



LUND UNIVERSITY

Cognitive Control in Distracted Dinosaurs

Boehly, Thibault; Osvath, Mathias; Reber, Stephan A.

2023

Document Version:

Publisher's PDF, also known as Version of record

[Link to publication](#)

Citation for published version (APA):

Boehly, T., Osvath, M., & Reber, S. A. (2023). *Cognitive Control in Distracted Dinosaurs*. Poster session presented at The Association for the Study of Animal Behaviour Winter 2023, Edinburgh, United Kingdom.

Total number of authors:

3

General rights

Unless other specific re-use rights are stated the following general rights apply:

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Read more about Creative commons licenses: <https://creativecommons.org/licenses/>

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

LUND UNIVERSITY

PO Box 117
221 00 Lund
+46 46-222 00 00



LUND
UNIVERSITY

Cognitive Control in Distracted Dinosaurs



Thibault Boehly, Mathias Osvath, Stephan A. Reber

LUCS Cognitive Zoology Group, Department of Philosophy, Cognitive Science, Lund University, Sweden

Introduction

- **Cognitive control** allows to control one's own behaviour to reach a goal
- In archosaurs, it's thought to be associated with the **nidopallium caudolaterale** (NCL)
- NCL increased in **size and neuron numbers** along the avian lineage

Question: Would cognitive control be affected differently between different species?

Methods

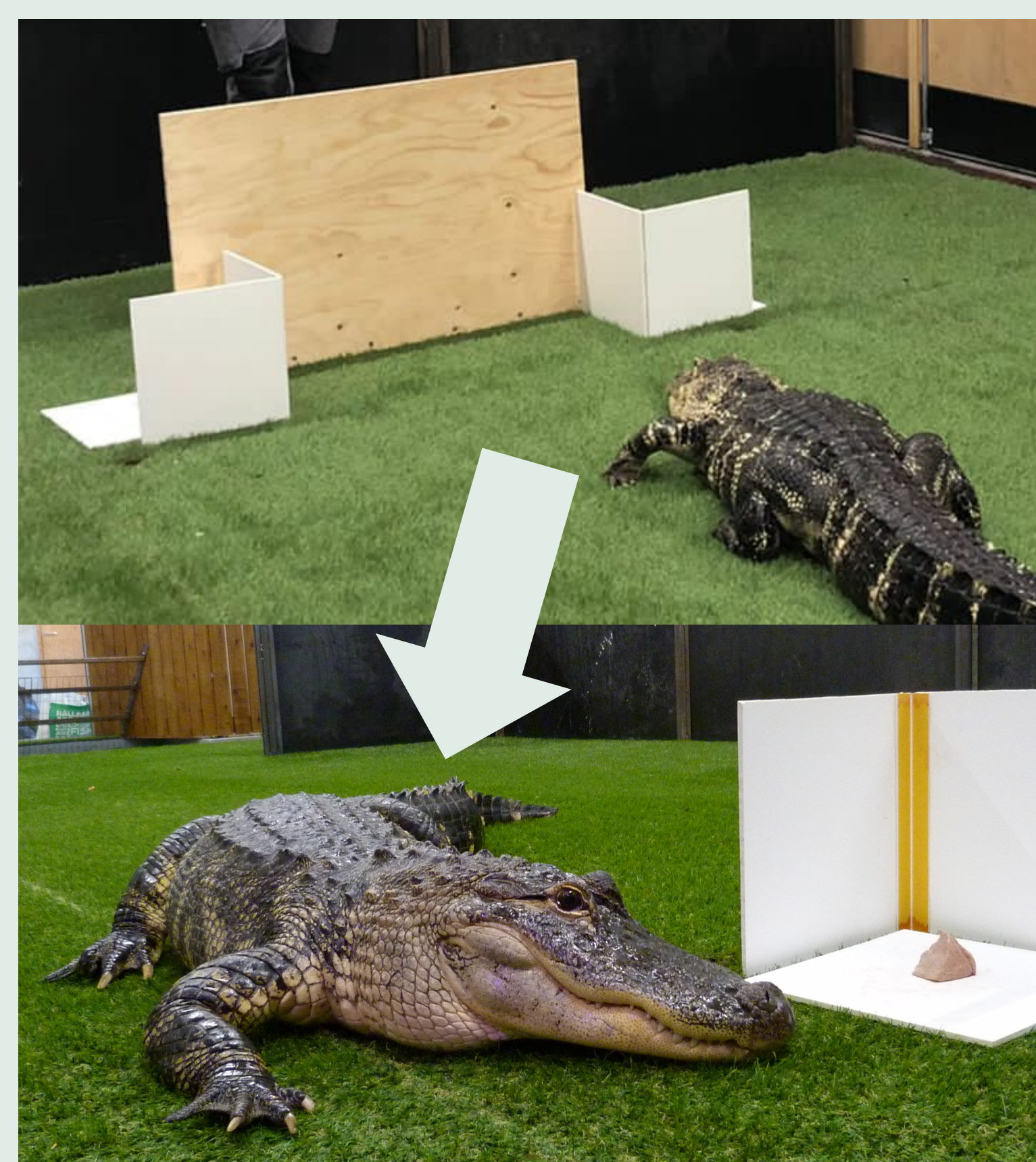


Figure 1. An alligator finding the hidden food reward

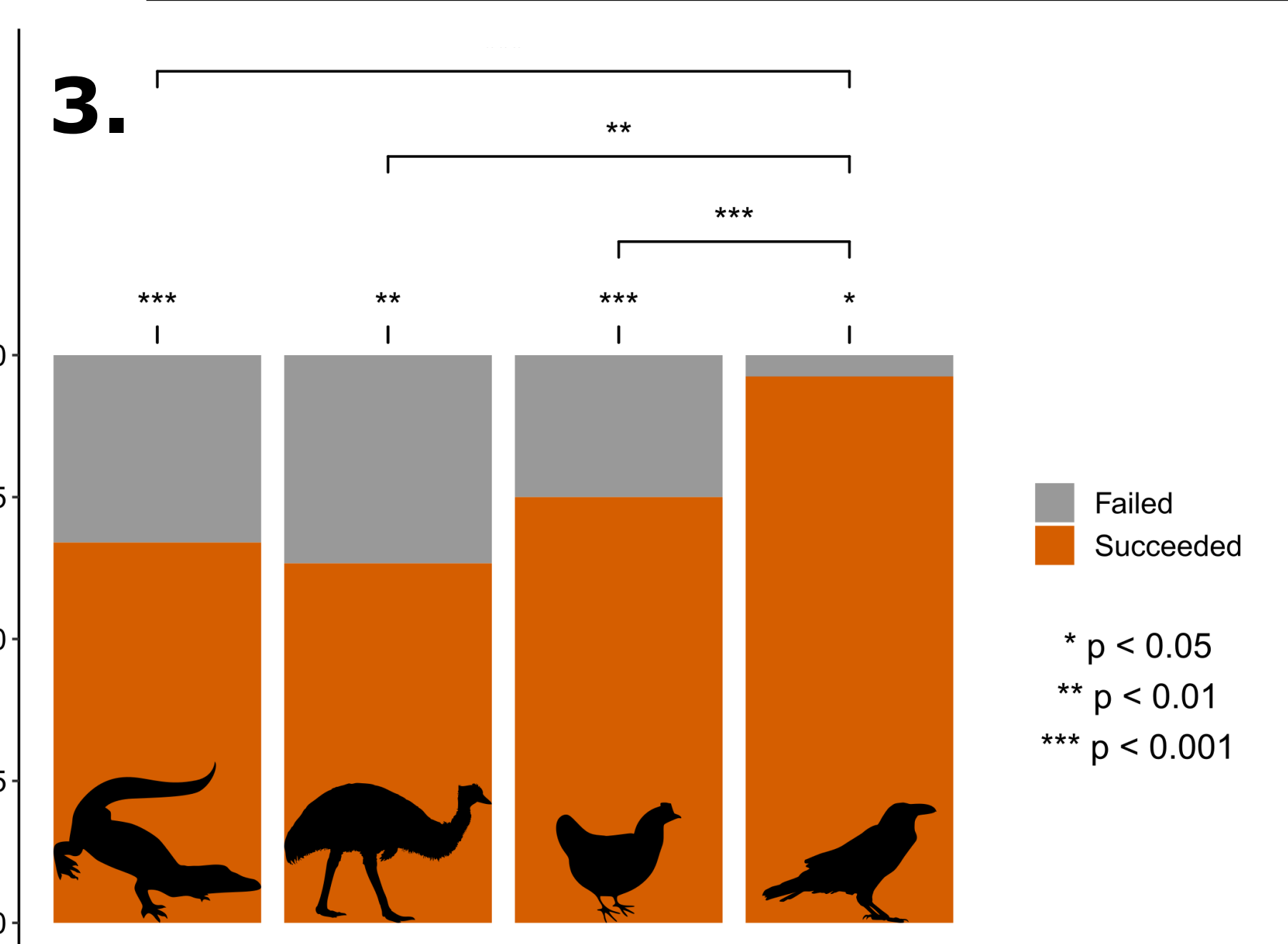
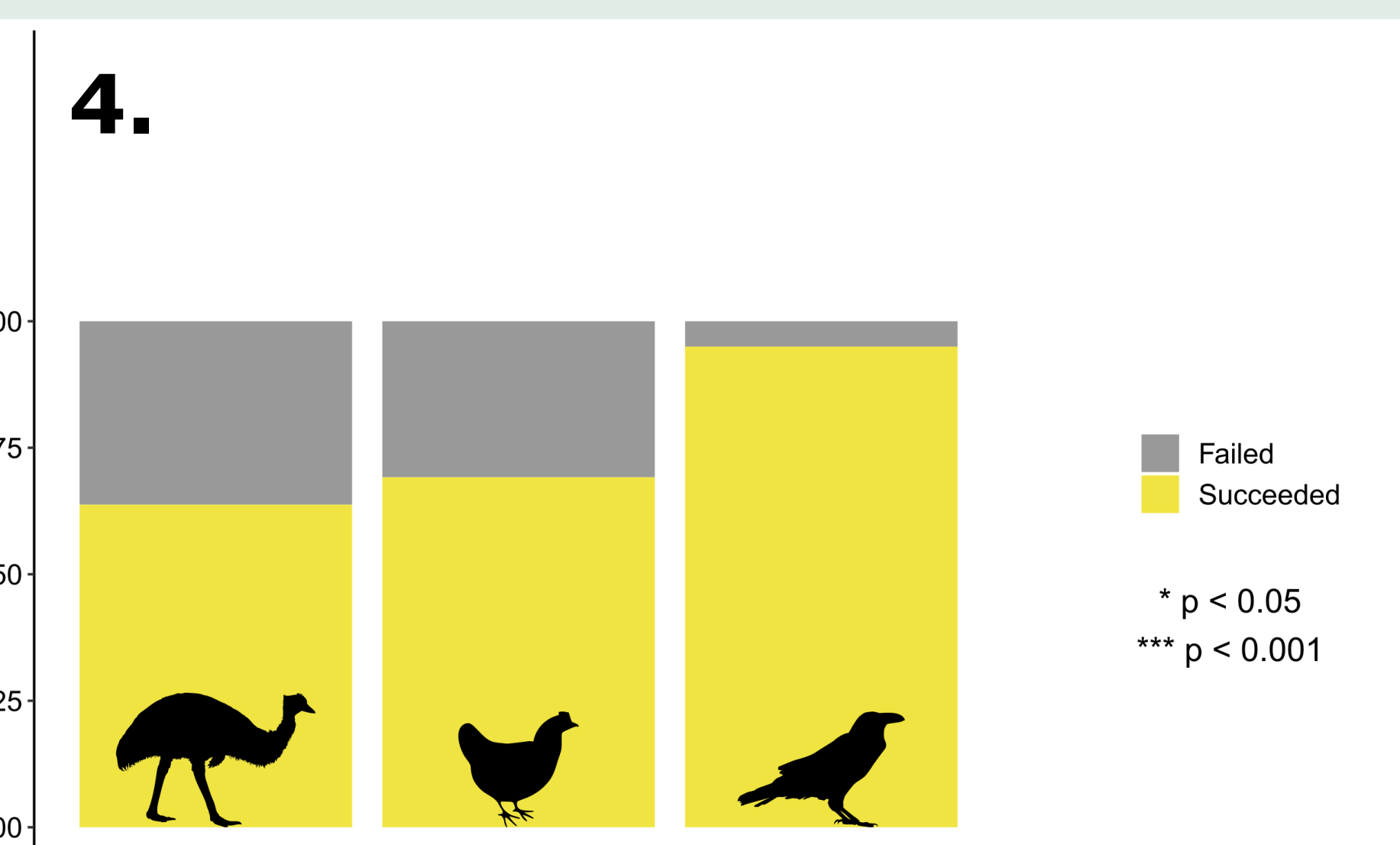
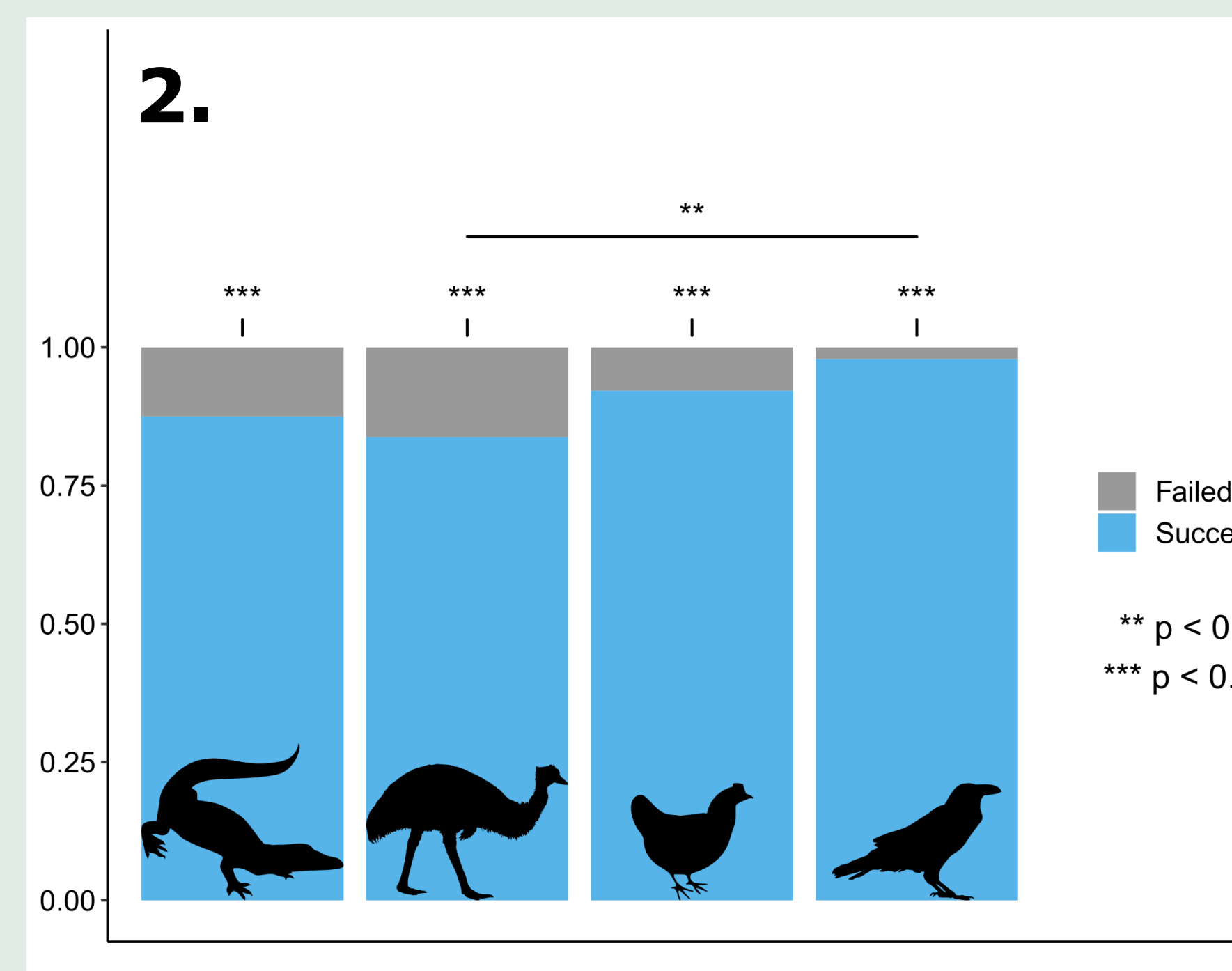
3 conditions - 20 trials each

- 1) A food reward is hidden in full view of the subjects
- 2) The subjects search the reward either without distraction or with one distraction or two distractions (one or two food items thrown to them while approaching)
- 3) The subjects choose one of two locations

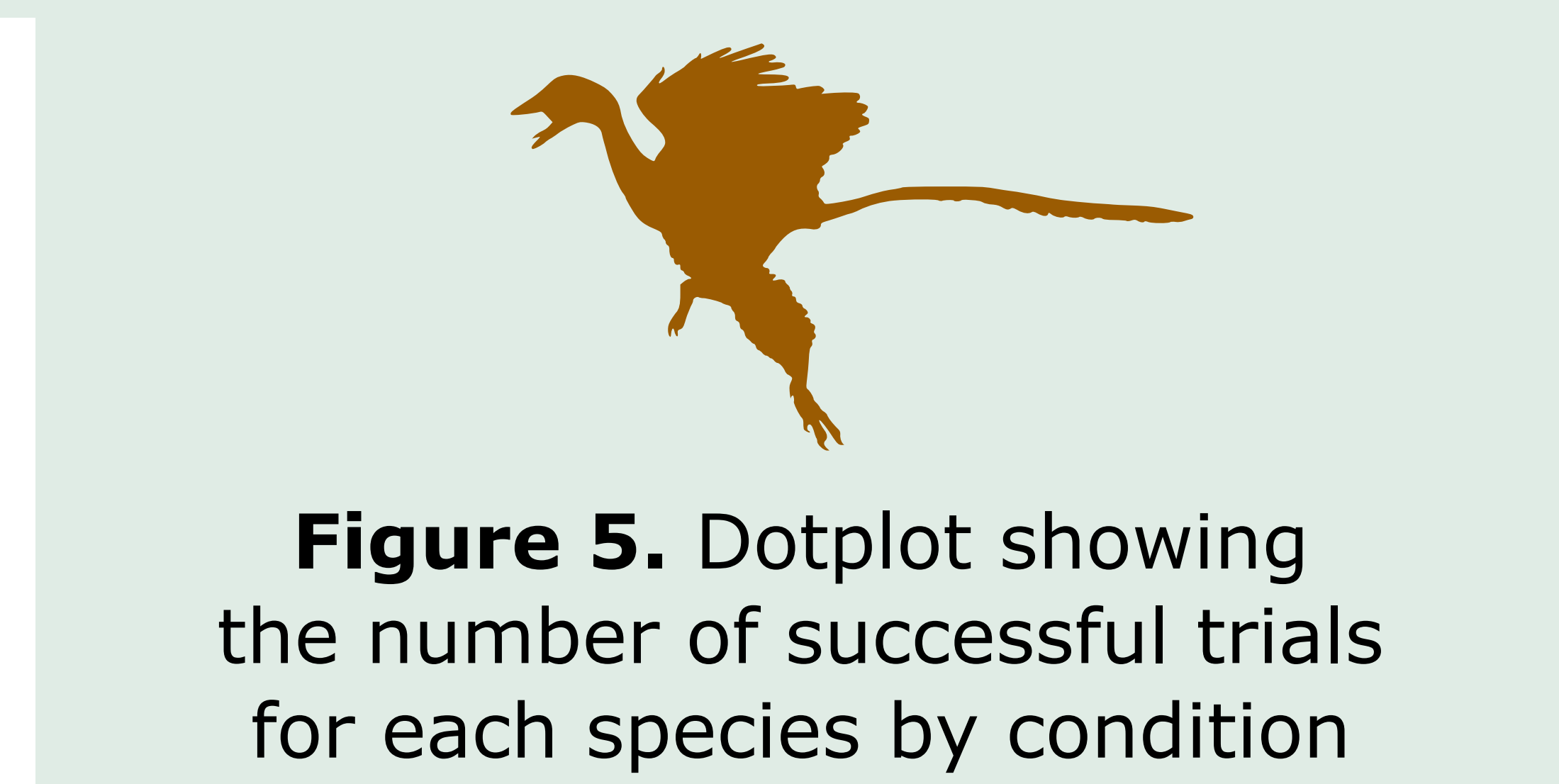
Species tested



Results



Figures 2, 3 & 4. Plots showing the number of occurrences by species without distraction, with 1 distraction, and with 2 distractions



Conclusion

- Distraction worsens the ability to find the food, except for ravens
- Results suggest conserved cognitive control abilities in archosaurs
- Better performance of ravens could be explained by a sharp increase of neuron numbers in the clade Telluraves



Sources

Dromaeosaurus skull by Becky Barnes, *Archaeopteryx* by T. Michael Keesey, and *Brachiosaurus* by Scott Hartman, available on PhyloPic

Contact

✉ thibault.boehly@lucs.lu.se