CHAPTER 4

ANIMAL PAIN AND DISTRESS

Definitions

4.1 Discussion of pain presents difficulties of both definition and communication. Some of the difficulties were outlined by Dr M. Rose, Chairman of the Animal Research Review Panel of New South Wales:

> I think it is important to note that in relation to pain we tend to use four terms ... 'pain', 'suffering', 'anxiety', and 'stress'. The interpretation of those words depends very much on whether you are talking to physiologists, psychologists, behaviourists or philosophers - they all seem to interpret this sort of terminology differently. I think this language problem with pain is one of the most difficult things ...[1]

4.2 The International Association for the Study of Pain defined pain as:

> ... an unpleasant sensory or emotional experience associated with actual or potential damage or described in terms of such damage.[2]

4.3 A similar definition is contained in a report to the European Commission:

> Pain is an unpleasant sensation that is perceived as arising from a specific region of the body and which is commonly associated with actual or potential tissue damage, or communicate in terms of such damage.[3]

Communication in this context includes signals and non-verbal communication.

4.4 The simplicity of this definition may be misleading. It is necessary to emphasise the fact that there are two distinct aspects to be considered in evaluating pain - stimuli and perception. There is not a simple one to one correlation between the two. The same amount of stimulus will not cause identical perceptions of pain by animals of different species, nor will it necessarily do so for different animals of the same species. This is explained in the introduction to an anthology of research reports on animal pain:

> Most authorities agree that pain is a perception, not a physical entity, and that perception of pain depends on a functioning cerebral cortex. Unlike most other sensations, no single area of the cerebral cortex seems specifically necessary for the perception of pain. The term noxious describes stimuli that, if perceived, give rise to the perception of pain ... The receptors specifically responsive to noxious stimuli are termed nociceptors. A stimulus must be a certain strength before a nociceptor will generate nerve impulses in peripheral nerve fiber of which it is a part. This stimulation strength is called the nociceptive threshold. In certain circumstances this amount of neural activity may be too little to result in perception of pain. The strength at which noxious stimulation is perceived by a human being as pain is referred to as the pain detection threshold. The strongest intensity of noxious stimulation that a human being will permit an experimenter to deliver is called the pain tolerance threshold. The strength of noxious stimulation necessary to reach the nociceptor threshold is rather constant and varies little among humans and animals. The strength needed to cross the pain detection threshold is slightly more variable, especially among humans experiencing clinical pain. The pain tolerance threshold is the most variable of the three thresholds.[4]

4.5 To understand the perception of pain as a sensation requires constant reference to both the sensory functions of the nervous system and the anatomic or physiological organisation of an animal. In humans pain is further linked to the emotions through the functioning of the brain which integrates it with information from the outside world and results in behavioural responses.

4.6 Pain can be divided into two categories: quality, which ranges from mild to severe; and temporal, either acute or chronic. The temporal category can be broken down further into causation, impact and treatment.

- Acute Pain results from a traumatic, surgical, or infectious event that is abrupt in onset and relatively short in duration. It is generally alleviated by analgesics.

- Chronic Pain results from a long-standing physical disorder or emotional distress that is usually slow in onset and has a long duration. It is seldom alleviated by analgesics but frequently responds to tranquillizers combined with environmental manipulation and behavioural conditioning.[5]

4.7 The term 'anxiety' is also used in connection with animal behaviour. There is some evidence that vertebrates at least are able to experience a physiological form of anxiety similar to that seen in humans. Brain receptors for benzodiazepine (chemical substances that relieve anxiety) have been found in mammals, reptiles, amphibians and bony fish but not in invertebrates.

4.8 The term 'suffering' is commonly used in relation to animals. It is often paired with the term pain in an attempt to indicate that the well-being of animals is not simply a matter of freedom from pain.

4.9 There are, however, difficulties with the term. Suffering is even more difficult to define than pain. It covers in humans a wide range of mental or emotional states. Fear, hunger, boredom, frustration and grief may all indicate suffering. Suffering then involves a scale or continuum of unpleasant experiences that vary in intensity.

4.10 The Committee does not find the use of the term 'suffering' to be very helpful. There is presently no agreed definition of suffering that would provide guidance to ethics committees and experimenters. The concerns with animal well-being that are not directly related to pain are more appropriately described by the term 'distress'.

4.11 In coming to an understanding of 'distress' we need first to consider the nature of 'stress'. Stress may be simply a normal healthy reaction to changes in an animal's environment or metabolism, for example, injury, disease or exposure to extremes of temperature. If stress were prolonged because the physiological response was not able to adapt to the changed conditions, a stage of exhaustion would be reached, characterised by impairment of those body functions involved in growth, reproduction, resistance to disease and general activity. The problem is deciding when stress becomes distress.

4.12 In the draft revised Code of Practice, 'distress' is defined as:

> Acute or chronic response of an animal caused by stimuli that produce biological or psychological stress to which the animal cannot adjust by normal physiological or behavioural means.

4.13 The EC report defines chronic stress in animals as:

> ... a feeling related with the entire process of emergence of pathologies (anatomically:

ulceration of digestive tract; behaviourally: stereotypes and redirected behaviour).[6]

Scientific Attitudes to Animal Pain

4.14 The willingness of the scientific community to consider whether animals experience pain let alone anxiety seems to have been influenced as much by the philosophical assumptions of their age as by the findings of research on the subject. Pain researchers Kitchell and Erickson presented the following view based on the current state of research into pain:

> When considering pain in animals, analogies must be drawn between human and animal anatomy, physiology, and behaviour. Knowledge about pain in animals remains inferential, however, and neglect of the probabilistic nature of pain perception in animals leads to anthropomorphism. On the other hand, overemphasis on the uncertainty of our knowledge about pain perception in animals, which leads to a denial that pain perception exists in animals, is logically as well as empirically unfounded. That tacit assumption is that stimuli are noxious and strong enough to give rise to the perception of pain in animals if the stimuli are detected as pain by human beings, if they at least approach or exceed tissue-damaging proportions, and if they produce escape behaviour in animals.[7]

4.15 This represents a balanced if cautious view on the issue. Changing views on the reality of animal pain in recent years have resulted from both advances in physiology and changes in philosophy which now allow for the possibility that animals experience some form of consciousness.

4.16 There was substantial agreement among the experimenters appearing before the Committee as to the reality of animal pain. According to Professor Egerton:

> My belief is that we should approach this question from the basic premise that at least vertebrate animals suffer pain. I cannot really argue about the level to which they suffer pain and their appreciation of that level. I know that the mechanisms are available in vertebrate animals sufficient to receive pain messages. They have brains that are sufficiently developed to make them appreciate those pain messages that they get from injured parts of their bodies.[8]

4.17 Although in basic agreement, Professor Titchen sounded a note of caution:

> ... one should remain aware of the fact that we make a number of assumptions, that is, that the receptivity for pain in animals is the same as or similar to that in humans. There is some supporting electrophysiological and neurophysiological evidence for that, but beyond that point, once we leave the issue of reception and we start into the area of perception and sensory appreciation of pain, our evidence is flimsy in the extreme. Indeed, there is some anatomical evidence which does not support the idea that the same pathways for pain exist in all animals as in humans ...[9]

4.18 Dr M. Rose pointed out to the Committee that there is a relationship between pain perception and the environment or context in which the pain is inflicted. A person's perception of pain is heightened when pain is expected compared with pain caused by an accident. She went on to say that there is evidence that this also occurs with animals.[10]

4.19 Mr Richard Ryder of the United Kingdom, who appeared for the Australian Federation of Animal Societies (now ANZFAS), agreed that animals and humans both experience pain in similar ways. He added:

> Dr Kelly and others in Britain and elsewhere have discovered the chemicals that seem to be associated with the transmission of pain in

> the central nervous system and have found that these chemicals are present in all the major classes of animals, including fish.[11]

Difficulties in the Assessment of Animal Pain and Distress

4.20 The assessment of whether animals are experiencing pain or distress is often difficult since it is mostly done on the basis of indirect evidence. Criteria for assessment of animal well-being include:

(a) physical health;
(b) behaviour of animals in the wild;
(c) physiological measurements such as heart rate and hormone levels;
(d) abnormal behaviour patterns;
(e) animal preferences; and
(f) anthropomorphism.

These criteria, in many cases, cannot be used to make definitive statements about the level of pain or distress experienced by an animal. At best, they can give an indication of such suffering.

4.21 Disease and injury are major causes of distress and their absence is necessary to an animal's well-being. Animals may still suffer distress despite an appearance of good health. According to M. Stamp Dawkins:

> The occurrence of physiological and behavioural disturbances in apparently healthy animals suggest that other methods of assessing suffering should be looked for.[12]

4.22 Some people may try to draw inferences about the well-being of confined animals by means of comparisons between animals in restricted environments with those of the same species in wild or semi-wild conditions. However, genetic and

environmental differences between wild and domesticated animals make comparisons difficult. A difference in the behaviour of free and restricted animals in itself does not automatically mean that the restricted ones are distressed. Distress must be established by independent means.

4.23 The problem of physiological measurements such as heart rate and hormone levels is to decide how much of a physiological change an animal can tolerate before it can be said to be distressed. The taking of physiological measurements may also be stressful to an animal and this additional stress may distort the results.

4.24 With abnormal behaviour patterns, the question to be asked is: when does such behaviour constitute distress? Some abnormal behaviour clearly indicates distress because visible physical damage is done to the animal. However, abnormal behaviour often does not reach that level.

4.25 One method of research into stressful environments is by establishing animal preferences. This involves giving animals the opportunity to choose for themselves which environments they prefer. Animals may choose, however, an environment with which they are familiar rather than a 'better' one which they have not experienced. The results may be different if the animals had been raised in different conditions.

4.26 Anthropomorphism in the interpretation of animal behaviour should only be used in association with behavioural or other scientific information on the animals concerned. It is nevertheless very difficult to make judgements which avoid at least some degree of anthropomorphism.

Animal Pain Assessment

4.27 British veterinarians have developed a series of species specific assessments that enable the extent of pain being experienced by an animal to be defined in a general way. The elements involved in this assessment include:

(a) behaviour indicating pain, distress and discomfort: posture, vocalising, temperament, locomotion and other behaviour;
(b) common clinical signs: cardiovascular, respiratory, digestive, nervous and musculoskeletal, miscellaneous.

These elements are in addition to any changes in appearance and food and water intake.

4.28 Not all of the signs may be present simultaneously and no sign by itself is indicative of the degree of pain experienced. The scheme involves measuring or assessing a number of independent variables: bodyweight, appearance, clinical signs, unprovoked behaviour and responses to an appropriate stimulus.

> Scores of 0 to 3 are assigned to each of these variables in an animal ... While more precise quantitative assessments would be preferred this is not possible. Consequently, one has to try to group clinical observations into broad categories and the following have been assigned for this purpose: No obvious deviation from the normal range; possibly abnormal, ie, minor change; a definite change from normal but not marked; and a gross change from normal.
>
> Scores of 0 to 3 are assigned to these four groups with 0 given when no abnormal variation is detected.[13]

4.29 The broad categories of pain assessment and necessary action are set out in Table 4.1.

Table 4.1: Possible Interpretation of Total Scores from an Overall Assessment of an Experimental Animal

Total Score	Overall Assessment
0 to 4	Normal
5 to 9	Monitor carefully, should consider the use of analgesics and sedatives
10 to 14	Ample evidence of suffering, some form of relief must be seriously considered; should be under regular observation; seek expert advice; consider termination
15 to 20	Relief should be given, unless the animal is comatose. Is it a worthwhile experimental animal because physiologically it is likely to be abnormal? There is ample evidence of severe pain. If likely to endure, terminate the experiment.

SOURCE: 'Guidelines on the Recognition of Pain, Distress and Discomfort in Experimental Animals and an Hypothesis for Assessment', by P. H. M. Griffiths, Veterinary Record (April 20 1985, Vol.116, pp.431-436)

4.30 Such a scheme is species specific and requires a detailed knowledge of many dimensions of the normal behaviour, diet and metabolism of each species. It is particularly relevant for post-operative care as well as monitoring during non-invasive experiments. However, David Adams, an Australian expert in pain research, warned:

> Words such as 'measurement' and their like have limited application to pain. They imply the possibility of a system for ranking pain and a single universal formula for reckoning its severity. Pain is a perception in the physiological sense of the word and varies

> both in quality and intensity. Pain is 'pluridimensional'. A scale of severity would be spurious and, more importantly, inconsequential to pain relief or prevention. Pain is better categorised according to the action necessary to alleviate it. Diagnosis as opposed to measurement is implied here.[14]

4.31 The alternative approach to assessing animal pain is to grade the experimental techniques upon the basis of what is known about the techniques, the extent to which they are invasive, their length, degree to which analgesia is necessary etc. Dr A. Rowan provided a model for such a classification in Table 4.2.

Table 4.2: Research Techniques, Pain and Distress

Categories	Examples
1. No pain or only minimal and momentary pain	Injections*, blood samples, tube-feeding*, diet experiments*, breeding studies, behavioural studies without aversive conditioning, routine procedures from small animal vet. practice
2. Animals painlessly killed or anaesthetised animals not allowed to recover	Blood pressure studies, organ and tissue removal, studies on organ survival, perfusion experiments
3. Surgery on anaesthetised animals with recovery but where postoperative pain will be minimal	Biopsies, transfusion or vascular studies, cannulation, castration, pituitary removal in rodents using standard techniques, some CNS lesions
4. As above but with considerable postoperative pain	Major surgical operations, burn studies, graft studies
5. Experiments planned on unanaesthetised animals expected to become seriously ill from the treatment or to suffer considerable pain or distress	Toxicity testing, radiation, transplants of tumours or infections, stress, shock or burn studies, behaviour experiments involving aversive conditioning
6. Experiments on unanaesthetised animals (or only local anaesthesia) where the animal is curarised or paralysed	Some physiological or pharmacological studies on CNS

* These procedures may produce pathological states (e.g., injection of pathogens, feeding of toxic chemicals) and, if so, would have to be graded differently.

SOURCE: Dr A. Rowan, 'Of Mice, Models and Men', State University of New York, 1984, p.82.

Pain Classification System

4.32 There has been some debate in Australia whether the Code of Practice should include a pain classification system that would require researchers to specify in their protocols in which pain category their experiments would fall. It has been argued that a pain classification system would enable ethics committees to give special consideration to experiments which fall into the more severe categories of pain. It would also identify for non-scientist members of ethics committees those experiments which caused more than mild pain or suffering.

4.33 Although a pain classification system has some benefits, it has administrative problems and may bring about some undesirable practices.

4.34 There is the obvious problem of deciding in which category to place an experiment. It is inevitably a subjective decision even with documented criteria to assist experimenters in their decisions. It is also human nature to downgrade the severity of an experiment, particularly in cases where the level of pain is difficult to determine.

4.35 In a series of experiments, different levels of pain and suffering may be experienced by the animals. Should the categorisation be on the basis of the most painful, the least or the average? One painful experiment in a hundred may distort the categorisation if the most painful experiment forms the basis of categorisation. If the average is used, it may hide a few excruciating experiments amongst many mild ones.

4.36 Professor Taylor of the University of Sydney commented:

> I cannot see the advantage of such a scheme. In the first place, I think any sort of scale would be extraordinarily difficult to devise

> and agree on so that it became a matter of common consent all over Australia and, indeed, internationally that a grade 2 experiment meant exactly the same thing. Without that sort of agreement a scale would be meaningless.[15]

4.37 A pain classification system concentrates attention on the severe end of the scale and diverts attention from the other end. An experiment which causes any pain at all should be scrutinised carefully by an ethics committee. Even minimal amounts of pain should not be disregarded. The questions that should be asked of all experiments are whether animals need to be used at all and, if so, whether there needs to be any pain or distress. Experiments which fall in the lower end of the scale should not be disregarded as unimportant because they account for most of the animals used.

4.38 Professor Dorsch, Pro-Vice-Chancellor of the University of Sydney, argued:

> It (a pain classification system) would be positively counterproductive ... If an ethics committee gives you a grade 2 for pain, you think, 'I am not doing anything very painful so I do not really have to take much care of these animals'. It takes out the individual care and the individual responsibility for the experiment. So I think that sort of artificial scale, firstly, is difficult to establish and, secondly, would probably lead to less care than the responsibility being right there for looking at the animal and establishing whether it is suffering pain and discomfort.[16]

4.39 Dr Rose, in her capacity as Chairperson of the New South Wales Animal Research Review Panel, expressed the view that a pain classification scheme engenders a belief among experimenters that minimal pain in animals is acceptable and does not have to be treated or monitored.[17]

4.40 The level of pain or distress caused by an experiment is often determined by the experience and competence of the experimenter. Dr Hampson illustrated this point in her evidence by showing that one experimenter can keep distress to a minimum by proper and caring techniques while another experimenter will cause significant distress to the animal while conducting the same experiment.[18]

4.41 In evidence to the Committee, Dr W. Anderson, representing the NHMRC, said that pain categories might be useful for statistical purposes, referring, by way of example, to the collection by the Victorian Government of statistics on types of experiments.[19] This use of pain categories is subject to the same problems as those inherent in the use of categories by ethics committees. Such categories are only useful if they can be defined in such a way as to make the statistics meaningful. However, because classifying pain is so subjective and defining categories is so difficult, the Committee can see little purpose in including pain categories in statistics on animal experimentation.

4.42 Apart from the severity of pain, there are other factors to be considered, such as the duration of the pain and the types of procedures being used. Then there are other forms of stress or anxiety occurring either during or after an experiment which might not be painful but might be more distressful to the animal than pain itself. An experiment might, for example, result in paralysis of part of the body or in the impairment of some bodily function. This might be more distressful to the animal than being subjected to pain.

4.43 The draft revised Code of Practice states:

> The AEEC (ethics committee) may adopt or develop a system to categorise experiments, to help identify areas of special concern.[20]

4.44 Although this provision in the draft Code of Practice does not specifically require the adoption of a pain classification scheme, it is couched in a way to suggest it is preferable to establish one. The Committee believes that its adoption will not serve the interests of animal welfare.

Pain Relief in Laboratory Animals

4.45 Despite the difficulties outlined in measuring and assessing pain as experienced by animals, the need for pain relief in animals used for experimental purposes is clear. Dr P. Flecknell, a leading expert on analgesia and anaesthesia, has outlined the basis on which experimenters should consider relief of pain.

> Until further progress is made in assessing the nature of pain in animals, it should be assumed that if a procedure is likely to cause pain in man, it will produce a similar degree of pain in animals. Although such anthropomorphic views have been much criticized, no satisfactory alternatives have so far been proposed, therefore the relief of pain, particularly in the postoperative period, must be considered essential.[21]

4.46 According to the same author:

> Anaesthesia is a relatively neglected area of laboratory animal science. Many of the advances in technique which have been introduced into human clinical anaesthesia have been largely ignored by research workers and, at the time of writing, ether and pentobarbitone remain the drugs which are most widely used for anaesthetising laboratory animals. As will be discussed later, both of these drugs have serious disadvantages as anaesthetics, and they are generally better replaced by other agents.

> A second common failing of current laboratory animal anaesthetic practice is the lack of consideration given to the pre- and post-operative care of the animal. Careful attention to the needs and well-being of the animal during these periods should be considered an integral part of the anaesthetist's responsibilities. Not only will such attention do much to prevent the animal from experiencing any unnecessary pain and distress, it will also considerably reduce anaesthetic mortality and hasten post-operative recovery.[22]

4.47 Control of pain extends well beyond the administration of analgesia. Good surgical techniques and provision of appropriate areas for recovery from anaesthesia and for post-operative nursing are also important.

4.48 There is a need for continual in-service training of experimenters to assist them in keeping up to date with developments in anaesthesia and analgesia. Few opportunities for training in this area are currently provided in Australia.

Pain in Codes of Practice

4.49 The draft revised Code of Practice contains the following general principles on the infliction of pain on experimental animals and the use of anaesthesia and analgesia:

> 1.12 Experiments must be designed to avoid pain or distress to animals. If this is not possible, pain or distress must be minimised.
>
> 1.13 Pain and distress cannot be easily evaluated in animals and therefore investigators must assume that animals experience pain in a manner similar to humans. Decisions regarding the animals' welfare must be based on this assumption unless there is evidence to the contrary.

1.14 Experiments which may cause pain of a kind and degree for which anaesthesia would normally be used in medical or veterinary practice must be carried out using appropriate anaesthesia. When it is not possible to use anaesthesia, such as in certain toxicological or animal production experiments or in animal models of diseases, the end-point of the experiments must be as early as possible to avoid or minimise pain or distress to the animals.

1.15 Investigators must avoid using death as an experimental end-point whenever possible.

1.16 Analgesic and tranquillizer usage must be appropriate for the species and should at least parallel usage in medical or veterinary practice.

1.17 Animals which develop signs of pain or distress that are more severe than is acceptable in medical or veterinary practice must have the pain or distress alleviated promptly or be killed humanely without delay. Alleviation of such pain or distress must take precedence over finishing an experiment.

4.50 Sections 3.3.1 to 3.3.15 of the draft revised Code of Practice set out the specific steps necessary for these general principles to be implemented. Emphasis is placed on monitoring animals for signs of pain and distress. The approach taken draws heavily on the work of Morton and Griffiths discussed earlier in this chapter.

4.51 In its discussion of pain and anaesthesia, ANZFAS recommended to the Committee:

> That no procedure be permitted which may cause pain or, suffering (in its broadest sense), of more than trivial extent unless -
>
> i) appropriate analgesia or anaesthesia is administered including during any period of post-operative care, or
>
> ii) other refinements are utilized,
>
> to eliminate the potential for such pain or suffering.[23]

4.52 This is a more restrictive form of the requirement in the current Code of Practice which requires that:

> Procedures which are liable to cause pain of more than trivial extent, or those other than of a routine husbandry nature carried out in accordance with accepted farming practice, must not be carried out without anaesthesia which is adequate and appropriate for that species of animal and is administered for the duration of the procedure.[24]

4.53 The relevant provision in the draft revised Code of Practice is:

> Experiments which may cause pain of a kind and degree for which anaesthesia would normally be used in medical or veterinary practice must be carried out using appropriate anaesthesia.[25]

4.54 ANZFAS made the following observations about the proposed new provision:

> (i) the existing, pain threshold of 'more than trivial extent provides a higher standard of animal welfare than does the proposed threshold of normal 'medical and veterinary practice';
>
> (ii) the normal treatment of a human or an animal in a medical or veterinary practice, where the object of the treatment is for the benefit of the individual concerned, should not apply as the standard in circumstances where the animal is subjected to pain or distress as part of an experiment;
>
> (iii) the experimental animal should not be subjected to levels of pain that would be unacceptable to healthy human volunteers in a similar experiment;
>
> (iv) the existing pain threshold of 'more than trivial extent' provides a clear, unambiguous guideline of the circumstances in which anaesthesia and analgesia are prescribed

> by the Code. By contrast the proposed threshold is loosely worded, and subject to variable interpretation. There is ambiguity as to whether veterinary practice includes procedures of a routine husbandry nature.[26]

4.55 Central to the ANZFAS case is the assertion that the concept of 'pain of more than trivial extent' provides a 'clear unambiguous guideline' for the level of pain which requires anaesthesia. Professor Singer commented:

> I have understood this is to mean the kinds of pain that one would inflict on humans without too much thought. For instance, giving an anaesthetic itself will involve an injection and that may cause some momentary pain. But I would consider that to be pain of a trivial extent and something that could be justified. The same may be true of drawing a blood sample. Again, that is something that would be done in humans without the use of an anaesthetic.[27]

4.56 However, as Dr Hampson pointed out in evidence, the giving of an injection may cause distress if the animal is not handled properly by the experimenter.

4.57 Dr Gleeson, the Executive Officer of the ethics committee at La Trobe University, emphasised the subjective nature of this concept. Asked to define it he replied:

> I cannot really define it for everybody else but in my mind I would, perhaps, know what trivial is to me. In my experience at La Trobe, I find the experiments there to be pretty non-invasive and whilst for some of them you may not use the word trivial, I think that the amount of pain involved is small and the animals were always closely monitored so that if it does get beyond a particular, again subjective, threshold, something can be done about it.[28]

4.58 Given the subjective nature of the 'trivial extent' option there can be no guarantee that it will lead as the first part of the ANZFAS comment suggests to a higher standard of animal welfare than the proposed alternative.

4.59 The variability of the human pain threshold also casts some doubt on the usefulness of the test proposed in part (iii) of what would be acceptable or unacceptable to healthy human volunteers.

4.60 The proposed wording in the draft revised Code of Practice is an attempt to establish a more objective basis for decision-making by ethics committees. However, the reference to medical and veterinary practice needs to be tied more closely to specific species. What is acceptable practice for one species may not be for another species. The spaying of cattle in remote areas of Queensland, for example, is routinely done without anaesthesia. Surgical interventions of a similar nature conducted on companion animals would normally be done under anaesthetics.

4.61 The Committee prefers the following wording instead of that which is contained in the draft revised Code of Practice. It ties veterinary and medical practice closer to specific species and procedures.

> Experiments which may cause pain of a kind and degree for which anaesthesia would normally be used in the area of medical or veterinary practice most closely related to the proposed procedure and species, must be carried out using appropriate anaesthesia.

4.62 What both definitions (that is, Code of Practice and ANZFAS) point to is the shared moral consensus within the community which acknowledges that animals are not to suffer pain above some fairly minimum level. The definitions in the Code of Practice are there to guide experimenters in the planning of projects and assist the ethics committees in their assessment of them.

4.63 Inevitably, a decision by an experimenter or an ethics committee whether to use anaesthesia will be subjective, irrespective of which definition is used in the revised Code of Practice. Whatever wording is adopted, the meaning is clear: minimal pain only will be acceptable to the community and to the authorities which sponsored the revision of the Code of Practice. Where tightly defined terminology is impossible by virtue of the subjective nature of the topic, the spirit of the regulatory provisions overrides any interpretation of the actual words used in the regulation. The intention of the Code of Practice is clear and it is the intention which is paramount in the interpretation of the provisions of the Code of Practice in this subjective area.