

Scientific evidence and improvements in animal welfare: RSPCA perspective and overview**Dr Bidda Jones**

RSPCA Australia, PO Box E369, Kingston, ACT 2604, Australia

The purpose of this paper is to examine the role of scientific evidence in advancing, or holding back, improvements in animal welfare.

From the RSPCA's perspective, while scientific evidence is of great importance in influencing animal welfare, it must be considered alongside other factors which include cultural, traditional, legal, economic, political, practical, ethical and moral influences. These factors can have a direct influence on animal welfare or act indirectly, by affecting other factors, such as economic influences affecting political decisions or the direction of scientific research. Examples of the influence on animal welfare of each of these factors are discussed.

The animal welfare policies of the RSPCA are influenced by many of these same factors. All RSPCA policies have an underlying ethical stance that we should prevent cruelty and promote kindness to animals. This view is motivated by sympathy and compassion for animals and emphasises humane treatment and prevention of animal suffering, and is summed up in the RSPCA Australia Animals' Charter which begins with the words: "*RSPCA Australia believes that Man must treat animals humanely*".

The RSPCA sees the major role of scientific evidence in advancing animal welfare as a tool to help us define how we can "*treat animals humanely*": a tool which helps us to determine whether a change in the way we treat animals increases or decreases their wellbeing; a tool that can be used to persuade others that change is necessary.

The use of scientific evidence in progressing improvements in animal welfare is discussed using three practical examples relating to current issues. The first example describes a situation where an advance in animal welfare through the use of scientific evidence is frustrated by political opposition producing counter evidence. The second example describes a situation where calls for further research are used as a means of frustrating progress. The final example illustrates a situation where science has taken many years to quantify an animal welfare problem that seems obvious in common sense terms.

These examples illustrate the different ways in which science can both positively and negatively influence animal welfare. The question remains, how can we make science a more useful tool in progressing the welfare of animals?

How do you measure animal welfare?

Professor Paul Hemsworth

Animal Welfare Centre, University of Melbourne and Agriculture Victoria, Victorian Institute of Animal Science, Werribee, Victoria, 3030, Australia

The welfare of farm, companion and laboratory animals generates considerable national and intense international interest. General public perceptions, particularly misconceptions, of animal welfare issues have the potential to markedly affect society's access to and use of these animals. Because both moral views and biological facts influence an individual's opinion of an animal welfare issue, it is important that the general public, interest groups and politicians are provided with factual information on these welfare issues. Therefore, scientific evidence on how animals respond to a particular housing or husbandry practice can provide part of the answer as to whether society should sanction a particular activity. For many of these housing and husbandry practices, there is currently little definitive data on their welfare implications and thus considerable debate surrounds the welfare consequences of many of these housing and husbandry practices.

While definitions of welfare vary, a common definition of welfare within scientific circles is:

"The welfare of an individual is its state as regards its attempts to cope with its environment"
(Broom 1986).

In this definition, the "state as regards attempts to cope" refers to both how much has to be done by the animal in order to cope with the environment and the extent to which the animal's coping attempts are succeeding. Attempts to cope include the functioning of body repair systems, immunological defences, physiological stress response and a variety of behavioural responses.

Therefore, using such a definition, many scientists have studies risks to animal welfare at the two biological levels:

- firstly, by measuring the behavioural and physiological stress responses of the animal to the environment, and
- secondly, measuring the consequent biological cost to, or reduces biological fitness for, the animal.

Such an approach in measuring risks to welfare involves both an assessment in terms of the magnitude of these biological (behavioural and physiological) responses and also the consequences of these responses on the animal's ability to grow, reproduce and remain healthy. Thus this approach utilises well-accepted biological concept of stress, adaptation and biological fitness.

This preferred approach to welfare assessment and its strengths and weaknesses will be discussed in this presentation. Furthermore, other approaches, such as preference and motivational testing, will also be considered.

Research animals: do small changes benefit the animals?

Dr Alana Mitchell

Animal Welfare Liaison Officer, NHMRC, PO Box 46, Parkville, Victoria 3052, Australia

Background reading today's talk has revealed that the published accounts of the benefits to research animals of various changes in their captive environment actually raise more questions than they provide answers.

However, the question "Do small changes benefit the animals?" is a good point at which to focus thoughts on the matter.

Aspiring to render the environment of a caged animal as comfortable, interesting, natural and secure as possible is a noble pursuit, in keeping with community values and awareness of animal welfare. The trouble is, no widely accepted definition of "environmental enrichment" exists, let alone a consensus about how to gauge the inherent well-being of a research animal and how it is influenced by environmental change.

Improvement for the animal could relate to biological measures, such as increased reproductive success, or to behavioural indicators, like the time spent on apparently diverting activities. Some hold that any attempt at environmental enrichment should seek to encourage natural behaviours, while others may find that toys can make the animals in their care happy.

One study on the welfare of caged mice attempted to establish what resources were important to the mice themselves, by placing traverses of shallow water as "tolls" between the test situation and the mice. It seems reasonable to assume that if mice will subject themselves repeatedly to the water hazard, then they must deem the offering on the other side to be important. Is it possible that mice come to enjoy paddling through shallow water?

Anecdotally, it seems that small changes can and do improve the lot of research animals. Many observant animal technicians know the benefits of placing cardboard tubes as bolt holes or shredded paper as nesting material in rodent cages. Would anybody doubt the benefits of exercise yards for dogs or access to outside enclosures for non-human primates?

But where is the hard scientific data to pinpoint the mean and standard error of such benefits. Until a system is devised which allows aspects of health and welfare to be quantified for caged animals, it is important to rely on our own instincts and observations and not be stifled by the complexity of the problem, nor the lack of statistical proof of an outcome.

Livestock transport: should codes of practice be based on scientific evidence?

Amanda Paul

Animal Welfare Unit, NSW Agriculture, Locked Bag 21, Orange, NSW 2800, Australia

The use of scientific evidence in formulating Codes of Practice would ensure that the Codes are based on sound principles and would provide a basis for resolution of disputes regarding clauses in the Codes.

However, the use of scientific evidence is limited by a number of factors, including:

- the extensive consultation and necessity for compromise inherent in the writing process;
- the need to take account of public perceptions;
- the degree to which animal welfare may be compromised before scientifically measurable changes occur;
- the availability of scientific data relevant to the species and type of animal, as well as the enterprise in question;
- the applicability of the data to real-life conditions.

Nevertheless, after taking the above factors into account, scientific evidence should be incorporated into codes wherever possible.

Animal welfare and the livestock export trade

Tony Brightling

PO Box 116, Parkville, Victoria. 3052, Australia

The livestock export trade is dominated by a small number of companies that have millions of dollars invested in the industry - in ships, feedlots, feedmills etc., in Australia and overseas. The exporters are acutely conscious of on-going animal welfare criticism and the threat it poses to their industry, and are very keen to move from defensive 'backs-to-the-wall' justification of the live exports to a more positive relationship with Government and the community. As a result a cultural change is occurring, with the leading exporters genuinely committed to improving animal welfare standards and implementing best practice management.

A quality assurance program that is auditable, transparent and has broad community support is seen as the way forward. This is a big ask given adverse publicity about the trade in recent years, but progress is being made. A Livestock Export Accreditation Program (LEAP) is being developed by LiveCorp in conjunction with AQIS and a range of primary industry and community stakeholders.

LEAP accreditation is based around compliance with the Australian Livestock Export Standards. The Standards describe minimum management requirements, based on practical stock husbandry and scientific research. The Standards can and are being changed to incorporate new research findings as they come to hand.

The hands-on stock work in the industry is done by a group of stock buyers, feedlot and assembly depot managers, stock persons, ship's officers and veterinarians with a wealth of experience handling large numbers of stock. With few exceptions they have a strong sense of professionalism and real commitment to the animals in their care. Best practice stock handling is the norm.

The technology gap of greatest concern is vessel design. Live export research to date has focused on animal husbandry - causes of death, mortality risk factors, nutritional requirements etc. By contrast, there has been almost no work on heat and moisture exchange in the animal house on livestock vessels.

Once constructed, it is very difficult and enormously expensive to make major design changes to the environmental control systems on a livestock vessel. The costs involved are a barrier to acknowledging the need for change, let alone investigating and implementing improvements. Livestock vessel designs have altered dramatically over the years, from animal houses above deck on converted oil tankers in the 1970s and 80s to fully enclosed custom built vessels and converted car carriers in the 1990s. Environmental control systems on these vessels have not always kept pace.

Animal welfare at sea is very dependent on environmental conditions in the animal house. If we have ignored the obvious, it is the need for a better fundamental understanding of ventilation and heat and moisture exchange technology on livestock vessels.

Living with wildlife - a management challenge for the new millenium

Peter R. Brown

School of Ecology & Environment, Deakin University, Rusden Campus, Clayton, Victoria,. 3168, Australia

Historically little or no attention has been paid to the management of urban wildlife in Australia. This is somewhat surprising given that the vast majority of Australians live in major urban centres, with more than 85% of the population living in our capital cities and major regional centres. Eighty seven percent of the population of Victoria live in urban centres, with over 71% of the total population living in Greater Melbourne. These high levels of urbanisation are predicted to continue into the 21st Century.

Interactions between people and wildlife in urban environments continue to increase as human populations grow and expand into natural bushland on the urban fringe, and as wildlife begin to exploit new habitats provided by urbanisation. Many of these interactions are positive and are welcomed by people, and may provide an important base for support of wildlife conservation activities in general. Activities such as planting trees to attract butterflies and birds, the erection of nest boxes for birds and possums, the provision of food for wildlife, and the rescue and rehabilitation of sick, injured or orphaned wildlife are typical of the activities of people who actively encourage positive wildlife interactions.

Unfortunately, not all people and wildlife interactions result in positive outcomes. Some result in conflict between humans and wildlife, others result in conflict between groups of people with differing expectations of their interactions with wildlife. A real dilemma facing urban wildlife managers is how to manage inappropriate responses (both positive and negative) by people to wildlife. Two potentially inappropriate responses which may result in serious animal welfare problems, release of rehabilitated wildlife and inappropriate feeding of wildlife, will be discussed in the light of recent research results.

Educating veterinarians: recent changes in teaching animal welfare in veterinary schools

Professor Ivan W Caple

University of Melbourne, Faculty of Veterinary Science, Werribee, Victoria 3030, Australia

The veterinary science course requires at least five years of tertiary study, and a lifetime of learning. In February 1999, the Australian and New Zealand Veterinary Council (ANZVC), a forum that includes all veterinary organisations re-affirmed that: "The mission of the veterinary profession is to enhance the welfare of all animals by the provision of high quality veterinary services". This mission statement would suggest that the approach to teaching in the Veterinary Schools should be centred on the welfare of animals, no matter what they are used for in the community. There are approximately 8,500 registered veterinarians in Australia and New Zealand, and about 1650 students enrolled at five Veterinary Schools. Seventy percent of the students enrolled are women, and from 10 to 20% of all students indicate that they are vegetarians. The students selected represent about one in ten applicants, and they come from a wide variety of backgrounds and experience with animals.

In most veterinary courses animal welfare teaching commences in first year with subjects including the study of animal behaviour, and practical animal handling, restraint and management. There is discussion and debate on the community expectations of veterinarians, and the roles of Laws, Ethics and Morals in managing an orderly society including animals. The roles and expectations of veterinarians in administering legislation, codes, assisting industry self-regulation, quality assurance programs and achieving best practice outcomes, are also addressed. During term, students spend over 50% of their time in practical classes. During vacations they are required to work in animal shelters, on farms and in other animal production enterprises, and with veterinarians.

Veterinary teaching involves the use of live animals for learning handling and restraint, clinical examination and surgery, and cadavers and abattoir specimens for dissection and autopsy. All procedures on animals used in teaching have to be approved by an institutional Animal Experimentation and Ethics Review Committee, with recording and reporting of animal usage according to State Legislation. In the early years of the course, the use of computer-simulated models and interactive multimedia have progressively replaced some animals in teaching anatomy, physiology, pharmacology, microbiology and biochemistry. This change has been fostered by developments in digital technology, as well as the requirement for implementation of the three R's - reduction, refinement, and replacement - of animals in teaching and research. Most veterinary schools operate hospitals, emergency centres and ambulatory clinics where students in the final years work with registered veterinarians.

The RSPCA has been involved in educating veterinarians for a very long time. Many students have worked as volunteers in animal shelters before entering the course, and as animal rescue ambulance drivers at weekends and nights while at University. In 1998, first year veterinary students at Melbourne undertook formal practical classes at the RSPCA Centre at Burwood where they were instructed in the practical procedures for managing unwanted animals in the community - including euthanasia, rehabilitation, and selection of suitable animals for adoption. During compulsory vacation work students also gain an understanding of the work of the RSPCA Inspectors, and obtain an appreciation of the complexity of the issues involved in managing unwanted domestic animals and injured wildlife in society.

Learning the skills to deal with conflict and differing opinions takes time and practice. Veterinary teaching is changing so students can confront some of the ethical and scientific issues involving the use of animals in society. Veterinarians occasionally must act as "police" on behalf of pet animals, laboratory animals, farm animals, animals held by welfare societies, shelters, zoos, and circuses, and animals kept in the wild. Students are exposed to community attitudes regarding the usage of

animals through discussion and debate following presentations from organisations including the National Farmers Federation, the Australian Professional Rodeo Association, Animals Australia, and the RSPCA. This helps them develop an informed and balanced approach when putting the welfare of animals above all else.