Module 2

Introduction to Welfare Assessment

WORLD ANIMAL PROTECTION

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.
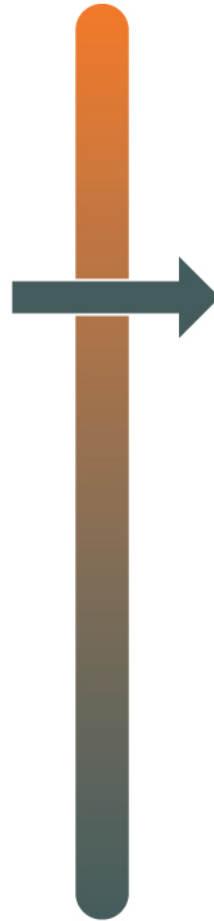
This module will teach you

The theory behind the Five Freedoms

**How they have influenced
the development of modern
assessment tools**

**How to assess the animal's experience
in terms of welfare (inputs) and actual
welfare performance (outcomes)**

"How are you today?"
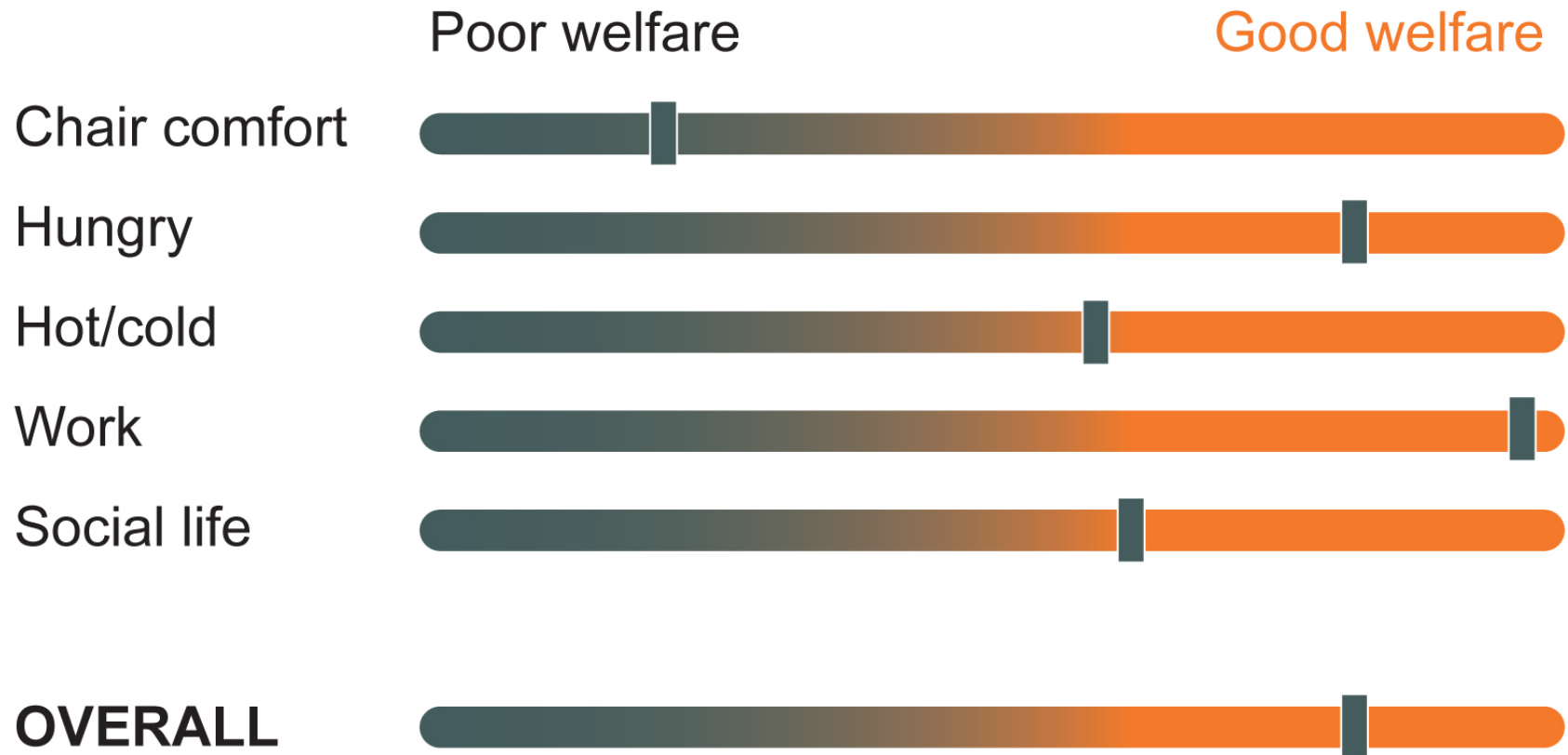
Good welfare

Poor welfare

"Fantastic"

"Pretty good"

"Reasonable"

"OK"

"Not good"

"Miserable"

"Terrible"

Some aspects of your welfare

Poor welfare   Good welfare

Chair comfort

Hungry

Hot/cold

Work

Social life

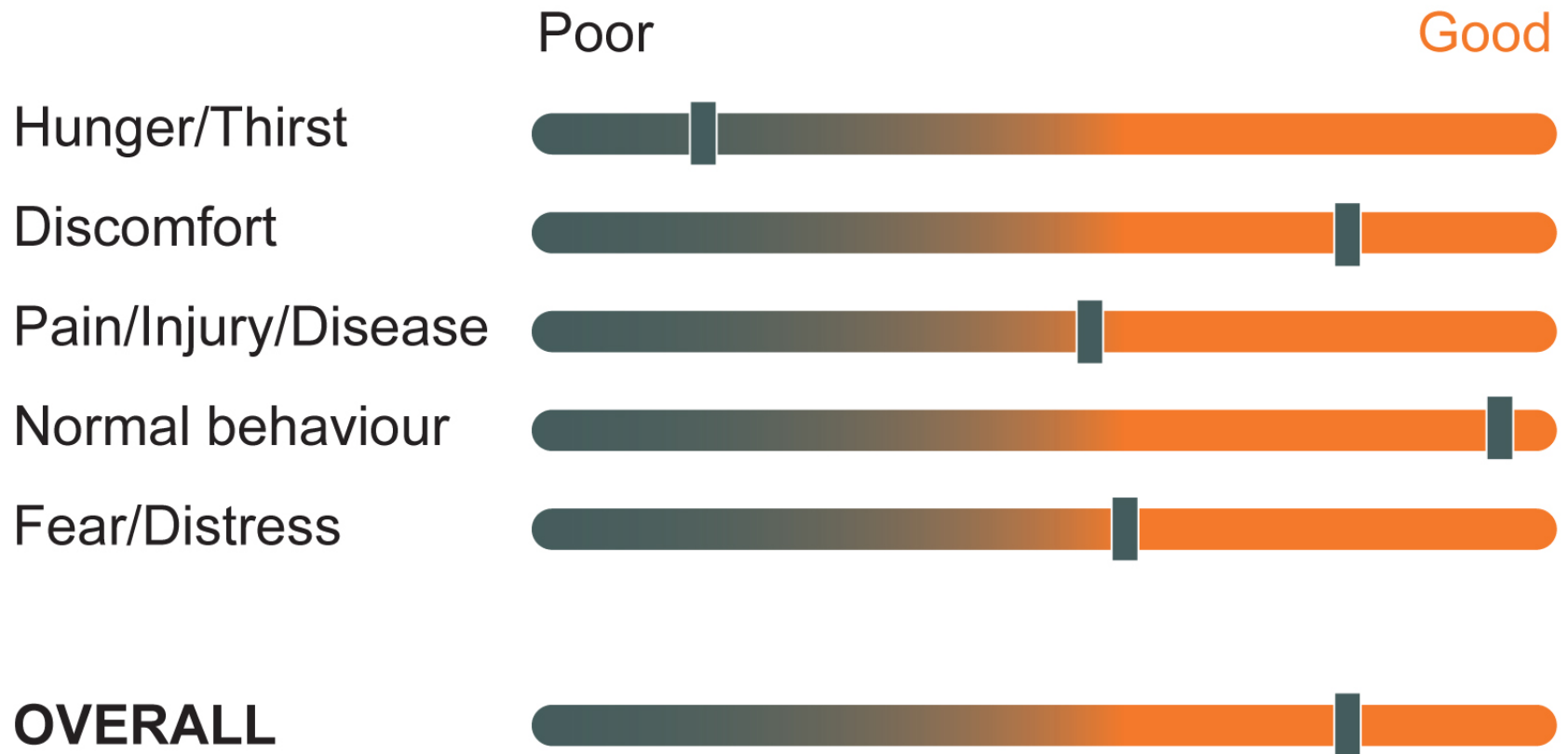**OVERALL**

The Five Freedoms
(Brambell Committee, 1965; FAWC, 1992)

Farm Animal Welfare Council (FAWC), (1992)

- Freedom from **hunger and thirst**
- Freedom from **discomfort**
- Freedom from **pain, injury and disease**
- Freedom to **express normal behaviour**
- Freedom from fe**ar and distress**

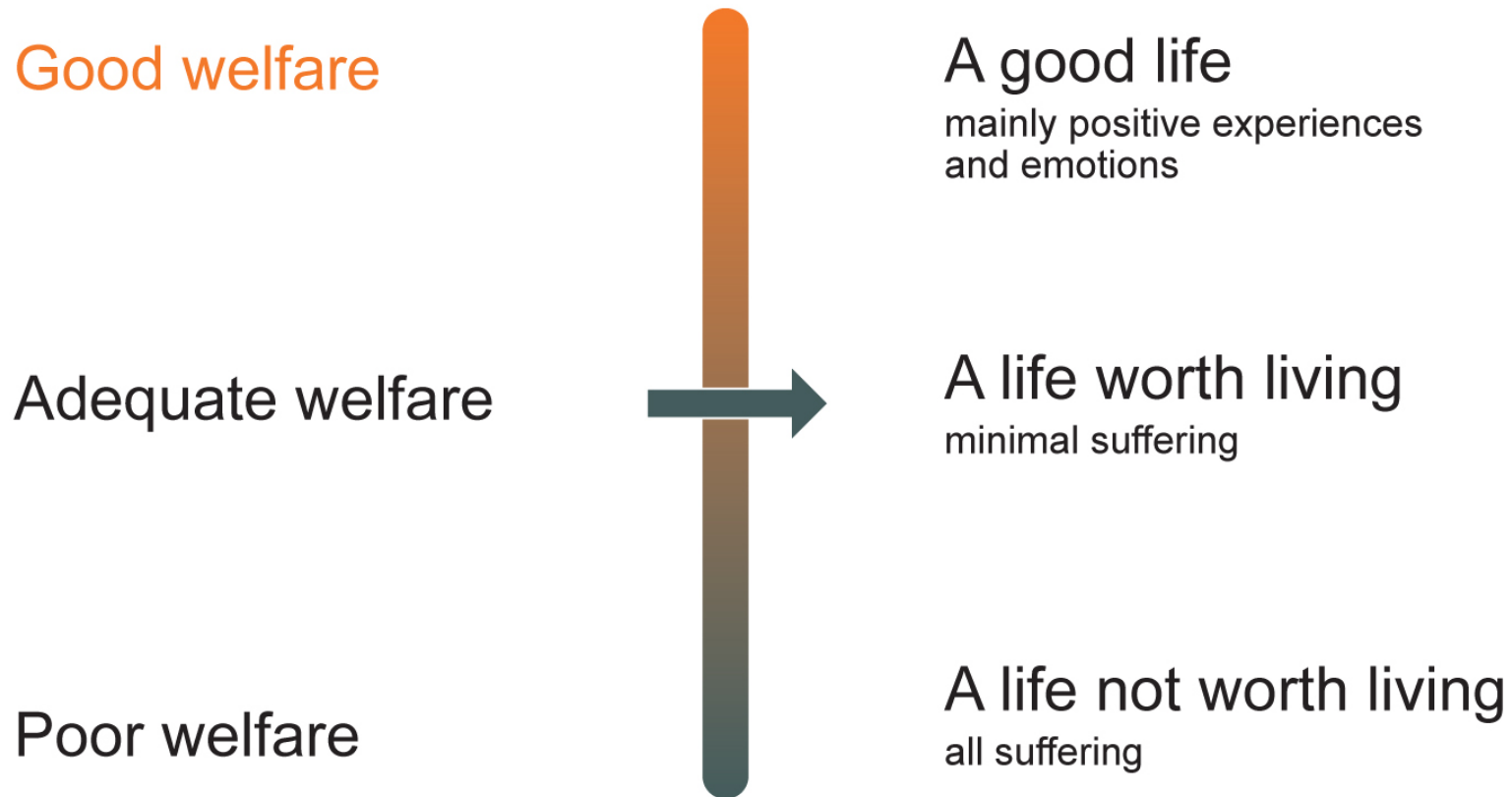# The Five Freedoms and animal welfare
(Brambell, 1965; FAWC, 1992)

Poor   Good

Hunger/Thirst

Discomfort

Pain/Injury/Disease

Normal behaviour

Fear/Distress

OVERALL

Welfare as a continuum?
(eg FAWC (2009) vs. Veissier & Boissy (2007))

Good welfare

Adequate welfare

Poor welfare

A good life
mainly positive experiences
and emotions

A life worth living
minimal suffering

A life not worth living
all suffering

Most farming systems restrict normal behaviour
(eg Laven & Holmes, 2008)

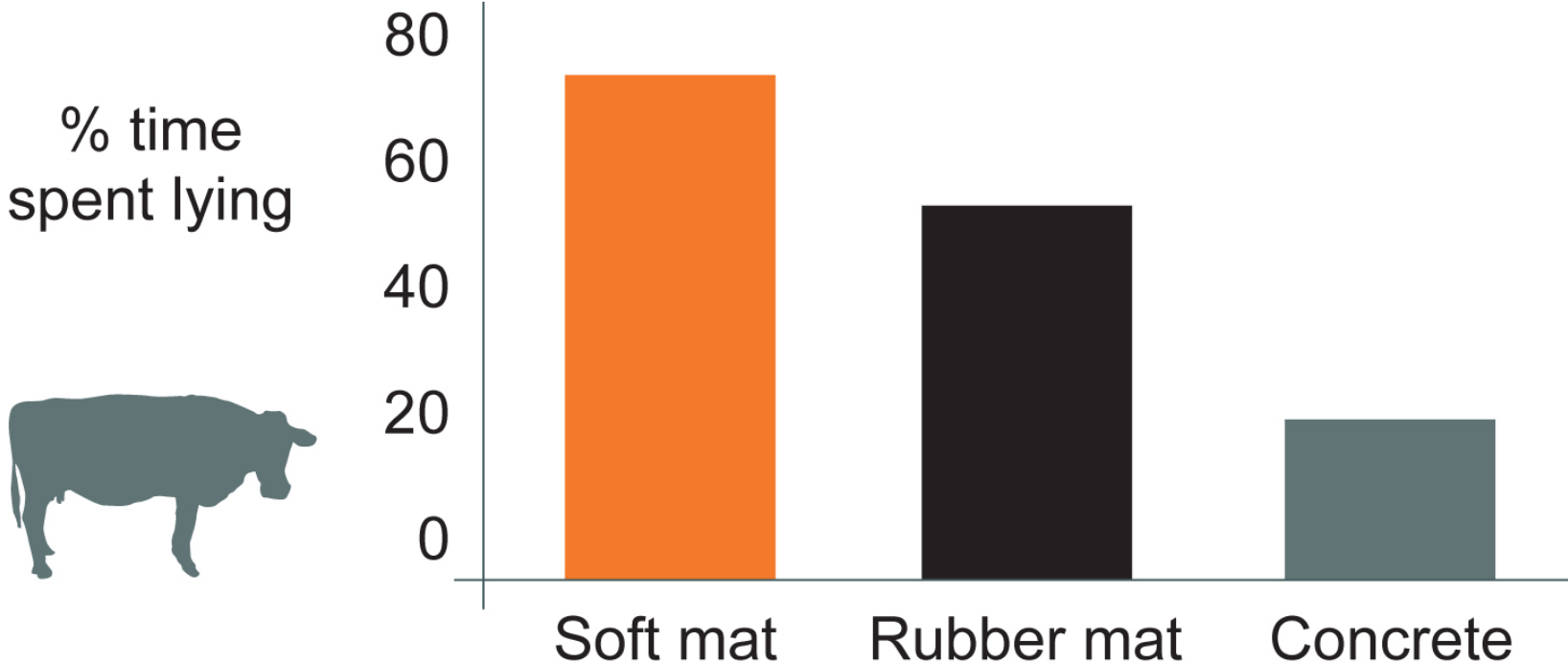# Restriction of 'normal'

Obvious: farrowing crates

Not so obvious: cubicle surface

Cubicle surface and lying time

Problems with the Five Freedoms

The Freedoms conflict

Keeping animals 'free from disease' can cause them fear and distress, from handling during treatment

If animals have 'freedom to express normal behaviour', they can suffer fear and distress during normal social interactions

Emphasise avoiding negative experiences rather than promoting positive ones

The Five Freedoms in the 21st century

**Aim is not to eliminate stress
but to prevent suffering**
(Webster, 2001)

the outcomes of good husbandry

Welfare Quality® project
(EU and South America)

**Clinical veterinary literature,
eg ocular pain in livestock
(Williams, 2010);
care of indoor cats
(Jongman, 2007)**

**International Finance Corporation
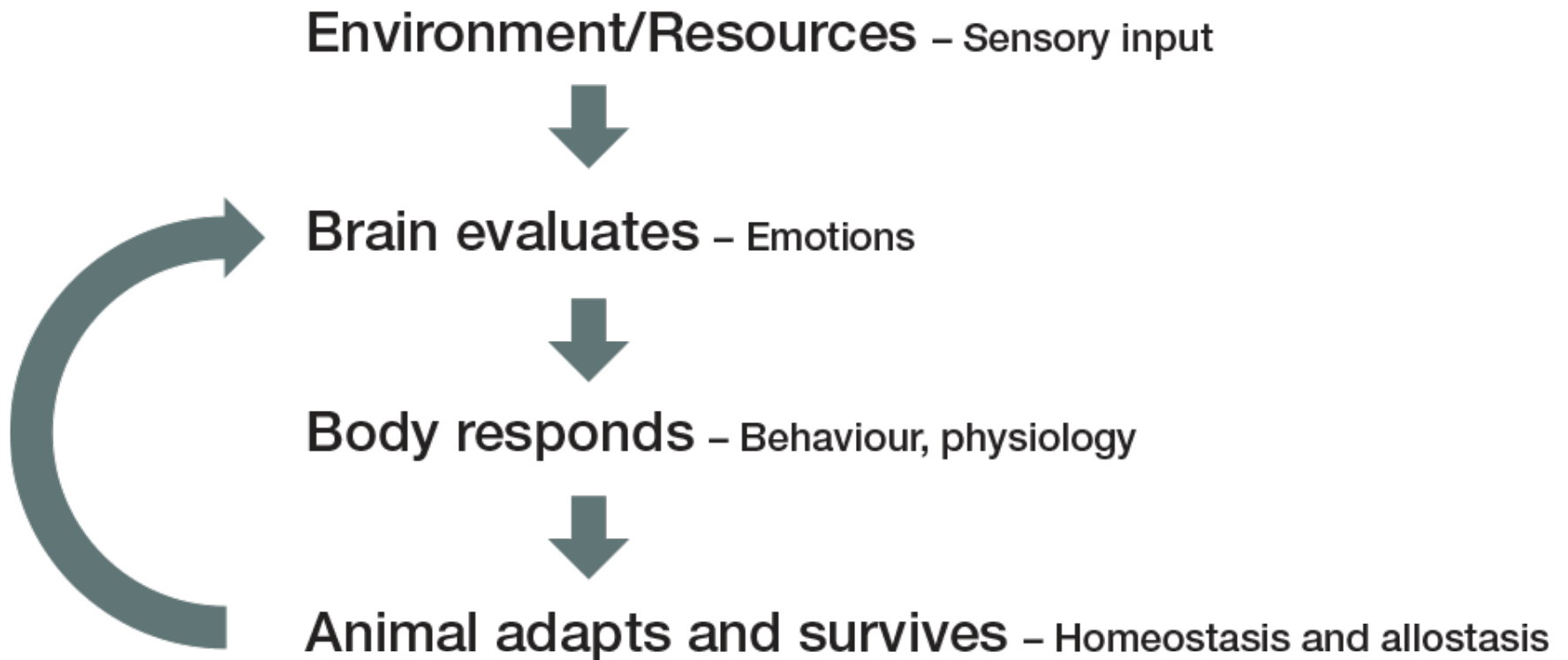of the World Bank Group**
(World Bank, 2006)

World Organisation for Animal Health
(OIE, 2011)

Retailers, eg Marks & Spencer
(World Bank, 2006)

Animals' experience

Environment/Resources – Sensory input

⬇

Brain evaluates – Emotions

⬇

Body responds – Behaviour, physiology

⬇

Animal adapts and survives – Homeostasis and allostasis

Animal adapts and survives

Homeostasis ('same state')

Steady, internal state that is necessary for the basic processes of life

Physiological set points, eg maintain blood pH at approx. 7.35 to 7.45

Allostasis ('other state')

Stability through change

No fixed set points, eg changes in physiology and behaviour enable adaptation to the milking parlour

Neural Circuitry Underlying Negative Affect

Human sadness system

Guinea pig separation distress circuit
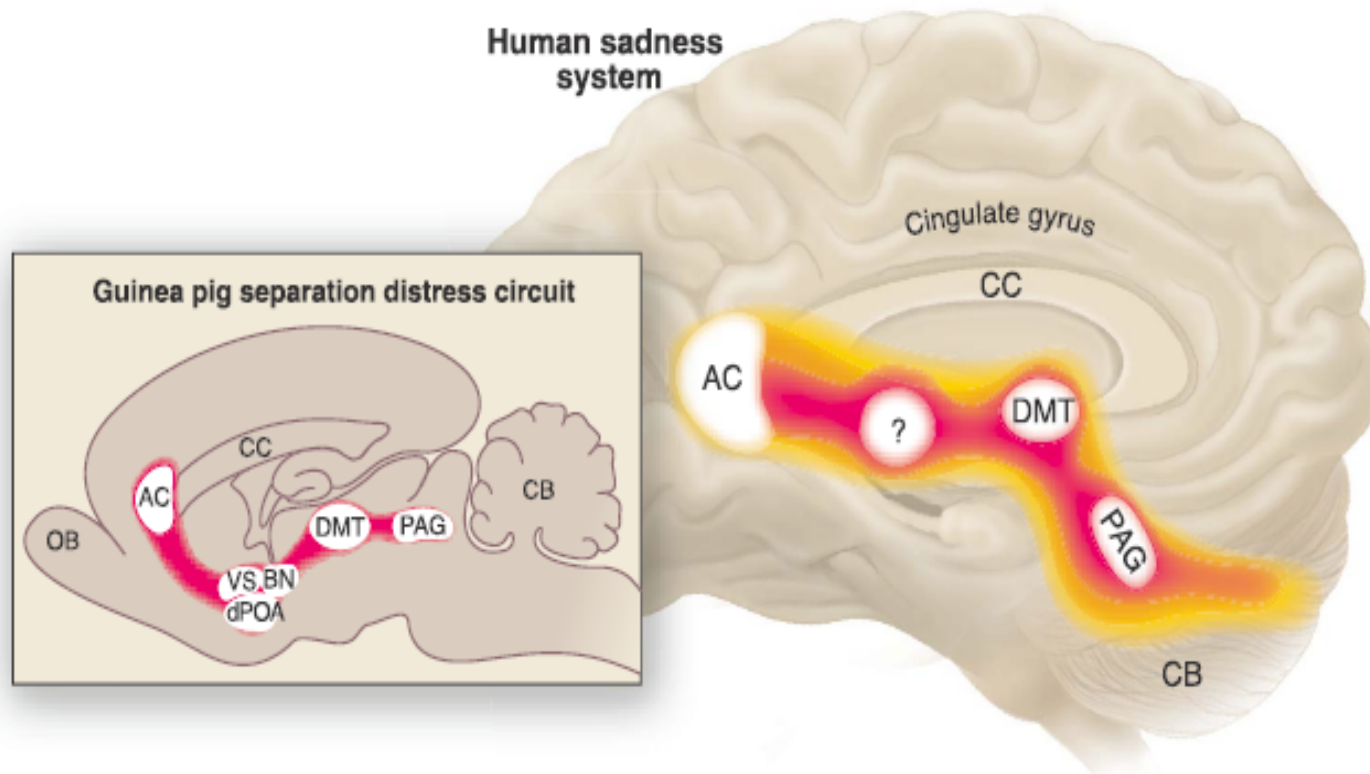
Animal Behaviour and Welfare Group, Michigan State University

Animals' experience

Environment/Resources – Sensory input

Brain evaluates – Emotions

Body responds – Behaviour, physiology

Animal adapts and survives – Homeostasis and allostasis

Animals' experience

Environment and resources create sensory input

daily, eg night/day, feeding, handling, urinating

occasional, eg clinical examination, transport (disease)

Brain evaluates sensory input (novelty, pleasantness etc.), which results in

emotions, eg fear, pleasure, physical feelings, eg nausea, pain

Body responds to feelings and emotions

physiological and behavioural responses

enables the animal to adapt and survive

What to assess

Measures of the environment and resources – 'welfare inputs'

Measures of the animal's responses – 'welfare outputs'

Welfare inputs and outputs

WELFARE INPUTS

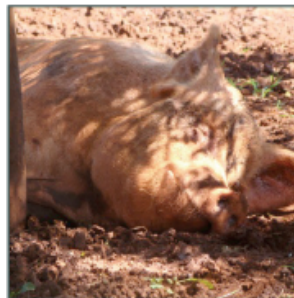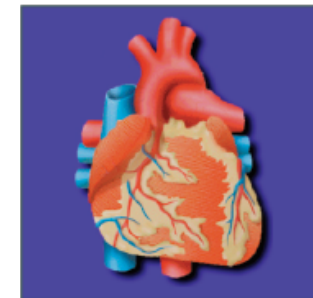Management

Environment

Animal

WELFARE OUTPUTS

Clinical health; production

Behaviour

Physiology

The Five Freedoms and welfare inputs and outputs

Freedom from hunger and thirst

Inputs: ready access to fresh water, and a diet that maintains full health and vigour, e.g. how often stockperson delivers feed

Outputs: body weight; body condition score; evidence of dehydration on the skin-pinch test

Freedom from discomfort

Inputs: an appropriate environment, including shelter and a comfortable resting area

Outputs: pressure sores on the skin

The Five Freedoms and welfare inputs and outputs

Freedom from pain, injury and disease

Inputs: veterinary advice ⠿ disease prevention or rapid diagnosis and treatment

Outputs: prevalence of coughing, etc.

Freedom from fear and distress

Inputs: conditions and treatment which avoid mental suffering, e.g. stockperson's training

Outputs: behavioural tests, e.g. avoidance distance

Freedom to express normal behaviour

Inputs: sufficient space, proper facilities and company of the animal's own kind

Outputs: signs of injury from fighting; abnormal behaviours

Using the Five Freedoms to assess welfare

Welfare outputs

For each freedom, estimate

- percentage of animals affected
- how badly they are affected
- how long the problem has been going on for

Example: freedom from hunger – thin sheep

Percentage affected:

how many sheep in the flock are thin?

Severity

how thin are the sheep (body condition score)?

Duration

how long have the sheep been thin?

Conclusions

Five Freedoms

Limitations as assessment tool

But useful framework for investigating
animals' experience of their lives

Animals' experience

Sensory input to brain ⸬⸬ emotions
body responds ⸬⸬ adapt (allostasis and homeostasis)

To assess their experience

Welfare inputs (stockman, environment, animal)

Welfare outputs (animal-based − percentage affected, severity, duration)

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

References

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