Veterinary ethology and animal welfare

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Summary: Renewed interest in veterinary ethology has been stimulated by increasing sensitivity in modern societies with regard to the use of animals, and a concurrent shift in emphasis in the veterinary profession, including veterinary education. Veterinary ethology appears to form the common ground where animal welfare activists and veterinarians can meet. Ethological parameters seem to be adequate when evaluating animal welfare and well-being, as well as for correcting situations of animal abuse. This approach in assessing animal welfare avoids either a mechanistic or an emotional evaluation of the quality of life of an animal. The object of veterinary ethology is to teach responsible animal ownership. A practical checklist is provided which enables the full spectrum of animal welfare and well-being issues to be addressed from a veterinary point of view.

KEYWORDS: Animal welfare – Ethology.

INTRODUCTION

Until recently, veterinarians and representatives of animal welfare societies did not always see eye to eye on animal welfare issues. Veterinarians have even been called the "sleeping beauties" of animal welfare (12). In a certain sense, veterinarians were able to overlook these differences of opinion in view of their status as members of a learned and scientific profession. Emotional and sentimental arguments from lay people with regard to animal welfare could be safely ignored, as veterinarians are indeed busy treating sick and traumatised animals. To some veterinarians, appeals by animal welfare activists seemed inappropriate and even a nuisance. Why should non-professionals disturb well-qualified scientists in the performance of their work? However, certain changes in society and within the veterinary profession have made the gap between veterinarians and animal welfare groups unacceptable. These changes are discussed briefly below.

Societal perceptions

Industrial societies, which are mainly orientated towards materialistic gains, have long exploited nature in general, and animals in particular, in the quest to reach their goals. This approach has created a counter-reaction within these societies which has alerted people to the dangers of adopting a mechanistic view of non-human life. The global organism theory of Lovelock (6), in particular, contributed to a new outlook on life. This insight pictured the world as a living system which reached homeostasis through the cybernetics of the four macro-systems: biosphere, hydrosphere, geosphere

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and atmosphere. During this paradigm shift, many people re-evaluated the use and abuse of natural resources for the sole purpose of monetary profit (1, 2). These ideas sensitised people and gave new impetus to organisations concerned with animal welfare, animal rights and animal liberation (7). It was thus inevitable that veterinarians, who are the professionals in the field of animal health and care, could no longer escape these debates. The veterinary profession cannot ignore, deny or even fight animal welfare issues on the basis of the belief that scientists are immune to these issues. The time is now ripe to find common ground on animal welfare issues with even the most sensitive groups. The days of science being seen as value-free, unemotional and insensitive seem to be past (4). In the words of De Groot (3), "the new paradigm acknowledges the reality and operation in the scientific establishment of values, ethical choices and emotional involvement. It takes these variables into account rather than denying their legitimacy as part of the operations of scientists".

As long as science remains a human activity, it will reflect human traits such as emotional and moral considerations; this is a simple, unavoidable fact. This does not indicate that scientific standards should be lowered, or that purely sentimental approaches should be employed in the study or use of animals, but merely acknowledges the fact that humans – even those who are involved with animal science – remain essentially human. The challenge, therefore, is to find an approach in dealing with animals which makes sense, which is fair, and which is acceptable to people outside the profession, while also being based on sound scientific knowledge.

**From clinical to ethological approaches**

Sophistication in clinical work appears to be reaching its limits for many veterinary clients. This statement could be questioned in some circles, as there still exist communities for whom the cost of veterinary services seems to be virtually immaterial. One can thus accept that there may be a continuing demand for sophistication which could match human medicine in nearly all disciplines. However, financial constraints do play a decisive role for the majority of veterinary clients. Even in human medicine, very expensive and advanced treatment may be available due solely to the wealth of the patient, or other financial support or subsidies, e.g. medical funds. Support of this kind is often lacking for veterinary services.

There is now a tendency to emphasise basic care and preventive medicine rather than the treatment of expensive single clinical cases. Although clinical veterinary medicine, including advanced treatment, will always be part of the expertise of the profession, the approach to veterinary involvement appears to be changing. This new direction was well demonstrated at the last World Veterinary Congress, where a major impetus was given to veterinary ethology. One of the resolutions of the Congress was as follows (15):

"The World Veterinary Congress recommends that teaching in Veterinary Ethology and Animal Welfare be part of every veterinary curriculum".

Other indications of the shift which has occurred over the past decade are the establishment of new departments, new curricula, ethical codes and committees, study groups, societies and scientific meetings, and an increase in the number of publications in this field. Thus, while clinical veterinary medicine has reached a plateau for the majority of veterinary clients, veterinary ethology is experiencing new attention and is increasingly becoming a subject of greater veterinary importance and broader interest.

Recently, a new component was added to veterinary ethology, which has also had an impact on veterinary services (8). This is the study of human/animal interactions. From an ethological point of view, it is obvious that the human – as an animal owner – plays a
decisive role in the behaviour of the animal, both genetically and environmentally. Veterinarians should thus address the specific interactions between owner and animal in seeking to improve animal welfare.

Throughout history, man and animals have always interacted, but the phenomenon had not been studied seriously until the 1980s. The veterinary profession is an integral part of this new direction. In a recent historical, cross-cultural study on human/companion animal contact, these interactions were found to be based on practical and emotional advantages for man, while in modern times these contacts have become more intensified and varied. These new types of contact include veterinary services (10).

It has also been postulated that human/animal interactions could be explained through a continuum of behaviour which includes positive interaction (where keeping animals benefits both parties), no interaction (where people are not involved in direct contact with animals) and negative interaction (where animals are abused) (14). Cases of abuse obviously attract the attention of animal welfare groups as well as veterinarians. Recently, there has been a change in the terminology used to describe negative human/animal interactions. This has been influenced by the field of victimology, where the term “cruelty” is being replaced by “abuse”. Reference to a cruel person is a value judgement, while abuse refers to the status of the victim. The implication for veterinarians is that, while it could be argued that human cruelty is not part of the mission of the profession, abuse of animals falls well within the scope of professional concern of veterinarians.

To summarise, the climate of ideas has changed to such an extent – both in society and within the veterinary profession – that it has become essential for animal welfare groups and veterinarians to meet on common ground.

VETERINARY ETHOLOGY AND DOMESTICATION

The generally-accepted definition of ethology is: “the scientific study of the behaviour of animals in their natural environment”. However, there is an important distinction to be made between ethology as such and veterinary ethology.

This difference mainly concerns the concept of domestication, in view of the use of the word “natural” in the original definition of ethology. Domestication is a process in which man takes control of the breeding and care of an animal; this can be described as an “unnatural” or “human-controlled” process. Contrary to the beliefs of many people, this process is not related only to a time in the past when man began to take control over animals, but is an ongoing process. The process of controlling the breeding and care of animals has developed in the same way as other human/animal interactions, by becoming more intensified and varied. The urge of man to control animals (and indeed the whole of nature) increased tremendously during the last century. With regard to wildlife, man has also taken control of a large number of animals under the umbrella of conservation. Animal numbers are recorded and managed and these methods have an influence on natural selection. Genetic manipulations are operated in endangered species through intensive breeding programmes, including artificial insemination, to save the species from extinction. Other forms of care for wildlife by humans range from intensive care, as administered in wildlife rehabilitation centres
(this may include activities in certain zoos), to pasture management and the supply of water and food in open veld areas during times of drought or other hazardous climatic conditions. In the case of wildlife farming, the physical handling of animals (e.g. tagging, parasite control, transport and veterinary care) can be added to the human interferences. Selection for improved stock could also form part of this management. Man is thus involved in the genetic and environmental control of many wildlife species which produce products such as meat, hides, trophies and tourism. In this context, the term "wildlife" becomes controversial because a large part of the process of domestication has already occurred in these animals.

However, this paper will concentrate on domestic animals in the traditional context. Such animals can no longer survive in nature, as man has become the sole selector of the genetic material of the animals; natural selection is no longer operative. These genetically-changed animals are thus not "natural" in the sense that they lack survival potential in nature. Metaphorically, we can refer to them as "man-made products". Such "plastic" animals can only survive in "plastic" or "unnatural" environments. For traditional domesticated animals, man has thus changed the genetics of the animal through adaptation to a changed environment which was created and supplied by man. Returning to the original definition of ethology, the "plastic environment" of a "plastic animal" has become the "natural environment" of the animal. If the use of the term "natural" creates a problem, this can be avoided by referring to the "usual environment" of the animal without adding new meaning to the original definition.

For the veterinary connection to ethology, the original definition may require another slight change. One way to study animal behaviour is through the concept of the basic needs of the animals. An "ethogram" characterising the full spectrum of needs can be supplemented by a description of the social, developmental and physiological needs of an animal. In man-made environments, there may also be a greater need to adapt. Needs could be inherited (instinctive needs) or acquired (operant conditioning and associations). Learning could also create wants (desires) in animals which could be described as "unnecessary" or "non-basic needs". A new definition of veterinary ethology, where "behaviour" is replaced by "needs", could be formulated as follows:

"Veterinary ethology: the scientific study of the needs of domestic animals in their usual environment."

Such a definition justifies veterinary involvement, at any level, in creating an equilibrium between domestic animal and environment. Such a balance between the needs of animals and their usual environment is closely related to ensuring the good health of the animals through the following: the prevention of diseases in combination with stress control; the diagnosis of the causes of disease and trauma arising from the direct environment; the treatment of behavioural problems; recommendations with regard to the keeping of the right animal in the right environment (knowledge of breeds); and consultations concerning the proper care of the animal in relation to basic needs, such as nutrition, housing, hygiene, exercise, social relationships, training, handling and breeding facilities. Veterinary science is thus concerned not only with the prevention of problems and the basic care of the animal, but also with the maintenance of the health of the animal in achieving optimum performance, production and reproduction.
VETERINARY ETHOLOGY AS PART OF VETERINARY EDUCATION

From the veterinary application mentioned above, it is evident that veterinary ethology must form part of basic veterinary training (9,13). While other subjects, such as veterinary anatomy and physiology, teach the student about the parts and functions of the body, veterinary ethology will enable the student to study the animal not only as an entity, but also as an open system interacting with the environment by means of behaviour. As with any true, fundamental knowledge, the rest of the veterinary curriculum is built on this knowledge, and the application of ethology will be as valid in practice as any other aspect of veterinary education. Therefore, any animal management system should first be evaluated from an ethological point of view, before problems of illness and trauma can be addressed. Furthermore, preventive diagnosis and treatment of behavioural problems form part of the clinical approach. As inferred above, many clients might expect professional advice to consist of a perspective on the living conditions of an animal, an analysis of the whole system and a meaningful consultation which leads to prophylactic measures, rather than merely the offer of costly sophistication aimed at solving a single problem.

Veterinary training should also concentrate more on the relationship between the veterinarian and the client. This can help by teaching veterinarians how to convey the knowledge gained from veterinary ethology, and thus motivate clients to apply this knowledge and deal with potential inadequacies. The specific human/animal interaction concerned could determine the approach required in conveying the message, as well as the level of communication. Communication between the veterinarian and the client should always address the question of the welfare of the animal, irrespective of the problems to be solved.

WHERE TWO WORLDS MEET

Veterinary ethology has clearly opened the way for veterinarians to become much more involved in animal welfare and well-being. Ethological parameters have become the scientific tools for evaluating the welfare of the animals. Welfare is not limited to the diagnosis of disease conditions, but also considers the animal as a whole in relation to environmental influences, including the humans who are responsible for its care and maintenance. Treatment is no longer limited to medicine and surgery, but is expanded to include changes to the environment, shaping animal behaviour, directing genetic traits and influencing the attitude of the client towards animals. Many cases of animal abuse are due to a lack of the necessary knowledge and/or advanced planning to provide for all the needs of the animal. On this point, the welfare and well-being of animals are now truly becoming the common ground between veterinarians and animal welfare groups. There may still be some differences with regard to the premisses of the two groups but, most importantly, the end result will be the same. Some animal welfare activists may be more emotional, sentimental and anthropomorphic in their approach than ethological scientists. However, with the emerging realisation of the importance of human/animal interactions as part of veterinary ethology, other approaches can be understood and tolerated, and may form part of the consideration which the veterinarian has for other people and opinions. From the point of view of the veterinarian, it could be said that veterinary ethology is the study of animal welfare.
based on scientific knowledge, and veterinarians must therefore be guided by scientific facts while allowing for emotions and not vice versa. However, as members of a caring profession, veterinarians must be compassionate and must show cognitive empathy with other people when dealing with sensitive issues. Time and patience are required to defuse emotion, as well as certain social and communicational skills; but if the common goal of improved animal welfare is reached, there is no reason for veterinarians and welfare activists to be in opposite camps. Most of the time, reason should prevail and understanding should bring mutual acceptance of the respective roles of each party.

This is not an attempt to idealise human relations, as there are no simple answers in this domain. In animal welfare issues, there will probably always be extremists on both sides. Some people from animal rights and liberation movements may not be willing to consider reason, because their premisses may be irrational. There may also be veterinarians who are so task-orientated that they neglect the importance of human/animal interactions and sensitivity towards the well-being of the animals. This usually derives from a mechanistic, linear approach to solving problems, and from concentrating on clinical achievements regardless of the methods followed. It may be necessary to add that success is not always achieved by such an approach, particularly if the success is more self-centred than patient-centred.

VETERINARY ETHOLOGY AS A CRITERION FOR ANIMAL WELFARE

Ethological parameters can be used to evaluate the welfare and well-being of animals and can often supply acceptable answers in heated debates on animal welfare issues. Ethological principles must be based on the genetic and environmental factors which contribute to the behaviour of the animal. This approach is summarised in Table I.

<table>
<thead>
<tr>
<th>Genetics</th>
<th>Environment</th>
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<tr>
<td>Basic animal needs</td>
<td>Standards in the usual environment of an animal</td>
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<tr>
<td>Adaptation capabilities</td>
<td>The human factor</td>
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An appropriate checklist could also be established to evaluate the welfare and well-being of specific animals. Some factors are primarily of a qualitative nature, as welfare deals mostly with the quality of life. The main factors mentioned in Table I are discussed below, to illustrate how these can be used in the evaluation of animal welfare.

GENETIC FACTORS

Certain basic needs must be fulfilled for any animal to have an acceptable quality of life. Ethologists may term these needs “instincts” or “species-specific behaviour”. The term “basic” relates to primary requirements (needs), rather than secondary requirements (wants) which are not necessary for an acceptable quality of life.
Generally-accepted indicators are used to establish whether the basic needs of an animal are being fulfilled. The basic behavioural needs of an animal can be determined by an ethogram, supplemented by a description of the developmental, social and specific physiological needs of the animal.

**Ethogram**

A few variations exist in the form which an ethogram may take, but the description given below is applicable to most animals. The ethogram is a useful tool for evaluating the basic needs of animals: the list of behavioural systems is flexible and criteria can be used as necessary. The importance of each system is related to the length of time an animal is kept, the purpose for which the animal is kept and the type of animal being kept.

*Epimeletic behaviour*

Caring behaviour, as between dam and offspring, is very important in nature. However, in domestic animals, man often interferes in this process and, in some cases, the task of nurturing the young is purposefully taken away from the dam at a very early stage. In this regard, is it acceptable in animal welfare to keep female animals with poor epimeletic behaviour in breeding programmes? Or would such an approach be to the detriment of the breed in the long term? Furthermore, does the human being truly substitute the natural mother in all respects? Does the natural mother have the necessary time, privacy and space to care for her offspring?

The presence or absence of self care (which is part of epimeletic behaviour) could also serve as an indication of the well-being of the animal.

*Etepimeletic behaviour*

In domestic animals, there is a dependency on human care which goes beyond the care-seeking behaviour of the young. It is based on an inter-species epimeletic/etepimeletic situation, which lasts throughout the life of the animal. Another facet of this behaviour is that the decision to make use of veterinary services could be seen as a form of special care-seeking behaviour, which is performed by the owner on behalf of the animal in need.

*Ingestion behaviour*

In domestic environments, a specific type of feed is provided in a particular place at a given time. Such intense control leaves little opportunity for variation of the ingestion behaviour of the animal. To ensure the welfare of the animal requires a knowledge of the nutritional requirements of the animal and the appropriate feeding methods. Competition for food must never be a cause of agonistic behaviour.

*Excretory behaviour*

Accommodation of excretory behaviour is a very important aspect of the keeping of animals and is often insufficiently provided for. This not only comprises maintenance of hygiene and effective removal of faeces and urine, but also provision of appropriate surfaces onto which the excretions may be deposited, adequate space to ensure individual hygiene and the time necessary to carry out these behavioural patterns.

*Comfort-seeking behaviour*

For domestic animals, species-specific needs should be met with regard to the provision of proper housing or shelter, to afford protection against excessive rain, snow, wind, cold, heat, sunlight (ultra-violet rays) and – for some animals – to provide safety and privacy.
Surfaces on which the animals live should be considered. In certain circumstances, bedding (including regular replacement with clean, fresh material) should be evaluated as a basic need.

Investigatory behaviour

Although inquisitiveness in animals tends to decrease with age, animals of any age kept in a confined space over a period of time may become bored with their environment. In such cases, the necessary environmental stimuli must be supplied to fulfill the investigatory needs of the animal. Some species will have a greater need to explore than others. There may also be differences between the exploratory behaviour of males and females, as well as between sterilised and non-sterilised animals.

Relaxation behaviour

Animals need time and space to relax. Behaviour such as resting, stretching, rolling, playing, yawning, sleeping and informal exercise must be considered, especially if animals are kept on a long-term basis. Different animals will have different needs in this regard.

Allo-omimetic behaviour

Some animals have stronger needs for the social facilitation of certain kinds of behaviour. Examples of such behaviour are eating, playing or moving together. If animals with natural tendencies towards allo-omimetic behaviour are kept separately for long periods, this may have a negative effect on their welfare.

Sexual behaviour

Wherever breeding programmes are part of the keeping of animals, the necessary provision has to be made for natural breeding behaviour, including the observation of sex cycles, matings, pregnancies and parturition. If artificial breeding procedures are used, these must also be adapted to the basic needs of the animal. These programmes should also consider effects such as inbreeding, the humane culling of surplus animals and the disposal of offspring.

Agonistic behaviour

Agonistic behaviour of animals may be unacceptable to humans, but this behaviour can usually be explained in terms of the survival strategies of the animal. A thorough knowledge of the agonistic behaviour of an animal is necessary, either to prevent a situation which can cause aggressiveness or to manage the situations which arise when animals become aggressive. From a welfare point of view, the aim is to minimise injury to humans and animals in such situations. Preparations should include not only the required knowledge, but also suitable equipment and facilities to effectively handle aggressive animals. Serious injury can occur when no provision is made for the agonistic behaviour (e.g. belligerent) of animals. Some people simply refuse to believe that domestic animals will show such behaviour until it is too late.

Developmental needs

One method of evaluating the welfare of animals over a lengthy period of time is to use a developmental calendar for the specific species. Such a calendar should indicate the behavioural patterns which can be expected and the provision which should be made to accommodate these patterns during various stages of development. Monitoring of behaviour could commence by recording the post-natal phases, doubling of birth mass, the change (in some animals) from mainly motor to sensory behaviour, socialisation, changing of teeth, group formation (where applicable), puberty, adult
behaviour and geriatric behaviour, as well as the lifespan of the animal compared to the life-expectancy of the species. Not only species differences, but also breed differences should be incorporated into these calendars. During every developmental stage, the behaviour of an animal can then be compared to the average expected behaviour, to establish whether any deviations are taking place.

**Social needs**

The social needs of animals should be known and provided for, and there may also be species or breed differences in these needs. Social needs are often underestimated and because non-fulfillment causes psychological rather than physical abuse, this is often not reported. For welfare purposes, it is thus important to use ethological knowledge of a specific animal to determine whether the social needs of an animal are met. The choice of a suitable animal for a specific environment could help to prevent problems in this regard.

Social needs usually concern the interaction of an individual animal with members of its own species, but these needs could also be fulfilled on an inter-species basis if animals are carefully mixed. With companion animals, the human is often the other species which has to provide the necessary social contact.

Social structures also involve the perception of living spaces by the individual animal. This refers to a number of different parameters, as follows:

- **Physical space** must allow for body movement, especially around the head. This space can be of great importance during transport.

- **Social space** can be defined as the distance between animals of the same species which is allowed without eliciting any special reaction. The same species could also be replaced by other accepted species and still be accepted as part of the same social system.

- **Safe space** determines the critical distance for the “fight or flight” decision and is defined as the area within which the intrusion of strange animals will cause an animal to react.

- **Home range** is applicable to free-ranging animals and is usually determined by considering the number of animals present per unit of available space, food and water.

**Specific physiological needs**

Consideration should be given to the specific physiological needs of different animals, e.g. the effect of long hair or smooth hair coats of dogs in hot and cold weather, and the lack of pigmentation in breeds which are exposed to lengthy periods of sunlight (ultraviolet rays). To evaluate welfare, such specific needs of animals must also be addressed.

**Adaptation**

It would be incorrect to use ethological parameters in evaluating animal welfare in a mechanistic way, because this denies the complexity of biology. Lay people with a sentimental or emotional approach to animal welfare often disagree with ethologists on this point. If all of the above parameters are applied in a rigid manner it may appear, in certain circumstances, that the needs of the animal are not being met. However, if the animals appear to be relaxed and without any detrimental symptoms, it is possible that proper adaptation has taken place. This factor should always be considered. Adaptation to an environment may be difficult to define, but in broad terms it can be described as the absence of disease, trauma or abnormal behaviour over a period of time. Adaptive capacities of animals vary and may be influenced by genetics. The selection of animals in breeding programmes with phlegmatic temperaments, or animals which are easily
trainable, could be a strategy for acquiring animals which are more adaptable. In genetic terms, this means that the animals are selected even further to fit “unnatural”, human environments. Such a programme will exclude nervous animals and those which can cope less well with stress in general. However, the welfare implications of this decision should also be taken into consideration.

Lack of adaptation could also be evaluated according to stress-related parameters such as production, performance and reproduction. Furthermore, superficial measurements of stress (e.g. increased pulse rate, respiration, sweating, enlarged pupils, raised hair, anxiety or apathy) can also be considered. More sophisticated measurements could include the determination of blood levels of metabolites such as cortisol and adrenalin; white blood-cell counts could also indicate significant changes.

ENVIRONMENTAL FACTORS

Environmental factors affecting domesticated animals can be controlled and can often be precisely measured. From a welfare evaluation point of view, it could thus be easier to identify any shortcomings in an environment if set standards for a specific animal are known. These standards are usually based on a knowledge of the basic needs of the animal. The human (client/owner) factor will obviously play a determining role in the environment of the animal and this will be discussed separately.

Environmental factors

Three major influences which could ensure a balance between the animal and its environment are briefly discussed below.

Housing

“Housing standards” must be seen as a collective term for many measurable preconditions which could make the keeping of animals in more intensive conditions acceptable. The housing standards will depend on the period of keeping, breed, age, gender, the number of animals and also whether housing is provided for breeding purposes. Some housing facilities require a highly controlled atmosphere, and this can become very unnatural. Despite such intensive control, housing should provide an environment where the basic needs of the animal can be met. The design of housing should include specific measurements of space, proper shelter, adequate hygiene, management, the durability of the construction material and an escape-proof area. A budget for maintenance must be included from the outset. Poor maintenance may lead to trauma and unhygienic conditions (disease). Housing of animals can be expensive and must be carefully planned if this is to be cost-effective.

Nutrition

Animal nutrition is a specialised field for every species, and specific rations are available for different stages of the reproductive cycle as well as for improved production or performance. Feeding can be expensive and must also be planned in a cost-effective way, often using computer programmes. Nutrition is also affected by the preparation processes used, the source of nutrients, and the handling and storage of feeds. Furthermore, there are different methods of feeding, and both quality and quantity play a role in the welfare of the animal. Adequate provision of water may appear to be an obvious need, but water is often provided in insufficient amounts, or is left exposed to the sun, contaminated, or even placed where it is inaccessible to the animal. In proper care clean, cool water must be available at all times.
Handling facilities

The mere provision of housing facilities is not sufficient. Special facilities should always be provided whereby animals can be handled appropriately, especially if veterinary care is required. It is the duty of the veterinarian to indicate the necessity of such facilities. The design of handling facilities is important from a welfare point of view, as proper handling facilities can prevent injuries to both animals and humans.

The human factor

Bearing the definition of domestication in mind, the human factor is crucial to the keeping of domestic animals. Surprisingly, this fact has not been dealt with for a long time.

Selection

Man became the main selector of the genetic tendencies of animals mainly for his own benefit. On ethical grounds, therefore, the implications of this selection should be given serious consideration. Negative genetic traits can no longer be ascribed to “mother nature”, but rather to “father man”. Much animal suffering has been and still is caused by irresponsible genetic experimentation or by pampering the genetically weak for further breeding. It is possible that negative genetic traits are concealed or kept, in some instances, to profit from such animals. The breeder is concerned only to cover costs and has little feeling for the animal. The selection of animals for breeding must always bear in mind the health of the animal, with regard to form and function.

Conditioning

Man is clearly in charge of most of the learning and training experiences of domestic animals. Owners of animals should ensure that sensitive learning periods in the young, such as socialisation, are positive experiences. Unnecessary wants should not be created in animals, and acceptable conditioning methods should be used when animals are trained. Often it is a complete lack of training, rather than incorrect conditioning, which is detrimental to an animal. Training should provide important positive influences on the temperament and adaptative capacity of the animal. A trained animal may have increased confidence, as it knows what to expect from humans and its environment. For some animals, the establishment of a routine in their lives can be a significant type of training which develops certainty and avoids misplaced expectations. However, all training procedures should clearly take the welfare of the specific animal into account.

Care

Animal care covers many different aspects, including everything which is encompassed by the term “management”. The care of the animals embraces all decisions concerning the aims of keeping animals, the control necessary to reach these goals and the evaluation of the extent to which these goals are reached. Animal management is concerned with day-to-day care as well as long-term planning, and is also linked to monetary budgets in terms of the amount which the owner is prepared to spend on the care of the animals and the output gained from such care. Decisions concerning animal care will also determine whether and to what extent veterinary care will be used. Such care is often only used if the owners of the animals are aware of the value of these services. This also underlines the importance for animal welfare of the relationship between the veterinarian and the client. A veterinarian is able to provide special care and, by giving sound advice, becomes intrinsically involved with every aspect of animal welfare, i.e. the provisional planning for keeping animals, the selection of appropriate animals, the creation of a suitable environment for such animals, the management and care of
these animals, and finally achieving optimum production and performance from the animals. Other factors which should be considered in animal care are the selection of suitable personnel to work with the animals, and all relevant aspects of record-keeping.

Responsible animal ownership

The success of the relationship between the veterinarian and the client contributes greatly to responsible animal ownership, and epitomises the importance of the human factor in animal welfare. In defining responsible animal ownership, the following points could be considered:

- the selection of healthy animals for a specific purpose and environment after consultation with a veterinarian
- the use of acceptable conditioning processes based on species-specific behavioural traits
- the provision of an environment where management and care (general and veterinary) is to the advantage of the animal
- good neighbourliness (i.e. the keeping of animals should not disturb other humans or animals in an area).

If veterinary ethology can promote responsible animal ownership, this will contribute to human society in general, and enhance the use of veterinary services. The value which the owner attaches to an animal remains a significant factor and influences the decision to use veterinary services. Responsible animal ownership will help to increase the value of the animal for the owner.

Although other ethological evaluations of animal welfare exist (4, 11), the list of elements presented in Table II could also be considered as a practical checklist for this purpose.

CONCLUSION

From a veterinary perspective, animal welfare and animal well-being are virtually synonymous with the application of ethological principles. These principles can maintain and improve health, improve animal functionality through the selection of animals, and provide environments which fulfil animal needs. Veterinary ethology is deeply involved in the ongoing process of domestication. This process is based on human control and can be summarised as follows:

- control by gaining and applying thorough knowledge of the needs (behaviour) of the animal
- control over management (care and breeding) of the animals, based on the above knowledge
- control of the production or performance of the animal, which should be optimum rather than maximum and should be based on the above management.

Management represents the effort which the responsible owner is prepared to put into keeping the animal, and the production or performance represents what is gained from that input. From a human perspective, this is what domestication (control) of animals really means: input – care – output. This also implies that the effort has to be profitable, and this is a factor which may lead to the possibility of animal abuse in the
TABLE II

Ethological checklist for assessing animal welfare

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Criteria</th>
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<tbody>
<tr>
<td><strong>1.</strong></td>
<td>Are the basic needs of the animal addressed? (where applicable)</td>
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<tr>
<td>1.1</td>
<td>Epimeletic behaviour</td>
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<td>1.2</td>
<td>Etepimeletic behaviour</td>
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<td>1.3</td>
<td>Ingestion behaviour</td>
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<td>1.4</td>
<td>Excretory behaviour</td>
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<td>1.5</td>
<td>Comfort-seeking behaviour</td>
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<td>1.6</td>
<td>Investigatory behaviour</td>
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<td>1.7</td>
<td>Relaxation behaviour</td>
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<td>1.8</td>
<td>Allophilemic behaviour</td>
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<tr>
<td>1.9</td>
<td>Sexual behaviour</td>
</tr>
<tr>
<td>1.10</td>
<td>Agonistic behaviour</td>
</tr>
<tr>
<td>1.11</td>
<td>Developmental needs</td>
</tr>
<tr>
<td>1.12</td>
<td>Social needs</td>
</tr>
<tr>
<td>1.13</td>
<td>Specific physiological needs</td>
</tr>
<tr>
<td><strong>2.</strong></td>
<td>Are adaptive capabilities considered?</td>
</tr>
<tr>
<td>2.1</td>
<td>Absence of disease and trauma</td>
</tr>
<tr>
<td>2.2</td>
<td>Absence of abnormal behavioural patterns</td>
</tr>
<tr>
<td>2.3</td>
<td>Absence of unacceptable stress levels</td>
</tr>
<tr>
<td>2.4</td>
<td>Optimum performance, production, reproduction</td>
</tr>
<tr>
<td><strong>3.</strong></td>
<td>Are the environmental factors evaluated?</td>
</tr>
<tr>
<td>3.1</td>
<td>Housing and other spaces</td>
</tr>
<tr>
<td>3.2</td>
<td>Nutrition</td>
</tr>
<tr>
<td>3.3</td>
<td>Handling facilities</td>
</tr>
<tr>
<td><strong>4.</strong></td>
<td>Are humans consulted about their influences?</td>
</tr>
<tr>
<td>4.1</td>
<td>Breeding programmes</td>
</tr>
<tr>
<td>4.2</td>
<td>Training and learning processes</td>
</tr>
<tr>
<td>4.3</td>
<td>Management and general care</td>
</tr>
<tr>
<td>4.4</td>
<td>Responsible animal ownership</td>
</tr>
</tbody>
</table>

attempt to maximise output for the largest profit. It is precisely in this process that the question of animal welfare arises and ethological principles can help to ensure that optimum gain benefits both humans and animals. If animal welfare is part of the contemporary Zeitgeist, then veterinary ethology is the answer. Veterinary ethology will not only place veterinary science right in the centre of animal welfare issues, but it will also enable those who previously did not always see eye to eye, to come together in addressing animal welfare issues.

* *
ÉTHOLOGIE VÉTÉRINAIRE ET BIEN-ÊTRE DES ANIMAUX. – J.S.J. Odendaal.

Résumé : Le regain d'intérêt pour l'éthologie vétérinaire s'explique par la sensibilisation croissante des sociétés modernes au sort réservé aux animaux et par un renouveau d'attention pour l'éthologie de la part de la profession vétérinaire et en même temps de l'enseignement vétérinaire. L'éthologie constitue, en fait, le point de rencontre possible entre les militants de la protection des animaux et les vétérinaires. L'éthologie semble, en effet, offrir des critères adéquats à l'évaluation des conditions de vie et de bien-être des animaux, et pourrait permettre de corriger des situations abusives. Cette méthode d'évaluation évite les analyses trop mécanistes mais aussi trop émotionnelles de la qualité de vie des animaux. L'objet de l'éthologie vétérinaire est d'éveiller le sens des responsabilités chez les propriétaires. L'auteur fournit une liste complète des questions de protection et de bien-être des animaux à prendre en considération par les vétérinaires.


ETOLOGÍA VETERINARIA Y BIENESTAR DE LOS ANIMALES. – J.S.J. Odendaal.

Resumen: El incremento del interés por la etología veterinaria puede explicarse por la sensibilización creciente en las sociedades modernas por la utilización de los animales y un cambio consecuente en la profesión y en la enseñanza veterinaria. La etología constituye un lugar de encuentro posible entre los militantes de la protección de los animales y los veterinarios en la medida en que parece ofrecer criterios adecuados para la evaluación de las condiciones de vida y de bienestar de los animales y la corrección de situaciones abusivas. Se trata de un método de evaluación que evita tanto los análisis de la calidad de vida de los animales demasiado mecánicos como aquellos demasiado guiados por las emociones. El objetivo de la etología veterinaria es despertar el sentido de la responsabilidad en los propietarios de animales. El autor proporciona una lista completa de los distintos aspectos de la protección y el bienestar de los animales, establecida desde una perspectiva veterinaria.

PALABRAS CLAVE: Bienestar de los animales – Etología.

REFERENCES


