Pain and personality in non-human animals

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Introduction

Assessing pain in non-human animals is a difficult task requiring the study of their physical health, behaviour and emotional state. However, such welfare assessments can be confounded by individual personality, cognition and ‘behavioural syndromes’ (1,2,5).

- Lameness is a protective behavioural adaptation used by animals in pain to prevent further damage (4).
- Its presence is used in welfare assessments as an indicator to veterinarians of pain and disease severity, and informs treatment decisions (4).
- This presumes that pain behaviours such as lameness are reflective of tissue damage/disease severity (2).
- However it has been recently demonstrated that this may not be the case, and that personality can effect aspects of pain expression (2).

The aim of this research is to be able to correlate personality and temperament with measures of pain and severity, whilst also controlling for other confounding variables.

Systematic review

A systematic review was carried out to determine and confirm some of the other sources of variance that may account for differences in pain behaviour. As there is a limited amount of research on this in non-human animals a cross-species review was undertaken.

- Searched Cab Abstract, Web of Science and Pubmed with systematic phrases.
- Reviewed in stages, title, abstract and full-text.
- Articles were not carried through to the next stage if the topic or methodology was unsuitable.
- Critically appraised each full text article.

Findings

- Confirmed there to be a huge disparity between the amount of research available in human and non-human animals.
- Highlighted many comparable traits between humans and dogs, such as, extraversion, neuroticism, positive affect and negative affect.
- Personality, cognition and affect mediates pain expression, coping, resilience and threshold in humans in both direct and indirect ways.
- Extraversion is linked to pain expression in horses and humans.
- Higher levels of neuroticism can be detrimental for coping, threshold and resilience to pain in humans and expression in humans and horses.
- These findings illustrate that personality mediates pain experience and expression. This could be particularly problematic in non-human animals where welfare assessments are dependent upon visual expressions of pain.

What’s next?

We need to further understand what elements of personality and temperament may be impacting different aspects of a non-human animal’s pain experience. To do this we need a model system to focus on. Dogs with hip dysplasia provide this as we know a large number of dogs are affected with the disease, variations in lameness are seen and chronic pain is a feature of the disease. We also have valid and reliable ways of measuring personality and temperament in dogs.

Methods

Two chronic pain scales will be used to determine both the affective and sensory elements of pain. Force plate analysis will be used to assess pain as measured by lameness.

The positive and negative activation scale (PANAS, 3) and cognitive bias testing will be used to assess affect. A personality questionnaire will be used to assess the dog’s personality.

Recruitment and Public engagement

- Dogs will be recruited from dog shows, and competitions as well as pet homes. In doing so the pubic will be informed about hip dysplasia, and given a chance to be informed about their dogs’ behaviour.
- The owners will take part in the force plate task with their dog, walking them over the force plate. This allows them first hand experience of research and a chance to work with specialised equipment.
- The dog owners will be assessing their dogs’ personality, temperament and how much pain they believe their dog experiences. This utilises and acknowledges the owners expert knowledge of their dogs behaviour.

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References

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