

Meeting community expectations for animal-based science: an Australian perspective⁺

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Members of the community have frequently expressed concerns about the use of animals in scientific experiments during the past three decades through the media, in formal surveys of public opinion and sometimes in acts of vandalism and violence against scientists and their institutions. Fortunately, to date Australia has not had to deal with the latter forms of protest against animal experimentation. The debate in the 1980's was strongly polarized in Australia which provided a strong stimulus for governments, scientists and their institutions to implement measures to provide transparency and accountability for animal use to the public so that important research using animals was not jeopardised. It is acknowledged that the use of animals for research in contemporary society must be regarded as a privilege and not a right, so that when animals are used, all costs to the welfare of animals used in experiments must be carefully weighed against the potential benefits of the research outcomes in a process involving community input. This paper describes the system of self-regulation backed by legislation that has evolved in Australia, the components of which include legislation, a code of practice enforceable by

law and institutional animal ethics committees. Community attitudes and expectations toward animal-based science and scientists are described and the role of the Australian and New Zealand Council for the Care of Animals in Research and Teaching (ANZCCART) in promoting rational and open debate between scientists and opponents of animal experimentation is outlined. Some comparisons are made with the UK and New Zealand systems of regulation and consideration given to the future and the need to develop a 'culture of care' amongst scientists.

Introduction

"Those scientists who work with humans have certain standards that must be applied to what they do. Among the professional responsibilities in this field are the need to avoid doing too much damage to individuals and groups, and also the need to gain informed consent before starting procedures that carry moral or physical risks. In the field of human research, however, there is a particular check against the erosion of good professional standards. This is that, at least in the world's democracies, and where research is carried out on consenting adults, the subjects of that research can themselves complain if it turns out that they believe themselves damaged in any way by the research. Animal research, by contrast, involves subjects to whom scientists have duties of care, but subjects who cannot complain about damage, let alone engage in litigation to seek compensation or restitution. So, while there is a direct check on the professionalism of those working with human subjects, this is lacking in the case of those working with animals. The maintenance of professional standards is thus more of a challenge in the latter area" (Brennan, 2000).

The Australian Commonwealth Scientific and Industrial Research Organisation's (CSIRO) Animal Welfare Policy

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states at its outset that "CSIRO carries out research to improve the health, welfare and productivity of farm animals, to understand and protect Australia's unique environment and wildlife, to control vertebrate pests and to benefit human health. These objectives sometimes require the use of animals in research." Whilst there are those in the community who would disagree with the use of animals for research at all, scientists in Australia are provided with legal protection to carry out manipulations on experimental animals which would otherwise allow them to be prosecuted under prevention of cruelty to animals legislation. This privileged position of scientists underlines their duty of care to ensure that there is minimum pain and distress inflicted upon those animals in achieving the scientific objective of any experiment.

Community concerns about animal experimentation date back to the 19th Century, but the major impetus in Australia for developing the system of self-regulation backed by legislation that we have in place today, occurred during the 1970's and early 1980's stimulated by factors such as:

- the emergence of animal welfare/rights organizations who had major concerns about animal experimentation;
- the publication of enormously influential books written by philosophers and scientists such as Russell and Burch (1959) (humane experimentation), Singer (1978) (animal liberation) and Regan (1983) (animal rights); and
- and the vandalism and violence being perpetrated against scientists and research institutions in the UK and USA.

These issues brought the animal experimentation debate into sharp focus for the government, the community and for scientists. In response to the concerns of the community and the scientific establishment, the Australian Government established a Senate Select Committee on Animal Welfare in 1983, to inquire and report upon, amongst a number of other animal welfare issues, animal experimentation. The Select Committee findings were published in a report (Anon, 1989), hereafter referred to as the Senate Report. The Senate Report (3.59) states that "The autonomy and clearly demonstrated capacity of animals to experience pain, though varying in degrees, is enough to establish that human beings, as moral agents, have real and substantial obligations and duties toward them. Anyone involved in the use of animals for research purposes is therefore accountable to the wider community for the performance of those duties". The exhaustive process and publicity surrounding this inquiry pushed the scientific community and the various governments into getting their houses in order. It is encouraging to re-read the Senate Report in the year 2003 and see that all but a handful of the twenty recommendations have been addressed in the intervening years.

Community expectations

A majority of the community expects advances in science to provide them with a plentiful supply of cheap, safe food, with new products and procedures to improve the health and wellbeing of themselves and their domesticated animals, to improve the lot of wild animals and ensure a sustainable environment. The human condition also has as one of its core values the advancement of knowledge *per se* and this is a particularly strong value in scientists. At the present time it is impossible to achieve all of these outcomes without using experimental animals. At this point community expectations can become sharply divided.

There has been little formal survey of community attitudes to the use of animals in research in Australia. The Senate Report (1.19) quotes a 1989 Morgan Gallup Poll published in The Bulletin that "There is no doubt that the majority of the population supports biomedical research involving the use of animals provided that effective controls are operating to keep the number of the animals and the level of pain and distress to a minimum. Until such time as the majority of Australians are persuaded that animal experimentation should not be carried out, and that is translated into legislative form, experimenters have a right to use animals within the regulations and guidelines imposed on such use by government and the scientific community".

Australia has thus far been free of the excesses of violence that have characterized the debate in the UK and USA and the Senate Report (1.23) optimistically states that "Institutions and government have a responsibility to ensure that animal experimentation is conducted humanely in accordance with approved rules and guidelines. By fulfilling that responsibility and by keeping the public informed of the extent and nature of animal experimentation, public disquiet should be kept to a minimum".

A recent Morgan Gallup Poll commissioned by Meat & Livestock Australia (Anon, 2000) showed that "The level of concern about animal welfare issues has increased from 1994 to 2000. Experiments using animals remains the issue mentioned by the greatest number of people (54% : 62%) .. ". Both the Royal Society for Prevention of Cruelty to Animals Australia (RSPCA Australia) and the Australian and New Zealand Federation of Animal Societies (ANZFAS) have official policies which do not accept experimentation using animals as appropriate. However, both organizations play a constructive role as external members of AECs (Animal Ethics Committees) constituted under State/Territory legislation as described in the Australian Code of Practice for the Care and Use of Animals for Scientific Purposes (hereafter referred to as the Code). RSPCA policy states in part that "RSPCA Australia is opposed to the use of live animals in experimentation ... (but) accepts that until alternative techniques are developed the use of live animals in some experiments will occur. If suffering is observed (which manifests itself in abnormal behaviour) then the experiment should cease

immediately or anaesthesia be used, and in any event, where required analgesics be used" (Strachan, 1994).

Internationally there have been some comprehensive surveys published (Pifer et al, 1994; Aldhous, 1999). These surveys clearly demonstrate that the response of the community to questions about attitudes to animal experimentation depends upon how the questions are framed. The MORI Poll (Aldhous, 1999) showed that a 'cold start' question as to whether people "agreed or disagreed that scientists should be allowed to experiment on animals" met with hostility, 64 percent against and just 24 percent for. When the question was modified to "Some scientists are developing and testing new drugs to reduce pain, or developing new treatments for life-threatening diseases such as leukaemia and AIDS. By conducting experiments on live animals, scientists believe they can make more rapid progress than would otherwise have been possible", the responses varied more widely depending upon:

- the perceived benefit to humans;
- whether pain, illness, surgery or death of the experimental animals is involved; and
- the species involved, e.g. mice versus monkeys.

For example, there was an 83% approval rate for the use of mice in experiments for a cure for leukaemia if they were not subjected to pain, illness or surgery. This dropped to 69% support if mice were to suffer or die. With experiments to develop a new painkilling drug the corresponding figures were 73% and 60% respectively. For the experimental use of monkeys to find a cure for leukaemia, corresponding figures for no suffering versus suffering or death were 75% and 53% respectively. To develop a new painkilling drug using monkeys there was a further fall in support to 64% and 33% respectively. The article concluded that "the implication is that the public's mind is not made up on these issues. Most people are willing to be persuaded, although initially skeptical of the value of animal experimentation".

Birke and Michael (1992a, b) explore in detail the 'researchers dilemma' in two frank papers which explore hostile views from many in the community, and the frequently futile attempts of scientists to counter the impact of those views on the opinion of the community at large. "Science is no stranger to controversy. But, as sociologists of science have pointed out, the controversy that is intrinsic to science has to do with what it produces – how data are interpreted, for instance. By contrast, the use of animals in scientific experiments is controversial because of the way new scientific knowledge is produced. Perhaps this helps to explain why it attracts public attention: nonscientists think they do not have to be "experts" to have an opinion on the ethical issues raised by using animals. As a result, scientists' work becomes seen as uncertain and open to public debate" and "For several researchers, a part of the problem of communicating with non-scientists was that the public did not appreciate the

scientists' own ways of negotiating a moral standpoint. Nor did the public recognize that research need not always be gruesome or painful. One example of this was expressed by those scientists whose research did not involve any invasive procedures but relied on making observations of the animals; the public, in their experience, always expected animal research to be about cutting things up, or about testing trivial commercial products".

In Australia a number of issues in recent years have highlighted increasing community concern and suspicion about science and scientists, given more impetus by recent debate about gene technology. Scientists have often been reluctant to enter public debate on the issues, and when they do so are often ill-prepared to present a persuasive case that the public can understand let alone accept. The remainder of this paper describes measures that have been put in place in Australia with the aim of providing the majority of the Australian public with the reassurance that they need to feel comfortable about the use of animals in research.

Regulation by the States and Territories

All of the States and Territories have legislation in place to regulate the use of animals in research. This has sometimes been by amendment of existing prevention of cruelty to animals legislation, the development of animal welfare acts, or in the case of New South Wales a specific new animal research act. Table 1 shows the legislation that is in place in Australia.

Table 1. Legislation regulating the use of animals in research in Australia

State / Territory	Legislation
Queensland	Animal Care and Protection Act 2001
New South Wales	Animal Research Act 1985 (amended 1997; currently under review)
Victoria	Prevention of Cruelty to Animals Act 1986
Tasmania	Animal Welfare Act 1993
South Australia	Prevention of Cruelty to Animals Act 1985
Western Australia	Animal Welfare Act 2002
Northern territory	Animal Welfare Act 2000
Australian Capital Territory	Animal Welfare Act 1992

There is no Australian Commonwealth Government animal welfare legislation, although it was a recommendation in the Senate Report. The system in Australia can best be described as self-regulation backed by legislation. All of the State/ Territory legislation enshrine conformance

with the Australian Code. The governments are signatories to the Code through the Primary Industries Standing Committee and each State/Territory provides a representative on the Code Liaison Group (CLG) which periodically revises the Code. The Code is therefore an important harmonizing document in the way that different legislation in the various states is applied. The States/Territories, in one form or other, license/register/accredit scientific establishments, institutions or corporations to carry out research using animals (they also oversee the use of animals for biological testing and teaching).

There is variation amongst the States/Territories in the mechanisms in place for monitoring performance of AECs and inspecting animal facilities. The most sophisticated of these is the Animal Research Review Panel (ARRP) in New South Wales which has broad-based membership from the community and oversees the effectiveness and efficiency of the legislation in that State. Their Annual Report for 2000-01 (NSW Agriculture) is exemplary. Other States/Territories have public input into the way they implement their legislation by broadly based Animal Welfare Advisory Committees (AWACs).

The level of monitoring of institutions is variable and has been a subject of great concern to Animals Australia (ANZFAS). At the 1999 AGM of ANZFAS the following resolution was passed;

"Therefore Animals Australia (ANZFAS) seriously questions the value of the AEC system, particularly as in many States/Territories there is little effective assessment of AEC performance.

Animals Australia (ANZFAS) hereby puts the research community 'on notice' that unless prompt redress of this situation occurs, it will recommend to its member societies and supporters that they withdraw their services as Category 'C' (animal welfare) members of AECs".

The level of concern over this issue resulted in the National Health and Medical Research Council (NHMRC) introducing a comprehensive system of 3-yearly external inspections for holders of NHMRC research grants (much like the ARRP in NSW), but this process has not been accepted widely as yet. While the situation has improved there are still some concerns among the welfare groups (Glenys Oogjes, personal communication).

Other activities undertaken by the States include support for AECs (including training of external members), handling complaints, and in some cases collecting statistics on animal use. This latter activity is unfortunately highly variable at this time, and as a consequence there are no collated national annual statistics for animal use in Australia (contrary to a recommendation in the Senate Report).

The Australian Code of Practice for the Care and Use of Animals for Scientific Purposes, 6th Edition, 1997 (the Code)

The Code had its genesis when the 69th Session of the National Health and Medical Research Council (NHMRC) approved a Code of Practice for Experiments in Animals prepared by the NHMRC Experiments in Animals (Reference) Sub-Committee. The original Code had four sections – humane conduct of experiments, provision and production of animals, animal care and personnel training. Six appendices gave special requirements for different species of animals and the document numbered twenty six pages in total. In 1979 the CSIRO and the NHMRC joined together to produce a revised Code of Practice for the Care and Use of Animals in Australia. The stated aim of this Code was:

- "to emphasise the responsibilities associated with experiments involving the use of animals;
- to promote an attitude which will encourage the efficient and considerate treatment of animals so that the degree of stress or discomfort produced is no greater than would be accepted as reasonable and tolerable by community standards;
- to ensure that the research is not prejudiced by inefficient experimental techniques and lack of care of the animal; and
- to provide references to more detailed information on the care and use of animals in research".

This Code was further revised by the CSIRO and NHMRC in 1981 and 1982. The 1982 edition for the first time introduced a requirement for institutions to appoint Animal Ethics Experimentation Committees (AEECs) to approve experiments. Their responsibilities were outlined in one and a half typed pages compared with nine printed pages in the current (1997) Code. In 1985 the Australian Agricultural Council (which later became the Agricultural Resource Management Council of Australia and New Zealand (ARMCANZ) and is now the Primary Industries Ministerial Council (PIMC)) joined CSIRO and the NHMRC as signatories to the revised Code of Practice for the Care and Use of Animals for Experimental Purposes. This facilitated a direct link for the State/Territory governments to incorporate a requirement to abide by the Code into their own animal welfare legislation. The same signatories were party to the 1990 revision of the Code which now used the term "use of animals for scientific purposes" in its title rather than "experimental purposes" as previously. This allowed a broader definition of a Scientific Purpose as "All those activities performed to acquire, develop or demonstrate knowledge or techniques in any scientific discipline, including activities for the purposes of teaching, research, diagnosis, product testing, and the production of biological products". This considerably expanded the scope of the Code and thus what could be enforced under legislation. The current (1997) edition of the Code gives its purpose as "to ensure the humane care of animals used for scientific purposes, including teaching. Its aims are to:

- emphasise the responsibilities of investigators, teachers and institutions using animals;
- ensure that the welfare of animals is always considered;
- ensure that the use of animals is justified;
- avoid pain or distress for each animal used in projects; and
- promote the development and use of techniques which replace animal use in scientific and teaching activities”.

The Code establishes Animal Ethics Committees (AECs) to verify that the case for animal use is justified by proper cost/benefit analysis and to ensure adherence to the principles of Replacement, Reduction and Refinement, (the Three Rs, Russell and Burch, 1959). The 1997 edition of the Code also expands the definition of scientific purposes to include field trials and environmental studies. Significantly the definition of animal is expanded to make it clear that any “live non-human vertebrate” includes “fish, amphibians, reptiles, birds and mammals, and encompassing domestic animals, purpose-bred animals, livestock and wildlife” is covered by the Code. It also explicitly sets out the principles of the Three Rs:

- “the replacement of animals with other methods;
- the reduction in the number of animals used; and
- the refinement of techniques used to reduce the impact on animals”,

and provides examples of how these objectives can be achieved.

Specific new chapters were included on the care and use of livestock for scientific and teaching activities and studies on wildlife. While the Code mandates approval of all projects by AECs, it points out clearly that “Investigators and teachers have direct and ultimate responsibility for all matters related to the welfare of their animals. They must act in accord with all requirements of this Code”.

The CLG that revised the 1990 edition of the Code included in addition to CSIRO, NHMRC and ARMCANZ representatives, the Australian Vice Chancellors Committee (AVCC), the Australian Research Council (ARC) and welfare organizations (RSPCA and ANZFAS). In addition to specifying the requirements needed to carry out experiments with animals, the Code also provides guidance to help implement its recommendations and a wealth of references to resource material for researchers, AEC members and animal care staff. The 1997 edition of the Code is presently being revised by the CLG and a second draft for public consultation has been posted on the NHMRC website.

Animal Ethics Committees (AECs)

Although the NHMRC/CSIRO 1982 Code revision recommended establishment of AEECs, and funding bodies like the NHMRC required that all proposals for funding to them

be approved by AEECs, the Senate Report concluded (16.17) that “In practice, there was little effort made to secure compliance with the Code of Practice by experimenters and institutions. Many ethics committees did not carry out their responsibilities and some institutions did not even have ethics committees in operation. The NHMRC and other funding bodies had no resources to monitor compliance and they depended on statements of compliance from experimenters and institutions”. Compliance has vastly improved since 1989 and it would be surprising if there are any institutions using animals in research at the present time that do not have an AEC.

The 1997 Code specifies that all institutions must “establish one or more AECs directly responsible to the governing body of the institution or its delegate. Where animal usage is small, an institution may access an external AEC”. It also states that “AECs must ensure that animal care and use within the institution is conducted in compliance with this Code and incorporates the principles of Replacement, Reduction and Refinement” and “AECs must have terms of reference which include provisions to:

- recommend to the institution any measures needed to ensure that the standards of this Code are maintained;
- monitor the acquisition, transport, production, housing, care, use and disposal of animals;
- examine and approve, subject to modification, or reject written proposals relevant to the use of animals in scientific and teaching activities. Also to approve only those studies for which animals are essential and which conform to the requirements of this Code, taking into consideration ethical and welfare aspects as well as scientific or educational value;
- formally withdraw approval for any project or authorize the treatment or humane killing of any animal;
- examine and comment on all institutional plans and policies which may affect animal welfare;
- maintain a register of approved projects; and
- perform all other duties required by this Code.”

Membership of an AEC must be at least four persons, including a separate person appointed to each of the following categories:

“Category A. A person with qualifications in veterinary science, with experience relevant to the activities of the institution or, in special circumstances, a person with qualifications and experience to provide comparable expertise;

Category B. A person with substantial recent experience in the use of animals in scientific or teaching activities;

Category C. A person with demonstrable commitment to, and established experience in,

furthering the welfare of animals, who is not employed by or otherwise associated with the institution, and who is not involved in the care and use of animals for scientific purposes. The person should where possible be selected on the basis of active membership of, and nomination by, an animal welfare organization; and

Category D. An independent person who does not currently and has not previously conducted scientific or teaching activities using animals, and who is not an employee of the institution, except under defined circumstances”.

The Code also provides detailed guidelines for submission of proposals by scientists to an AEC, for operating procedures, for assessing proposals, for monitoring, annual review, reporting and record keeping.

How well are AECs currently performing their key role in ensuring compliance with the Code? As stated previously, great progress has been made since the Senate Report in 1989. In part, this has been brought about by increased awareness of the legislation in the various States/Territories and the potential drastic impact on the research programs of an institution for getting it wrong. Although there are still a few scientists who believe that they are overregulated and that they are the best judge of what should or should not be done, most contemporary scientists believe that the ethical positions for use of animals in research, exemplified by the guidelines in the Code, are reasonable. One of the strengths of the AEC system is that it provides a mechanism for community input into judgments made concerning the use of animals in a particular research project. The Category C and D members have to be convinced that the costs to the welfare of the animals being used are outweighed by the benefits that will accrue to humans or other animals if the outcomes are achieved. This is probably the most difficult issue facing external members of AECs, especially category C members. Representatives from welfare organizations are generally already compromising their personal principle that animals should not be used for research simply by agreeing to be a member of an AEC where the majority of projects put forward will be approved. We are fortunate that these members are prepared to assist in making such judgments on behalf of the community.

Although the enforced self-regulation of animal research has improved greatly during the past ten years there is still some disquiet over the process, particularly amongst the animal welfare groups (see earlier the resolution of the ANZFAS AGM in 1999; Oogjes, 1992, 1996; Glenys Oogjes, personal communication) who identify areas of concern such as:

- better audit and inspection of AECs and institutions;
- better training for external AEC members; and
- belief that not enough effort is being put by AECs into replacement.

It is likely that the level of scrutiny of research with animals will never be enough for some groups in the community and will always be too much for others. Scientists and regulators must work together to ensure that the general public has confidence in the system.

The Australia and New Zealand Council for the Care of Animals in Research and Teaching (ANZCCART)

ANZCCART began life as ACCART, the Australian Council for the Care of Animals in Research and Teaching, in 1987. The first major sponsors were the CSIRO, the AVCC and the NHMRC. The organization was initially located within CSIRO at its headquarters in Canberra, but in 1992 moved to the University of Adelaide with a full-time Executive Officer and Assistant. In 1993 the Australian Research Council and the Royal Society of New Zealand became major sponsors and ACCART became ANZCCART which became incorporated as a non-profit company in 1994. The structure of ANZCCART is that of a Board of Directors and a Council with a wider representation of stakeholders.

ANZCCART's corporate mission is to:

- promote excellence in the care of animals used in research and teaching;
- ensure that the outcomes of the scientific use of animals are worthwhile; and
- foster informed and responsible discussion and debate within the scientific and wider community regarding the scientific use of animals.

ANZCCART operates on a purely advisory basis and provides guidance and information to all interested parties, including members of animal ethics committees, scientists, teachers, regulatory authorities, granting agencies, government, animal welfare organizations, the media and the general community.

ANZCCART fulfills its mission by:

- addressing in a balanced and considered way the distinctive scientific, ethical and social issues associated with the use of animals in research and teaching;
- being an independent body which provides a national and international (with NZ) focus for consideration of these issues;
- promoting effective communication and cooperation between all those concerned with the care and use of animals in research and teaching;
- assisting in the resolution of potential conflicts by promoting awareness of concerns and solutions to problems; and
- assisting the scientific and teaching communities to be aware of and be responsive to community concerns.

ANZCCART provides support to Universities, CSIRO and other users of animals in research and teaching by providing ready access to the latest ideas and methods about the responsible scientific use of animals, by giving advice on how to implement the Three Rs, by providing support for effective operation of Animal Ethics Committees by holding annual conferences on topical issues with published proceedings and running workshops on specific issues, publishing a quarterly newsletter (*ANZCCART News*), major publications on specific topics and providing a website as a source of information. ANZCCART has published eleven conference proceedings and six monographs, and conducted ten workshops between 1995 and 2002. In 2002 ANZCCART organized a conference entitled "Animal Welfare and Animal Ethics Committees – Where are the Goalposts Now". The theme of this conference was arranged to allow practical exploration of issues faced by category C and D members on AECs. Of the 150 delegates at the conference approximately half were category C and D members. The eight sessions were:

- Designing new learning events;
- GMO issues for AECs;
- The public/animal user interface (transparency and accountability);
- Non-institutional (external) animal users;
- Planning to achieve animal welfare outcomes;
- Personal perspectives on animal ethics; and
- Team decision making on AECs.

Feedback suggested that the conference was highly successful and this sort of activity exemplifies the manner by which ANZCCART achieves its mission. Bradshaw (2002) carried out a comparison of the ethical review processes in the UK and Australia and states "One of the key elements to the success of the Australian system is an organization called the Australian and New Zealand Council for the Care of Animals in Research and Teaching (ANZCCART)Facilitation and communication between all interested parties may be greatly enhanced in the UK by the development of an organization similar to ANZCCART with a similar mandate. It could be called UK-CCART".

Some comparisons

The UK has stringent 'top-down' controls in place over animal experimentation, with individual licensing of experimenters, centralized review and licensing of individual projects and a full-time inspectorate to enforce the laws. More recently the UK has moved to institute a local Ethical Review Process (ERP) in institutions (Bradshaw, 2002). Bradshaw states that "The aims of the ERP are: first to provide independent ethical advice to the certificate holder (institution), particularly with respect to project licence applications and standards of animal care and welfare; second, to provide support to named people and advice to licensees regarding animal welfare and ethical issues arising from their work; and third, to promote the use of ethical analysis to increase awareness of

animal welfare issues and develop initiatives leading to the widest possible application of the Three Rs." In this sense the UK is moving a little toward the Australian system.

The system of regulation in New Zealand (NZ) and its evolution was described by Reid (1989) and Bayvel (2000). Bayvel (2000) outlines the current system: "It is essentially one of enforced self-regulation, with a National Animal Ethics Advisory Committee (NAEAC) and institutional Animal Ethics Committees (AECs) providing the national infrastructure, which enables individual scientists and others using live animals to accept a personal, ethical responsibility. The system is flexible, cost-effective, politically and publicly credible, and provides statistical information regarding animal use to meet national public policy needs. A classification system for animal use was introduced in 1997 after considerable development effort and consultation. To further reduce adverse effects, and in keeping with the principles of total quality management, the system has been the subject of regular refinement. An AEC assessment initiative has been developed and introduced in recent years. A number of research activities relating to replacement and refinement are also undertaken with either government or private sector funding. The Australian and New Zealand Council for the Care of Animals in Research and Teaching (ANZCCART) plays an important national role in ensuring awareness of legal obligations within the scientific community, in increasing "ethical literacy", and in promoting and fostering informed debate on the responsible and humane use of live animals in research, testing and teaching. New legislation will embody the principles of the Three Rs and will mandate regular reviews of the effectiveness of AECs."

A significant difference between the New Zealand and Australian system is that New Zealand has a single national Animal Welfare Act 1999 which makes administration less complex than in Australia. Another major difference is that New Zealand does not have a national code of practice embedded in the legislation. Instead there is a stand alone section (Part 6) of the Animal Welfare Act which describes, in detail, the legal requirements which apply to the use of live animals in research, testing and teaching and the production of biological products. A voluntary Code of Recommendations and Minimum Standards for the Care and Use of Animals for Scientific Purposes compiled by the Animal Welfare Advisory Committee in 1995, and which drew heavily on the Australian Code, was effectively replaced in 2002 by NAEAC's Good Practice Guide for Research, Testing and Teaching. Under the New Zealand Animal Welfare Act each institution must produce its own Code of Ethical Conduct (CEC) which is approved by the Minister on the recommendation of NAEAC. Each CEC has to be revised every 5 years and both institutions and their AEC reviewed by an inspection prior to re-accreditation by the Ministry of Agriculture and Forestry.

The future

NAEAC in New Zealand has recently produced a five page brochure, entitled "A Culture of Care", which gives some insight as to the direction that regulation of animal experimentation might move into the future. The brochure states:

1. "Anyone responsible for the welfare of animals used in research, testing or teaching has a duty of care, which is defined under the Animal Welfare Act 1999. Discharging this duty involves more than the basics of animal care. It involves a genuine commitment to the welfare of the animals, a respect for the contribution they make to your work, and a desire to enhance their well-being beyond the minimum standards: in short, a culture of care.
2. This guide is published by the National Animal Ethics Advisory Committee (NAEAC) for scientists, technicians and teachers who use animals in their work and are responsible for their welfare.
3. It summarises the legal requirements, but also provides a framework of understanding for going beyond the legal minima. The guidelines are designed to help keep researchers and teachers in touch with, and responsive to, society's rapidly evolving attitudes towards the relationships between people and animals".

Can we move from our system of enforced self-regulation to a culture of care where each scientist instinctively takes account of all of the guidelines in our various Codes? Will the public ever accept that scientists can be trusted enough to do this without the elaborate systems of regulation that we currently have in place?

Rose (1994) writes "In this public debate, the scientist has an important but difficult role to play.... Nevertheless, the involvement of scientists is critical if we are to achieve constructive outcomes to these issues. All aspects of the debate must be considered and scientific information is an integral part of this process. Not only is the scientist the person best placed to provide relevant scientific input, but, as the practitioner, his (or her) participation in and commitment to the decision-making process will ensure the effective implementation of decisions".

I strongly believe that during the past 10 years there have been major steps forward in the regulation of animal experimentation and that most scientists have been willing participants in the process. If all AECs during the next 10 years pursue their role conscientiously, and a 'culture of care' becomes the norm in the scientific community, then the present heavy demands placed on decision-making by AECs will be substantially reduced or maybe even eliminated altogether.

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Animal Ethics Infolink

www.animaethics.org.au

Margaret Rose has informed ANZCCART about an important new website www.animaethics.org.au. The website has been developed by the Animal Research Review Panel and NSW Agriculture's Animal Welfare Unit. Its aim is to assist researchers, teachers and members of Animal Ethics Committees to access information about the operation of the Animal Research Act 1985, Animal Research Regulation 1995 and The Code of Practice in New South Wales. In addition to specific information about this legislation, including relevant policies and guidelines, this site provides general information about legislation in other states and countries and links to many sites from which useful, general information promoting the humane care and use of animals for scientific purposes can be sourced. This web site is a very valuable resource for anyone interested in the animal ethics area, and not just relevant to those in NSW.

Books of possible interest:

Diseases of Poultry

Eleventh edition

By Y.M. Saif

Iowa State University Press, March 2003

ISBN: 0-8138-0423-X

Diseases of Small Domestic Rodents

Second edition

By Virginia Richardson

Blackwell Publishing, June 2003

ISBN: 1-4051-0921-1

Animal signals

By John Maynard Smith and David Harper

Oxford University Press, December 2003

ISBN: 0-19-852684-9

MORI (Market and Opinion Research International) survey into the use of animals in medical research

The 2002 MORI Report provided some interesting results. It was a follow-up study to the survey conducted by MORI in 1999, and it confirmed that the public is still interested in the issue of animal experimentation with 12% "very interested" and 47% "fairly interested". It also showed the marked difference on responses that a "warm start" and a "cold start" can bring about. Two-thirds of the public report that they are concerned about the use of animals in medical research, but it should be remembered that there are almost always other, more personal, concerns which will have a higher priority. Fewer than 1 in 10 (7%) are both very interested and very concerned about the use of animals in medical science. Reflecting MORI's earlier work for The Medical Research Council and New Scientist, by far the main reason for concern is the potential suffering of laboratory animals. Furthermore, there is some apprehension that some or all experiments performed on animals are unnecessary.

Results of the survey are available from: www.mori.com/polls/2002/cmp.shtml.

Towards humane vertebrate pest control

Bidda Jones
Scientific Officer, RSPCA Australia

What makes an animal a *pest* and how does this shape our attitude and actions toward it? The term *pest* is generally used to indicate animals that are unwanted in a particular context. Consider our differing attitude to horses, cats, dogs, rabbits, or pigs depending on whether they are 'owned' or 'feral'. These animals are often considered pests because they are in the wrong place at the wrong time, or sometimes there are just too many of them in one place. This situation arises because humans have introduced them to a place where they did not originally occur, or humans changed the environment in such a way that favoured them. The usual human solution to either situation is to *get rid of them*, one way or another.

The control of vertebrate pests is considered vital for a range of reasons, including the conservation of native ecosystems, agricultural production, and the prevention or control of exotic disease. At the same time, few animal welfare issues are comparable in both their range and scale, given the number of animals affected each year and the suffering inflicted. Concerns over the humaneness of vertebrate pest control arise as much from negative perceptions of pest animals as from the techniques used to control them.

In the research environment, much care and thought is taken to ensure that animals used for scientific purposes are killed in the most humane way possible. The method used will vary according to the species and age of the animal (for example neonates require different treatment from adults), the nature of the study and whether tissues are required after death, and to some extent the skill and experience of the researcher. But the principle that killing methods must be humane is paramount, and is enshrined in the Australian Code of Practice for the Care and Use of Animals for Scientific Purposes.

In contrast, when it comes to killing vertebrate pests, consideration of the humaneness of the method used has come a poor second to its perceived effectiveness. There are some methods employed to kill pest animals that provide a rapid and relatively distress-free death – but there are many that do not, including slow-acting poisons, snares and steel-jawed leghold traps, suffocation through burrow destruction, and the deliberate release of disease such as myxomatosis. The argument has always been that those methods that cause distress are justifiable, because these animals *must* be controlled due to the extent of the damage they inflict or the threat they pose.

There is widespread acceptance that land managers need

to control both introduced and native animals where their populations have an adverse impact on the environment. But even when there is a persuasive and evidence-based argument for the necessity of control, this does not mean that we can forgo consideration of animal welfare. Whether a fox is roaming the streets of suburban Bristol; being chased by hounds in the English Home Counties; stealing chooks from a hobby farm in the NSW Southern Highlands; or catching an eastern-barred bandicoot for its meal in the Victorian bush; it is still capable of experiencing pain, suffering and distress. And if we choose to intervene in the life of such an animal, we have a duty to do this humanely.

Progress towards humane control

In February 2003, RSPCA Australia raised the issue of our treatment of vertebrate pests in its annual Scientific Seminar. A number of developments had prompted this choice of subject, including the ongoing review of the registration of fluoroacetic acid (1080), and the internal revision of the RSPCA's policies on wildlife issues.

It was clear from the seminar presentations and discussions that, while animal welfare is regarded as an extremely important issue in vertebrate pest management, there is currently very little practical commitment to addressing a large number of known animal welfare issues. The overwhelming recommendation arising from the seminar was for the urgent development of a national strategy to improve the humaneness of vertebrate pest management.

A national approach

In August this year a workshop was held in Melbourne to develop a strategy to promote a national approach to humane vertebrate pest control. The basis for this process was the involvement of as many stakeholder representatives as possible. The workshop was jointly organised by RSPCA Australia, the Animal Welfare Centre (a joint Centre of the University of Melbourne, Monash University, Department of Primary Industries (Victoria) and the CSIRO) and the National Vertebrate Pests Committee. Sponsors included the Victorian Department of Primary Industries, Victorian Department of Sustainability and Environment, the Australasian Wildlife Management Society and the Pest Animal Control Cooperative Research Centre. An independent facilitator was brought in to run the workshop and direct the discussions.

The workshop had three aims:

- To develop a commitment to a national approach towards humane vertebrate pest control;
- To identify the required research, development and

- education actions and legislative/regulatory actions required to overcome present deficiencies; and
- To identify a mechanism to deliver this approach, including a program management and funding processes.

The workshop was attended by 43 people, including representatives from thirteen state, territory and federal government agencies with responsibilities in the area of vertebrate pest control, relevant industry groups, non-government organisations, and key researchers. The agenda included discussion of key principles underpinning humane vertebrate pest control, priority issues and crucially, a framework for the implementation of a national approach.

The workshop identified the following key features of a national approach:

- ensuring uniformity of approach across jurisdictions;
- coordinating and collaborating over control efforts;
- promoting the development of nationally acceptable pest animal control practices;
- optimising research, development and education resources in pest animal control;
- identifying national priorities for increasing the humaneness of vertebrate pest control; and
- forming a national coordinating body to effectively implement and coordinate such a national approach.

Such an approach is intended to increase on-ground recognition of the need for humane control practices and the lead to the development of more humane control methods. If these features can be put into practice effectively on a national basis, the end result will be the avoidance or minimisation of animal suffering during vertebrate pest control operations.

Key components

One of the tasks of the workshop participants was to identify priority animal welfare issues in humane vertebrate pest control. A pre-workshop survey identified a range of issues that were grouped into six components of a national approach. These are listed here together with brief comments on some of the issues raised under each heading.

1. Reviewing current control techniques, codes of practice and best practice

One of the issues that stimulated the most discussion at the RSPCA Australia Seminar, and subsequently at the workshop, is exactly how we assess the humaneness of a particular control method. Many factors can affect our opinion on whether or not we find a particular method acceptable. To address this problem, objective science-based criteria for evaluating humaneness need to be

developed. These criteria can then be used to rank control methods against each other. This would enable decisions over control techniques to be made with full consideration of the welfare implications of the techniques involved, and enable the least acceptable techniques to be identified and ultimately phased out. The key to this approach is to reach agreement on the evaluation criteria, which will involve considerable research and consultation.

2. Identifying research, development and education priorities

While efforts to develop humane alternatives or improvements to traditional methods of pest control have had some success in Australia, there are few incentives to adopt these methods in place of more traditional techniques. A coordinated national approach to the research and development of vertebrate pest control techniques would encourage more research in this area. Steps also need to be taken to ensure that improved techniques are rapidly adopted and implemented. Support for this type of research is essential – the workshop identified research into alternatives or improved methods as a priority area for funding, with State and Federal contributions needing to be coordinated towards common goals.

3. Development of a consistent state/national framework

One of the frustrations inhibiting a national approach to the management of vertebrate pest control in Australia is the complexity of the Federal system. Pest animal control is managed at a State/Territory level, but obviously wild animals do not respect State or Territory borders. The impacts of vertebrate pests are often on a national or regional level and must be dealt with using a multitude of legislation and different government policies. Unless control measures can be applied in a coordinated fashion across these areas, programs are unlikely to be successful in the long term. The success of control programs has a direct impact on animal welfare as sustained and effective control measures will reduce the overall number of animals that require control. Preventing the re-establishment of highly abundant pest populations after control will ensure that fewer animals have to be controlled. A strategy to improve the humanness of vertebrate pest control has the most potential for immediate success if it can be incorporated into existing State and Territory programs, while encouraging the joint coordination of control across jurisdictions.

4. Understanding public attitudes and awareness and their implications

While some information is available on public attitudes to wildlife and wildlife control, our knowledge of how these attitudes influence decision-making is limited. We need to find out more about public attitudes to the control of pests and communicate this information to

policy-makers. Importantly we need to inform the public about the issues behind controlling pest animals and the welfare implications of different control methods.

5. *Integration of animal welfare into the planning, implementation and evaluation of control programs*

Linked to the need to raising community awareness of humane pest control is the formal integration of animal welfare considerations into the planning, implementation and evaluation of control programs. This needs to involve all aspects of planning and operational control, from policy makers to front-line staff. Information on the development of humane control techniques and field experience needs to be communicated at the grass-roots level to ensure the highest level of uptake. A national website for humane vertebrate pest control would provide a focal point for information and communication.

6. *Coordinating and implementing a national approach*

The current approach to vertebrate pest control in Australia is fragmented and lacks national coordination. This gives rise to difficulties both in managing the impact of pests and reduces the potential for improving animal welfare outcomes. The hardest challenge for the workshop was to come up with a means of overcoming this fragmentation to deliver a national approach. There are many possibilities in terms of tapping into existing mechanisms and committees, but underlying reform of the system is necessary if real progress is to be achieved. One aspect identified in the workshop is the need for widespread stakeholder representation into decision-making (eg the national Vertebrate Pests Committee includes State, Territory and Federal government representatives but no external (non-government) input. The involvement of NGOs from animal welfare, animal industries and conservation is vital for a truly inclusive national approach to humane vertebrate pest control.

What next?

The task now is to turn these ideas into something tangible. A discussion paper on the workshop and on-going activities is currently being prepared. Once finalised, this discussion paper will be forwarded to policy makers and stakeholder groups. The discussion paper is intended to stimulate feedback and encourage all those involved in vertebrate pest control to *think humanely* when making decisions about the planning and implementation of control programs.

An announcement will be made in ANZCCART News when the discussion paper is available.

Details of the workshop including a short Communiqué, and the proceedings of the RSPCA Australia Seminar *Solutions for achieving humane vertebrate pest control*, can be found on the RSPCA Australia website www.rspca.org.au under the *Info* tab.

Animal Transgenesis Symposium 21st November 2003, Sydney

The Faculty Centre for Environmental Restoration and Stewardship at Australian Catholic University National is presenting a one-day symposium entitled "Issues in Animal Transgenesis". The symposium, scheduled for Friday 21 November 2003, brings together experts from Australia and New Zealand to present contemporary scientific, ethical and moral views on animal transgenesis. Amongst the scheduled speakers are: Susan Maastricht (Childrens Cancer Institute Australia), Alana Mitchell (ScienceLink, Melbourne), Jean Fleming (University of Otago School of Medicine, Dunedin, New Zealand), Yuri Koszaryck (School of Theology, ACU Nationals) Glenys Oogjes (Animals Australia). Further details and a registration form can be obtained from the ACU National website at: <http://www.acu.edu.au/index.cfm>. The convenor of the Symposium is Vaughan Monamy.

International conference of animal welfare

23-25 th February 2004, Paris

This will be held at **The Office International Des Epizooties** (OIE) headquarters in Paris, France, on 23-25 February 2004. Among the topics covered will be:

- Scientific approaches to animal welfare;
- Support from industry and non-profit organisations in setting up science-based standard on animal welfare; and
- The link between animal health and welfare

Animal research in Tasmania

Mike Manuel

Inspector of Animal Research, Tasmania

In Tasmania, animal research is strictly regulated through Part 4 of the *Animal Welfare Act 1993*. With the proclamation of Part 4 in April 1996, Tasmania joined the ranks of other mainland states to regulate animal research conducted on mainland Tasmania and in its outlying islands, which includes Macquarie Island.

The legislation applies to research on all vertebrate animal species (including fish) that are alive or are killed specifically for an investigation. Invertebrates are excluded from the provisions.

The Act requires research to be only conducted by Institutions licensed by the Minister for Primary Industries, Water and Environment. This applies to all Institutions whether based in Tasmania or the mainland. Researchers are not licensed but must belong to a licensed Institution to be able to conduct research.

Research by unlicensed institutions (or their researchers) is an offence for which substantial pecuniary and custodial penalties exist.

Many of the intrusive and injurious procedures on research animals have the potential to expose the investigator to the cruelty provisions of the Act. To overcome this concern, a regulation has been introduced to exempt a researcher from the cruelty provisions, if the procedures being undertaken have been approved by the Animal Ethics Committee (AEC) of a licensed Institution. It is, therefore, in the interest of researchers to ensure that their Institutions have a current Tasmanian research licence.

Research on Tasmanian wildlife has and is attracting researchers and consultants from within and outside Tasmania. However, there are particular community sensitivities associated with the use of native animals and birds in research. Investigators wishing to use Tasmanian wildlife have to obtain a Scientific Permit from the Primary Industries, Water and Environment's (DPIWE) Nature Conservation Branch (NCB). The NCB guidelines require summaries of research proposals to be placed for two weeks on its web-site for public comment. Scientific Permits are only issued if there are no concerns and the project proposal has been also approved by the relevant AEC of a licensed Institution. This provides an additional tier of control. However, the AEC approval of a project does not automatically guarantee the receipt of a Scientific Permit. Permits are only issued after all of the NCB's special requirements are met.

The application form for an Institution Research Licence and the Nature Conservation Guidelines for a Scientific Permit are posted on the Department's web-site and can be accessed by:

www.dpiwe.tas.gov.au > Food and Agriculture > Animal Industries and Welfare > Animal Research.

The *Australian Code of Practice for the Care and Use of Animals for Scientific Purposes* has been adopted in legislation as the research Code of Practice (COP). All animal research activities must be conducted in accordance with the specifications of the COP. Research proposals must be approved and monitored by institutional Animal Ethics Committees (AEC) established in accordance with the code specifications. It is important for these AECs to ensure that the research is necessary, justified, valid, and relevant and the research conducted in accordance with the specifications of the COP. The 3R's of research are mandatory core considerations.

The Minister has appointed an Inspector of animal research in accordance with the provisions of the Act. While advising the Minister on matters relating to the granting and cancellation of licences, the Inspector also monitors the conduct of institutional AECs and their research and animal holding facilities.

The Animal Welfare Advisory Committee also advises the Minister on matters relating to the granting and cancellation of licences. Through their membership on the Advisory Committee, such organisations as the RSPCA are able to have an input into animal research matters.

A research licence application is examined by the Inspector of Animal Research and the Chairperson of the Animal Welfare Advisory Committee (AWAC). Both parties provide independent advice to the Minister regarding the granting or cancellation of licences. An application for a licence will include the names and particulars of the members of the AEC and an indication of the type(s) of research proposed. The Inspector and AWAC will examine the bona-fides and suitability of the members of the AEC as part of the licensing process. The AEC must conform to the specifications of the COP. Interstate Institutions will be also asked to submit their proposed monitoring arrangements for research conducted in Tasmania (a location distant to their AEC).

Applications for research licences will be accompanied by the prescribed fee and forwarded to the Minister through the Inspector of Animal Research. The current licence

fee is A\$277.50/yr for institutions employing three or less persons and A\$421.80/yr for institutions employing four or more persons. A three-year licence is the maximum permitted.

The research licence year commences on 1 April and ends on 31 March of the following year. There are no provisions for part-year licences.

In the 2002/03 licence year, there were eleven institutions licensed to use animals for research and teaching in Tasmania. Seven of these are located in Tasmania and the remaining four on mainland Australia. Among the latter is a mainland consultancy, two Universities in NSW and one in Victoria.

Tasmania will accept interstate AEC approvals for research projects to be conducted in Tasmania. It, however, reserves the right to intervene if the research is likely to conflict with the State's vested interests.

The Act allows animal research to be conducted by institutions in a self-regulatory environment. However, it is subject to audit by the Inspector of research and is overviewed by AWAC.

In accordance with the condition of their research licence, Institutions are required to provide a yearly report to the Minister on the animals they have used in research. The Act requires the report to provide *the numbers and types of animals used* and *the types of animal research carried out*.

These reporting parameters were seen to be covered in a statistics reporting format developed some years ago by the Code Liaison Group (CLG) of the National Health and Medical Research Council for the purpose of compiling national statistics. The CLG format was endorsed by AWAC as suitable for the Tasmanian report as well, to avoid any duplication of effort.

An *Animal Research Statistics Annual Report* is compiled from the reports submitted by research institutions. In accordance with the requirements of the Act, the Minister tables the Annual Report in both houses of the Parliament each year. The Tasmanian report is very comprehensive and also provides a lot of detail as requested by the Minister. The community and the members of the Parliament appear to be satisfied with the transparency the report provides for animal research in Tasmania.

Massey University scientist honoured

A Massey University veterinarian was honoured for his work in the humane use of animals in scientific research, testing and teaching at a conference recently held in Christchurch.

Professor Alex Davies of the Institute of Veterinary Animal and Biomedical Sciences is the first person to receive the National Animal Ethics Advisory Committee (NAEAC) Three Rs Award.

The award was presented by NAEAC Chairperson Wyn Hoadley at the Australian and New Zealand Council for the Care of Animals in Research and Teaching (ANZCCART) conference held in Christchurch over the 18th and 19th of August.

Ms Hoadley said the award recognises excellence in the humane use of animals in research, teaching and testing and embraces the concept of the three Rs – reduction, replacement and refinement – in the practice of humane animal-based science.

“The award is just a small tribute to the important advances Professor Davies has made in this field. He has been an inspiration to his students and colleagues and is a veterinarian of international repute. We are very proud that he is a member of New Zealand's scientific community.”

Ms Hoadley also said the development of the award was timely as the welfare of animals used in research, teaching and testing has become a matter of considerable public interest. The award will serve to recognise the three Rs, the ingenuity of the scientific method and the relevance of research findings,” she said.

Over the last ten years, Professor Davies has focussed on the use of computer technology as an alternative to using animals in teaching.

He says he has long been motivated by a desire to explore ways to improve classical methods of teaching anatomy as well as an awareness of the ethical issues involved in using live animals and student expectations of alternatives being available.

It was this awareness that led to a funding partnership in 1994 with the New Zealand Fund for Humane Research, which sponsors and supports research into viable alternative techniques to replace living animals in scientific investigations.

Compliance issues: Compliance with the legislation governing the care and use of animals in research and teaching

Paul Gilchrist
Warraba Consulting, New South Wales

This article examines the legal basis of the work of the Animal Ethics Committees (AEC) and indicates their responsibility for ensuring that documented evidence of compliance with the law is generated. The evidence concerned applies to both CARE and USE of animals. The documented evidence must embrace intended and actual care and use.

Those involved in the operations of an Animal Ethics Committee (AEC) may easily lose sight of the fact that their prime responsibility is to meet the requirements of the legislation. The intricacies of the tasks before the AEC may be seen as having moral or ethical implications for the members to ensure that they are seen to be protecting the welfare of the animals. This approach could lead to an over-zealous interpretation of the governing law.

There are a few central matters that are the legal responsibility of the AEC:

- The care of animals must be adequate within the law;
- The use of animals must be justified by the purpose of the project;
- The numbers used must be justified adequately;
- Pain or distress for each animal used in scientific and teaching activities must be avoided;
- The three R's must be satisfied; (Replacement. Reduction. Refinement)
- The qualifications, training and experience of the operators must be appropriate;
- The application must provide sufficient detail of the intended use of the animals; and
- The actual use of animals must be adequately monitored and reported.

The application process is already complex and can easily be extended by zealous additions. In an application form or in a record form it is always easy to add another question or another space to fill in but it may be an unnecessarily arduous task to answer the question or otherwise satisfy the requirement. The cost/benefit of each item in a form must be considered. Brevity has many advantages and complexity may not benefit the process or the animals. This article attempts to provide some perspective to the process undertaken under the animal research legislation and thus to simplify the task of the AEC and the researcher.

Legislation

The State Government legislation, amongst other things, establishes Animal Ethics Committees and incorporates the Australian code of practice for the care and use of animals for scientific purposes. The Act of Parliament varies between States but I will use the NSW Act as my reference. It is the Animal Research Act 1985. In this Act the Committee is called an Animal Care and Ethics Committee but for some reason the Code refers to them as Animal Ethics Committees and I will do so.

The NSW Act is "An Act to protect the welfare of animals used in connection with animal research".

Section 14 describes the functions of the Committee as:

1a. The making of recommendations concerning the granting of animal research authorities by the establishment.

1b. The supervision of the carrying out of animal research by holders of animal research authorities granted by the establishment.

1c. Such other functions as may be conferred or imposed on it by the Code of Practice.

Section 16 provides for the delegation of specified functions to subcommittees. Busy AEC members should remember this provision as a way of spreading the labour and speeding up some functions.

Regulations may be made to prescribe various things, including, those in Section 62. (1) (c) and 62. (1) (d).

(c) the records to be kept for the purposes of the Act
(d) the forms to be used for the purposes of the Act

Incorporation of the code

This provision makes the Code an important document for AEC members to be familiar with but does not reduce their legal responsibilities. On the contrary the Code is part of the legislation. The designers of the Code therefore have a great responsibility to avoid extremes of interpretation of the legislation.

The Code sets out its purpose as follows. The sections in *italics* are additions proposed in the Draft Code of March 2003.

“The purpose of this Code is to ensure the humane care of animals used for scientific purposes, including teaching. Its aims are to:

- Emphasise the responsibilities of investigators, teachers and institutions using animals;
- Ensure that the welfare of animals is always considered;
- Ensure that the use of animals is justified (*taking into consideration the scientific or educational benefits and the potential effects on the welfare of the animals*);
- Avoid pain or distress for each animal used in scientific and teaching activities;
- Minimise the number of animals used in projects; and
- Promote the development and use of techniques which replace animal use in scientific and teaching activities.

The Code establishes Animal Ethics Committees (AECs) to verify that the case for animal use is justified and to ensure adherence to the principles of Replacement, Reduction and Refinement. (*AEC's apply a set of principles outlined in this Code governing the ethical conduct of people whose work involves the use of animals for scientific purposes*).

Interpretation of the law

As with most legislation there are those who are temperamentally prone to interpret the letter of the law and those who are inclined to interpret its spirit. In the case of animal welfare legislation there is an opportunity to see the role of the AEC as seeking to achieve, or at least strive towards, “perfection”, which may be based on personal interpretations of the intent of the law. Others may seek to be minimalist in achieving what is laid down and no more. Of course most will fall somewhere in between and adopt the concept of “best practice” within the prescription of the law.

The enthusiasts may seek to achieve a sort of “bracket creep” by wanting to require improving “environmental enrichment” of the animals or some other desirable objective. The minimalists may resist attempts to improve or upgrade the welfare of the animals as the legislation provides for acceptable standards, not continual improvement. With varying perspectives it is possible for “moral” versus “practical” arguments to emerge, especially in such an emotive area as animal welfare.

Worthy arguments can be made for each position but it is important to accept that the politicians, who see their responsibility as reflecting the attitude of the community, are the people who fashion the legislation. If the community's attitudes change for some reason, the politicians are those responsible for interpreting the change and amending the law. It is clearly the responsibility of the practitioners to inform the politicians of perceived developments in the field

and to encourage them to act. It is not their responsibility to pre-judge the political process.

A common trap for unwary regulators is the apparent need to spell things out in more and more detail. The Code does get very detailed in some aspects but some would see it as still being vague in important matters. It may be seen to leave a lot of responsibility with the researcher or it may be seen to allow room for interpretation by AEC members of the meaning of terms such as animal welfare, distress and other key terms. The law is full of attempts to spell out in words the measures that might cover every eventually. Knee jerk reactions to events in the public domain commonly lead to a call for more restrictive new rules.

A good case can be made for leaving some of the responsibility of interpreting the benefits of a project or the welfare implications of a particular procedure in the hands of the professionals and the AEC members rather than trying to spell it all out in words. The AEC is designed to allow assessment of a proposed use of animals to be justified by the benefits expected to flow from it.

Some questions pose themselves to AEC members.

- Is it not acceptable to expect applicants, especially those with a good track record, to be capable of performing as they predict in an application?
- Is there any need to monitor such well meaning and competent people in the performance of their duties?

Practical issues for AECs.

The AEC is responsible for all sorts of things but at the centre of its activities are two broad areas, namely supervision of the CARE and the USE of animals for scientific purposes.

CARE involves all matters relating to the animals before they are allocated to a procedure. The people responsible for them at this stage will usually be animal attendant staff rather than researchers.

USE applies to their care during and after the application of procedures associated with a project. The people responsible for the animals at this stage must be the researcher approved for the project.

In an application the **proposed use** of animals is spelt out in a way that enables AEC members to assess the intentions of the applicant. In the actual procedures and the monitoring of the animals during and after the procedure the **actual performance** may well fail to come up to expectations.

There are two ways to supervise the actual performance. The first is to make inspections during a procedure and the second is to produce other evidence of compliance with the approved procedure.

Compliance

The NSW Act provides a system to offer assurance to the community that the welfare of animals used for scientific purposes is adequately cared for. The system involves establishments, researchers (and their assistants), AECs, a Panel and the Parliament.

This chain of responsibility must rely on records of relevant activities to demonstrate that the legislation has been complied with. It is not sufficient to rely only on the track record of applicants. Documentary evidence is needed.

The responsibilities of the AECs are the only ones to be addressed here. The AEC is responsible for considering applications for approval to conduct research, for supervising the care and use of the animals involved and for monitoring

Evidence of compliance

Any person charged with legal obligations may be expected to produce evidence of compliance. This evidence must be in a form that can be assessed by appropriate assessors, whether scientific, animal welfare or community representative on an AEC or by authorised inspectors or monitors. Evidence is critical as a means of assuring all the stakeholders that the requirements of the Act and Code as well as any additional rules imposed by the institution or the AEC have been adhered to.

What constitutes evidence? In this case evidence comprises mainly documents. An appropriately authorised person must sign the documents.

The main documents are designed to demonstrate:

1. The adequate CARE of animals intended to be used for scientific purposes.
2. Approved USE of animals.
 - The benefit/cost relationship of the proposed project.
 - The intentions of the applicant for the project as a whole.
 - The intended USE of animals in each procedure.
 - The justification for the number of animals to be used.
 - Evidence that any substance or treatment used has a known effect on the animals.
 - The actual outcome of each procedure, such as numbers used and adverse findings.

The documents to be generated to demonstrate adequate CARE of animals are records of reproductive and productive performance including litter size, weaning weight, mortality and morbidity records. These should be computer friendly records that can be expressed in graphic form for presentation to AEC meetings.

The evidence of acceptable USE of animals has two components - Proposed use and Actual use.

The proposed benefits must be anticipated in the application and assessed by the AEC. Evaluating the proposed benefit is perhaps the most serious responsibility of the AEC followed closely by evaluating the extent of the imposed stresses on the animal required to carry out the project and its procedures. Balancing these two matters is the critical responsibility of the AEC and nobody can make the decision for them. Training of AEC members is essential to ensure that they are as well prepared as it is possible to be in order to assure the community, through the legal process that adequate safeguards are in place to protect the welfare of animals used for scientific purposes and that standards are uniform from one AEC to another.

Evidence of intention

The evidence of the applicant's intentions placed before the AEC should comprise a correctly completed application form. The application should encourage the applicant to separately indicate **each occasion** on which animals are to be used for an approved procedure. It is clear that the legislation requires approval for use of EACH animal. This is easily achieved if each occasion for the USE of animals for an approved procedure is separately considered. Separate listing of each occasion of use would then lead to an improved ability to report on each of those occasions. A computer-generated system could provide for the approval of a numbered series of occasions of use of animals in an approved procedure. The way the intended use is displayed in the application should be one that is easily used for reporting. The Table at the end of this article is suggested as one simple way of displaying intended use.

Evidence of performance

Having the approved applicant prepare a brief report of each occasion on which animals were used under an approval would simplify reporting of actual performance. Reporting of each occasion of use would involve entering a record of the actual performance in the computer. This type of information does not impose an onerous task on the researcher and can easily be aggregated into the annual report.

The simplest format for application, approval and performance of a procedure would involve using something like the following table.

Procedure (Description or Number)	PROPOSED USE		ACTUAL USE		
	Serial number of occasion of use.	No. of animals	No. actually used	Date of use	Adverse results
I/P Substance A	1	10	10	1-09-03	
Ditto	2	10	10	8-09-03	
I/P Substance B	1	10	10	1-09-03	
Ditto	2	10	9	8-09-03	1 euthanased - underweight
I/P Substance C	1	10	10	1-09-03	
Ditto	2	10	10	8-09-03	
I/P saline	1	10	10	1-09-03	
Ditto	2	10	10	8-09-03	
TOTAL for procedure	2 occasions	80	79		No adverse effects
S/C Substance A	1	15	15	3-09-03	
Ditto	2	15	15	10-09-03	
S/C Substance B	1	15	15	3-09-03	
Ditto	2	15	15	10-09-03	
S/C Substance C	1	15	15	3-09-03	
Ditto	2	15	14	10-09-03	1 - accidental death day 2
S/C Saline	1	15	15	3-09-03	
Ditto	2	15	15		
TOTAL for procedure	2 occasions	120	119		No adverse effects

Selected highlights from the printed and electronic world of Animal Welfare

Frame News – April 2003 - reports that the annotated database Refinement and Environmental Enrichment for All Laboratory Animals is now freely accessible at http://www.awionline.org/lab_animals/biblio/laball.htm. Some of the topics covered include: abnormal behaviour; animate enrichment; cage design; environmental enrichment; ethical issues; feeding enrichment; human interaction; inanimate enrichment; refinement; safety concerns; social enrichment; species typical behaviour. Currently there are 2757 entries of which 505 are available as online full text documents.

Animals Today – Volume 11 Number 1, 2003: Cynthia Burnett reviews the book "From Guinea Pig to Computer Mouse" by Nick Jukes and Mihnea Chiuiu. This is the second edition of the book published by the International Network for Humane Education (www.interniche.org). Cynthia says: "The first section covers curricular design and change to incorporate replacement methods and the second section includes seven fascinating case studies that add immediate and up-to-date information on what is actually going on in progressive institutions around the world. A comprehensive alternatives file, containing over 500 alternative to animal methods in a wide range of disciplines, is provided in the third section, and the fourth section offers extensive information about further resources, including web sites". This book is a great resource for educators. It is distributed by Animals Australia and can be purchased for A\$15 by contacting the Animals Australia Humane Education Officer: Cynthia@powerup.com.au or fax: 07 37160050.

Animal welfare science update: The update, published by RSPCA Australia, provides summaries from a selection of relevant scientific papers. Included in issue number six (July, 2003) are summaries of articles on "Assessing pain in laboratory animals" and "The welfare of transgenic pigs".

The Canadian Council on Animal Care (CCAC) guidelines on the "Care and Use of Wildlife" is available for downloading from the CCAC website www.ccac.ca. Much useful information can be obtained from this website.

High tech animal facility provides ideal environment

Virginia Williams

New Zealand Veterinary Association Animal Welfare Co-ordinator

The Psychology Department at Canterbury University, Christchurch, New Zealand, is rightly proud of its two-year-old animal facility, which has been described as “one of the best laboratory animal facilities in the country”. The design was a collaborative effort that sought input from a wide range of experts from many disciplines, the outcome reflecting the close cooperation between the design team and the scientific users.

As a Diplomate of the American College of Laboratory Animal Medicine, Dr John Schofield of Otago University has some experience with facility engineering and provided considerable input into the design. “The HVAC (heating, ventilation and air-conditioning) system was based on computerised fluid dynamics (CPD) data used to model air movement through an animal room,” he says (Hughes and Reynolds 1995; Hughes, Reynolds et al. 1996). “The room ventilation is delivered and extracted through a ceiling mounted soffit, which produces an even distribution of room air. The system has 100% fresh air with no recirculation, and provides up to 20 room air changes per hour.” Dr Schofield believes this is the first animal facility in New Zealand to have utilised the CPD concept.

The lighting system in the rodent area is also computer-controlled, the twelve hour light/dark cycle having the added benefit of a “dawn” and a “dusk” when lighting gradually increases or decreases over half an hour rather than changing abruptly.

Walking into the unit is a bit like boarding a ship – wide shiny corridors with round “portholes” in the doors and – significantly – no rodent odour. But this facility houses the rats, pigeons and Japanese quail that are used for behavioural studies by researchers in the Psychology Department.

In the rodent area, each main research group has its own four animal holding rooms conveniently located adjacent to the research laboratories. This facilitates the transport of animals to and from the research areas. The rodent and bird areas are separated by a cage washroom of generous proportions that resolve the common problem within animal facilities of space limitations in this area. The washroom is itself divided into “dirty” and “clean” areas by the double-doored automatic cage rack washer.

The Senior Technical Officer has worked in the Department for 15 years and raves about the comparative advantages of the new facility. “Previously, we had animals housed in

different buildings, and we also had to transport animals out of the facility to research areas,” she says. “There was no ventilation system, and the space was very limited.”

One of the real bonuses of the new building for the technicians is the ease with which hygiene can be maintained. The whole facility is lined with “Bondor”, a refrigeration material which is easily cleaned, while innovations such as Venetian blinds being enclosed within double windows help reduce the amount of dust and clutter. The six sets of filters in each cage room are changed weekly. “All the cages are on stainless steel trolleys for ease of movement and cleaning. In fact, we made sure that as much equipment as possible is made of stainless steel so it can all go through the cage washer.”

The pigeon rooms can also be regularly hosed out, an important feature along with the ventilation system in reducing the amount of dust these birds can potentially produce. “It’s quite common for people working with pigeons to develop allergies,” says one American researcher doing behavioural studies with the birds. “But this is the best facility in terms of air quality that I’ve worked in.”

His positive sentiments are echoed by a Canadian researcher in the rodent area, who cites the attention to detail in the excellent facilities and the quality of the support staff as reflective of the Department’s “investment in the welfare of the animals, as well as in the research work.”

John Schofield would just like “the HVAC system, the floor plan, the space, and the easy cleaning” for all of the University of Otago facilities.

References

Hughes, H. and S. Reynolds (1995). “The use of computational fluid dynamics for modelling airflow design in a kennel facility.” *Contemporary Topics* **34**(2): 49-53.

Hughes, H., S. Reynolds, et al. (1996). “Designing animal rooms to optimise airflow using computational fluid dynamics.” *Pharmaceutical Engineering* **1205**: 44-65.

ANZCCART CONFERENCE 2003

Lifting the Veil: Finding Common Ground

Martin Kennedy, Donald Love and Gill Sutherland
Conference Organising Committee

Over 150 delegates gathered in Christchurch on 18 and 19 August 2003 for the biennial conference of the Australian and New Zealand Council for the Care of Animals in Research and Teaching (ANZCCART). In addition to members of ANZCCART, delegates included representatives of the RNZSPCA and the National Animal Ethics Advisory Committee, MAF and Australian Officials, researchers who work with animals, and members of various institutional animal ethics committees from across New Zealand and Australia.

The theme of the conference was “Lifting the veil: finding common ground”, a reflection of many scientists’ concern at misconceptions about the use of animals for research and teaching.

The conference was opened by National MP, Dr Lockwood Smith, who has a practical, political and academic background associated with agriculture. His address entitled “Animal Research: The Lives It Saves” focussed on the medical advances made because of animal research, and also his own training in animal science.

The programme of diverse and talented speakers represented the research, regulatory advisory and public interest sectors drawn from New Zealand, Australia, the United States and the United Kingdom.

Some speakers put alternative views on the use of animals for research and the need for more transparency under the strict regulatory regime of the Animal Welfare Act and Animal Ethics Committees, which approve the use of animals for research projects. There was plenty of discussion, as attendees moved through the two-day programme with presentations in five key areas: “Animal research—where has it got us?” “Animal research—unveiling the process”, “Behind the statistics—grades of manipulation”; “Behind the statistics—unveiling the numbers”; and “Pressing concerns”.

There was also an open session which was a facilitated opportunity for the delegates to raise issues of particular concern and for break-out groups to form based around these topics. The goal was to generate a series of proposals that could be taken from the conference for further consideration and promotion by appropriate groups. These recommendations are highlighted below:

1. Increased transparency of animal research and testing procedures would be of value to the public,

and more information should be made available provided such disclosure does not compromise personal safety of scientists involved. The preferred means for providing this information would be by publication of a plain language summary of all research projects approved by animal ethics committees.

2. Annual statistics published by regulatory bodies should provide more detail, in particular the types of testing, research or teaching that cause specific degrees of animal suffering.
3. Balanced information on the value and need for animal research and testing must be made readily available to the public at all levels (particularly in schools). Towards this end, reliable sources need to be established that can provide authoritative information on animal research, in a proactive fashion.
4. Particularly noxious procedures on animals (not necessarily used in Australia or New Zealand) should be examined with a view to their prohibition.
5. The rigour of the existing process must be emphasised to the public at every opportunity. The public need to be better informed about the methods AECs use, the detail required of researchers, the grading of interventions, and the emphasis on the Three Rs.
6. The severity of intervention scales, as used by AECs, should be standardised and clarified, to leave less room for misinterpretation.
7. The distribution of public views toward animal research in Australia and New Zealand is relatively unknown, and it would be of value to survey these views and establish precisely what the public want to know and their views animal research.
8. The possibility of appointing external or independent AEC chairs should be investigated.

ANZCCART looks forward to further developing these recommendations, in consultation with the other parties represented at the meeting.

Proceedings of the conference should be published before the end of the year.

ANZCCART publications available for purchase

In the last edition of ANZCCART NEWS we listed Fact Sheets available from our website. Here we list publications for sale.

Prices include packing and surface post for Australia and overseas. For airmail add \$10.00 for North America, \$12.00 for UK/Europe. New Zealand readers may obtain copies from the ANZCCART (New Zealand) office, PO Box 598, Wellington, New Zealand.

Prices quoted are in Australian Dollars (AUD) and include 10% GST

<i>Animal Pain: Ethical and Scientific Perspectives</i> (eds T Kuchel, MA Rose and J Burrell). Proceedings of the conference held in Adelaide, 1990. ISBN 0 643 05383 2	\$ 25.30
<i>Survey of Laboratory Animals and Tumour Cell Lines Maintained in Australia and New Zealand</i> (ed. RM Baker) 8th Edition. 1997. ISBN 0 646 12728 4	\$11.00
<i>Animal Welfare in the Twenty-first Century: Ethical, Educational and Scientific Challenges</i> (eds. RM Baker, DJ Mellor and AM Nicol). Proceedings of the conference held in Christchurch, New Zealand, April, 1994. ISBN 0 9590540 6 5	\$25.30
<i>ANZCCART Public Lecture Banting's Dog and Schrodinger's Cat: Animals and Experiments</i> (C Puplick) 1994. ISBN 0646 206 788	\$5.50
<i>Animals and Science in the Twenty-first Century: new technologies and challenges</i> (eds. RM Baker, R Einstein, DJ Mellor and MA Rose). Proceedings of the conference held Melbourne, October, 1994. ISBN 0 646 22484 0	\$25.30
<i>Farm Animals in Biomedical and Agricultural Research</i> (eds. RM Baker, R Einstein, DJ Mellor). Proceedings of the conference held Wellington, New Zealand, August, 1995 ISBN 0 646 26379	\$25.30
<i>Animal Experimentation: A Student Guide to Balancing the Issues</i> (V Monamy) 1996. ISBN 0 9586821 0 0	\$16.50
<i>Animals in Education: Value, Responsibilities and Questions</i> (eds. A Brennan and R Einstein) 1997. Proceedings of the conference held in Canberra, 1996. ISBN 0 9586821 1 9	\$25.30
<i>Ethical Approaches to Animal-based Science</i> (eds. D. Mellor, M. Fisher and G. Sutherland) 1998. Proceedings of the conference held in Auckland, 1997. ISBN 0 908654 83 9	\$33.00
<i>The Use of Immuno-adjuvants in Animals in Australia and New Zealand</i> (eds. R.M. Baker, T. Kuchel, S. Maastricht, M. Rose, H. Smith and D. Watson) 1998. ISBN 0 646 24923 1	\$16.50
<i>The Use of Wildlife for Research</i> (eds. D. Mellor and V. Monamy). Proceedings of the conference held in Dubbo, NSW, May 1999. ISBN 0 9586821 2 7	\$25.30
<i>Housing for laboratory rats, mice, guinea pigs and rabbits</i> (A. Hargreaves) 2000. ISBN 0 958621 3 5	\$55.00
<i>Farm animals in research - can we meet the demands of ethics, welfare, science and industry?</i> Proceedings of the conference held in Adelaide in December, 2000. (eds. R.M. Baker, M. Fisher and P. Hemsworth) ISBN 0 9586821 5 1	\$44.00
<i>Euthanasia of Animals Used for Scientific Purposes</i> (ed. J Reilly) 2nd edition (2001). ISBN 0 9586821 4 3	\$33.00

Other News

Graduate Certificate in Animal Welfare: The Faculty of Medicine, Nursing and Health Sciences at Monash University runs a Graduate Certificate in Animal Welfare. The course includes four semester-length units, each requiring the equivalent of 13 weeks of study. The Units are named: Ethics and Welfare, Biology and Ethology, Domestication and Management, and Research project on observing animal behaviour. Further details can be obtained from: www.med.monash.edu.au/psych/student/pgrad/

Nuffield Council on Bioethics - Consultation on the ethics of research involving animals: The Nuffield Council on Bioethics was established to “examine and report on the ethical questions raised by recent advances in biological and medical research” and earlier this year the Council established a working party to consider ethical issues raised by research involving animals. The Council is holding a public consultation process - based on a document that can be obtained from the website: www.nuffieldbioethics.org/animalresearch. The deadline for response is 15 December 2003. ANZCCART urges interested individuals to obtain a copy of this interesting and important consultation document and respond to it.

New Zealand News: The “Good Practice Guide for the Use of Animals in Research, Testing and Teaching” has been published by the National Animal Ethics Advisory Committee. It is designed to complement the New Zealand Animal welfare Act 1999. The document can be downloaded from: www.maf.govt.nz/biosecurity/animal-welfare/naeac/papers/guide-for-animals-use.pdf

The number of animal used for research in Great Britain: A recent article in the Veterinary Record (August 16, 2003) draws attention to the Home Office (UK) publication: “Statistics of Scientific Procedures on Living Animals, Great Britain 2002”. The statistics, which are published annually, summarise data on experiments conducted under the 1986 Act, which regulates animal experiments in Great Britain. The figures revealed that in 2002 (as in 2001) rodents (mainly rats and mice) were used in by far the majority (84%) of experiments. The number of procedures involving genetically modified animals rose in 2002 by 79,000 to 710,000. “Twenty six percent of all procedures used animals which were genetically modified, representing an increase of 2% compared with 2001.” In commenting on the statistics, the Home Office Minister, Ms. Caroline Flint, is reported to have said “Research using animals is vital to the development of safe medicines and effective treatment for serious human ailments and for certain types of research where there is currently no suitable alternative. It is vital, however, that such tests are only carried out where absolutely essential and done with the minimum of suffering to the animals.” These are sentiments that ANZCCART strongly supports. A copy of the publication is available from the website: www.official-documents.co.uk/document/cm58/5886/5886.htm.

Australian Democrats introduce an **Animal Cruelty Bill:** Australian Democrats Senator Andrew Bartlett has introduced the “National Animal Welfare Bill,” which he claims would rescind powers that individual Australian states currently have regarding the regulation of animal welfare, and place them instead in the hands of a new national authority. A copy of the Bill can be found at <http://parlinfoweb.aph.gov.au/piweb/browse.aspx?NodeID=121>

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conduct of animal-based research and teaching
and the welfare of animals so used.**

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