



Module 3

Behaviour and Animal Welfare

Student Activities

Questions

1. Read the following statement and indicate if it is true or false.

(1 mark)

Measures of behaviour can tell us more specific things about an animal's experience than measures of physiology alone.

Answer: true.

2. During a consultation in practice, vets can make physical observations of an animal in order to gauge their health status. It can be equally important for the veterinarian to observe and consider an animal's behaviour in this context. Using examples, explain why.

(4 marks)

Animal welfare concerns three interrelated areas: physical functioning, feelings, and performance of behaviours that are important to the animal. Behaviours can reflect an animal's physical functioning and associated feelings. Vets can use behavioural measures associated with physical functioning ('clinical signs') to diagnose a disease (a physical functioning aspect of welfare), and to identify associated negative feelings such as pain and nausea associated with the disease or associated treatment side-effects.

3. Explain why veterinary medicine has not traditionally been concerned with animal behaviour.

(4 marks)

1. Animals may physically function very well even though they may be experiencing negative feelings as a result of being unable to perform important behaviours.
2. Therefore veterinary clinical work has not typically included behavioural measures of how animals feel when they are unable to perform behaviours that are important to them.
3. Owners may not be aware of the broader behavioural aspects of welfare, so they do not typically consult vets about them.
4. Therefore vets have not traditionally talked about whether their animals have the opportunity to perform behaviours that are important to them.

4. Welfare scientists have become increasingly involved in examining whether the performance of a specific behaviour in its own right can be important to an animal and his/her welfare. What information is needed before these preference tests can be carried out, and how should it be obtained?

(3 marks)

If we want to know how important performing a behaviour is to an animal we must first ensure we have a good understanding of what behaviours a given animal species is capable of performing, so its full behavioural repertoire. To do this we need to observe the species or its closest relatives in the wild.

5. Describe two categories of behaviour that should be monitored when observing an animal species in the wild in order to gain an idea of its full behavioural repertoire. Include an explanation of how the animal should be monitored.

(3 marks)

- Reproductive behaviour including courtship behaviour; mating behaviour; parturient behaviour and maternal behaviour.
- Feeding behaviour, including behaviours directed towards seeking and obtaining food and behaviours involved in consuming food.

These behaviour categories should be monitored using time budgets, to find out how much time is spent, and the frequencies with which animals are engaging in these different behaviours.

6. An animal's motivation to perform a certain behaviour may be influenced by various internal and external factors. Identify four of these.

(2 marks)

- Genetics (humans have selectively bred lines of animals for certain behavioural tendencies)
- Emotional state (cognitive bias)
- Stress response (can inhibit eating and defecating/urination behaviours)
- Presence of disease (an animal with a disease may feel weak and unable to perform otherwise important behaviours)

7. A landmark study in 1989 by Stolba and Wood-Gush involved taking a group of domestic sows who had previously been reared and housed in intensive conditions and introducing them into a large woodland enclosure. Describe what this study revealed and its implications in terms of the potential impact of confinement on animal welfare.

(5 marks)

When the sows were released into the woodland enclosure they soon showed a wide range of behaviours and spent very little time doing nothing. For example, they rooted, moved through the woods, interacted with others, wallowed when the temperature was warm, and created nests with grass when they were about to give birth. They no longer showed repetitive bar-biting behaviour.

This knowledge indicated that when the environmental cues were different, the sows had the urge to perform a range of behaviours. This provided the impetus for research on whether close confinement might cause them to suffer because they were unable to perform those behaviours if they were not in a woodland enclosure.

8. Identify two examples of behaviours that are primarily motivated by internal stimuli. Describe the main purpose of these behaviours, and the welfare implications associated with the animal not having the opportunity to perform them.

(4 marks)

- Two of the following:
 - a) feeding behaviour
 - b) drinking behaviour
 - c) resting behaviour
 - d) grooming behaviour
- These behaviours enable the animal to preserve their physical state.
- Animals need to perform these behaviours in any environment, and research shows that if animals are housed in such a way that they cannot eat, drink, rest, etc., the motivation to perform these behaviours increases until these life-sustaining behaviours can be performed.

9. As a clinician in practice, it is essential to have a full and scientific understanding of animal motivation and behaviour in order to correctly handle, manage, treat and safeguard the welfare of animal patients. Explain a scenario whereby without this understanding, an aggressive dog may be misunderstood and mistreated.

(2 marks)

When a dog growls at a vet during examination in the clinic, the vet may interpret this as dominance aggression and may try to dominate the dog. However, because the vet is not a member of the dog's social group and is not competing with the dog over the dog's resources, dominance cannot be the dog's motivation. Instead, the motivation is generally fear, which is very different from social dominance and requires different solutions.

10. There is a growing amount of research exploring cognitive bias in various animal species. Define cognitive bias, and explain how this may be used to measure animal welfare.

(4 marks)

In humans, cognitive bias concerns the process whereby a person's emotions can influence their cognitive capacities, such as learning, memory and judgments. For example, a person who is depressed may be more susceptible to viewing ambiguous (non-negative and non-positive) stimuli or events as negative. A person may be more pessimistic about future events when s/he is sad than when s/he is happy. As humans and domestic animals may have neural similarities, it is possible that the process of cognitive bias may arise in animals too. In terms of animal welfare, this could mean that an animal experiencing a negative mood state such as fear may be more likely to interpret an ambiguous stimulus as a threat, which could in turn increase his/her levels of fear and stress.

11. An animal's strength of motivation to perform certain behaviours can be measured scientifically through research. Describe two examples of research into the measurement of how hard an animal will work for the opportunity to perform a particular behaviour.

(3 marks)

- When hens are ready to lay they will squeeze through narrow gaps, or push open heavily weighted doors, in order to gain access to a nesting area. So, nesting behaviour seems to be important for hens to perform when they are getting ready to lay.
- Research in which heifers pressed a panel repeatedly in order to have the opportunity to rest for a total of 13 hours per day. They were not so motivated to work for the opportunity to rest for longer than 13 hours. So, resting for 13 hours a day seems to be important to heifers.

12. The performance of stereotypic behaviour or redirected behaviour can indicate that an animal has a strong motivation to perform a behaviour but cannot fully do so. Using examples for each, describe stereotypic and redirected behaviours.

(4 marks)

A stereotypic behaviour is a repetitive behaviour pattern that has no obvious purpose in the context in which it is performed. For example, sows biting the bars of their stalls, wild cats pacing in cages, and horses weaving (moving from side to side) and crib-biting (biting their stable doors or mangers). Elements of normal behaviour are seen in the stereotypic behaviour performed, but the repetitive pattern, frequency and duration in which these behaviour sequences are performed are abnormal.

Redirected behaviours are behaviours that are not abnormal in themselves, but that are directed towards a less appropriate target animal, object or substrate. For example, cross-suckling behaviour shown by calves towards other calves. In this case, sucking is a normal behaviour when directed towards the cow's udders, but is not normal when directed at other calves. Another example is crib-biting in horses.

In-class activity

Discussion

Allow 45 minutes for this activity.

This discussion will focus on recognising and trying to understand behavioural needs in a variety of animal species. This activity can be carried out as a whole-class discussion, or in small groups.

As a class/in small groups, consider the following species in the given context, performing the abnormal behaviour listed:

- a polar bear in a zoo enclosure engaging in stereotypic figure-of-eight pacing
- pigs on a farm, intensively housed without substrate, rooting at the concrete floor
- calves on a farm, recently weaned from the heifer and group-housed, directing cross-suckling behaviour towards each other
- laying hens on a farm, group-housed in substrate cages, engaging in vacuum dust-bathing (which involves dust-bathing actions regardless of the absence of a suitable substrate)
- a hamster housed individually in a laboratory setting in a sterile cage without substrate, digging repetitively in the corner.

Discuss if the behaviours described above are normal or not for that species, and whether they are indicative of poor or good welfare. In each case, discuss what you know about the species and how they, or related wild counterparts, behave in the wild.

There is debate about whether preventing animals from performing strongly motivated behaviours compromises their welfare. For example, pigs may be fitted with nose rings in an attempt to discourage rooting behaviour, and horses who crib-bite may be fitted with an anti-crib-biting collar which makes performing this behaviour uncomfortable. **Is it a welfare issue to prevent an animal from engaging in an abnormal behaviour?**

If the class has been divided into smaller groups, each group should report back to the rest of the class after 30 minutes of discussion time.

Applied Learning Opportunity

Behavioural Observation

Visit or gain work experience in one of the following systems:

- rescue centre
- horse stables
- industrial farming unit (any animal species)
- animal research laboratory (any animal species)
- zoo

Notes to Lecturer:

Students will need to design a data sheet to enable them to record elements of the environment and the behaviour they witness during their observation of the animals in their enclosure. Students may have a good idea of the behaviours they will observe, but should leave space to write any unexpected behaviours. They should decide whether they will observe an individual animal for the entire duration of the observation, or whether they will observe a group of animals before they begin. They should keep a record of the number of times a particular behaviour is carried out during the observation.

The following table is suggested as a data sheet:

Date of visit		Start time:		End time:	
Establishment					
Breed of animal:		Age (range if a group observation):		Individual or group observation?:	
Relevant characteristics:					
Environment					
Space allowance:		Socially/ individually housed?		Group size:	
Feeding methods and routines:					
Behavioural Ethogram					
Behaviour	Frequency (or duration)				
<i>e.g. rooting</i>					
<i>e.g. self-grooming</i>					
<i>e.g. drinking</i>					
<i>Etc.</i>					

After completing the observation, students should produce a report describing what they have seen and considering the extent to which the animals' need to perform certain behaviours is being met. They should make conclusions about the welfare status of the animals. They should also consider what could be done to provide the animals with opportunities to perform specific behaviours that are important to them.