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Can horses discriminate human body odors from joy and fear contexts?

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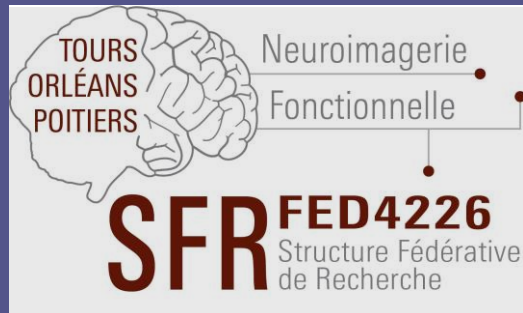
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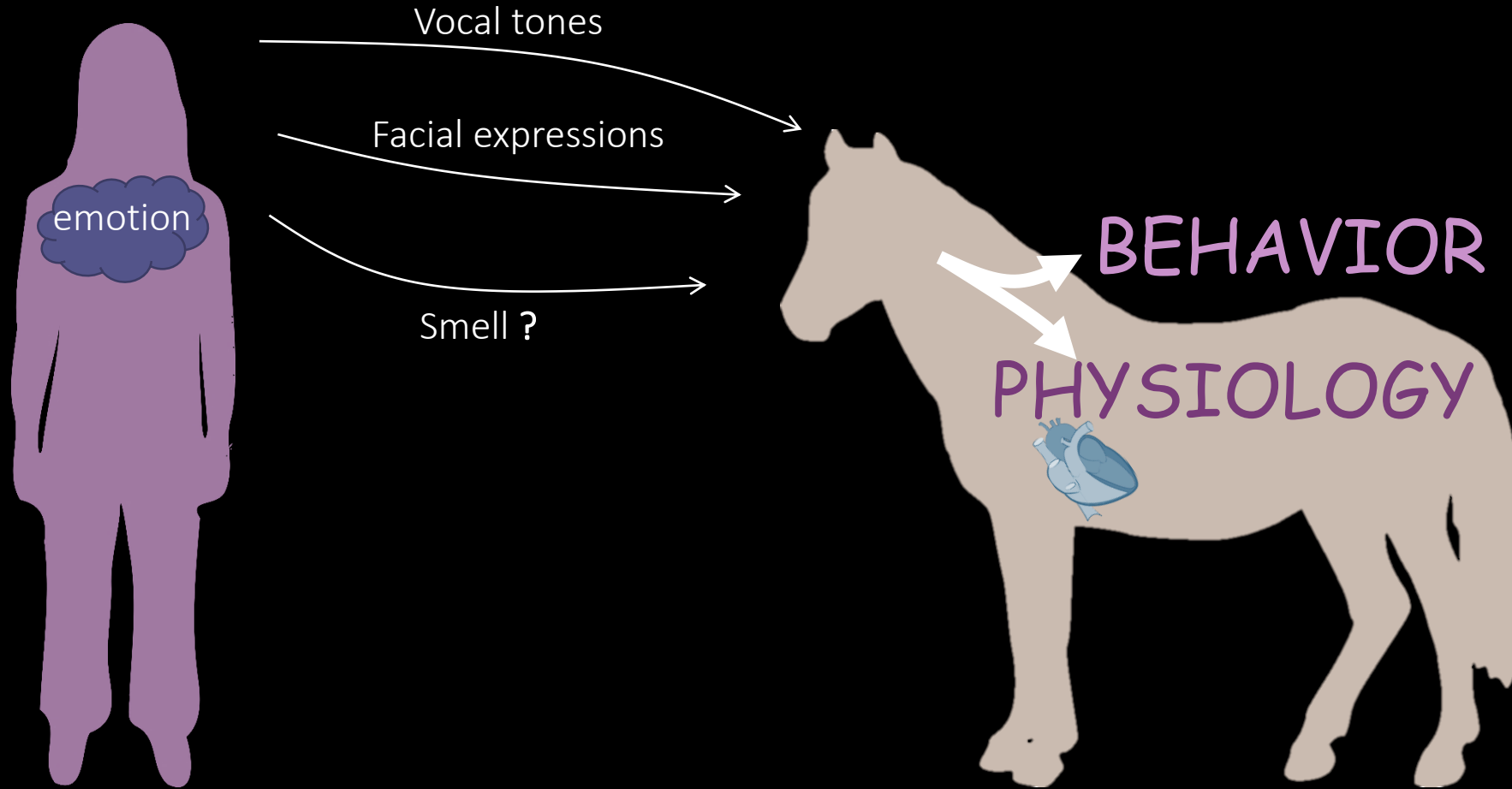
Horses discriminate human body odors between fear and joy contexts in a habituation-discrimination protocol. *Sci Rep.* 2023;13: 3285. doi:10.1038/s41598-023-30119-8

Team Cognition, Ethology, Behavior - Physiology of Reproduction and Behavior Lab, France



Introduction

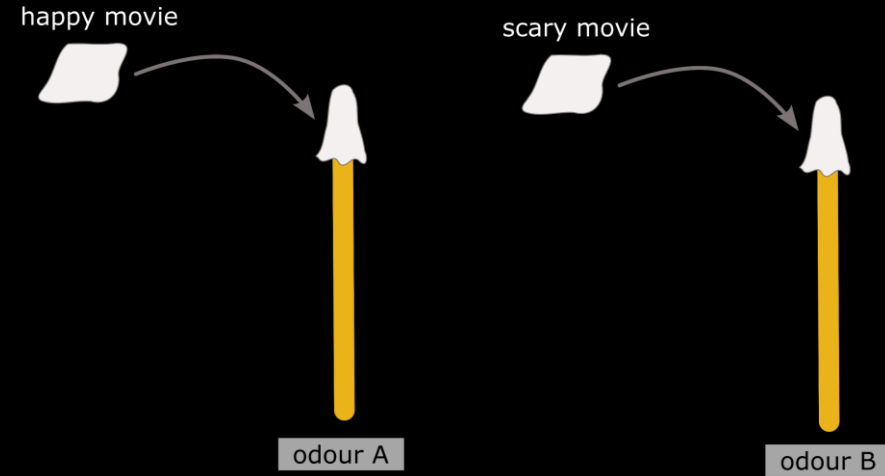
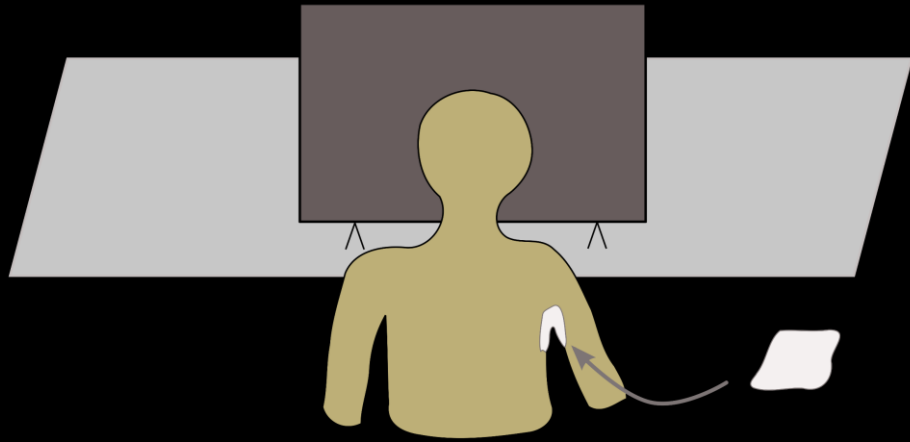
Jardat, 2022
Galvan, 2016
Proops, 2018
Siniscalchi, 2016, 2018
Smith, 2018
Trösch, 2019
D'Aniello, 2018
Sabiniewicz, 2020



Discrimination of human odors from different emotional contexts?

Methods

Happy movie + Scary movie



Habituation – discrimination protocol

Methods

Habituation

sample A_1

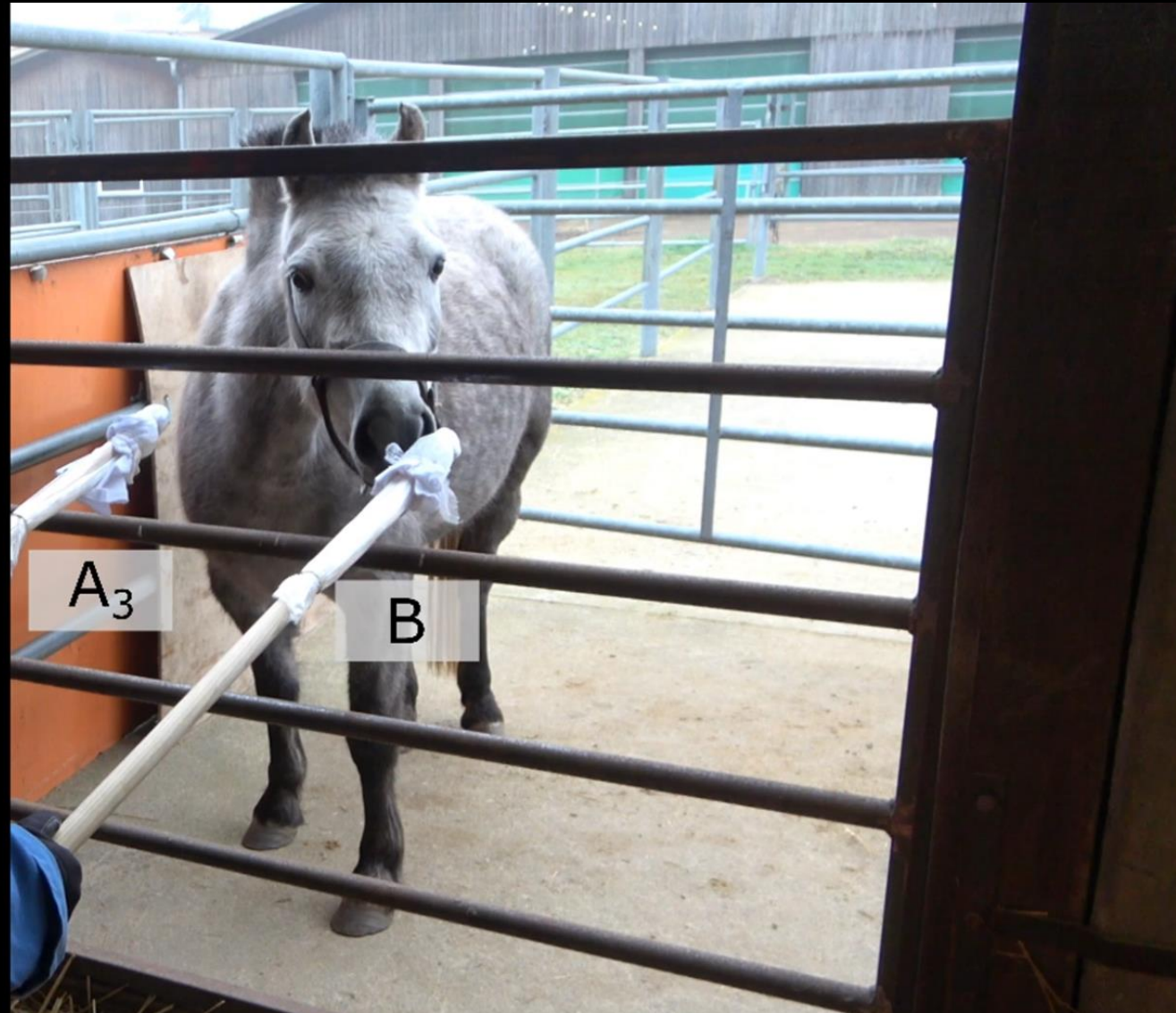
2 min

Methods

Discrimination

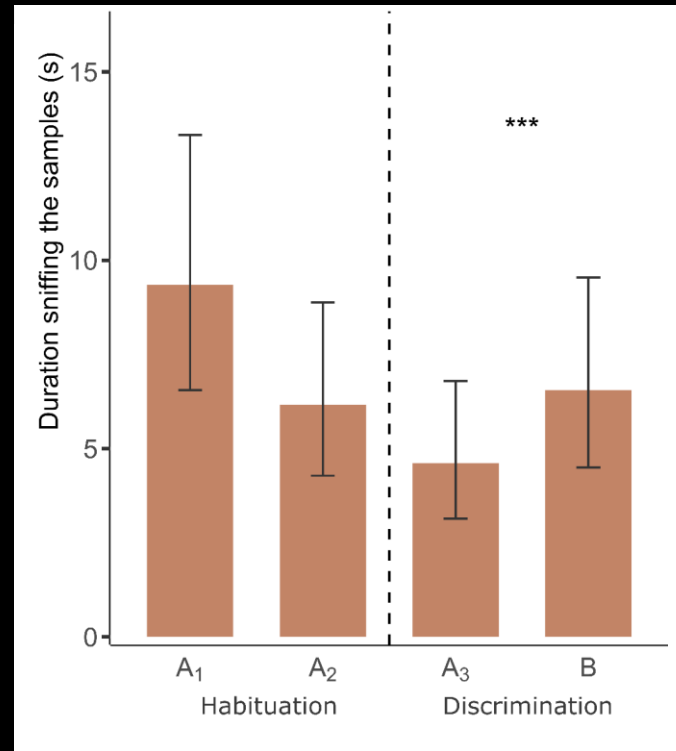
sample A_3
and
sample B

2 min



Results

Time spent sniffing the samples



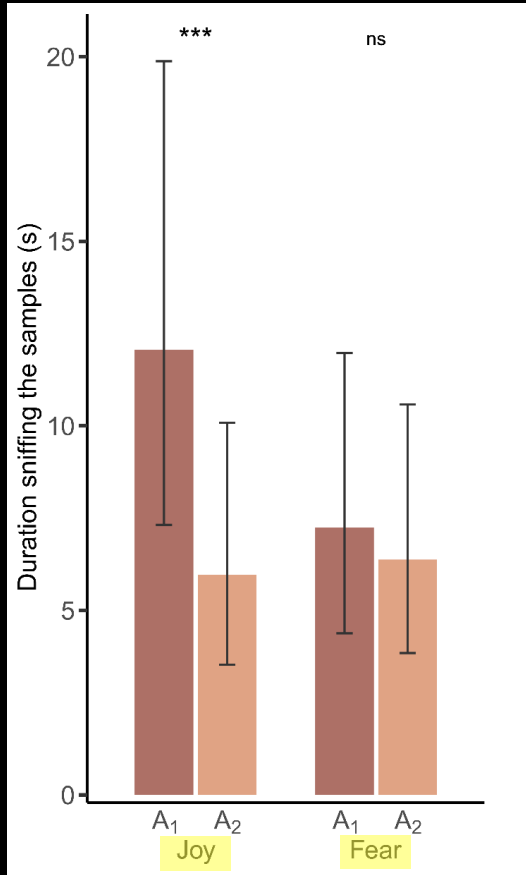
Habituation & Discrimination



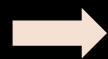
Horses sniffed the novel odor for longer

Results

Habituation



Faster habituation for joy



Different processings of the odors of joy VS fear

Odor A1



Left bias for joy
but not for fear

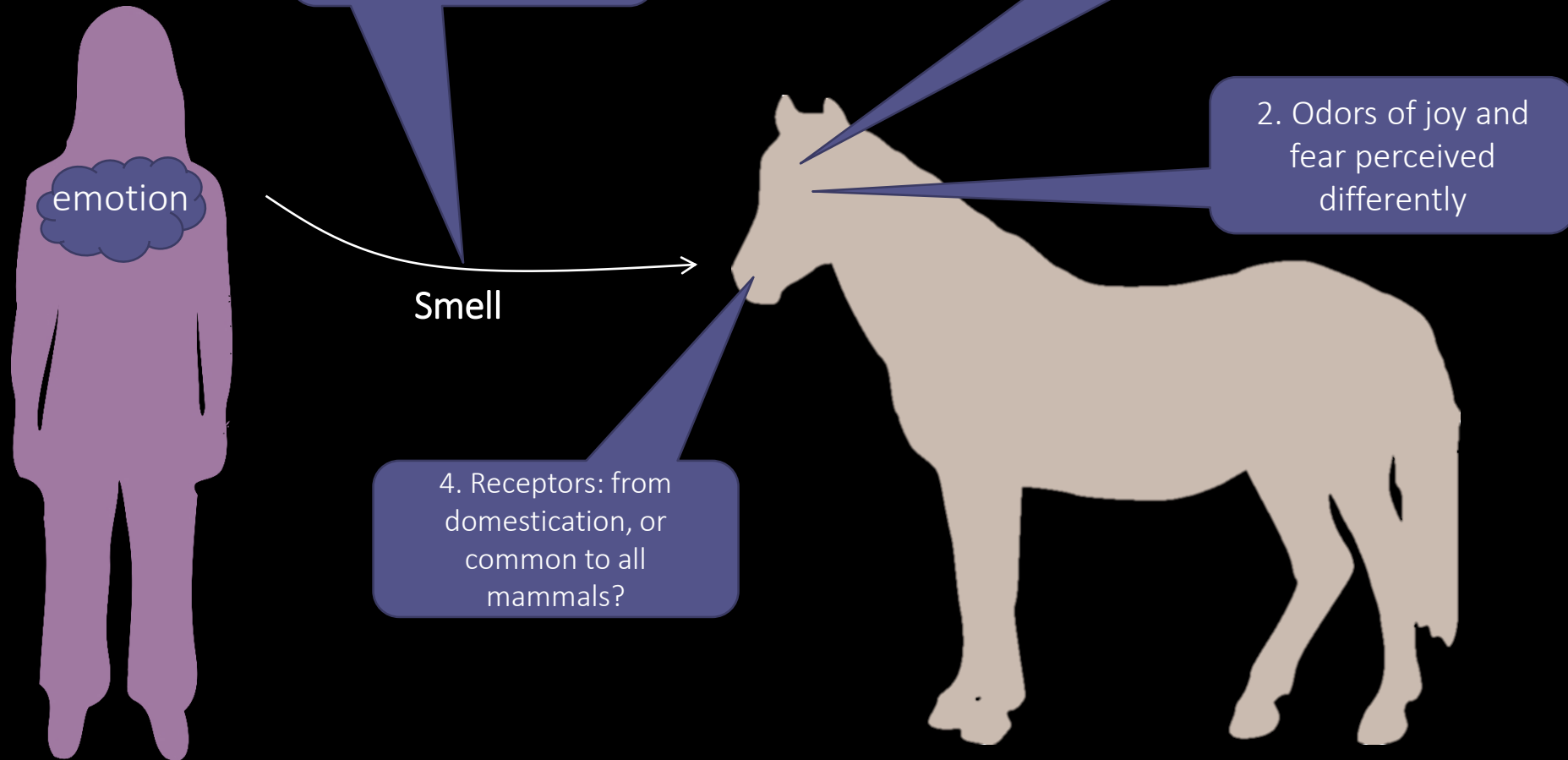
Number of dilations of
each nostril

$$\frac{L}{L + F}$$

Left-nostril bias index

Discussion

Semin, 2019
De Groot, 2015, 2017
Sabiniewicz, 2021
Destrez, 2021
D'Aniello, 2018, 2021



Conclusion

Horses discriminate human body odors from fear and joy contexts and process them differently

- ➔ Basis for recognition of human emotions by horses through smell
- ➔ Next steps: influence on behavior & physiology? Emotional contagion?

Thank you to the horses who were tested in this study

Thank you to all the participants who donated their sweat

Thank you for your attention

Thank you to my research team:

Léa Lansade
Ludovic Calandreau
Céline Parias
Zoé Menard--Peroy
Rachel Degrande
Philippe Barrière
Fabrice Reigner



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