiler, a characteristic of this breed is its "sturdiness" Breeders want to see a strong, non-submissive dog, but not all people that buy these dogs know how to deal with this. In the case of the Cocker Spaniel though they may not be deliberately selected on aggression but by breeding with dogs that were aggressive without selecting on behaviour it became a part of the breed. Again this is not a problem in the dog but a problem created by humans. Many problems are created by owners that do not think before buying a dog whether the breed of dog they are buying will fit into the family. People should also question themselves on their ability to communicate sufficiently with the dog to prevent behavioural problems as aggression.

In Munchen Germany a survey was conducted under people that owned aggressive dogs and people that did not. They also concluded that breed and gender were connected to the showing of aggressive behaviour. But beside this they found that other important influencing factors included housing conditions, criteria concerning the selection of a dog, and the dog's training. They concluded that the owner's attitude towards the dog and whether the owner had any previous experiences in keeping a dog were also contributing factors to the occurrence of aggression. (Roll, 1997)

In other work done by Jagoe the same conclusion was reached. He wanted to find scientific evidence that dog owners are often responsible for their animals' behaviour problems. A number of statistically significant associations were detected: Dogs that had received obedience training had less separation related problems, a reduced prevalence of competitive aggression and escaping and roaming. They found a connection between the timing of the dogs' meal times and the occurrence of territorial-type aggression and between sleeping close to the owner and increased prevalence of competitive aggression. Also first-time owners had more problems with the prevalence of dominance-type aggression, separation-related problems, fear of loud noises and various manifestations of over excitability (Jagoe, 1996).

These researches under score what most people that work with dogs already believe that the influence of the owner determines for a large part whether their dog shows problem behaviour. Though every dog can be a good dog with the right training and handling from the owner there are many breeds that are less suitable as a family dog for people without sufficient experience in dogs. One of the most important things people have to become aware of is that these large differences in breeds exists and that not all breeds are suitable for every home situation or will fit their character or level of knowledge. Owners should realise that they are

responsible for the behaviour of their dog and that this starts with buying the right breed that will fit into the family situation.

4.2 Separation anxiety

Another common problem that people are confronted with is separation anxiety in dogs. As shown in table 5.1 this is a problems that is prevalent in many different countries.

It is important to know that not all dogs that show unwanted behaviours as chewing on things, barking and whining are suffering from separation anxiety. As discussed in chapter three dogs that are left alone can also suffer from boredom or they might never have learned to be alone. There is even a category of dogs that sees the time the owner is gone as the perfect time to do all the things that are usually not allowed, chew on shoes, lay on the couch, steal food etc.

Table 5.1

Percentage of dogs with separation related problems	Country	Source
20 % of total case load	North America	Mc Grave, 1991
14 %	US	Overall <i>et. al.</i> , 2001
5-21 % of problem dogs	Switzerland	Horwitz, 2000
15 %	UK	Bradshaw <i>et. al.</i> , 2002
14-34 %	UK	ABPC, 2000

Separation anxiety though is a serious problem in a dog, which can seriously negatively influence the welfare of the animal because of the amount of stress that can be involved. Dogs with separation anxiety exhibit behaviour problems only in the absence of the owner. Typically, these dogs will show a dramatic anxiety response within a short time (20–45 minutes) after their owners leave them, behavioural symptoms shown are:

- Digging, chewing, and scratching at doors or windows in an attempt to escape and reunite with their owners.
- Howling, barking, and whining in an attempt to get their owner to return.
- Destructive behaviour that occurs is often oriented against barriers such as doors
- Urination and defecation (even with housetrained dogs) as a result of distress.
- Not eating for the time that the owner is gone (DFL, 2002, Lund, 1999)

Some dogs will already show stress signals when he recognizes that the owner prepares to leave. Dogs suffering from separation anxiety will give the owner a very intensive greeting when he/she returns even when the owner was gone for just 10 minutes.

It is not fully known why some dogs suffer from separation anxiety and, under similar circumstances, others do not. Separation anxiety sometimes occurs suddenly:

- When a dog accustomed to constant human companionship is left alone for the first time.
- Following a long interval, such as a vacation, during which the owner and dog are constantly together.
- After a traumatic event (from the dog's point of view), such as a period of time spent at a shelter or boarding kennel.
- After a change in the family's routine or structure (such as a child leaving for college, a change in work schedule, a move to a new home, or a new pet or person in the home). (DFL, 2002, Kovary, 2000, Lund, 1999)

Further breed and gender both seem to influence separation behaviour (Lund, 1995) Especially, hounds, sporting and herding dogs bred for high activity frequently cause problems by barking or whining while the owner is away (Niego *et al.*, 1990). Additionally, early experience such as too early separation from its mother (McElroy, 1989), illness and being left alone for a long time as a puppy (Serpell and Jagoe, 1995) may predispose the dog for development of separation problems. Dogs adopted from a shelter often become strongly attached to the new owners and are more likely to exhibit separation problems (Borchelt, 1984, McBride *et al.*, 1995). There is also research done into the question if serotonin concentrations are involved in dog behavioural problems. Because it has been proved that serotonin is related to behavioural disorders in humans the question was raised if the same would be true for animals and especially dogs. Findings suggest that aggressive dogs and dogs suffering from separation anxiety show lower serotonin activity. Research showed that dogs with Separation Anxiety respond positively to treatments with serotonergic drugs.

Dog trainers and behaviouralists can help the owner with solving this problem, mild cases can often be solved with behavioural training for the dog. With dogs that have serious problems however the combination of medicines and behavioural training may be the only way to treat the dog. Some of the medicines available are, clomicalm or L-deprenyl and off label, the human medicine prozac.

4.3 The effect of training methods on welfare

There are and have been many methods introduced to train dogs and to “cure” the dog of problem behaviour as described above. At this moment there are various organisations and behavioural therapists in the Netherlands that are knowledgeable in how to work with these dogs and their owners so problems can be solved. Unfortunately not all problems have a solution and in some cases, for especially fearful or aggressive dogs the only acceptable solution can be to put the dog down. Luckily this is quite rare and most problems can be solved in a different way or it is possible to teach the owner how to avoid problems.

There are roughly two different methods to train a dog, using negative reinforcement or positive reinforcement. Negative reinforcement works by punishing the wrong behaviour so the dog will avoid displaying this behaviour in the future. This will always cause a certain amount of stress in the animal as an unpleasant stimulus is being used. Though if the trainer does his/her job right this will not pose welfare concerns as the stress period is very short and the dog knows how to deal with the situation. The problem with the use of punishment is that when not giving in exactly the right way and with the right timing it will reach the opposite of what you are trying. Especially the use of pain stimuli can be detrimental to the welfare because it is very difficult to use these corrections in the right way. Any painful, negative reinforcement to be effective must be associated with some unwanted (by the trainer) behaviour and the timing must be impeccable. A few seconds off and it is just a painful stimulus with an undefined cause that the dog cannot associate with anything specific. There is even evidence that the use of more extreme measures as the (still popular) shock collar is always detrimental to welfare even when used “right”. Research done into the use of shock collars showed that there are good reasons to conclude that dogs trained with the use of this collar (by professionals) are affected by stress, not only in the training situation but also outside the training these dogs showed behavioural signs of stress (Schilder, 2004).

There is also the idea that the use of repeated pain stimuli can actually result in aggression (Bailey, no date). Any pain with an undefined cause may result in redirected aggression. One of the main selling points of the shock collar is the dog does not know where the pain comes

from. The trainer is not associated with the shock and so is presumed innocent by the dog. So the dog “blames” whomever or whatever is near at the time. The pain is redirected as aggression toward the dog or person that is equal to or below it in the dominance order.

Positive reinforcement is based on the principle of rewarding the right behaviour. If done consequently the dog will learn to show the behaviour the owner want because that behaviour is associated with a positive stimulus. Behaviours that do not result in a reward will fade out because the dog will have a higher preference to show the behaviour for which it will be rewarded. With this type of training the welfare of the animal is better guaranteed. Again the owner must know what he/she is doing and be consequent. But this situation is more forgiving, not giving a reward on exactly the right time may cause the dog a lot longer to learn the exercise but the chance of seriously lowering the welfare of the dog is much less. This is not always possible especially when solving problem behaviour. The basic thing to remember when using positive reinforcement is that the trainer gives the dog should always be better than the reward the dog gives itself by showing the wrong behaviour. In some cases using punishment may be the only way to teach the dog to stop with an unwanted behaviour as chasing sheep. In these cases though it is best to ask a professional for help, as the chance that something will go wrong is high.

To conclude it is good to mention that most local dog schools and dog trainer work with positive reinforcements techniques nowadays which makes it easy for dog owners to familiarise themselves with this method.

Use on the website...

- State that behavioural problems are not only problems for human but can also lower the well-being / welfare of the dog.
- Mention that aggression is a major problem. Different things should be explained:
 - What aggression is, explain the different classes of aggression. It should be made clear with the help of pictures what the behavioural clues are to determine aggression in dogs.
 - Explain what to do when your dog is aggressive.
 - Explain what to do if a strange dog is acting aggressively.
 - What can be the cause of aggression?
- Explain separation anxiety and again tell people with the help of pictures how to recognise this. Give people tips they can follow with their dog in mild cases.
- Provide the information where the owner will be able to find professionals help when they cannot deal with the problems any more.
- Let the owner think about the training method they use to train their dogs and not do whatever the local clubs or the neighbour says works well.

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Chapter 5 Anthropomorphism

Anthropomorphism is defined as the 'attribution of human mental states (thoughts, feelings, motivations and beliefs) to nonhuman animals', which is an almost universal trait among pet owners (Serpell, 2003). This is also called projection, people project their own emotions and thoughts on the dog. People feed their pets on human food, celebrate their birthdays, dress them in designer-label fashion and bury them in pet cemeteries. All of these are examples of anthropomorphic activities. Humans perform these anthropomorphic activities because they provide a feeling of psychological satisfaction. Relationships between humans and pets are unique because they are based on the exchange of social rather than economic or utilitarian provisions. In other words, humans keep pets for companionship.

Jean Donaldson (1997) states that people want to see dogs as smart and honourable creatures and think that dogs are superior to humans because they are loyal and reliable. People are afraid to accept that dogs are not better than humans in this. Accepting that dogs are normal animals would make it more difficult for people to use them as surrogate children or family members. There is no doubt that the bonds that people have with dogs are very strong and to express this emotion humans exaggerate how much dogs are like us. Also humans always find it easier to relate to something when they see their own emotions and thought patterns into the actions of their dogs (Rawlinson, no date). This also leads to human emotion or feelings being subscribed to their dogs.

It cannot be said that anthropomorphism is wrong, anthropomorphism is always a part of keeping animals for companionship. Dogs are not always aware that people treat them like a human, for example when people celebrate their birthday. It becomes a welfare problem only in cases where people do not realise anymore that dogs are animals. Some people may say that dogs will not suffer from clothes being put on or being treated as owners' accessories. Probably the suffering is not severe, dogs just may feel uncomfortable. Is it acceptable?

Treating dogs like this can result in destroyed relationships between the owner and the dog. Dominance aggression can occur because the owner puts the dog at the same level as him/herself, but for dogs the same level of hierarchy does not exist. In this case the dog will see its level as the dominant one. Inappropriate relationship such as spoiling or not providing obedience training can also lead to behavioural problems.

Owners often have too high expectations of their dogs' abilities because they project their own emotion and intelligence on them. This misunderstanding will sabotage the communication between owner and dog. As a result the dog will be punished because the owner overestimated the dogs ability to think. Dogs are put into situations that they cannot solve or do not understand and they get punished "because they are smart enough to understand this".

Humans also project their own needs onto dogs, they will for example think that a dog needs the same food they eat. This is inappropriate because it does not satisfy the nutritional needs of dogs, and moreover, excess energy content in the diet leads to obesity and imbalanced mineral contents can be the cause of diseases.

However, there is a study concluding that anthropomorphic activities, or spoiling does not cause problem behaviours (Voith *et al*, 1992). It cannot be stated that this research has proven that anthropomorphic activities do not cause problems. But this study might have proven how difficult it is to measure the consequences of anthropomorphism on the welfare of animals.

Serpell (Serpell 2003) also states that another welfare issue is anthropomorphic selection, which is a selection of physical and behavioural traits that attract humans. This means that many of the breeding problems discussed earlier could have an anthropomorphic background. Though there are many arguments that could be brought against this, he makes a valid point in the fact that although some breeds' exteriors and characteristics are selected for some purposes such as working and hunting, nowadays we often do not use them for these purposes any more. There are some breeds that are established for companion dogs, for example, toy breeds. There is no reason except humans' favour to keep their exterior and characteristics. It is not always harmful to dogs but often it is. One of the examples is the British Bull dog, which must be born by caesarean, has nasal and respiratory disorders because of its exaggerated exterior. These dogs are obviously harmed and their well being is threatened due to enhancing the attractive appearance of companion dogs by human.

Anthropomorphism gives humans the opportunity to use dogs as companions, this relationship provides humans with mentally and physically benefits. On the other hand, dogs have to adapt to a human lifestyle and this will restrict them from behaving as a dog. The welfare of many dogs may be threatened by anthropomorphism below the surface. Leaving the Lassie-myth behind is necessary; people should take the responsibility to learn about the basic needs of the species with which they live together without suppressing the dogs' true nature.

Use on the website...

- Explain what anthropomorphism is. It is not always a bad thing, when and why does it become a problem?
- Give examples of anthropomorphic activities like; feeding pets human food, celebrating the birthday of the dog, dressing them in designer-label fashions and bury them in pet cemeteries
- Mention the problems caused by anthropomorphic activities. In some instances / situations anthropomorphic views of the owner can lead to health and especially behavioural problems.

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Chapter 6 Rules and Regulation

Though regulation is not a direct threat to the welfare of dogs, not as the other discussed subjects are it is important for owners to be aware of the regulations surrounding the keeping of dogs. Regulation may not be the cause of a lowered welfare status but it can be part of the solution in the form of a preventative.

All existing regulation specifically made about animals falls under and is enforced by the ministry of agriculture. Though in other laws animals are also mentioned. The “Burgerlijk Wetboek” (BW) (civil code) states that animals are things. Because of this a number of regulations considering property, loss and consumers’ rights are also applicable to animals. Also the “Wetboek van Strafrecht” (penal code) equals an animal with a thing. Equalling an animal with a thing can be a source for an ethical discussion in which we will not go into here. It has to be mentioned though that there are also benefits for dog owners found in this approach. Because dogs are classed as things, buyers have some protection from the law when buying a dog. If the dog is sick or dies after the buyer bought it the breeder or trader has to prove that the dog was not already sick when he sold it. If he cannot prove this, the buyer has the right to be reimbursed. Dogs also receive some amount of protection by being classed as property, as the owner will protect them and there are rules for other people handling your property.

Besides this there is one law in place that specifically deals with the subject of animal welfare, the “Gezondheids en Welzijnswet voor dieren (GWWD)” (Health and Welfare law on animals). This law is concerned with all animals kept by humans, either for production, hobby or companionship. The GWWD is set up as a cadre law, the law gives directions and separate regulations and decisions are made under the GWWD. The GWWD states that it is forbidden to:

- Cause unnecessary harm or pain to an animal or compromise it’s health or welfare.
- Not give an animal the necessary care
- Perform surgery on a animal without a medical cause (unless stated otherwise in the law)
- Use animals as a price, reward or gift.

Besides this everybody is obligated to provide care to an animal in need

These regulations are also applicable for dogs, for example this means for the dog owner that not bringing their dog to a vet when it needs to is punishable by law. Further there is also an extra decision on non-medical surgery on animals “Het Ingrepbesluit” which among other things forbids the cropping of ears and tails of dogs. (min. LNV, 2006)

Also derived from this law is “Het Honden- en Kattenbesluit” (Decision on Cats and Dogs). This regulation provides standards for the commercial breeding, trading, and keeping of dogs. This is important for people to realise when they are thinking about buying a dog. They have to make sure that the business where the dog comes from applies with these regulations and is registered as a bona fide company. This decision only applies to breeders that produce more than 4 litters or more than 20 pups per year. At the moment the government is looking into adapting or deleting “Het Honden- en Kattenbesluit”.

In the Netherlands these are the only regulations considering the keeping of dogs that are of importance to the dog owner. The chance that the number of regulations will go up dramatically is small because the current policy of the minister about companion animal welfare is that the main responsibility for welfare has to be carried by the sector. It is also

stated the keeper of the companion animal is the first one responsible for the prevention and solving of welfare problems. In the Action plan "Gedeelde Zorg" from the Forum Welzijn Gezelschapsdieren, self-regulating is also used as a solution but besides this it is believed that voluntary activities as an identification and registration system must be backed up by governmental decisions so the people that will not voluntary comply can be forced. What the minister decides to do with this advice will be seen in the coming months.

From Europe there is also no further legislation on companion animal welfare expected. The Treaty of Amsterdam, in force since 1st May 1999, lays out ground rules for the actions of the European Union (EU) on animal welfare in a special "Protocol on the Protection and Welfare of Animals". It recognises that animals are sentient beings and obliges the European Institutions to pay full regard to the welfare requirements of animals when formulating and implementing Community legislation. The protocol indicates the responsibility of the EU in improving the welfare of animals and in preventing cruelty against animals and their mistreatment in areas covered by the Treaty (such as agriculture). In other areas not covered by the Treaty the EU has no competence so that these issues remain under the sole responsibility of the Member States (e.g. the use of animals in competitions, shows, cultural or sporting events such as bullfighting, dog-fighting and dog-racing). The use of animals as companion animals is also not covered in the Treaty. This year the Action Plan on the Protection and Welfare of Animals has been made public by the European Union. The overall aim of the Action Plan is to set out timetabled measures that will be taken by the Commission to promote animal welfare over the next 5 years. Two actions that must be undertaken are; Ensuring animal handlers and the general public are more involved and informed on animal welfare issues; Supporting and initiating further international initiatives to raise awareness of, and create greater consensus on, animal welfare. Though this sound promising after this the Action Plan concentrates on farm animals and experimental animals. Except in one point, The Commission is currently looking into ways to ban the trade of cat and dog fur in the EU, for ethical reasons and in response to considerable public concerns on this issue.

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Chapter 7 Methods to create awareness

As mentioned the information in this report will be used on a website as a method to increase the awareness of (potential) dog owners on welfare problems. Besides the use of a website other methods can be used to reach this goal. With the help of the RAAKS methodology other methods that the dog sector has used or are in use were analysed and advice has been giving on improvements. The results of this can be found in this chapter.

RAAKS stands for Rapid Appraisal of Agricultural Knowledge Systems. RAAKS was first developed for use in the agricultural sector but is nowadays used in many more areas (Salomon and Engel, 1997). The key element of RAAKS is knowledge information management. RAAKS focused on analysing the knowledge network surrounding dog welfare and identifying the most important people or organisations that play a role in the obtaining and contributing of information and knowledge. These people or organisations are referred to as actors. The weak points and strengths of the network are identified. Improved communication and cooperation between actors will play a large role in solving the problem.

There are many parties involved in the dog sector that are involved with the issue of dog welfare. Many of these are directly or indirectly dependent on the attitude of the dog owner towards dog welfare. If consumers play an active role in preventing welfare problems, by making conscious choices, the overall dog welfare will improve. A improvement in welfare will be beneficial to the actors because a responsible and knowledgeable dog owner or buyer will favour companies, breeders and traders that are working in a professional way with regard to dog welfare. Thus creating a healthy stable market without negative media coverage.

From interviews with actors it was revealed that the lack of awareness that exists on welfare problems, such as the ones discussed on previous chapters, is caused by different reasons. One part of the problems is that people do not know that problems exist, the cause of this can be a lack of education. But there are also problems that are accepted by society and because of this are no longer seen as a problem. Examples of these are the discussed genetic problems, but also dogs that are left alone for a long time while the owner is working. Creating awareness of these problems will only be a successful operation if all important actors in the dog network are willing to cooperate and make a joint effort in providing information towards the public. The combining of resources and knowledge is often necessary to achieve the desired effects especially because the target group is large. All these activities are dependent on a functional Knowledge and Information System (KIS) where actors can obtain and exchange information. That is why the important actors will be identified and interviewed and it will be analysed how actors work together in the KIS. Constraints will be identified that can be a threat to the set goal. The last step will involve giving suggestions on what directions the sector should be thinking in order to heighten the awareness of (potential) dog owners on problems that cause welfare concerns in dogs.

7.1 Some backgrounds facts on the target group

In the Netherlands the number of companion animals is rising. At the moment there are 1,8 million dogs in this country. It is often the families with children that keep companion animals. This can be seen in the fact that 77% of the households with children own some sort of pet. Many of which are dogs (Forum Welzijn Gezelschapsdieren, 2006). A relatively high percentage of problems with aggressive or fearful dogs are related to situations with children.

(Stichting Consument en Veiligheid, 1998 and Delise, 2002) This means that education is necessary for the adults in the family but also for the children. Because these children will mostly grow up and have pets of their own this will also help in lowering the number of ignorant people in the future.

About 300.000 to 350.000 pet owners are a member of a breed organisation. About 47% of these members are connected to a breed organisation for pedigree dogs (Forum Welzijn Gezelschapsdieren, 2006). Seeing that this is a considerable group of people it is clear that breed organisations can be very useful in relaying information about dog welfare to their members.

All dog owners have one moment in time where they can all be reached with much important information and that is the moment they buy the dog. The seller of the dog is in the perfect position to educate potential dog owners on how to care for their dog. This is why knowing the origin of dogs is important, so it is possible to calculate how many of the people that buy a dog will certainly receive information from the seller.

Sadly there is not much solid information available on the origin of pet animals. Various methods are available to buy companion animals in the Netherlands. Besides pet shops (only 10 pet shops in the Netherlands sell dogs), breeders and shelters, (Forum Welzijn Gezelschapsdieren, 2006) it is known that a lot of trade goes on through the internet. There are also many private pet owners that occasionally have litters and sell the puppies. It can be said that generally people will receive information about their dog when buying from a registered breeder or shelter. It would be expected that pet shops are also reliable but on this opinions are divided. When buying dogs from the internet or from non-registered breeders there is no way to know if people will receive (correct) information.

An average of 44% of dogs originates from professional breeders or hobby-breeders and 56% from private persons or animal shelters. (Forum Welzijn Gezelschapsdieren, 2006)

These are some background points that have to be taken into consideration when planning strategies to heighten the awareness of welfare problems.

7.2 Actor analysis

The analysis of the network surrounding dog welfare is important so actors in the dog sector that are connected to dog welfare can be identified. The analysis will also help with understanding the different roles that actors play in the network. The definition of an actor is a person, group or organisation that is the core of a knowledge system. Not as passive recipients but as active, knowledgeable participants who can arrive at decisions (Salomon and Engel, 1997). It was not possible in the context of the project for all actors identified to be interviewed, but an attempt was made to identify them as indicated by the people interviewed. Eight important groups of actors were identified:

- Raad van Beheer (Dutch Kennelclub) & Parent-clubs
- Behavioural therapists
- Vets, represented by Koninklijke Nederlandse Maatschappij voor Diergeneeskunde (The Royal Dutch Association for Veterinary Practice)
- Universities
- Welfare organisations
- Government
- Platform Verantwoord Huisdierenbezit (Platform for Responsible Petownership)
- Dog owners

7.2.1 The actor-groups explained in short

Platform Verantwoord Huisdierenbezit (PVH)

The organisation is formed by six different organisations, which together represent more than 300.000 members. These members are made up from breeding associations and organisations of people with shared interests. The main goal of the PVH is: to encourage a good human/animal-relation by giving information in the broadest sense of the word. Besides this the PVH is an interest group for the owners of companion animals, both organised and unorganised.

Behavioural therapists

Behavioural therapists are organised in several organisations of which the important ones are, Tinley advise agency, Kynotrain and the Martin Gaus training centres. The goals of all these organisations are; helping owners with problem behaviour in their dogs, educating dog owners and educating behavioural therapists.

Raad van Beheer (Dutch Kennelclub) & parent-clubs

The Raad van Beheer represents breeders of true breeds through the parent-clubs that are associated with them. They are also responsible for giving out the pedigree papers. There are 9.000 dog breeders active associated with the Dutch Kennel club. Most of these breeders are non-professional as the income from this is not their main income. Of these breeders 1.600 are seen as professionals by the “Honden- en Kattenbesluit”, these breeders are responsible for 50% of the produced dogs in this group.

Universities

The most important ones are the Veterinary faculty in Utrecht and the Agricultural University Wageningen. These both conduct valuable research on dogs. Also other university's as the HAS Den Bosch and the Van Hall Instituut contribute to the knowledge network. The main goal for a university is educating the students, next to this is the collection of information.

Vets/KNMvD (The Royal Dutch Association for Veterinary Practice)

The KNMvD represents the veterinarians in the Netherlands. The KNMvD promotes a high standard of veterinary healthcare and makes policies that give advice to veterinarians.

Welfare organisation

The three most important welfare organisations that are concerned with dog welfare are; De Dierenbescherming (The Dutch Society of protecting animals), de bond tot bescherming van honden (The Dutch Society of protecting dogs) and de Sophiavereeniging. Besides giving out information they also work to prevent and eliminate neglect and abuse of dogs through the work of welfare inspectors.

Government

The ministry of agriculture is responsible for the discussion about animal welfare with the sector. It is also their job, if so decided, to make regulations and enforce these. For example the existing “Gezondheids en Welzijnswet voor Dieren” and the “Honden en Kattenbesluit”) are enforced by the ministry of agriculture. At this moment the ministry's standpoint regarding dog welfare problems is that the responsibility to solve problems lies inside the sector. They are willing to act as a discussion partner and mediator between parties but will not take direct action in the form of new rules and regulations.

Dog owners

People that own a dog or are thinking about buying one.

7.3 Knowledge and information system

The Knowledge and Information System (KIS) links the different actors together. System performance depends heavily upon elements such as cooperation among actors, effective communication, agreement with respect to objectives and interests, and how well the system defines and coordinates its tasks (Salomon and Engel, 1997). Different actors have access to different ideas, knowledge, information and experiences so an effective information system is essential to work together on problems and find solutions that will have the required effect. Figure 1 shows how the identified actors work together in the KIS. The information is acquired from interviews with persons involved in this network, information on these interviewees can be found in appendix 1. As shown all actors are linked together but the width of the arrows represents how much information goes from one actor to the other and the amount of cooperation. This network is the core-network, the different organisations also maintain contact with other individuals and organisation. In the dog sector individual experiences are also an important source of knowledge and information and much information comes from people who are working with dogs, these individuals can already be a part of the mentioned organisations but can also be separate from this.

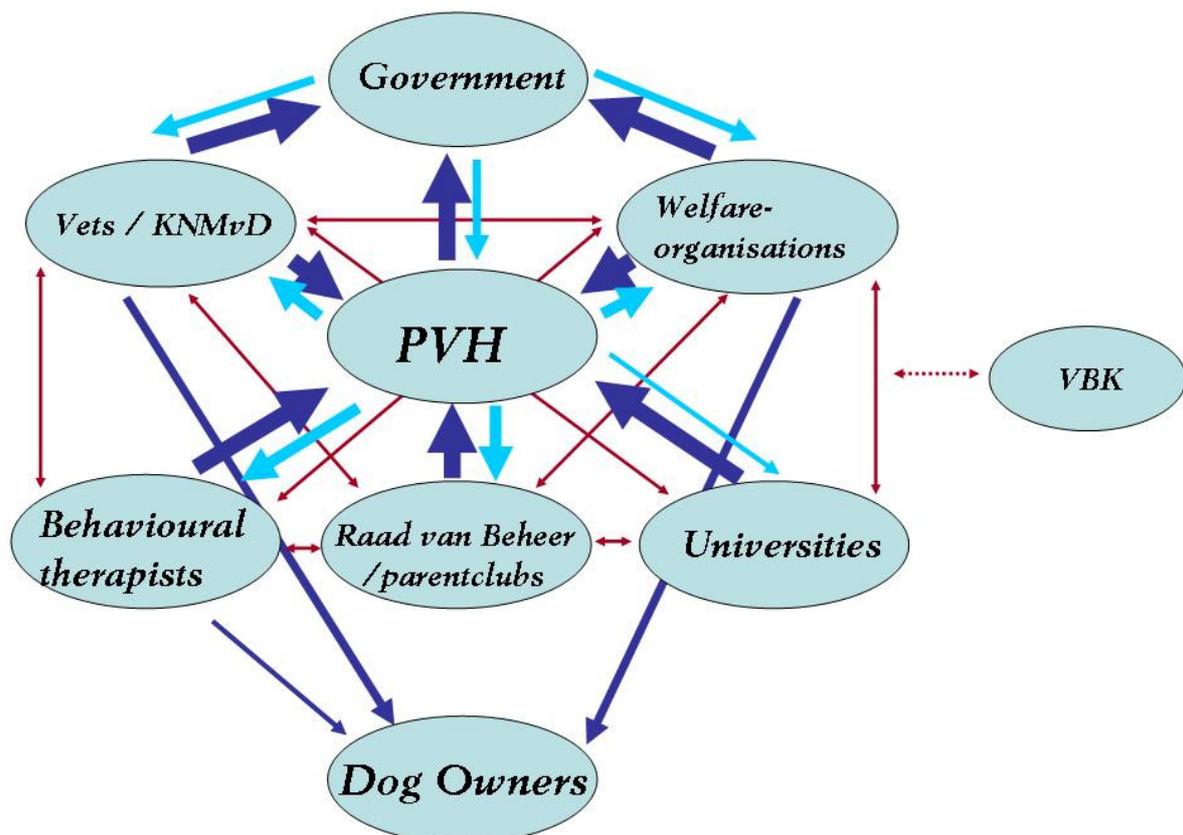


Figure 1, KIS evolving around Dog-Welfare

Even though the network exists of various organisations, institutions and persons, most people express that the network is actually quite small. Most people are familiar with the other actors.

The same people and organisations are mostly represented in projects and discussion. It was concluded from the interviews that communication channels are mostly short. Contacts go directly from person to person because everybody is familiar with each other. Outside influences are minimal. People contacted expressed that they usually do not encounter problems when trying to find information, information is readily available. One interviewee remarked that information is not often in writing or in a prescribed standard format.

The question was asked whether competition is present in the network. This is important to know because competition between networkpartners can lead to a diminished information sharing and exchange. It was found that not much competition was present. Because competition is mostly seen when organisations have the same goal and want to make a profit of this, this is not largely manifested in the network evolving around dog welfare. Most of the actors have no competition as they are either the only one in the market, government, PVH, KNMvD and RvB, or they do not have to make a profit, welfare organisations and universities. Competition is found in the relationships between the different organisations for behavioural therapy, but this is mostly in the area of trainings methods used. They will discuss subjects as education, both for the public and people working with dogs.

People from different disciplines in the dog sector have the same basic ideas when thinking about dog welfare. All actors agree that the separate parts that make up welfare, physical, behavioural and mental are equally important. This is a good first step to be able to coordinate actions in the sector that are aimed at improving dog welfare. Actors further agree that a lack of knowledge in dog owners and potential dog owners is one of the largest problems when trying to improve dog welfare. The “Forum Welzijn Gezelschapsdieren” (forum welfare companion animals), in which many of the actors are present, has, as requested by the minister, presented their thoughts and solutions on welfare problems in the Dutch companion animal population. This report has been handed to the minister of agriculture on the 23rd of March this year. In this report it is recognised that insufficient knowledge in dog owners and potential dog owners is a serious problem. Naturally people do put different amounts of emphasis on subjects. This is not harmful but beneficial in a situation where the knowledge network functions well so all parties have access to information and knowledge stored by other actors. When the network functions well this also means that cooperation between the actors is easier which provides opportunities to look at problems from different viewpoints and come up with solutions that take all this viewpoints into account.

Two problems have been found that impair the problem solving capacity of the network:

- The distance to the dog owners in the network is too large. As can be seen in the KIS there is not much direct contact between the network partners and dog owners. The connections that do exist are quite weak with exception of the connection with the vet. Dog owners are not sufficiently included in the network. They are not familiar with activities employed by the network actors and the network partners are not sufficiently known.
- Not all parts of the dog sector are involved in the network. The so called *Organised professional breeders* (Forum Welzijn Gezelschapsdieren, 2006) are not working together with the other actors but make their own plans; these breeders breed dogs commercially and their main interest is the continuity of their company. Breeding goals are mostly influenced by market demands. There are 41 of these professional breeders organised in the “Vereniging voor Beroepsmatig Kennelhouders” (association for professional dog breeders). This is represented in the KIS by the thin dotted line in the direction of the

network. The VBK does work in educating dog owners and giving information when buying a dog but their cooperation with the network is not very strong. These people breed large numbers of pedigree dogs, usually without papers provided by the breed association. Other actors in the network have objections against this way of breeding dogs, which makes communication difficult. Because of the large number of dogs being bred they do have influence on the consumer market and should be included in initiatives.

- The resources of local dog trainers and dog clubs are not sufficiently used. These people see a large part of the Dutch dog population, often in an early stage when owners are coming to puppy class. The local dog trainers are not represented in the figure made of the KIS, not because they are not important, but because they are actually part of a different KIS that is connected to this one. They are connected to the KIS through other organisation like Cynophilia and Quiebus which are connected to the PVH and the RvB. Because of this the distance between the core network and the local trainers is too long.

7.4 Constraints

Besides the mentioned problems identified in the functioning of the network, there are also other constraints identified that will impair efforts to reach the set goal of educating dog owners on the existence of welfare problems.

Constraint 1

Ideally all parties that have direct contact with the (potential) dog owner should be a part of the solution. Unfortunately this is not possible at the moment. The reason it is stated *all parties* is because each actor has their own area of expertise and welfare problems are found in all areas. It is possible to reach the solution with the cooperation of only the most important actors. But the process will take longer and it must be certain that other actors that are not cooperating will be neutral and not actively work against the other group.

Different subgroups are present in the sector that do not want to be part of the solution or can't be reached (Forum Welzijn Gezelschapsdieren, 2006):

Unorganised professional traders/breeders; These people are not approachable as a group and exist of many different individuals. Besides "normal" breeders these group also includes the so-called "shady" breeders for who money is more important than the welfare of their dogs. Keeping tabs on this group is at the moment almost impossible.

Non-professional breeders; In this group all people that have a litter now and then are included. This group sells many crossbreeds and the so-called look-a-likes, mostly Golden Retrievers and Labradors Retrievers.

Traders and second traders; The position from this group is getting stronger. Traders in this group are trying to meet market demands as fast as possible. Many dogs are being bought in Eastern Europe and are being sold in the Netherlands. It has been estimated that this group is offering 25% of all dogs sold in the Netherlands.

These groups make it possible for people to buy a dog in ten minutes time via the internet or newspaper without pointing out what keeping a dog means. All the information for these people will have to reach them after they have bought the dog in which case it may already be too late.

Constraint 2

Dog owners are not an organised group but are made up of many individuals without a common goal or a representative. When trying to reach dog owners it is important to realise that theoretically dog owners can be divided into different subgroups. This division into subgroups is important to decide what medium should be used to reach the different people present in the group dog owners.

Ways to divide dog owners:

Level of experience:

- Potential dog-owners
- First time owners
- Experienced dog owners

Interest in their dog

- Dog-owners that are interested in learning more about dogs
- Dog-owners that are not interested in learning more about dogs

Emotional tie with the dog

- Dog-owners that have a close emotional tie with their dog
- Dog-owners that do not have close emotional ties with their dogs

Constraint 3

The mostly negative attitude of the media. Especially in the case of dog bites the media focuses on the incident itself and the consequences for the human involved. The media does not go into the background of the incident and explain why the biting-incident occurred, in many cases the incident could have been avoided if the one bitten had had more knowledge about dog behaviour. Covering should be less one-sided. This has the ability to positively influence people's attitude towards dogs.

7.5 Current activities aimed at informing dog owners

It is important to have knowledge about activities and projects that are already being conducted by various actors. This knowledge is the base from where new plans or improvements can be proposed. Where activities are already in place and show results these are good starting points to build a new action plan.

Here the different strategies that were mentioned in interviews will be stated followed by the actors that use these, it will be mentioned what advantages and disadvantages are seen.

Websites

All actors make use of a website to inform visitors about their organisation. Not all of them also use their website to inform dog owners about their dogs or to inform potential dog owners. The organisations that do have an extensive amount of information on their website for dog owners are the "Hondenbescherming", "Raad van Beheer", and all organisations for behavioural therapy. The website from the PVH does have information on it for dog owners but this is not as complete yet. Besides the websites from these core-actors there are many websites on the internet that provide good information, for example websites from breed organisations. There is also much unreliable information found on the internet, when using a website it must be clear to the reader that the information found here has added value in comparison with other websites. Everyone agreed that a good website is an excellent way to keep in contact with people and to provide people with information, especially because it is a

medium with a low threshold. One of the few negative remarks heard was that the first action always have to come from the dog-owner, it is a reactive medium.

Flyers

Flyers are used by most actors to inform people. Flyers can contain general information or can be used to inform people about certain events or warn people for specific situations. For example the “Hondenbescherming” made specific flyers when the summer was extremely hot two years ago to inform about the danger of heatstroke in dogs. This action was deemed successful. Flyers can be very successful, especially in specific events as this is easier to get the attention of the reader. But flyers containing general information are in danger of being read and forgotten or being thrown away. Flyers do have the ability to reach passive people, especially when being handed out by hand.

Magazines

Some actors are involved in the publishing of magazines. Tinley is the biggest player in this because they provide the information for the magazines “Dogma” and “Dier en Gedrag”. This is an excellent way to provide people with information. The drawback however is that the people who read these magazines are already interested in the subject. Often these will also be dog owners with a higher than average knowledge on dogs.

Advertisements

The use of advertisements is not a common way to address people other than trying to attract customers or familiarise the name. The only organisation that makes use of advertisements in a different way is the “Hondenbescherming” they place warning advertisements between advertisements for puppies on the internet and in newspapers to make people aware of the risks of buying their dog here.

Events

Events are a good way to reach people in a fun environment, also for children events can be very useful in providing information without them feeling like they are getting educated. Not many events have been organised that aimed at improving animal welfare. Mostly these are related to sports like agility and fly ball or shows are build around the presentation of companies. At the moment the organisation of a new “week of the pet-animal” is underway. This week has been organised since 2002. The theme this year is “pet and child”. The organisation of this week is done in cooperation by several organisations, the KNMvD, Hondenbescherming, Dibevo (overseeing organisation for pet shops and suppliers), Dierenbescherming, PVH, Raad van Beheer and Nederlandse Databank Gezelschapsdieren (Dutch Database Companion Animals).

Education in schools

There are programmes being developed that aim at educating children in how to deal and take care of animals from a young age. One of the programmes that is already available teaches children how to safely play and take care of dogs so dog bites can be prevented.

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Chapter 8 Action plan

To shortly recap what is stated in the last chapter; the present network system seems to function well. However, it is necessary to strengthen the connection between the organizations in the knowledge network and dog owners to reach the goal of creating awareness of welfare problems. Advice on how these connections can be strengthened and further advice on how to educate dog owners will be given in this chapter.

The sector has already taken the initiative to design methods that will solve the problem. The “Forum Welzijn Gezelschapsdieren” (forum welfare companion animals) has, as requested by the minister, presented their thoughts and solutions on welfare problems in the Dutch Companion animal population. The sector recognises in this report that insufficient knowledge in dog owners and potential dog owners is a serious problem. They propose the next actions:

- Establishing the National Information Centre for Companion Animals. This centre will collect and provide information about companion animals. Part of this will be a website where people can go to search for information. This knowledge centre will be a coordinated effort by several actors.
- Coordination of the Information Centre of activities aimed at the education of the public. This can be in the form of internet, television shows, educational programmes, publicity campaigns and contacts with the press.
- Providing the buyers of animals with an information leaflet on the animal. These leaflets will contain information on the care, training, safety and health of the animal. In dogs this could be supplemented with specific breed information and individual information. The breeders and traders will provide these leaflets.

Funds for these activities will be provided by the sector and by the government.

It is proposed to not just look at the different methods that can be used to influence dog owners but also look at *when* they have to be reached.. It is said many times in interviews, literature and on websites that people must have knowledge about dogs *before* buying one. This means that it is important to know if the various activities will reach this goal or if people are being reached in another point of time, maybe after they bought the dog. Sometimes reaching people that already have a dog may be the goal but a conscientious chose must be made. This is why it is advised to use the following order when planning activities to increase awareness.

- **Before buying a dog**
- **When they are buying a dog**
- **When they already have a dog**

The next part shall discuss which methods are appropriate to use in the different stages.

8.1 Methods to inform people before buying a dog

Ideally all people are reached in this stage. Dog owners should be prepared to accept changes in their lifestyle, consider the daily and medical costs and will have to think about their future plans, are they planning to work more in the future, marry, have children? After this they will have to decide what dog to take, and not because it looks nice or the neighbour has one. They will have to make a decided choice based on breed and individual characteristics to make sure the dog will fit with the family.

Nowadays most people have an internet connection and people tend to look for the information they want to know through the internet. A website can be a very useful tool to provide people who want to buy a dog with information. The drawback is that potential dog owners will have to be motivated to look for information, they are not forced to think about this. More information about how the website could be set up can be found in the Companion Piece: “Dog Welfare on the Website”.

Television programmes can also be very effective when the content is well developed and interesting for a broad public. The Action plan “Gedeelde Zorg” also mentions this as a valuable medium but states correctly that because this medium is very expensive, coordination between actors is vital to make sure resources are not wasted but used optimally. Television programmes can be used in different ways, a weekly programme or a one time show. A one time show is only useful when it is used in combination with an event as the week of the pet animal or / and a large publicity campaign. Because the show will only be seen one moment in time the impact must be big. A weekly television show can do without so much publicity around it because there is more time to spread the message. The disadvantage of a smaller show without much publicity is that the people who watch will mostly be those that were already highly interested in dogs or other animal. A combination would be best of one big show which is followed up by smaller ones. But because of the amount of money needed it is doubtful this could be realised.

Other regular methods that are also mentioned in the report are the use of advertisements, posters and flyers to inform people. The most effective way of using all these methods is in combination with each other. The message for the television show will have to be repeated with advertisements and can also be found on the website.

Despite all these efforts people are still free in choosing to listen to the message or not. The only method that would be more effective though would be personal communication, which is virtually impossible because there are no records of people that think about buying a dog. Plus the threshold for people without a dog is very high to go ask for information from a veterinarian or local dog school.

The aim of all these programmes is to influence society in such a way that thinking before buying a dog becomes the norm instead of the exception. If this is the case there will be a self-regulating factor because people will influence each other.

8.2 Actions aimed at people when they are buying a dog

The best way to reach people that are in the process of buying a dog is through the breeders and traders that are selling the dogs. One of the pros of this method is that all people can be contacted in this stage, as they will all have contact with the breeder or trader. The large disadvantage is that not all breeders or traders provide buyers with (correct) information. The cause of this is twofold; insufficient level of knowledge in the breeders and a mentality that is not aimed at welfare but at making money. This problem must be addressed first before this can be made into an important instrument. The problem is also recognised in the Action plan “Gedeelde Zorg” and solutions have been proposed.

Breeders that have sufficient knowledge and take their responsibility for the welfare of their animals can inform owners adequately. Future owners should be given correct information about the breed and the breeder should help new owners to choose suitable dogs for them from the litter. Breeders should also not be afraid to refuse to sell a dog if he/she believes that the buyer will not be able to take proper care of the dog.

8.3 Actions aimed at people that have already bought a dog

Most of the tools that can be used to inform people before they buy a dog can also be used to inform people afterwards. Though the emphasis of the campaign must differ. For the first group, information had to be focussed on getting people to think before buying a dog. Now the focus must be set on the solving of problems that exist. It must be made clear though that this is not just for people that have made mistakes with their dogs. Problems can arise from different causes, lack of knowledge being an important one but not the only one. Sometimes problems either, health or behavioural, develop without fault of the owner. For example this means that a website not only has to contain general information but also solutions for problems or linkages to the professionals who can help them. Often people are not aware that solutions exist for problems and with behavioural problems not everyone realises that behavioural therapists exist that can help with problems that the owner itself can't deal with anymore.

A high percentage of people take their dogs to puppy class and other obedience trainings. This means that a high number of new dog owners can be reached in this way. Including theoretical lessons on welfare problems as a part of the regular courses can be a very valuable way to make people aware of problems they can encounter. It has to be kept in mind that too much theory will probably cause people to drop out. A good balance between theory and practice should be established. Contacts with other dog owners are a very important source of information, especially for first time dog owners. During the course discussion between owners should be encouraged so they can learn from each other. At this moment the local trainers are not fully involved in initiatives to educate on dog welfare, this while they are one of the easiest ways to reach people, improvements should be made here. Communication channels are already in place so plans have to be made how to utilize these more efficiently.

Pet shops and veterinarians can also play a valid role in informing and educating people as these have regular contacts with dog owners. Especially veterinarians are in an ideal position to educate dog owners as they see a lot of problems and can warn owners in advance. They can often explain to people why their dog is sick, and what they could have done to prevent this. They can also advice people to follow an obedience course with their dog.

In conclusion it can be said that the Action plan "Gedeelde zorg" that has been offered to the ministry by the "Forum Welzijn Gezelschapsdieren" has already made many valid recommendations towards improving the awareness of people about welfare problems. Some extra points have been made, especially that direct personal contact is just as important as publicity methods. Especially the contact with breeders, local trainers and veterinarians is of much use in educating owners. These communication channels are mostly already in place but improvements in the way these are utilized are necessary.

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Chapter 9 Conclusion

When considering the welfare of companion dogs it has to be taken into consideration that companion dogs live with humans so their circumstances are very different from other animals such as farm, zoo and laboratory animals. However, dogs are still animals and should be allowed to be animals. Dog welfare has to include the physical status, mental status and naturalness of the dog. In other words the dog must be healthy, emotionally stable and able to express its species-own behaviour.

Many pure bred dogs have a lot of genetic problems mostly due to the inbreeding used to select on exterior characteristics of dogs. However these genetic problems are also connected to various problems caused by how the dogs are bred and the trading of dogs. It are especially the breeders and traders that play an important role here but the public should also be aware how large the problem is and be responsible when buying a dog. Other health problems are caused by the owners' mistreatment or lack of knowledge about dogs. Many health problems e.g. skin, oral, and nutritional problems and infections with parasites are avoidable by appropriate daily care. It is the responsibility of the owner to take care of the dog and go to a veterinarian when necessary. The environment around the dog has a huge impact on the dogs. Environmental factors do not only exist of the habitat of the dog but also includes the relationship between the dog and its owner. Dogs should be provided a safe and clean habitat with enough opportunities for exercise and social contacts. These needs are often compromised due to the busy schedules of the owners. However this can cause stress for the dog which can lead to behavioural and health problems. It is very important that the dog owner can understand the dogs' behaviours. Many dogs are still euthanized and relinquished because of behavioural problems, many of which are caused by lack of the owners' knowledge about their dogs. People should think why unexpected behaviours occur and should be informed where professional help is available. Owners have to understand the breeds' characteristics, the dogs' behaviours, the needs that his/her dog has and what can cause stress in his/her dog. Knowing this will help improve the relationship between owner and the dog and will lead to good welfare for both humans and dogs. There is a danger that in trying to do everything well for their dog, people go into the wrong direction and view their animals with anthropomorphic glasses. When these people think about their dog's needs, they tend to think that dogs have the same needs as humans. The dog is not allowed to be a dog and has to suppress its natural behaviour. This can lead to health and behavioural problems and consequently impairs the welfare of the dog.

Thus there are various problems that lower the welfare of dogs. Most of these are caused by ignorance of the owner. It is necessary to create awareness of these issues in dog owners to improve dog welfare. Some activities such as websites, magazines, flyers and events have already been prompted by the organisations related to the dog sector. A report 'Gedeelde zorg' has been presented the ministry of agriculture by the Forum Welzijn Gezelschapsdieren on the 23rd of March this year. This report has made valid recommendations towards improving the awareness of people on welfare problems, including the use of a website. Guidelines to use the information in this report on a website to educate dog owners has been given in the companion piece to this report. Direct personal contacts such as communication between owners and breeders, local trainers and veterinarians are also very effective methods to reach people. However especially the local trainers are not fully involved in programmes to educate people on dog welfare something that will have to be rectified to receive the optimal result.

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Appendix 2

Percentages of purebred dogs with health-and welfare problems in a number of physiological systems based on surveys of owners.

- First column, breed
- Second column, total number of dogs
- The third till eighth column states, from left till right,: skin and hair, spinal chord, limbs, nerve system, eyes and face, ears and hearing, heart and blood vessels, digestive system

Percentages rashonden met gezondheids- en welzijnsproblemen in een aantal orgaansystemen gebaseerd op enquêtering van aselechte steekproeven van eigenaren (bron: Gezondheidsinventarisaties, Raad van Beheer).

Ras	totaal aantal honden	Huid & haar	Wervel - kolom	Lede- maten	Zenuw - stelsel	Ogen & gezicht	Oren & gehoor	Hart & Bloedv	Spijs- ver- tering
Border Collie	767	7,04	1,17	8,34	4,69	1,43	1,04	0,91	3,26
Duitse Herdershond	707	19,52	1,27	14,99	0,85	0,99	7,36	1,56	8,35
Shetland Sheepdog	219	7,31	0,46	3,20	0,91	16,89	1,37	0,46	9,59
Berner Sennenhond	535	15,33	3,36	28,04	3,93	6,92	6,17	0,75	11,40
Boxer	910	15,16	3,96	11,43	4,73	3,96	4,62	15,38	7,80
Duitse Dog	715	14,55	13,43	15,94	4,62	10,35	3,78	8,25	17,20
Leonbergse Hond	320	12,81	2,81	26,25	3,44	7,19	5,31	2,50	6,88
Newfoundlander	803	17,56	2,37	23,66	1,00	2,99	10,59	5,73	5,73
Schnauzer Dwerg	231	8,66	1,30	4,33	2,16	1,73	1,30	1,30	6,06
Schnauzer Middenslag	141	7,09	2,13	6,38	4,26	0,71	4,26	2,13	8,51
Schnauzer Riesen	67	10,45	4,48	8,96	5,97	0,00	10,45	1,49	5,97
Cairn Terrier	1033	14,42	1,36	7,94	0,77	1,26	1,94	1,55	5,32
Foxterrier (draadhaar)	309	15,21	0,97	4,21	2,27	5,83	7,12	2,91	3,56
Foxterrier (gladhaar)	209	13,40	0,96	12,92	4,31	1,91	0,48	2,87	4,78
Schotse Terrier	144	11,81	2,08	2,08	6,25	0,00	1,39	1,39	2,78
Staffordshire Bull Terrier	279	12,90	0,72	5,73	0,72	1,79	0,72	0,00	1,08
West Highland White	1099	31,21	0,64	6,92	0,73	1,82	10,10	0,82	12,10
Dashond (korthaar)	78	10,26	12,82	1,28	0,00	1,28	0,00	1,28	6,41
Dashond (langhaar)	258	10,08	8,91	1,55	7,36	4,26	2,33	1,16	3,88
Dashond (ruwhaar)	482	7,05	13,07	1,66	2,90	2,70	1,45	1,45	5,60
Chow Chow	306	21,90	1,63	22,22	1,63	30,39	3,59	0,33	4,58
Basset Fauve de	379	10,03	2,90	7,39	8,44	3,17	5,80	0,26	7,92
Beagle	507	15,78	3,94	3,16	4,14	4,93	5,13	0,39	3,35
Dalmatische Hond	251	18,73	3,59	4,78	2,79	1,59	28,29	1,99	5,18
Duitse Brak	184	8,70	1,09	0,54	7,61	3,80	1,63	2,17	11,41
Golden Retriever	952	21,53	1,16	10,61	3,89	2,73	6,20	1,16	6,51
Ierse Water Spaniel	58	20,69	3,45	5,17	5,17	1,72	0,00	3,45	1,72
Labrador Retriever	506	13,44	0,99	13,44	5,34	3,95	6,72	0,40	5,53
Cavalier King Charles	434	16,13	11,98	7,60	3,46	12,67	12,44	12,21	10,37
Shih Tzu	274	17,88	4,38	4,74	2,92	17,88	4,74	0,73	6,57
Ierse Wolfshond	266	11,28	4,14	13,91	4,89	1,50	3,01	12,41	12,03
Totaal aantal	13423								
Gemiddeld over 31	433	14,13	3,79	9,33	3,62	5,11	5,14	2,88	6,82