

LUND UNIVERSITY

Variation in working memory performance in two archosaur species

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

2022

Link to publication

Citation for published version (APA): Boehly, T., Osvath, M., & Reber, S. A. (2022). Variation in working memory performance in two archosaur species. Poster session presented at European Conference on Behavioural Biology, Groningen, Netherlands.

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



Variation in working memory performance in two archosaur species

Thibault Boehly, Mathias Osvath, Stephan A. Reber LUCS Cognitive Zoology Group, Department of Philosophy, Cognitive Science, Lund University, Sweden

Introduction

- Executive functions are essential skills for behavioural control and decision making
- In archosaurs, they are associated with the brain region **nidopallium caudolaterale** (NCL)
- We previously tested emus and alligators in various cognitive tasks
- Several of these tasks require working memory, an executive function

Question: Would a distraction affect the working memory of emus and alligators differently? Methods



Figure 1. An alligator finding the hidden food reward 2 conditions - 20 trials each American alligator (Alligator mississippiensis) 1) A food reward is hidden in full view of the subjects

> 2) The subjects either search the reward

Emu (Dromaius novaehollandiae) N = 6

N = 3



without distraction or with distraction (another food item thrown to them while approaching)

3) The subjects choose one of two locations

Results



Figure 4. Boxplot showing the number of successful trials for each species by condition

Contact

T @thibhly

thibault.boehly@lucs.lu.se

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

Conclusion

- Distraction worsens the working memory of both species equally
- Results suggest conserved working memory abilities in archosaurs
- The size increase of the NCL (relatively larger in birds than crocodylians) was probably not driven by a need for better working memory

Sources

Dinosaur silouhette in Public domain CC0 1.0 By Email by The Icon Z from the Noun Project - https://thenounproject.com/search/?q=email&i=3324085, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=90172396 By Twitter - http://fontawesome.io/icons/, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=119399173