

Nice to know you – Effects of human expectation on horse behaviour depending on the human-horse familiarity

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Introduction



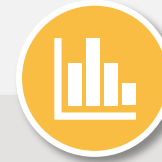
Development of **horse-human relationship** by **domestication**



Important issue of **animal welfare** and **human safety**



Human **expectation** can **increase the heart rate**



Analysing **horse-human interaction**

Keeling *et al.* (2009): Investigating horse–human interactions: The effect of a nervous human.

Aim of our study

1

Influence of negative human expectation

- **Hypothesis:** Expectation of danger will influence horse's behaviour

2

Influence of familiarity between horse and human

- **Hypothesis:** Stronger change in horse's behaviour with familiar humans than with unfamiliar humans

Materials & methods - Experiment setup



Materials & methods - Experiment procedure

1

Negative human expectation

- Rounds 1 – 3: Normal rounds
- Round 4: Potentially dangerous situation
 - Expectation of being spooked by hidden person
 - This was not actually done!



Materials & methods - Experiment procedure

2

Familiarity

- Horses participated twice

First
familiar person



Second
unfamiliar person



Materials & methods - Experiment procedure



- Four riding stables



- Humans (n = 48)



- Horses (n = 24)

Materials & methods – Example video



Materials & methods - Analysed behaviours

Head alignment

- Head alignment normal
- **Head alignment towards wall**
- Head alignment away from wall
- Head alignment high
- Head alignment low
- **Head movements**

Body alignment

- Straight body alignment
- **Hindquarters turn away from wall**
- **Forehand turns away from wall**

Tail movement

- **Swinging tail**
- **Swishing tail**
- Tail without movement

Speed

- Horse standing
- Horse's normal walking speed
- Horse changes pace

Others

- Ear movement
- Further irregularities

Lunge length

- Lunge length approx. 1 meter
- Lunge length > 1 meter
- Lunge length short

Humans position

- Human next to the horse
- Human in front of the horse
- Human behind the horse's shoulder

Horse behaviour

Human behaviour

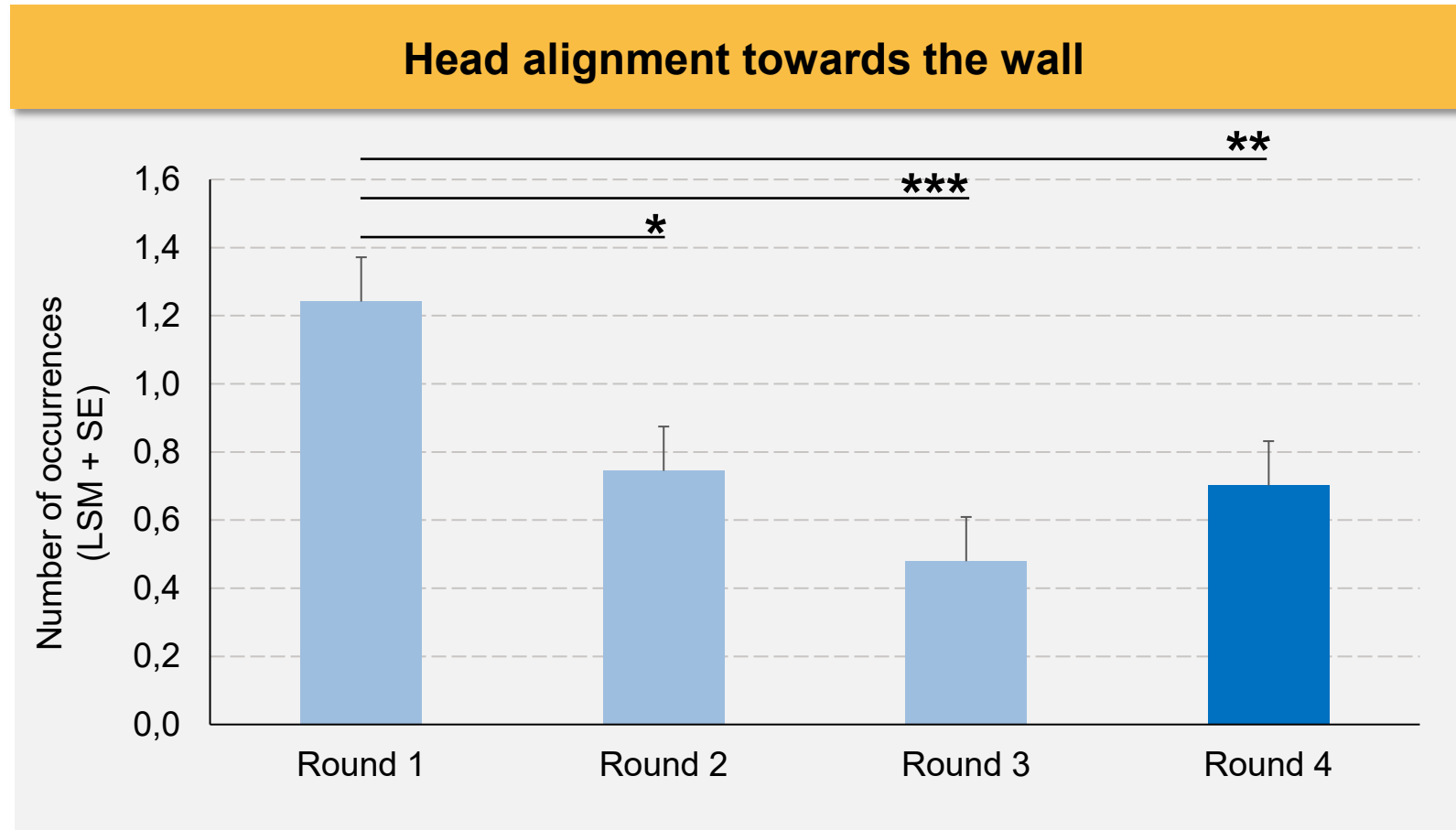
Materials & methods - Data collection and statistical analysis

- **Linear mixed models**
- Fixed factors
 - **Round** (1 – 4)
 - **Familiarity** (familiar/unfamiliar)
 - **Interaction between round and familiarity**
- Random factor
 - **Horse ID**



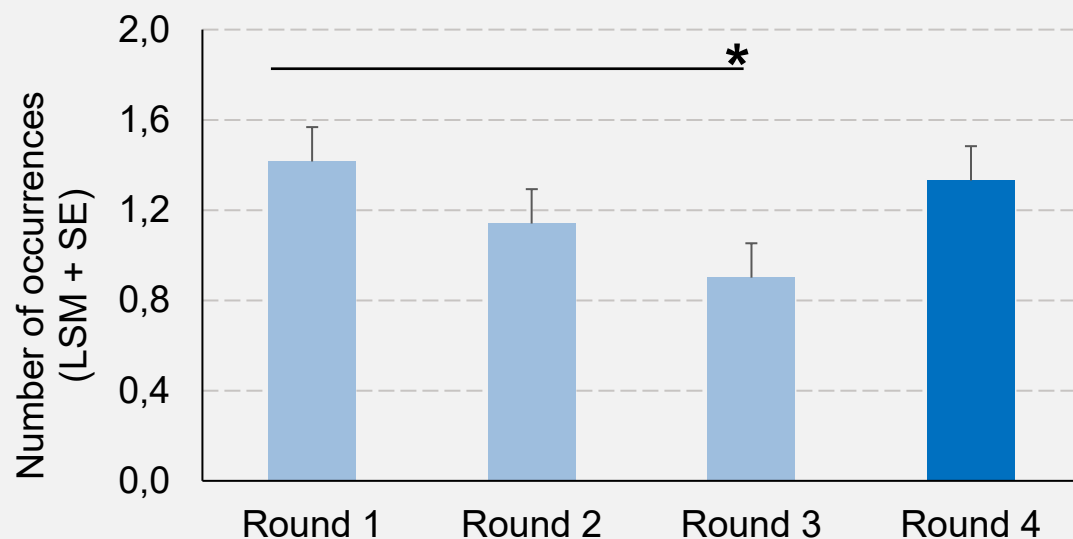
- Data presented as **least square means** (LSM) + standard errors (SE)
 - Duration
 - Number of occurrences
- Pairwise comparisons using Tukey Kramer t-Test
- Significance level to 5 % ($\alpha = 0.05$)

Results – Influence of negative human expectation

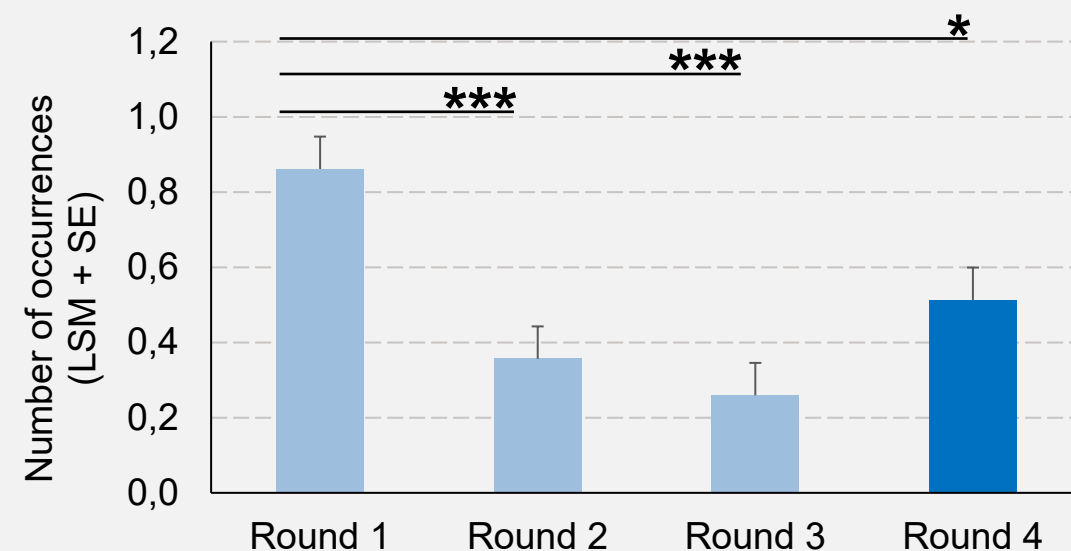


Results – Influence of negative human expectation

Hindquarters turn away from wall



Forehand turns away from wall



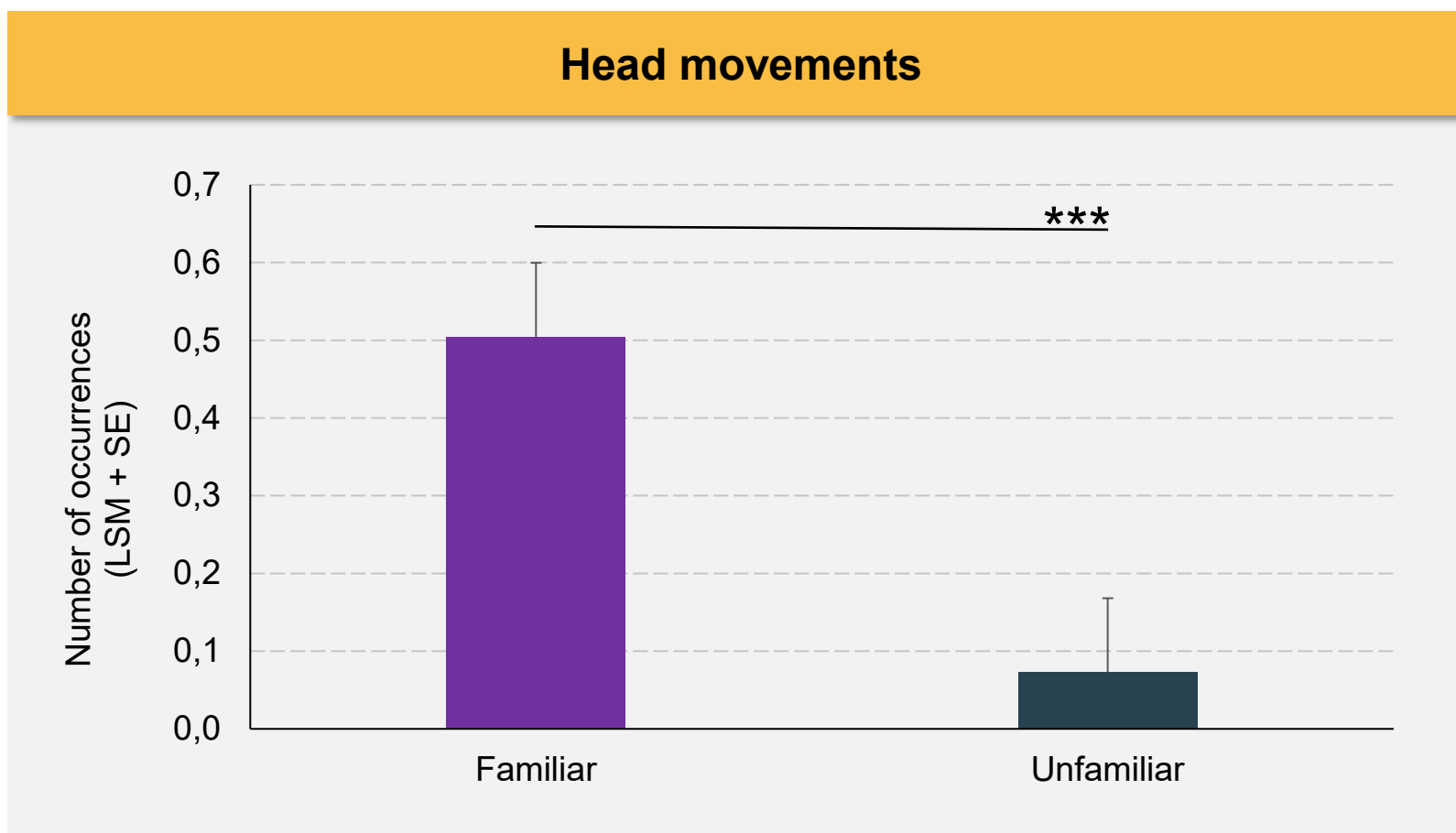
Summary of results – Influence of negative human expectation

Effect of round

- **Round 1 significantly influences the behaviour**
 - Round 1 vs. round 2 and 3 (habituation effect)
- **Round 4 did not significantly influence the behaviour**
 - Round 3 vs. round 4 numerically

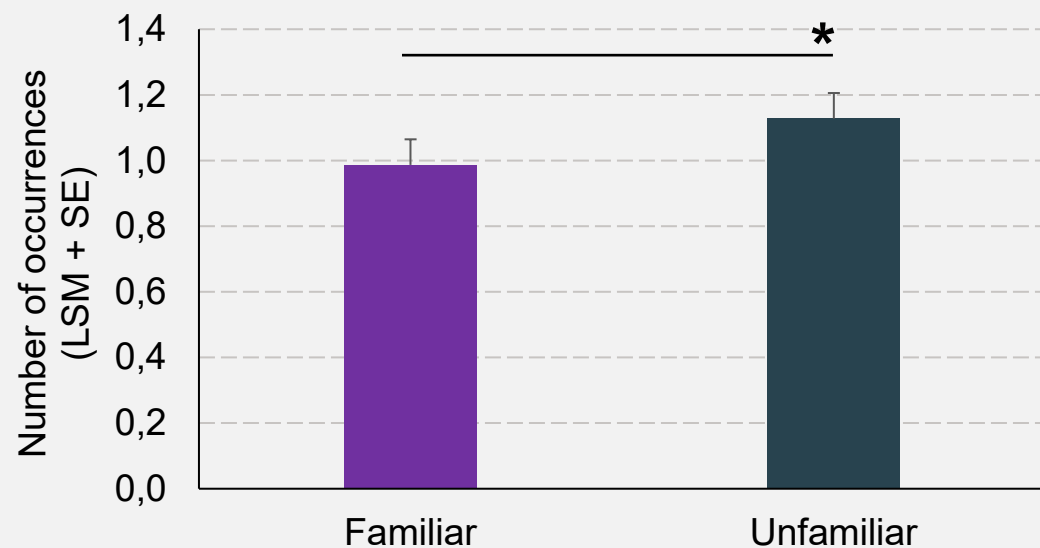
More attentive due to human **expectations**

Results – Influence of familiarity

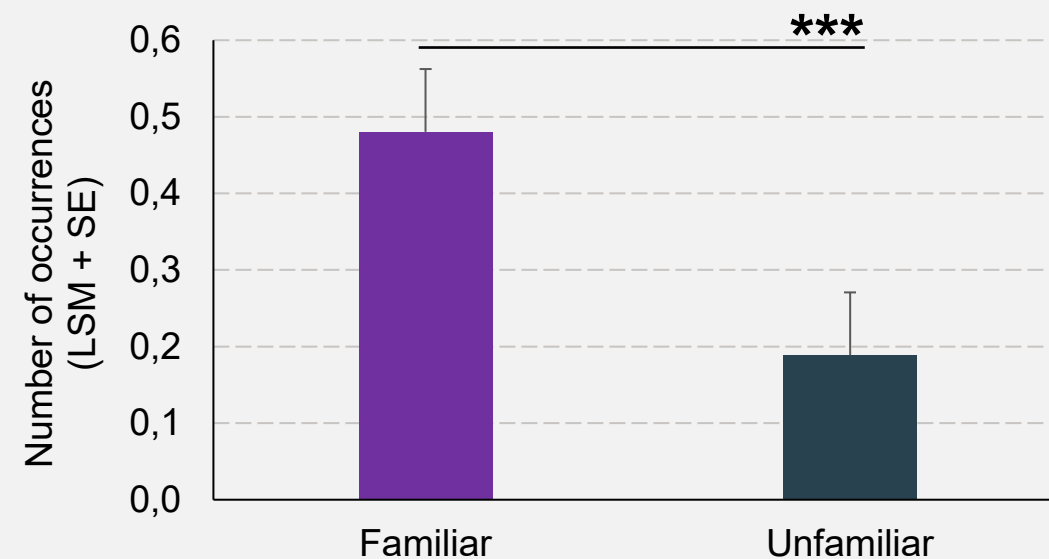


Results – Influence of familiarity

Swinging tail



Swishing tail



Summary of results – Influence of familiarity

Effect of familiarity

- **Behavioural changes** with **familiar humans** compared to unfamiliar humans

Behaviours with **familiar humans**
indicate **more attention**

Conclusion

1

Increase **safety**

2

More **animal-friendly**
communication

Reduce **stress**

Thank you for your attention!

Thanks to everyone who was involved in this study!



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List of references

- Keeling L J, Jonare L & Lanneborn L (2009): Investigating horse–human interactions: The effect of a nervous human. The Veterinary Journal, 181, 70-71. DOI: 10.1016/j.tvjl.2009.03.013