

# Measuring coping style on a continuous scale and its relation to aggression at mixing in weaned pigs

Mary Friel<sup>1</sup>, Hansjoerg Kunc<sup>1</sup>, Kym Griffin<sup>1</sup>, Lucy Asher<sup>2</sup> and Lisa Collins<sup>3</sup>

<sup>1</sup>School of Biological Sciences, Queen's University Belfast, Belfast, UK, <sup>2</sup>School of Veterinary Medicine and Science, University of Nottingham, Nottingham, UK, <sup>3</sup>School of Life Sciences, University of Lincoln, Brayford Pool, Lincoln, UK

Email: [mfriel06@qub.ac.uk](mailto:mfriel06@qub.ac.uk)



## Introduction

- Coping styles are defined as a set of correlated behavioural and physiological responses to a stressor which are consistent over time and across situations within an individual
- Individuals are usually classified as either proactive or reactive, however this categorisation is rather arbitrary and measurement on a continuous scale may be more reflective of natural variation in coping styles
- Coping style has previously been found to be related to aggression in pigs, however it is unknown if this remains the case when coping style is measured on a continuous scale

### Aim:

To investigate the relationship between coping style measured on a continuous scale and aggression in weaned pigs.

## Coping style testing



- **Social isolation** and **novel object tests** conducted at 6 and 8 weeks of age
- **60 pigs** were tested in total
- **Cronbach's alpha** used to test whether repeatable variables were measuring the same **latent trait**

Figure 1. Novel Object Test

## Aggression at weaning

- **Aggression at mixing** post-weaning was recorded for 150 min over 2 days
- Measured:
  - Total duration fighting (sec)
  - Total number fights initiated
  - Average fight duration (sec)

## Results

- **Standing, exploring the arena** and **latency to contact** the novel object were all found to be repeatable
- Cronbach's alpha for these variables was  $\alpha = 0.858$ , indicating that all variables were assessing the same latent trait
- **Combined these variables** to create the **Proactivity-Reactivity Index (PR Index)**
- Individual score on the PR index predicted total time spent fighting, with individuals at the **proactive** end of the scale having a **higher total time spent fighting** during the observation period

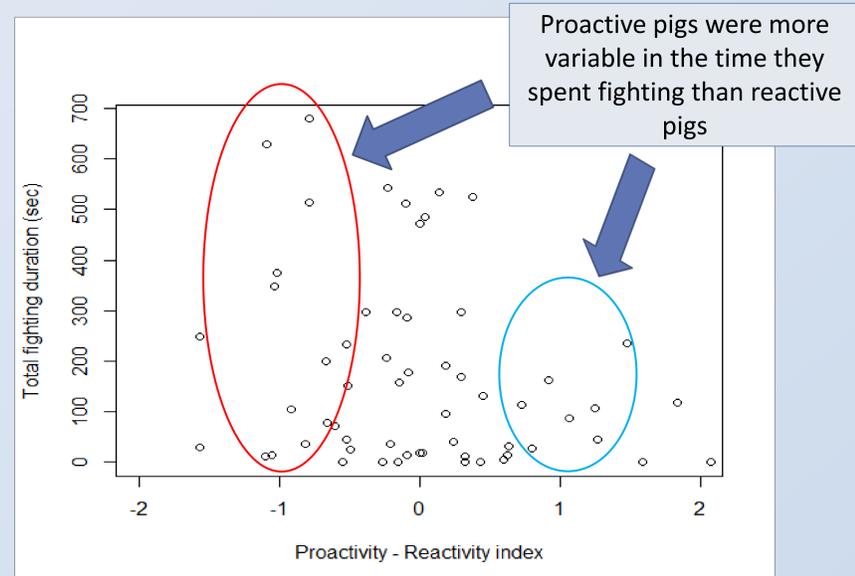


Figure 2. Total time spent fighting and individual score on the PR index (Estimate = -2.257, SE = 1.1,  $t = -2.051$ ,  $p = 0.045$ )

## Conclusions

1. Coping style can be measured on a continuous scale in juvenile pigs
2. More proactive animals were found to have a higher total time spent fighting during the observation period
3. However proactive animals and those falling in the middle of the scale were more variable in the time they spent fighting than reactive animals, who were more similar in their behaviour

### Selected references:

Groothuis & Carere, 2005. *Neurosci & Biobehav Rev.*, 29. Koolhaas et al., 1999. *Neurosci & Biobehav Rev.*, 23. Melotti et al., 2011. *Appl Anim Behav Sci.*, 133. Bolhuis et al., 2005. *Anim Behav.*, 69.