

THE EDUCATIVE ROLE OF AN ANIMAL CARE COMMITTEE IN CANADA: A CASE STUDY

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Abstract

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Animal Care Committees (ACCs) in Canada operate within guidelines established by the Canadian Council on Animal Care, an autonomous advisory and supervisory body sponsored by the Association of Universities and Colleges of Canada. ACCs are established to ensure appropriate, humane use of animals in research and teaching, including the adoption of valid alternatives. Their role includes an educative responsibility: to ensure that both ACC members and scientists using animals are acquainted with the ethical issues surrounding animal use and principles relating to refinement of techniques, reduction of numbers used and replacement where possible.

Strategies employed by one university ACC consistent with these aims are described and evaluated. Qualitative and quantitative data are presented derived from participant observation by the author as an ACC member, committee protocols, minutes and other records and a survey of animal users' perceptions of the role and value of the ACC. Results indicated a relatively low level of familiarity with ethical principles relating to the humane treatment of animals, although regulations governing housing and care were well known.

Keywords: *animal welfare, ethics, humane education, regulation*

Introduction

Canada's regulatory system for animal use in teaching, testing and research is based upon the voluntary participation of relevant institutions, with guidelines implemented locally by the scientists themselves. The Canadian Council on Animal Care (CCAC) exists at the national level to provide guidelines for humane animal use, resources and information for the scientific community and the public, and periodic inspections of laboratory and animal housing facilities. Each participating institution establishes an Animal Care Committee (ACC) which is granted specific authority, terms of reference and responsibilities for assuring that all aspects of animal care and use within the institution are consistent with the comprehensive and detailed guidelines issued by the CCAC (1980, 1993).

CCAC members represent industry and animal welfare organizations as well as science and education. The organization is co-funded by Canada's two major federal granting agencies for research in medicine, engineering and science. Institutions which fail to comply with CCAC regulations risk losing funding from these sources, although no institution has so far had its funding curtailed for this reason.

From its founding in 1968 the role adopted by the CCAC has included an educational component. The Council provides researchers with detailed information concerning all aspects of animal use and care, as well as an outline of the ethical principles considered fundamentally important for scientists to understand and apply.

The CCAC advocates the use of alternatives to animals in research, and has espoused Russell and Burch's (1959) principles of reduction, refinement and replacement throughout its history. Council delegations regularly visit local ACCs for purposes of information provision and education, as well as to perform periodic inspections of facilities.

The CCAC has more recently adopted a proactive approach in the education of scientists with regard to ethical issues, specific alternatives and improved procedures in research. For example, at CCAC-sponsored conferences held in Ottawa in 1992 and 1993 the workshops covered a wide range of topics including such diverse issues as the determination of 'scientific merit', the need to educate researchers regarding the role of invertebrates, media relations, field studies, environmental enrichment and agricultural research. The ultimate value of activities of this kind depends upon the willingness of local ACCs to participate and subsequently disseminate information among the researchers they represent.

This paper is based on an address given at the International Conference 'Alternatives to the Use of Animals in the Life Sciences', Baltimore, USA, October 1993.

Animal Care Committees (ACCs)

The implementation of humane animal use and care in Canada depends upon local ACCs operating under the aegis of CCAC. Membership of local committees must include a veterinarian or animal scientist trained in experimental animal use and care, as well as animal users and non-users within the institution and community, or animal welfare representatives. The size and actual membership of each ACC varies in accordance with the needs of the institution. Canadian Council on Animal Care guidelines describe the terms of reference for ACCs and procedures to be established within each institution. No teaching or research use may be made of animals in the institution without the prior formal approval of the ACC.

Animal Care Committees have important educational responsibilities. The extent to which scientists within the university community are well informed on ethical principles and humane animal care will depend to a significant extent upon the activity of the ACC. It is important that the members of each ACC be thoroughly familiar with CCAC guidelines governing the broader issues of scientific merit, ethics and alternatives and that these issues be put before researchers who use animals in their work.

An open and positive approach to these issues on the part of the ACC is more likely to facilitate reasoned dialogue with groups opposed to much animal research. In this paper the functions of one such Animal Care Committee and its impact are described and discussed, along with some implications for improved animal welfare practice.

Method

Lakehead University is small, with approximately 6,000 students, and is located in a geographically remote city in north-western Ontario. Forestry is an important industry, trapping is still practised in the region, and tourism encouraged by advancing a reputation

for fishing and hunting. Each of these factors bears upon the kinds of animal research which are conducted at this university, compared to work at larger universities in urban environments.

Members of the ACC agreed unanimously to a proposal by the investigator, as a committee member, to examine aspects of its effectiveness and in particular its educational role. Records were made freely available, including protocols and inspection reports for the period 1987-1992, with an understanding that individual confidentiality would be respected.

ACC membership and functions

At the time of this investigation the Committee was chaired by an animal researcher and included two other persons involved in research using animals, as well as two academics who did not use animals, a veterinarian and a community representative with an interest in animal welfare. The university president (vice-chancellor) is a non-voting member, *ex officio*, and the Committee reports directly to him/her rather than to the Senate. Membership on the ACC is for three years in the first instance, members being selected by vote of the Committee from interested individuals, and with the approval of the president. The ACC meets about six times through the year to review protocols and conduct other business.

Data collection

At the time of the investigation the author, a psychologist by training, was a teacher and researcher within the academic structure of Lakehead University. As a member of the ACC for 5 years, the author acted as participant-observer of its activities. All protocols and inspection reports submitted to the Committee were examined and summarized. A four-part questionnaire concerning the role of the ACC was sent to all current animal users at the Institution (n = 16). 'Animal users' were defined as individuals who had submitted protocols to the ACC in the period specified. The first part of the questionnaire included nine items dealing with researcher characteristics (academic rank and discipline, funding and publication experience). Part 2 consisted of five items on the legal and ethical role of the ACC and Part 3 requested expression of interest in a variety of topics for a proposed course or workshop series. Part 4 presented six Likert-type items (permitting responses according to a three point scale expressing agreement, no opinion, or disagreement) seeking opinions on ethical issues raised by the CCAC (1980).

Results

Animals used

Many studies were reported to be observational and non-invasive (40%), or of low to moderate invasiveness (43%). Invasiveness was described consistent with categories defined by the CCAC (1993) and employed in completing protocols submitted to the ACC. Severity and duration of pain or discomfort were the criteria used. Live capture and tagging of wild animals was included in the moderately invasive category. Seventeen per cent of investigations were considered to be moderate to highly invasive. The kinds of research carried out, and the species of animals used, reflect the northern geographic setting of the University. Twenty-six per cent of animal research was field-based, involving observation and/or tagging of caribou, wolf, moose, rodents and brown trout.

Protocols are occasionally modified as a result of ACC review. However in the three-year period studied only one was withdrawn as a consequence of the Committee's view that available alternatives should be used.

In laboratory research considered moderately or highly invasive, the animal used most often was the Norway rat, although rats were also used in non-invasive animal research. The majority of the more invasive studies were conducted in psychology, most often as Master's level thesis investigations. Follow-up of all Master's theses based on the study of animal behaviour revealed that only 2 of 24 completed had resulted in publications referenced in *Psychological Abstracts*. A laboratory in which some of these studies were conducted was cited on repeated occasions between 1984 and 1993 for violations of CCAC guidelines for housing and care and was closed in 1995.

Animal user questionnaire

All researchers who had submitted protocols between 1987 and 1992 ($n=16$) were requested to complete and return the questionnaire. Eleven people did so. At Lakehead University animal research and animal use in teaching was limited to the Departments of Biology, Psychology and Forestry. Although some technicians and laboratory assistants were employed, the bulk of the experimental work was conducted by academic staff.

Researcher characteristics

Most individuals submitting protocols for animal use were of senior academic rank (64% full professor) with an average of 21 years professional experience. In Canada the rank of professor corresponds with reader or professor in the UK, associate professor with senior lecturer, and assistant professor with lecturer. It should be noted that protocols were submitted by faculty members for work to be conducted by graduate students meeting thesis requirements. Usually the ACC interviews both student and supervisor at the time the protocol is submitted. Most animal users (64%) were conducting externally funded research, and all had received external funding for animal research during their careers. Animals were used for demonstration and teaching purposes by the majority of respondents (82%). Eighty-two per cent had published in refereed journals, 45 per cent had contributed to popular magazines, while 9 per cent had disseminated information through school visits or talks to community groups. Forty-five per cent had published books or monographs and 64 per cent presented papers at scientific conferences.

Knowledge of regulatory role of ACC

Respondents indicated an appropriate knowledge of the ACC regulations and mandate. All were aware that:

- in Ontario ACCs are required by law to be set up at all research institutions,
- researchers submitting protocols to the ACC are obliged to familiarize themselves with CCAC ethical and care guidelines,
- the ACC's function is to question ethical aspects of experimental procedures which may cause pain or distress, and
- Ontario legislation regulates animal housing and the ACC assists in periodic inspections.

Ten per cent of respondents were unaware that all animal use in the university, including teaching and demonstrations, must be formally approved by the ACC.

Consistency of ethical views with CCAC guidelines

Some frequently expressed opinions were contrary to the ethical position adopted by CCAC, with respondents tending to adopt a less humane position, or to express no opinion on matters which had grave implications for animal welfare (see Table 1).

The Canadian Council on Animal Care advocates what it characterizes as a reasonable and moderate set of ethical principles for the use of vertebrates in research: 'The polarized views of those at the extreme ends of the spectrum...those wishing to conduct experiments with little or no constraints regarding infliction of pain; those opposed, on humanitarian principles, to any suffering whatsoever' are not endorsed (CCAC 1980). The CCAC views its ethical position as a pragmatic response to community concern for animal welfare within a framework of responsible scientific practice. The founding principles for the CCAC stance derive from Russell and Burch's 'reduction, replacement and refinement', Newton's 'good science, good sense and good sensibility' and Rowsell's 'the right animal for the right reasons' (CCAC 1980).

Table 1 Consistency of ethical opinions with CCAC guidelines.

Statement	Agree	Don't know	Disagree	CCAC Position
Experiments in which pain is inflicted on animals must be based on reasonable expectation of practical benefit to humans and animals.	7	0	3	Agree
Social convention, not moral obligation, dictates that animals be spared pain or distress in research.	1	5	4	Disagree
An animal suffering severe pain which cannot be alleviated should be euthanased immediately.	5	2	3	Agree
Monetary cost and ease of application need to be weighed against reducing pain to animals in testing and research.	3	3	4	Disagree
Long-term deprivation of food and water is an acceptable practice if the researcher believes the goals of the research warrant it.	3	4	3	Disagree
Experiments involving pain performed solely for the instruction of students are unjustifiable.	6	1	3	Agree

Perceived educational role of ACC

The consensus of opinion among Committee members was that the ACC's responsibility should go beyond maintenance of library materials, facilitation of inspections, and protocol review. An annual seminar programme for faculty and graduate students involved in animal research was established as a consequence. Graduate student attendance is compulsory. Questionnaire data indicated that the topic of 'alternatives' attracted most interest. This

included reduction, refinement and replacement in behavioural and biological study and in teaching. Other topics noted were: care and housing, legislation (CCAC mandate, funding guidelines; approaches in other countries), ethical/moral aspects (utilitarian, teleological and religious arguments supporting and opposing use), social context (animal welfare and animal rights movements: history, objectives, support).

Discussion and conclusions

The Canadian system for ensuring humane animal research is strongly supported by the scientific community because of its voluntary nature and the fact that local Animal Care Committees are responsible for implementation. However, the present results suggest that the absence of legally binding regulation and short-term sanctions may foster less than optimal compliance with ethical and care guidelines.

The requirement that the ACC be chaired by an active animal user, and that its membership is appointed, maintains a majority of animal users, and reports directly to the institution's senior administrative officer, tends to ensure maintenance of the status quo. Since this investigation the Animal Care Committee has extended its membership to include a second community representative active in animal welfare and a student from a relevant field of study.

The ACC examined in this report, like most others in Canada, meets in private and treats research protocols as confidential. However, much of the research examined was non-invasive and had immediate benefits to wild populations of animals. One implication is that ACCs might be less concerned with 'confidentiality' and more willing to make public the details of studies which they have approved and the practical value of the research programmes involved. This would also open invasive work to more intense scrutiny.

The distinction between 'research' and 'teaching' is one which needs clarification, and which the CCAC has discussed in sponsored workshops (eg Boisvert 1994). The Council's guidelines restrict the use of animals in teaching more severely than in research, and painful experiments solely for instructional purposes are not permitted. However protocols for Master's level study, and sometimes undergraduate honours thesis proposals, were submitted to the ACC as 'research'. When the work is primarily for the education of the student, and there is little likelihood of significant new knowledge being produced, these protocols should perhaps be treated as 'teaching' by ACCs, and the appropriate regulations applied.

The scientists who cooperated in this study were very familiar with CCAC guidelines for the housing and care of animals. Most received external funding for their work, which was necessarily subjected to peer review, and most published regularly in scientific journals. However, it must also be noted that within the present Canadian system it is possible for an investigator to continue to receive ACC endorsement for invasive research despite having failed to publish the results of similar studies over a lengthy period. This would at least imply that ACCs should consider productiveness of the overall programme of research, and in particular, whether it has been subject to independent peer review when considering new protocols. It has been proposed elsewhere that ACCs are often not qualified to judge scientific merit, and that when research has not been properly adjudicated an appropriate panel should be established by the ACC towards this end (Boisvert & Johnson-Lussengurg 1992).

CCAC guidelines for animal care are the tangible products of the ethical principles the Council espouses. The observed level of disagreement with CCAC-endorsed ethical statements suggests a need for the continuing education of animal users in this field. When researchers complain of bureaucratic regulation (for example, when an inspection indicates failure to meet requirements), it may be because they have not placed the guidelines within the larger framework provided by CCAC ethical principles. The present study documented adequate familiarity with regulations, but a need for greater concern about ethical principles. ACCs have an important role to play in familiarizing researchers with the *reasons for* regulation, namely its foundation in ethics.

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References

- Boisvert D 1994 *The Use of Animals in Teaching*. Paper presented to the Ontario Regional Workshop: ACC Role and Responsibilities. Canadian Council on Animal Care: Toronto, Canada
- Boisvert D P J and Johnson-Lussengurg C M 1992 Scientific merit: who is responsible? In: Canadian Council on Animal Care *Animal Care Committees: Role and Responsibilities*. Canadian Council on Animal Care: Ottawa, Canada
- Canadian Council on Animal Care 1980 *Guide to the Care and Use of Experimental Animals, Volume 1*. Canadian Council on Animal Care: Ottawa, Canada
- Canadian Council on Animal Care 1993 *Guide to the Care and Use of Experimental Animals, Volume 1, 2nd Edition*. Canadian Council on Animal Care: Ottawa, Canada.
- Russell W M S and Burch R L 1959 *The Principles of Humane Experimental Technique*. Charles C Thomas: Springfield, Illinois, USA