

## Module 7

# Behavioural Measures of 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.

### Free online resources

To get free updates and additional materials, please go to [www.animalmosaic.org/education/tertiary-education/](http://www.animalmosaic.org/education/tertiary-education/)

# This module will teach you

## Which behavioural measures of animal welfare you can use

- ❖ **Behaviours indicating that an animal is functioning well (healthy), feeling well, and able to perform important behaviours**
- ❖ **Behaviours indicating that an animal is NOT functioning well (healthy), feeling well, and able to perform important behaviours**

# Behaviour and animal welfare

## The importance of understanding an animal's

- ⌘ Behavioural repertoire
- ⌘ Important behaviours/  
'behavioural needs'
- ⌘ Normal behaviour as an individual

# Behavioural indicators of good welfare

## The 'normal' animal

- ✦ Is alert and curious about his/her external environment
- ✦ Shows a range of activities, e.g. exploration
- ✦ Interacts with other members of the herd/flock
- ✦ Interacts with humans
- ✦ Avoids humans – flight distance
- ✦ Plays

# The 'normal' animal: alertness



# The 'normal' animal: curiosity



# The 'normal' animal: range of activities



# The 'normal' animal: interaction with other members of group/herd/flock

## Affiliative behaviours

Grooming each other (allogrooming)  
(Boissy et al., 2007)

## Affected by, eg

Species

Breed

Age and size range

Group size



Credit: Emma Chapman/Scott Liffen



# The 'normal' animal: interaction with humans

## Flight zone (Grandin, 2009)

- ❖ Animal's personal space regarding proximity to humans
- ❖ 0–50m

## Time taken to approach the person

- ❖ The more time = the more caution/fear



# The 'normal' animal: play

(Held & Spinka, 2011)



# Behavioural indicators of poor welfare

**Limited range of activity, eg no play,  
no response to external stimuli**

- ✦ **Sickness behaviours**
- ✦ **Pain behaviours**

**Abnormal fear or aggression towards humans**

**Fighting**

**Stereotypies**

**Other behaviours**

# Lack of environmental stimulation

(Mason & Burn, 2011)

Frustration, eg abnormal behaviour such as stereotypies

Non-specific boredom, eg passivity; stereotypies

# Sickness behaviour

(Millman, 2007)

Inflammation ❖ sensory input ❖ motivation to sleep, withdraw, stop eating, etc.

Sickness alters behavioural needs

Importance of hospital pen:

Space, comfort

Does not cause new welfare problems, e.g. stress from social isolation

# Pain behaviours 1

(Dobromylski, 2000)

## Acute pain

- ✦ Posture
- ✦ Gait – lameness
- ✦ Demeanour
- ✦ Inappetence
- ✦ Increased respiratory and heart rate
- ✦ Grinding teeth
- ✦ Response to palpation
- ✦ Vocalisations
- ✦ Check animal's response to analgesia

# Pain behaviours **2**

(Dobromylski, 2000)

## Chronic pain:

### Altered demeanour:

- ✦ Irritability
- ✦ Social withdrawal
- ✦ Aggression

Altered gait – lameness

Weight loss

Response to palpation

Response to analgesia

# Abnormal fear or aggression towards humans

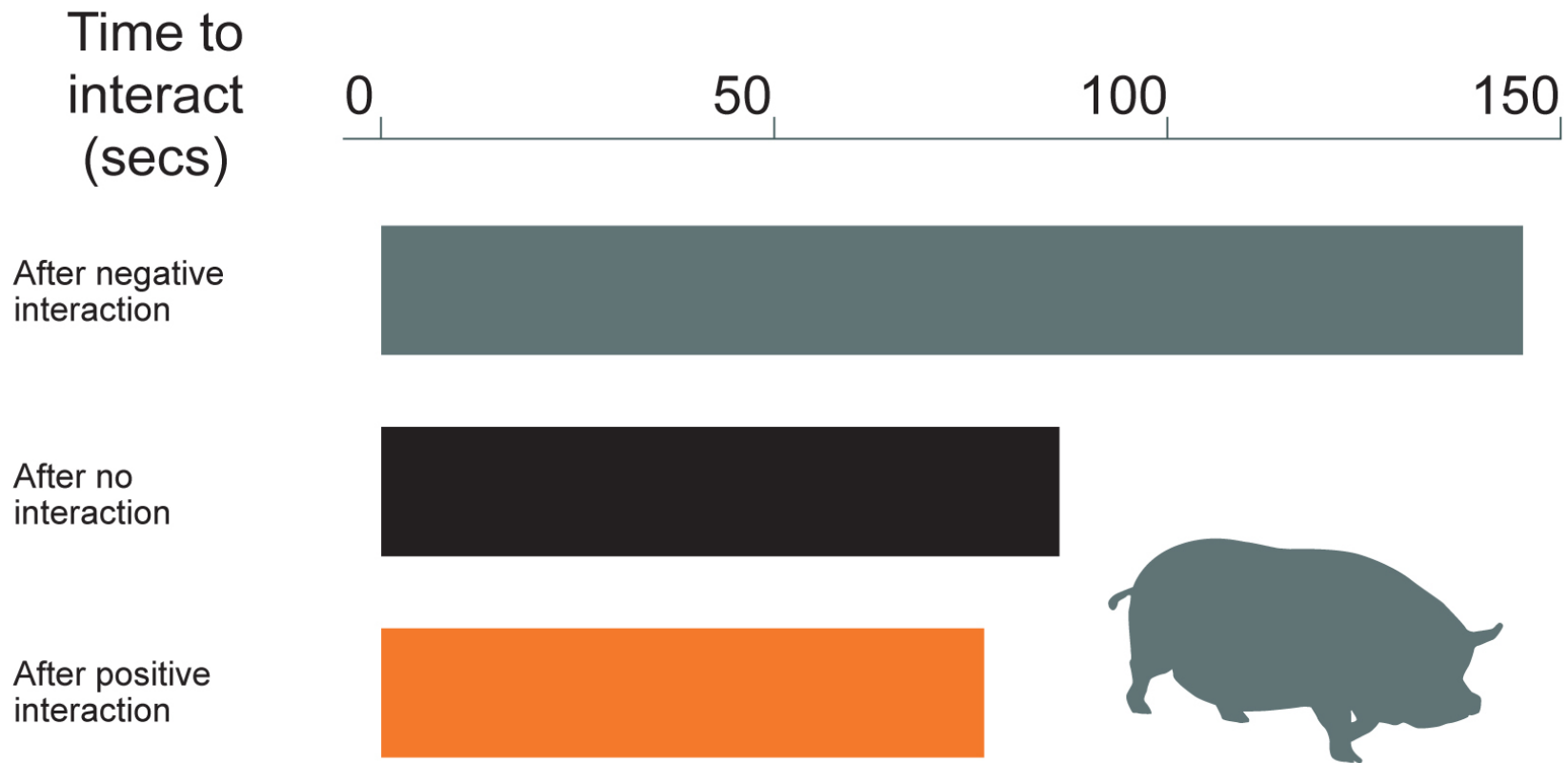
**'Normal' depends upon species, breed and previous contact with humans**

**Animals learn from experience: abnormal fear or aggression may indicate rough handling or cruelty**





# Time to interaction with stockperson (Gonyou et al., 1986)



# Fighting

**Post-weaning**

**Markets**

**Transport to slaughter**

**Motivations: fear, territorial protection, social dominance, competition for food**

**Triggers: space, mixing, early weaning**

# Stereotypies 1

(Mason, 2006)

## Stereotypies

- ⌘ Repetitive behaviour
- ⌘ Constant in form
- ⌘ No obvious purpose in the context

## Indicate past or present frustration

- ⌘ Restrictive environment



# Stereotypies **2**

(Mason, 2006)

**Adaptive?**

**Rewarding – endorphins**

**Persistence**

- ❖ Generalised response to arousal?
- ❖ Rewarding – endorphins

# Stereotypies 3

(Mason & Burn, 2011)

**Associated with signs of poor welfare**

**Indicate poor conditions, eg**

- ⌘ Early weaning
- ⌘ Lack of space or substrate for important behaviours

# Stereotypes: examples

**Horses: crib-biting** (Wickens & Heleski, 2010):

Genetics and lack of opportunities to forage

**Captive carnivores: pacing** (Clubb & Mason, 2007):

Lack of space to roam (not lack of predation opportunities)

**Hens: feather-pecking** (Rodenburg, et al., 2004):

Genetics, activity, stocking density

**Companion animals: barking, pacing, etc.**

(Luescher, 2003)

# Summary so far

**Limited range of activity, eg no play, no response to external stimuli**

- ✦ Sickness behaviours
- ✦ Pain behaviours

**Abnormal fear or aggression towards humans**

**Fighting**

**Stereotypies**

**Other behaviours**

# Other behaviours

## Redirected behaviours (Nicol, 2011):

- Normal activities directed towards inappropriate substrates, eg cross-sucking in calves; tail-biting in pigs



# Other behaviours

## Self-injurious behaviour, eg

- ⌘ Dogs: lick granuloma (Virga, 2003)
- ⌘ Horses: self-mutilation (McDonnell, 2008)

# Qualitative behavioural assessment 1

(Olsson, et al., 2011)



# Quantitative behavioural assessment **2**

**Frequency**

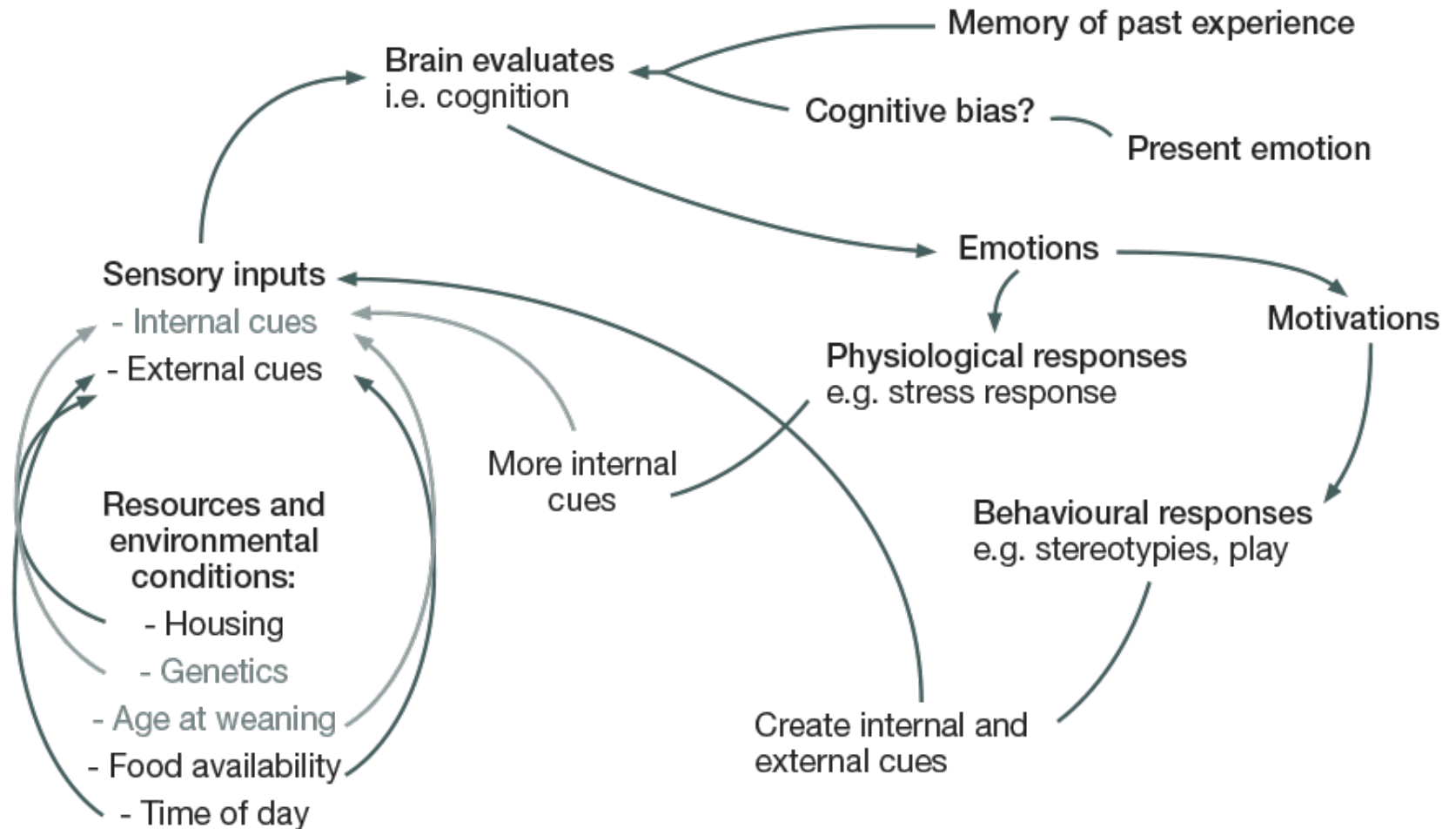
**Duration**

**Number of animals showing the behaviours**

**Examples**

- ⌘ Pigs fighting
- ⌘ Percentage of animals who vocalise during handling and stunning

# Summary



# 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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