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# Cognitive Control in Distracted Dinosaurs



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## 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

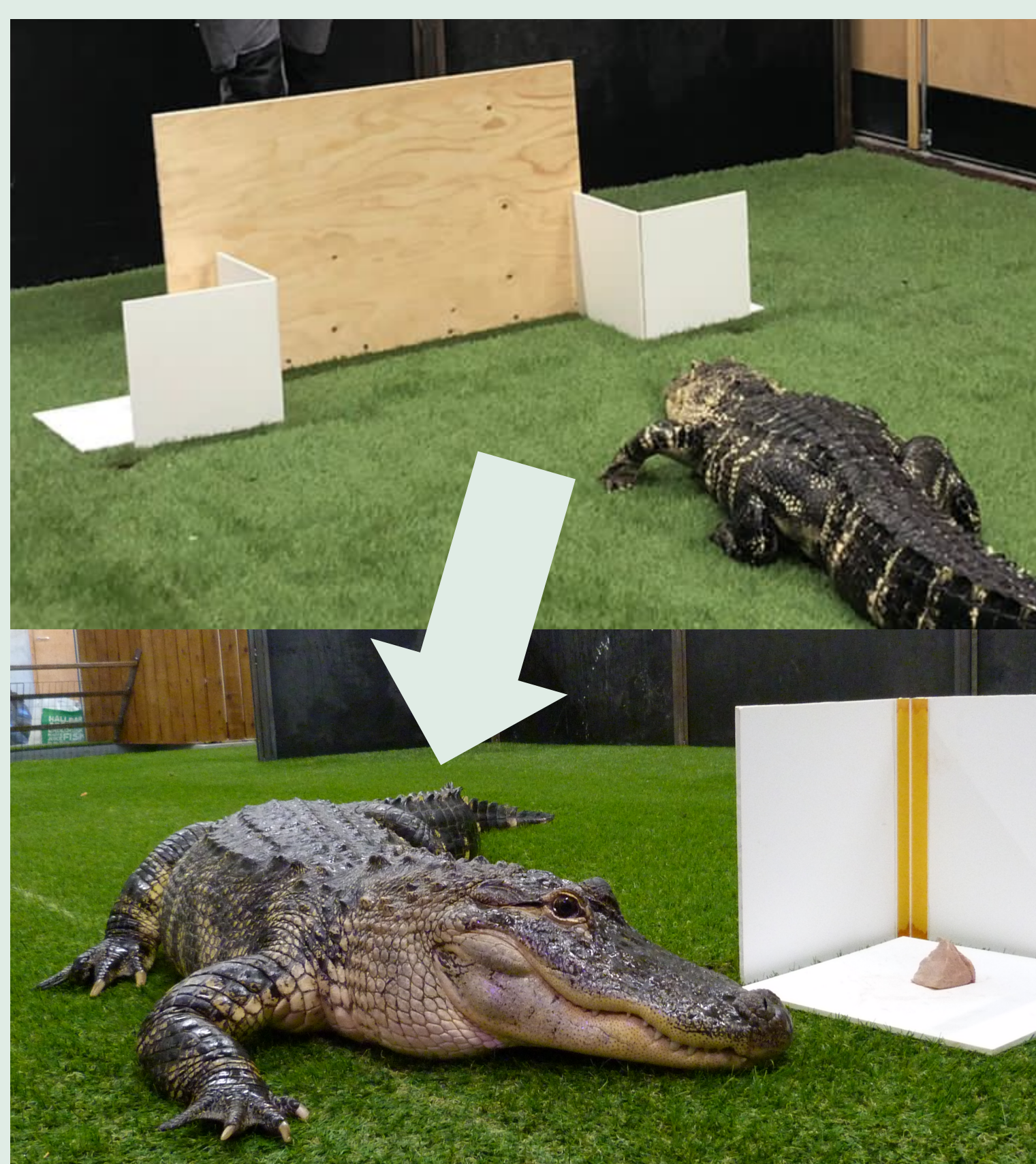


Figure 1. An alligator finding the hidden food reward

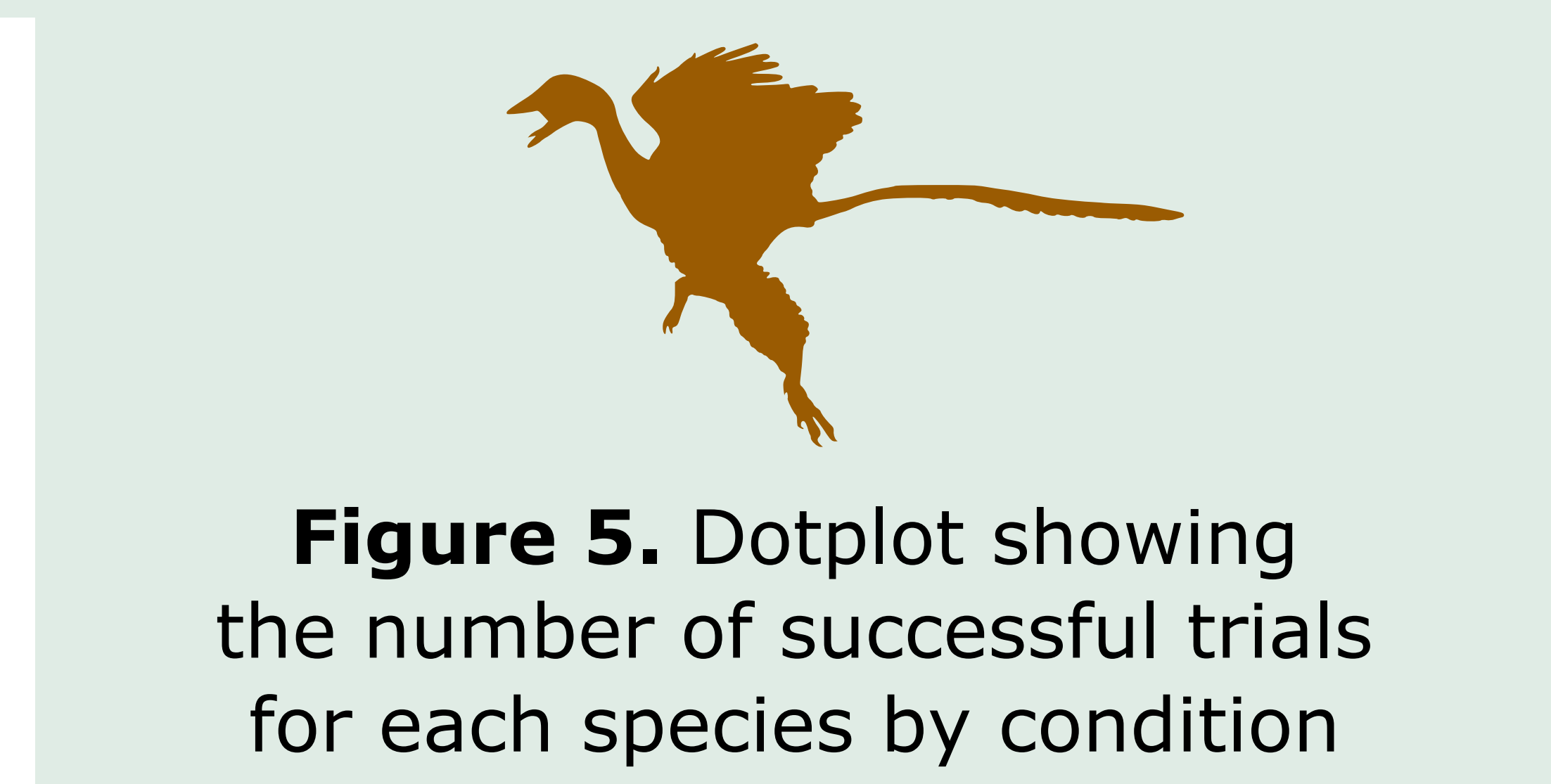
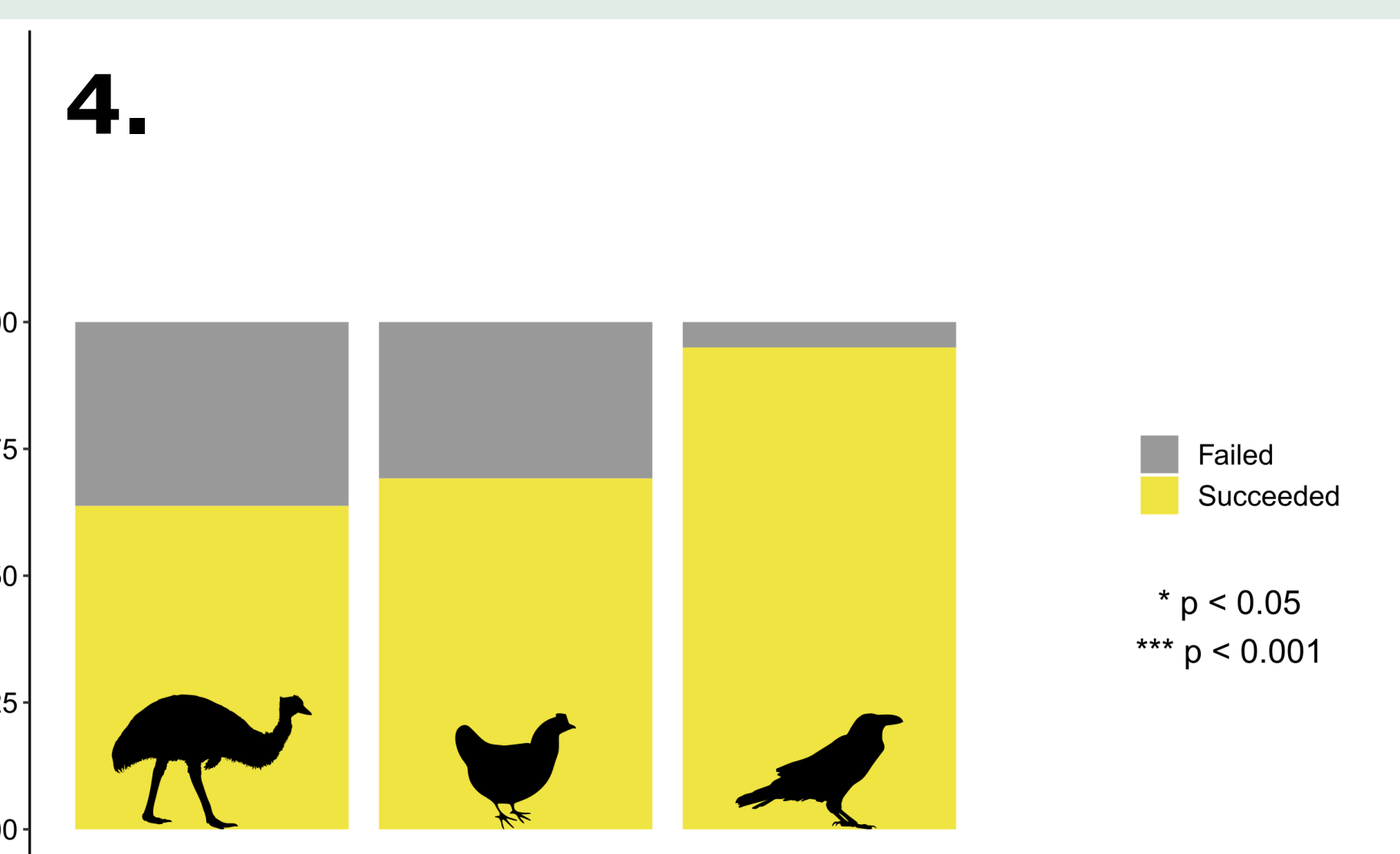
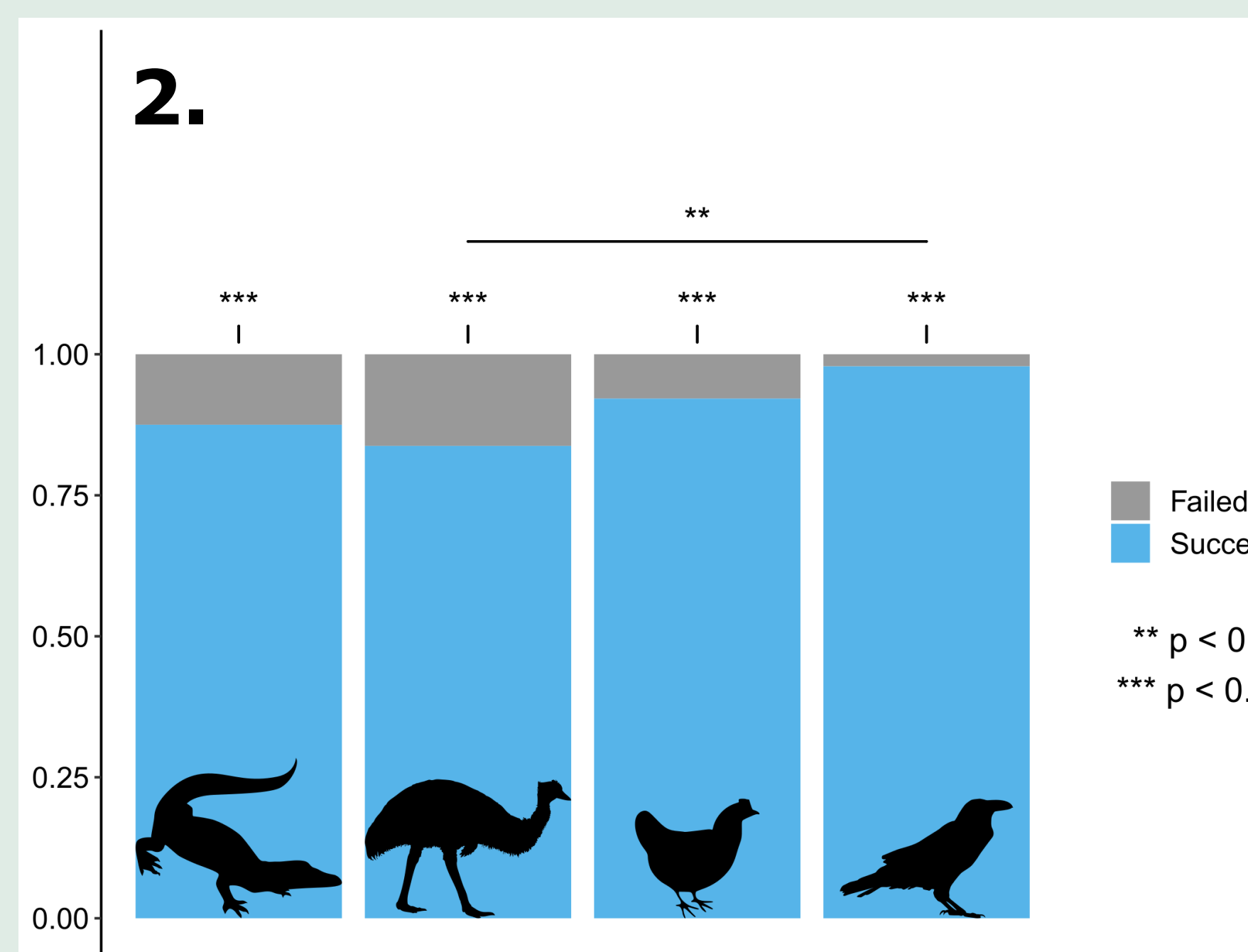
### 3 conditions - 20 trials each

- 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

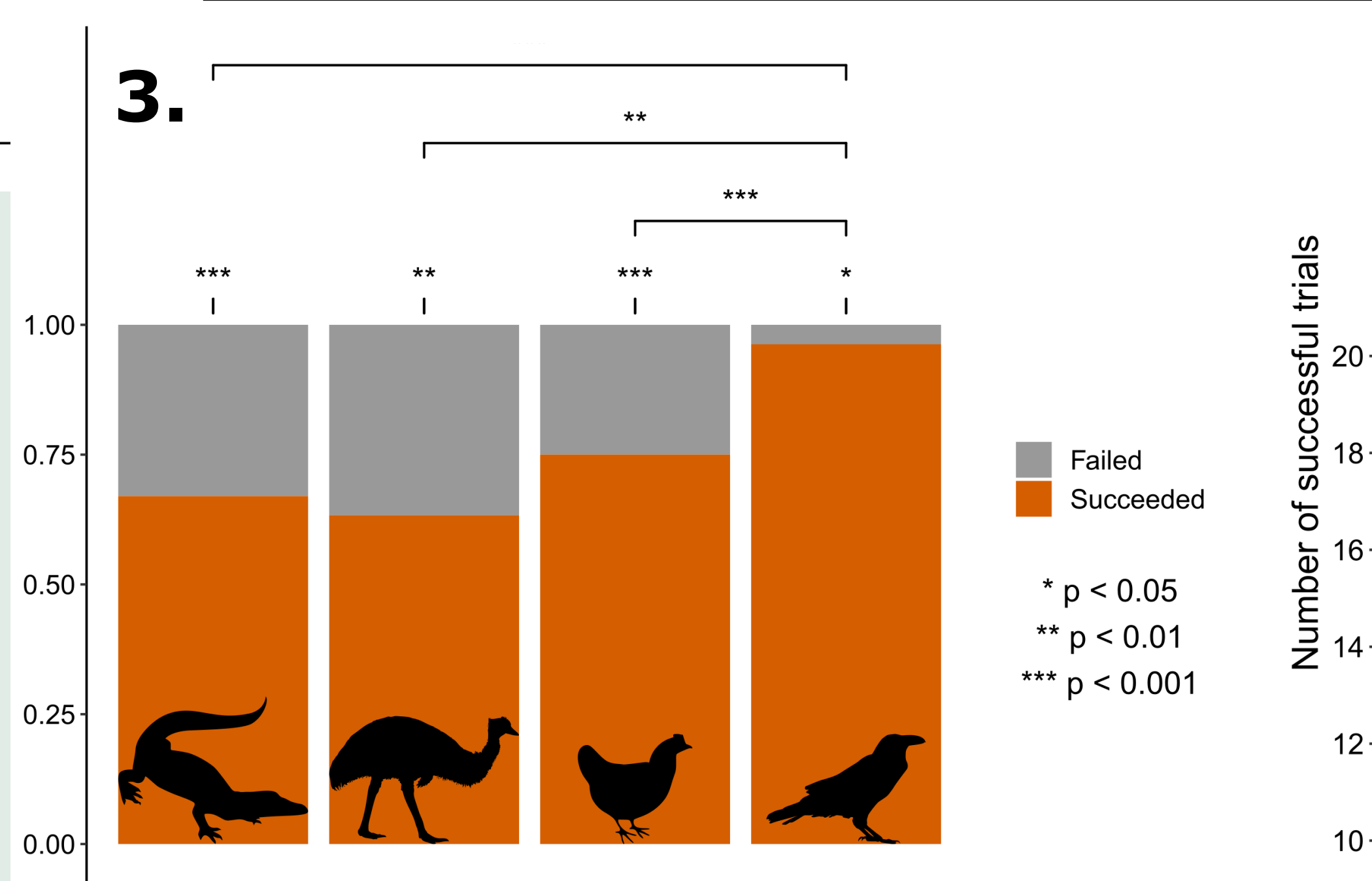
### Species tested



## 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

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