

The Animal Welfare Ratchet

A vet's eye view of animal welfare science

This paper is an attempt to discuss why, in the name of animal welfare, increasingly costly and restrictive constraints are being placed on those whose livelihoods or recreational activities involve animals. Can this be justified on the basis of increasing scientific knowledge concerning the propensity of animals to suffer or are there alternative explanations? Clearly, animals themselves haven't changed much in recent years but have we been keeping them in a manner likely to induce more suffering, are we becoming less tolerant of suffering or are we learning more about this subject and realising that we had previously underestimated the problem?

There have always been some who have campaigned against field sports and animal experimentation but public agitation over animal suffering appeared to escalate in the latter half of the 1960s, a period of rapid social change, of altered moral attitudes and encouragement of free expression. More and more attention was focussed on human rights and, maybe, the animal rights movement blossomed for the same reason. By this time, much of urban society was cut off from its rural roots and knowledge of animals was (and still is) principally gleaned from anthropomorphic written and televised presentations rather than from direct contact. Simultaneously, pharmaceutical research was expanding fast, necessitating the use of more experimental animals, and intensive livestock farming was also taking off, both providing extra opportunities for outrage and protest. It was against this background of public disquiet that the government responded by making substantial research funds available for the study of animal welfare and a new, supposedly applied, science was born, akin to sociology in the medical field. Previously, veterinary surgeons had been considered the arbiters on all matters of animal welfare and vets continue to hold sway over the physical well-being of livestock. The new science primarily concerned itself with studies of mental health and mainly attracted ethologists and physiologists. It goes without saying that it tended to draw to it researchers who were inclined to the view that current welfare standards were inadequate. In other words, they became advocates or spokesmen for the unspeaking subjects of their studies and, in so doing, further strengthened the animal protection lobby groups.

Animal welfare researchers generally agree that welfare involves both functions and feelings. However, not unreasonably, they are primarily concerned with feelings – if animals didn't have them, ethical concern should be no greater than that for a wilting vegetable or a faulty computer. What evidence, therefore, do they use to adduce the existence of suffering in subjects that cannot give verbal accounts to them? Depending upon their backgrounds, they look at behavioural or physiological responses to adverse situations. If animals behave or respond physiologically as we would to a noxious experience, then they say, by analogy, they should feel as we would. If analgesics or anxiolytics modify behaviour or physiological response in animals in a manner similar to that which would be seen in humans, it is taken as even better evidence that animals must be capable of suffering from pain and anxiety. It is also claimed that even when animals appear to be thriving, they may still be suffering mentally because confinement deprives them of the opportunity to perform important behaviours for which they were evolutionarily programmed. Welfare scientists accept that lack of self-report by their subjects means that the evidence they adduce for suffering is only indirect. However, their ethical beliefs then kick in and they fall back on the precautionary principle to point out that, as no-one has proved lack of ability to suffer, suffering must be presumed. Their point of view, sometimes referred to as “critical anthropomorphism”, has generally been accepted both by the public and by politicians. Conclusions based on it have become officially approved as the basis on which to legislate on matters involving animal welfare in many European countries. The enormous weakness of this position is not the claim that animals can suffer but the assumption that the range and intensity of their accessibility to suffering will be the equivalent of our own. Uncritical acceptance of “critical

anthropomorphism” plays directly into the hands of animal rights organisations and has affected even erstwhile moderate animal charities, such as the RSPCA whose policy stance has become radicalised and more extreme.

Animal welfare research has largely been directed towards studies of domesticated animals. Its proponents have championed the Five Freedoms for farm animals, now to be applied to companion animals in the proposed new Animal Welfare Bill. To all intents and purposes, this is an animal rights charter and demands that our livestock should be free from pain, injury and disease, free from discomfort, free from hunger and thirst, free from fear and distress and free to express normal behaviour. These are no doubt noble aspirations. However, when encoded into criminal law and enforced literally by zealots, they make the best intentioned animal keeper liable to prosecution. A moment’s thought would lead any sensible person to the view that humanity cannot even guarantee such freedoms for itself. However, it is even more apposite to consider how the lives of wild animals stack up in the context of these freedoms. In short, they don’t. If animals are capable of suffering in the manner that humans can suffer, as inferred by welfare researchers to be the case for domesticated stock, then the lives of wild animals must be truly miserable – so stressful in fact that it is amazing that any ever cope with the psychological challenges of free living. However, their usually attenuated, violent and ruthlessly competitive lives (“red in tooth and claw”) are not obviously lived in a state of self-pity! Perhaps, therefore, welfare researchers have overestimated the propensity of non-human animals to suffer psychologically.

The politics of animal welfare has, to some extent, been lagging behind an improvement of the science. Recently, the published views of researchers have been becoming less strident. For example, it is now generally accepted that abnormal behaviours, such as stereotypies, may indicate coping behaviours in barren environments rather than being indicative of suffering: Gone are the days when short-term elevations of blood cortisol levels were assumed to be indicators of poor welfare as it is now appreciated that stress changes must become maladaptive in the face of challenges that cannot readily be coped with before welfare becomes a problem. The idea of long term mental suffering in animals that are growing, converting food and breeding efficiently has largely been abandoned because of overwhelming evidence that central effects in the brain will have peripheral consequences in the stress and immune systems which will ultimately damage function: Some welfare researchers have even intimated that public pressure to ban foie gras production and eggs from battery cages are due to ill informed public prejudice rather than to any compelling scientific evidence.

The really important rethinking about animal welfare has, however, resulted from the rapid advances being made in other scientific disciplines, namely neurobiology and experimental psychology. In essence, access to feelings depends upon the existence and level of conscious awareness. What level of brain development is necessary before feelings become possible or probable? Science is still a long way from being able to explain how physico/chemical changes in the brain give rise to “raw feelings” (emotional qualia). However, studies of evolution and comparative brain anatomy are giving information about the likely levels of consciousness accessible to different classes of animals. The human empathic mind finds it difficult to accept the counter-intuitive view that it is possible that emotional behaviours may not necessarily be linked to conscious emotional feelings in non-human animals. Nevertheless, several of those who research this field, admittedly the minority, believe that humans (and, to a lesser extent, higher primates) are alone in having any conscious experience at all.

What is not in dispute is that lessons from neuroscience and experimental psychology demonstrate that the hypothesis that animals have access to conscious feelings that are of similar range and intensity to our own is no more plausible than one which maintains that they have none. However, most animal welfare scientists refuse to accept that feelings in mammals and birds are in any way related to level of consciousness or brain development. They argue that, once animals have

evolved beyond reliance upon hard-wired behavioural strategies and stimulus response learning and their behaviour becomes flexible, relying instead on stimulus-association reinforcement learning, conscious feelings must be present to drive the flexible behaviours. They argue that the emotional system is seated in older parts of the brain and that access to consciousness would have been hugely advantageous to all mammals from an evolutionary perspective. While it is obvious that flexible behaviour would confer evolutionary advantage, they fail to accept the possibility that signals from the senses could modify the behaviour and physiological responses of animals at a subconscious level without the need for conscious feelings to drive the system.

Cognitive ethologists are discovering an ever expanding range of intelligent behaviours, suggestive of pre-planning, in a range of vertebrates - birds and fish included - and even in invertebrates. This evidence of intentionality about behaviour is deemed sufficient by many to allow animals full access to human-type feelings. However, the argument is in no way conclusive. Much human intelligent behaviour has been shown to arise unconsciously even though the subject is certain in his own mind that it is the result of conscious decision. Some spider species, with very small brains, apparently intelligently and flexibly pre-plan their approach to prey, depending upon circumstances. It has recently been shown, however, that variability of response to a given stimulus by a given animal under different circumstances can be the result of prior experiences having been encoded in the hippocampus, an older part of the brain that would not normally be associated with conscious awareness. Further, one ought to acknowledge that evidence of intelligence, as opposed to evidence of conceptualised thinking, is not necessarily an indicator of the ability to suffer in animals. Despite the prognostications of science fiction writers, computers are far from demonstrating consciousness despite being capable of highly intelligent calculations.

There is a growing acceptance that man is probably unique in possessing so-called reflexive consciousness. While most vertebrates demonstrate first order intentionality, aware at the moment (in the present) of themselves and of what their senses are telling them, man has fifth order intentionality. He knows his own mind and can guess at what's going on in the minds of others. He can reflect upon the past, imagine and plan for the future and understand the concept of death. Apes may have second order intentionality with monkeys scoring slightly higher than non primates. Interestingly, domesticated dogs, possibly as a result of thousands of years of artificial selection by man, show some indications of having greater levels of intentionality than apes and certainly than of their wild forebears.

It is consistent with modern views of evolution that advance is not necessarily linear and continuous. Reflexive consciousness could well be an emergent property that divides us by a wide gulf from the rest of the animal kingdom, having arisen as a result of the greatly expanded "computational capacity" of our brains and the possible addition of new modules (e.g. dorsolateral pre-frontal cortex), new types of neurones and greater gene expression. Despite the enormous expansion of the frontal lobes of the brain in higher primates relative to non-primate mammals, it is still very considerably less than has occurred in our own. Thus, our closest relatives, the chimpanzees, are probably nearer to rats than ourselves in their levels of consciousness and, certainly, monkeys seem to be.

How does first order intentionality translate into conscious awareness of feelings? This is a murky area. Some think that this level of awareness is subconscious and that one must know what one knows or be aware that one is aware (have a theory of mind) before access to conscious feelings becomes possible. The majority, however, disagree or think that the precautionary principle should be used to assume that first order intentionality allows access to consciousness of some sort. Reflexive consciousness, however, is in a different league. The potential for and extent of some sorts of suffering in other animals is thus, at the very least, limited relative to our own. We are apt to prolong and magnify the intensity of our own emotional feelings through reflection and may even generate emotions from our minds rather than through our senses – a top down rather

than bottom up neurological route. The top down route is not available for non primate animals and, because they are “stuck in time” or living in a brief time window only a little either side of the present, they cannot amplify those emotions left to them by reflecting thereon. Of course, they can gain access to their long term memories on the presentation of suitable cues but not bring them to mind endogenously in an abstract fashion.

The reason why wild animals can carry on their lives with equanimity in circumstances that we would find intolerable is almost certainly due to their limited range and intensity of feelings. However, this is not to state that animal welfare is of no consequence. Most neuroscientists and experimental psychologists believe that non-human animals possess sensory or core consciousness. Because they are incapable of mental time travel and thus won't worry about past noxious sensations unless the circumstances that first precipitated them recur in the future, it seems that one's primary concerns over animal welfare should relate to those conditions that are likely to cause chronic adverse sensations (those which might produce on-going unpleasant feelings that are independent of the need for reflection). Perhaps, therefore, one should be most concerned about such things as malaise and chronic pain. However, a caveat is needed here: In primates, there are two tracts in the brain which transmit pain and other discriminative sensations from the body, one of which is common to all mammals and old in evolutionary terms. The second, which goes to the forebrain where consciousness is supposed to reside, is poorly developed in monkeys but very well developed in man. The existence of the newer tract, which is absent in non primate mammals, allows meta-representation of the state of the body which gives access to conscious emotional awareness. Severance of this newer tract near the top end has been undertaken in humans with intolerable levels of pain. The surgery effected marked improvements in the welfare of such patients. However, they insisted that they still felt the pain – it hadn't gone away but it no longer bothered them. Perhaps, they felt as animals might feel – pain as a sensation but not as an emotion. Veterinarians, certainly, are often surprised by the apparent lack of concern with which their patients respond to procedures which would be expected to be deeply distressing to humans.

Even scientifically precise animal welfare scientists can have their findings exaggerated and misinterpreted by the animal protection lobby. An example is the subject of pain in fish. The results of experiments in this subject fulfil the criteria needed to make a diagnosis of “animal pain”. However, this may merely be what, in man, would be called nociception (the totally unconscious receipt of and response to pain signals). Alternatively, it might be pain consciously experienced but only as a sensation and not as an emotion. Of course, it could, much less plausibly, be pain as we would consciously experience it. Needless to say, it is only the last possibility that is given credence by the protectionists or even the general public who do not conceive of pain as other than what they themselves have experienced. It should be noted that analgesic drugs that block nociception would block pain behaviour in animals. Thus evidence of their efficacy is not necessarily evidence of conscious pain.

While it is scarcely surprising that animal protectionists latch on to any new finding that may publicise animal suffering, it is much more surprising that those who use animals in their work also contribute inadvertently to the lobbyists who attack them. If it is accepted that non-human animals have the same range and intensity of conscious feelings as we do, one cannot help but sympathise with the animal rights cause. However, to claim that they don't is to appear heartless and self-serving. Animal keepers are therefore reluctant to use this claim as their most legitimate defence.

In summary, during the last decade, there has been a growing list of examples of clever animal behaviour in invertebrates and fish as well as in mammals and birds. Some animal welfare scientists are inclined to take this as strengthening their evidence for the existence of sophisticated conscious feelings throughout the animal kingdom. However, none of this cognitive ability requires a brain that allows more than first order intentionality and, to the extent that invertebrates

can demonstrate behaviour which, in some cases, appears to match in intelligence that which can be observed in mammals, one could argue that this level of cognitive ability is less rather than more likely to be associated with conscious feelings. Simultaneously, research is revealing the massive differences in the power of human brains relative to those of the rest of the animal kingdom, highlighting the dangers of anthropomorphism upon which most animal welfare judgements are based. At the very least, the appreciation that we are unique in the animal kingdom should allow some limits to be placed on “benefit of the doubt” or precautionary principle defences of ever greater legislative imposition on grounds of animal welfare. Legislators should not assume that their only legitimate source of expert advice comes from scientists working in this discipline, nor that it is necessarily impartial, laden as it is by ethics-based value judgements. Instead, they should seek it from those who study and understand the workings of the brain or who have the practical benefits of spending their lives working with animals.

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