

Module 3

Behaviour and Animal Welfare



This lecture was first developed for **World Animal Protection** by Dr David Main (University of Bristol) in 2003. It was revised by **World Animal Protection** scientific advisors in 2012 using updates provided by Dr Caroline Hewson.

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This module will teach you

How to know if performing a particular behaviour is important to animals

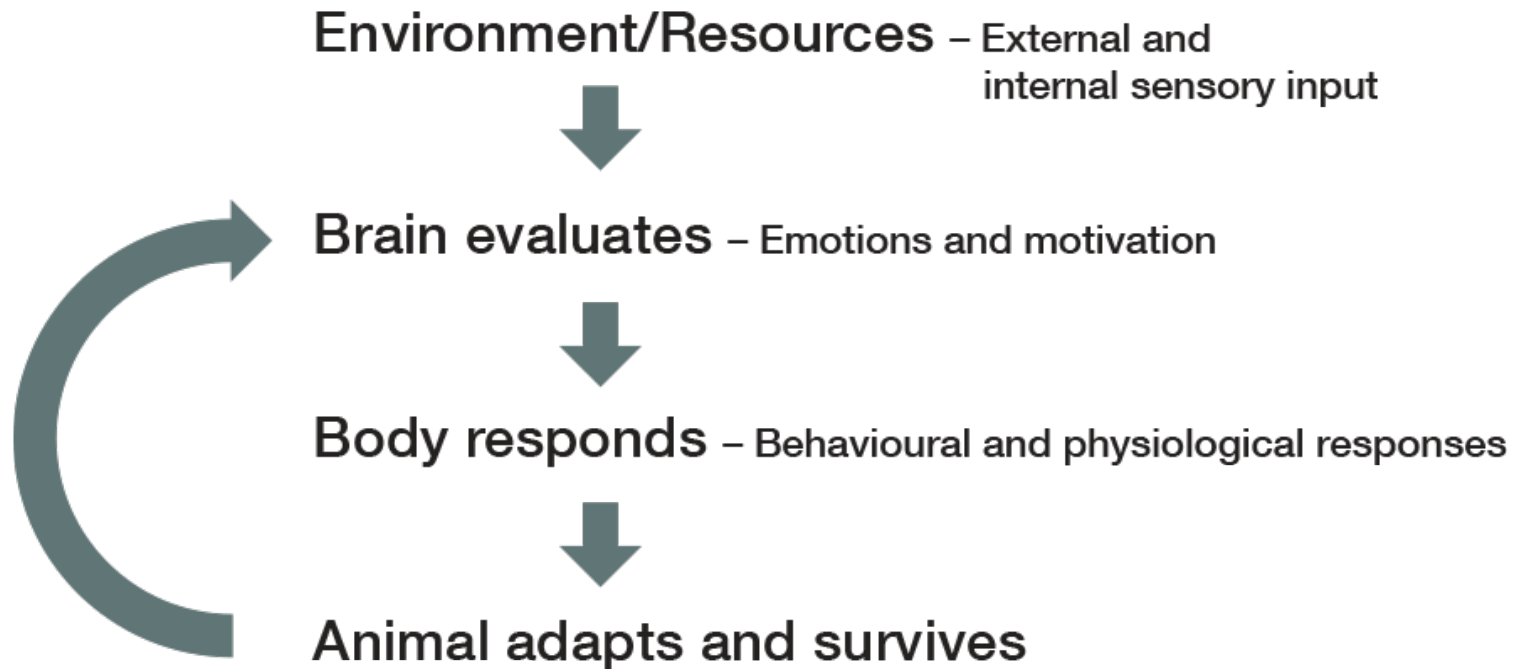
The basics of behaviour

- ⌘ **Behavioural repertoire**
- ⌘ **Motivation**
- ⌘ **Some influences on motivation**

Measures of behavioural priority

Examples of important behaviours

Animals' experience



Responses

Physiological responses

Many are not visible

Many are non-specific and do not indicate if the experience is positive or negative

Behavioural responses

(Olsson et al., 2011)

Easy to observe

More complex level of functioning than physiological responses – how animals change and control their environment

More specific measure of emotional state and experience

Behaviour and welfare 1

Welfare includes physical functioning, feelings, and the performance of important behaviours

Behaviour can be used to assess each of these areas

Vets already use behaviour ('clinical signs')

To diagnose disrupted physical functioning (disease)

To identify and treat negative feelings (eg pain, nausea)

Behaviour and welfare 2

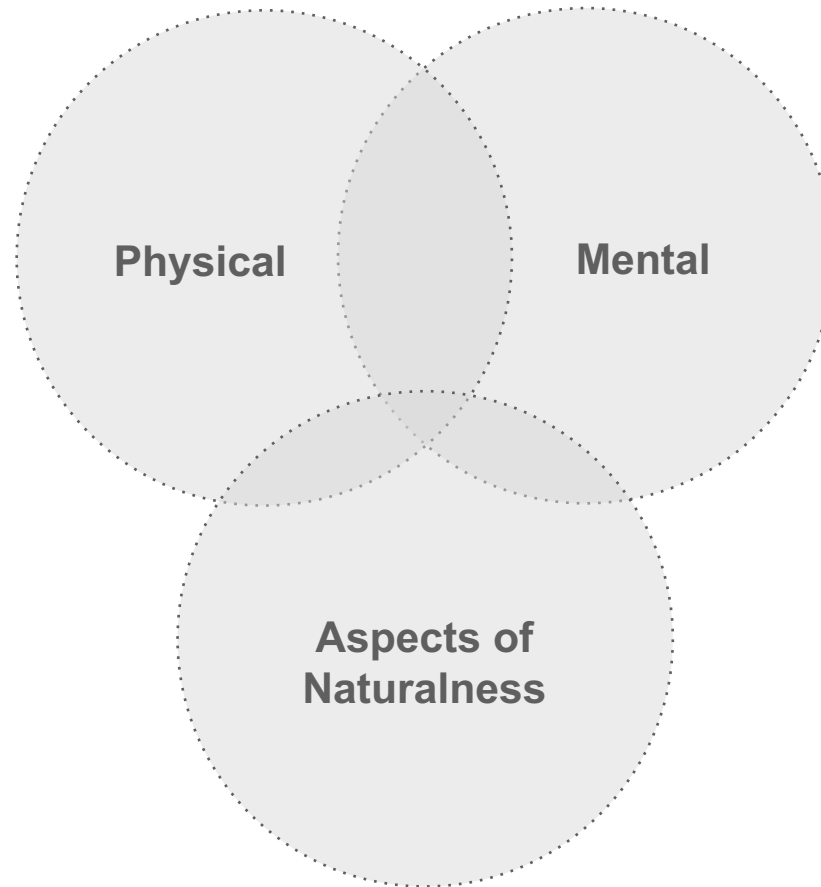
Why vets haven't considered the performance of important behaviours

Animals may function well even when they cannot perform those behaviours

Owners are not aware of them and do not ask

This is changing as public concern for animals grows, and research tells us more

Three areas when considering animal welfare



After Appleby, M. C. (1999) and Fraser et al. (1997)

Behavioural repertoire 1

Repertoire in the wild e.g.

Reproductive behaviours: courtship, mating, parturient, maternal

Feeding behaviours: seeking and consuming food

Time budget

How animals allocate their time to different behaviours

Behavioural repertoire 2

Domestic sows

(Stolba & Wood-Gush, 1989)

Captive animals do not need to perform the full repertoire

(Mason & Burn, 2011)

Many behaviours in the wild are responses to adverse conditions but are not otherwise necessary



Behaviour and motivation 1

Motivation = urge to perform behaviour
(Hurnik et al., 1995)

Results from brain's evaluation of sensory stimuli
that may be internal or external

Some behaviours motivated internally, others externally,
others a mixture

Behaviour and motivation 2

Behaviour motivated by internal cues is generally related to an animal's physical state
(Nicol, 2011)

Motivation can be to feed, to drink, to groom, to rest, etc.

Motivation increases if the behaviour is not performed

Such behaviours must be permitted
(eg calves and sucking; de Passillé & Rushen, 2006)



Behaviour and motivation 3

External cues,

Eg Sight of predator

Smell of food

External and internal cues

Social behaviour, e.g. play

Conflicting motivations



Behaviour and motivation 4

Importance of understanding motivation

Eg fighting vs. playing

Eg aggression

Affects handling

Advice to owners



Central role of brain

Evaluation of sensory input

Emotions, motivation, learning, expectations, anticipation

Cognition: brain's capacity to perceive, process and store information


Eg sheep: spatial memory of grazing, expectations

(Nicol, 2011)

Emotion and cognition **1**

(Mendl et al., 2009, 2010a)

Cognitive bias: influence of emotion on judgment, memory, etc.

People in a negative emotional state  focus on negative memories and make more negative judgments than people in a positive emotional state

Emotion and cognition 2

Cognitive bias in dogs

(Mendl et al., 2010b)

24 shelter dogs

Tested for separation-related behaviour

Dogs who showed more separation-related behaviour also showed pessimistic-like behaviour with regard to finding food

Emotion and motivation 1

(Keeling et al., 2011)

Negative emotions – pain, fear frustration

Motivate relevant behaviours that meet an immediate need

Eg INJURY: injury ❖ pain ❖ guarding behaviour to protect the injured area

Eg SEEING A PREDATOR: predator ❖ fear ❖ running away ❖ survival

Emotion and motivation 2

(Keeling et al., 2011)

Positive emotions, eg pleasure, excitement

Motivate behaviour that is not needed urgently, for survival, but brings a long-term benefit

E.g. PLAY: play ❖❖❖ pleasure ❖❖❖ play again ❖❖❖
learn social and prey-catching skills

Genetics and motivation

Genetics

(Jensen et al., 2008)

Eg

Gene mapping: behavioural differences are associated with differences in chromosomal regions

Feather-pecking in poultry: lines with lower tendency to peck had higher egg production

Temperament in cattle: docility in the milking parlour

Examples of other factors affecting motivation

Stress response

Environment, Eg Substrate

Disease

Summary so far

How to know if performing a particular behaviour is important to animals

Behavioural repertoire

Motivation

Influence of emotions

NEXT: measures of behavioural priority

Examples of important behaviours

Measures of behavioural priority **1**

(Nicol, 2011)

Animal works hard for the opportunity or resources to perform the behaviour

Eg hens and nest boxes

Heifers and resting (13 hours)

Animal develops substitute/abnormal behaviours if he or she cannot perform a desired behaviour,

Eg Calves cross-sucking (de Passillé & Rushen, 2006)

Behaviours indicating frustration – if space/housing permits

Substitute or abnormal behaviours

Stereotypies

repetitive behaviours, unchanging pattern,
serve no obvious purpose

Redirected behaviours

not abnormal but directed to an abnormal substrate,
eg calves cross-sucking other calves

Examples of important behaviours

“Behavioural needs” (Widowski, 2010)

Animals suffer if deprived of the opportunity to perform them

Examples

Laying hens: nesting in a secluded place (Nicol, 2011)

Pigs: rooting (Nicol, 2011)

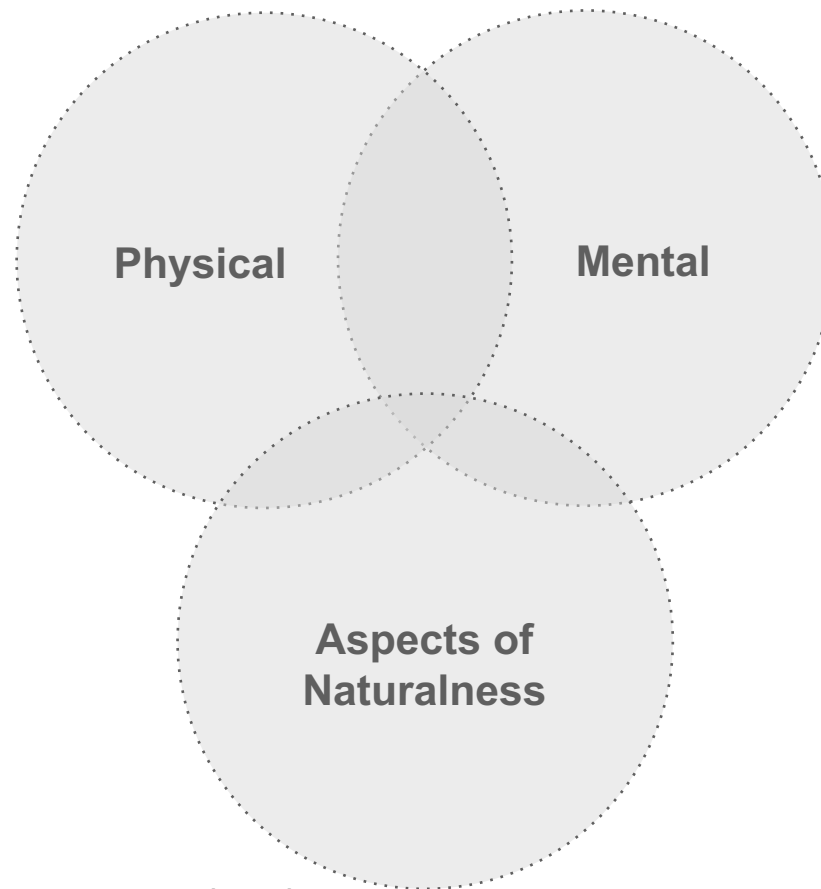
Calves: sucking (de Passillé & Rushen, 2006)

Polar bears: walking long distances (Clubb & Mason, 2003)

Hamsters: burrowing (Hauzenberger et al., 2006)



Three areas when considering animal welfare



After Appleby, M. C. (1999) and Fraser et al. (1997)

Feedback:

Please let us know what you think

- ❖ How have you used this module?
- ❖ What did you like about it?
- ❖ What did you not like?
- ❖ Do you have any tips to share?

Please take part in our 10 minute survey here:

<https://www.surveymonkey.com/s/BKP3D6H>

Your feedback will help other teachers like you

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