AWSELVA
THE ANIMAL WELFARE SCIENCE, ETHICS & LAW VETERINARY ASSOCIATION

Sentience – Where does sentience start?

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Mary Sumner House, Tufton Street, London

A summary of talks

Sentience – Where does it start?

Professor Donald Broom, Professor of Animal Welfare (Emeritus) in the Department of Veterinary Medicine at the University of Cambridge

The term sentience is used more widely now. Previously it was used to refer to purely sensory perception – what the animal could perceive of what was happening around it. Now we use it to mean the capacity of having feelings as distinct from 'having the feeling of something'. Feelings are evidence of higher order brain function.

To understand levels of sentience one of the starting points is to use tests and tools to monitor what concepts animals have, for example using monitoring equipment attached to the brain to test for response and recognition of stimulus. Another measure is to study an animal's assessment of a situation for example what is the likelihood of mating success following a course of action.

Levels of sentience can include addressing answers to the following abilities:

- To evaluate the actions of others in relation to itself and third parties
- To remember its own actions and their consequences
- To assess risks and benefits
- To have some degree of awareness

An animal is either sentient or not, but sentience varies in complexity ranging from perceptual to executive consciousness. Self-awareness as a concept means being self-referent – differentiating yourself from other things and understanding your own abilities for example not picking a fight with a stronger animal. This degree of awareness is widespread.

All animals can learn and learning is not necessarily characteristic of sentient animals. Nothing is either purely instinctive or purely innate, there is always potential for environmental effects on things that have a genetic basis.

Perception of pain is an interesting area of study and it must be considered that pain reception is physically different in different species i.e. fish perceive pain in a different area of their brains than humans do. The study of pain using MRI scanners is problematic because of the stress to the animal of being in that environment. There is good evidence for pain perception in crabs, prawns and cephalopods but little so far in insects and spiders.

Memory is essential to sentience. The assumption that some animals can't perceive of the past, present and future is false. Animals can be strategic thinkers, as shown by a study into cleaner fish showing that they will select the food source of a parasite-ridden passing fish rather than a parasite laden fish which is waiting around to be groomed. Learning behaviour in a variety of animals has been shown under test conditions, and in some tests parrots and wrasse have outperformed primates, showing that the hierarchy of learning is complicated.

Which animals are sentient and which animals are sentient when, is an important question. Until the 1970s babies were operated on without anaesthetic up to around 6-12 months. When does an embryo become sentient? Other important questions include how does sentience affect what animals we as humans wok to protect? Do animals more like us have more value? Should we use analgesics when we know they have or may have a developed pain system?

Sentience – Politics, Biology and Law
Peter Jinman OBE, Lay Member, Chair of FAWC, past president of both BVA and RCVS

Historically, human concern for animals has moved on from the earliest days of fair treatment of animals and protection of working animals to consideration in the enlightenment of 'can they suffer?' to behaviourism in the 1800s to active protection following publication of Animal Machines and the Brambell Report in the 1960s.

Going forward the UK Government has made clear that sentience will be covered in UK law following Brexit but the exact form has not yet been decided. Many practical questions need to be considered – Do all animals feel the same sensations? Are early procedures after birth acceptable – tail docking puppies? Is a short, sharp pain acceptable? Is it acceptable to cause distress to pests? Are animals sentient during hibernation? Is pet keeping wrong? Such practical questions need to be considered with regard to policy decisions.

Sentience in snails, pain in prawns, consciousness in cephalopods - (what) do invertebrates feel and think?
Dr David Williams, Associate Lecturer, The Queen's Veterinary School Hospital, University of Cambridge

Do insects and animals we are less familiar with and wouldn't consider domestic animals feel pain?

Bees have been shown to drink up more liquid morphine after a leg amputation. However be careful of ascribing aversive behaviour as pain perception – amoeba will move away if prodded. Yet highly developed behaviour can be observed in species we previously wouldn't have expected because we hadn't investigated it before, for example an octopus opening a jar to obtain food.

Insects can operate their own very complex behavioural systems, such as the parasitic wasp that paralyses its cockroach prey, bites off its antennae to disorientate it, lays its eggs on the

cockroach before walling it up while the eggs grow. Where is this behaviour learned? What does it say about sentience? Clearly these wasps are capable of following steps of behaviour though they seem to lack ethical feelings about that behaviour!

Exploring the emotional lives of wild animals, and what it means for their welfare
Helen Lambert, Global expert on animal sentience, published scientist and accomplished researcher in animal welfare science, formerly Sentience Manager at World Animal Protection

There is much anecdotal evidence of empathic behaviour in wild animals – such as female elephants helping each other with foaling and pulling out tranquiliser darts from other elephants. Elephants have also been shown to exhibit a kind of PTSD after being separated from their calves or having been kept in captivity. Long term problems following a trauma have been shown in several species and might exhibit themselves in behaviours like stereotypies and hyper vigilance long after the trauma has been removed.

For animals better suited to being in the wild rather than kept as pets, such as African Grey Parrots this has serious implications, especially in relation to the long distances they might be transported as part of the exotic pet trade and the poor conditions in which they are likely to be kept. Crustaceans have been subject to particularly poor conditions, even shrink wrapped and sold alive to UK supermarket customers or sent through the post.

Better understanding of animal's cognitive abilities and their emotional lives can help us bring an end to animals in captivity.

Where does Sentience feature in the Law worldwide?
Dr.iur. Antoine Goetschel, President, founder and CEO of the Global Animal Law Project, International Consultant in Ethics and Law, Animal Advocate – Zurich, Switzerland

Through work with the Global Animal Law Association, working with lawmakers and politicians around the world, still animals are being spoken of and considered as inanimate machines in the manner of Descartes. Animals require protection from harm, not just because they can suffer and feel pain but because it is the right thing to do to respect their inherent dignity and value as individuals.

In 1992 the concept of the dignity of creatures appeared in Swiss law, the first country to recognise this paradigm. Giving legal protection to animals in respect of their dignity. Korea has also implemented this idea and Dutch law covers the individual rights of animals. Dignity refers to the right of the animal not to be humiliated and to consider the animal's state of anxiety as well as the more blunt element of pain.

Collaboration is required to bring about effective legal status and protection of animals. The UN, OIE and vets and ethicists should work together to achieve this and stand up for animals with a warm heart and cool head.

Where does sentience start? A paradigm shift

Ruth Layton, Group Sustainability Director at BMK Holdings, founder of the Food Animal Initiative

Upon founding a business aiming to make a real change in the way animals are farmed, Ruth was frustrated that although some change happened it was slow and not enough. It is not enough just to recognise sentience, animals have an inherent value because they *exist*. Like ancient culture we must have more reverence for all living things. Is consciousness more than just the brain and our internal wiring?

Speaking to people as consumers means they will make financial and selfish decisions but speaking to people as citizens prompts them to make less selfish and more responsible decisions. Ruth has learned to speak to her food producer clients in this way to achieve better results. If we come to issues in this more considered way then we stand more chance of achieving real positive change.

Discussion panel

Some interesting comments came from the discussion following the talks:

Where does cognition come from at an anatomical level?
The same processes are happening in different places in brains of different species. Information that primates will process in the neocortex are processed by birds in the striatum. Animals have different brain structures, but essentially the same cell structures. And it must be recognised that species, often regarded as 'lesser' species can do things that other species can't e.g. birds can outperform primates in many tasks.

From 1-10 how sentient are these sample species – honeybee, lobster, salmon?
Some panellists thought 10 for all three. Some basing this on pain perception, some on communication abilities. 10 years ago a report made for developing guidelines on analgesia use recommended that it not be necessary for invertebrates, so perhaps bees might be considered less sentient?

How to turn sentience research into real action?
Academics can be too focused on publishing research locked in an ivory tower. We need practical change such as happened with plastic bag usage. Possibly more celebrity endorsement of animal issues. Also targeting industry as well as continued rigorous science, education and communication.