

### Introduction

Bird nests are an example of animal architecture [1]

Experience and learning play a role in nest-building decisions [2,3]

Research question:

Does prior experience using a different nest-building material affect the amount used of a new material?



Figure 1. Zebra finches building with string

### Methodology

Pairs of zebra finches built 10 nests

- 5 with coconut fibre
- 5 with string

Pairs were split into 2 groups:

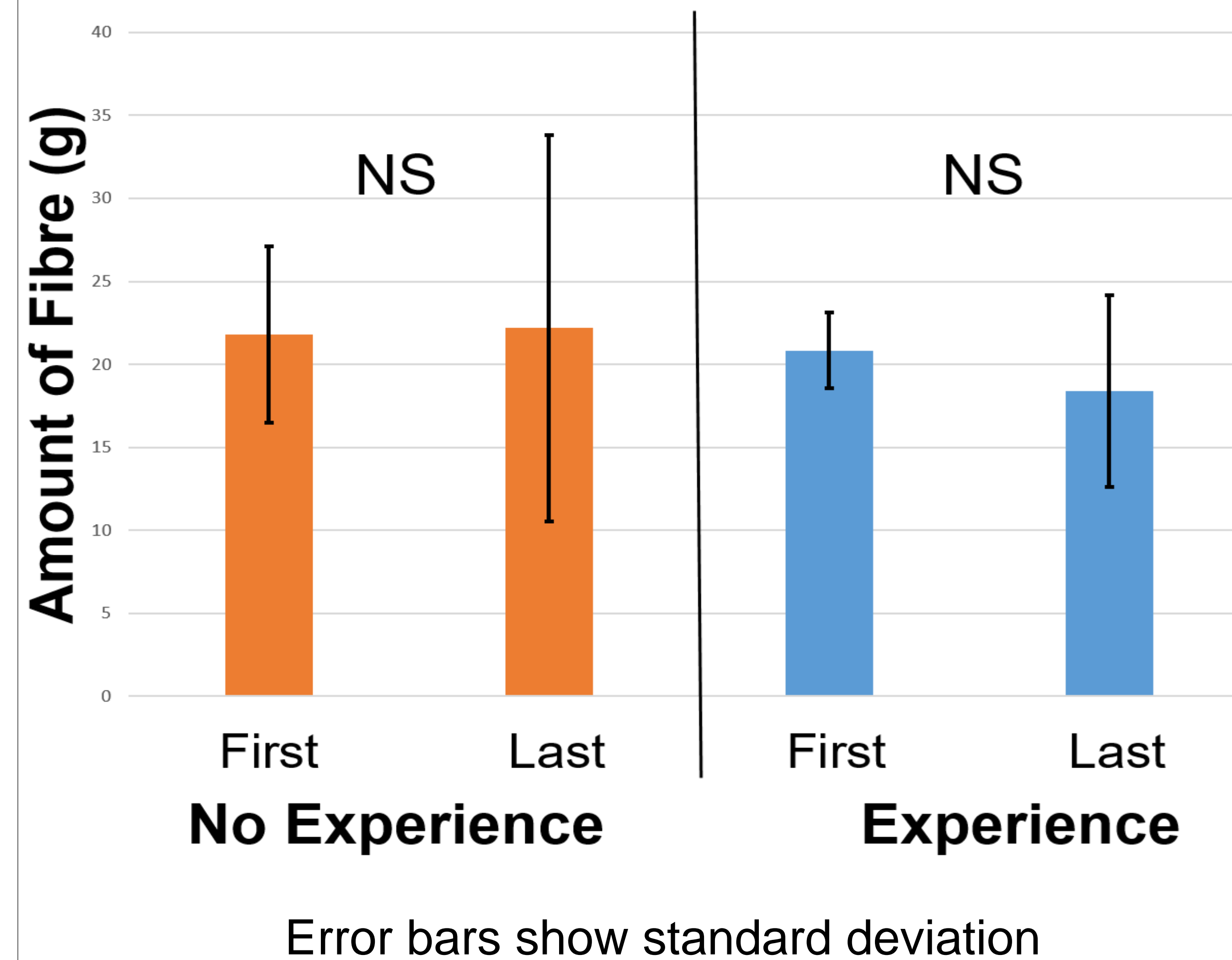
Group	S-C (n=8)	C-S (n=7)
Nest 1~5	String	Coconut Fibre
Nest 6~10	Coconut Fibre	String

**Measurers:**

Conut fibre nest - weighed (grams)

String nest - number of pieces

### Results (Fibre)

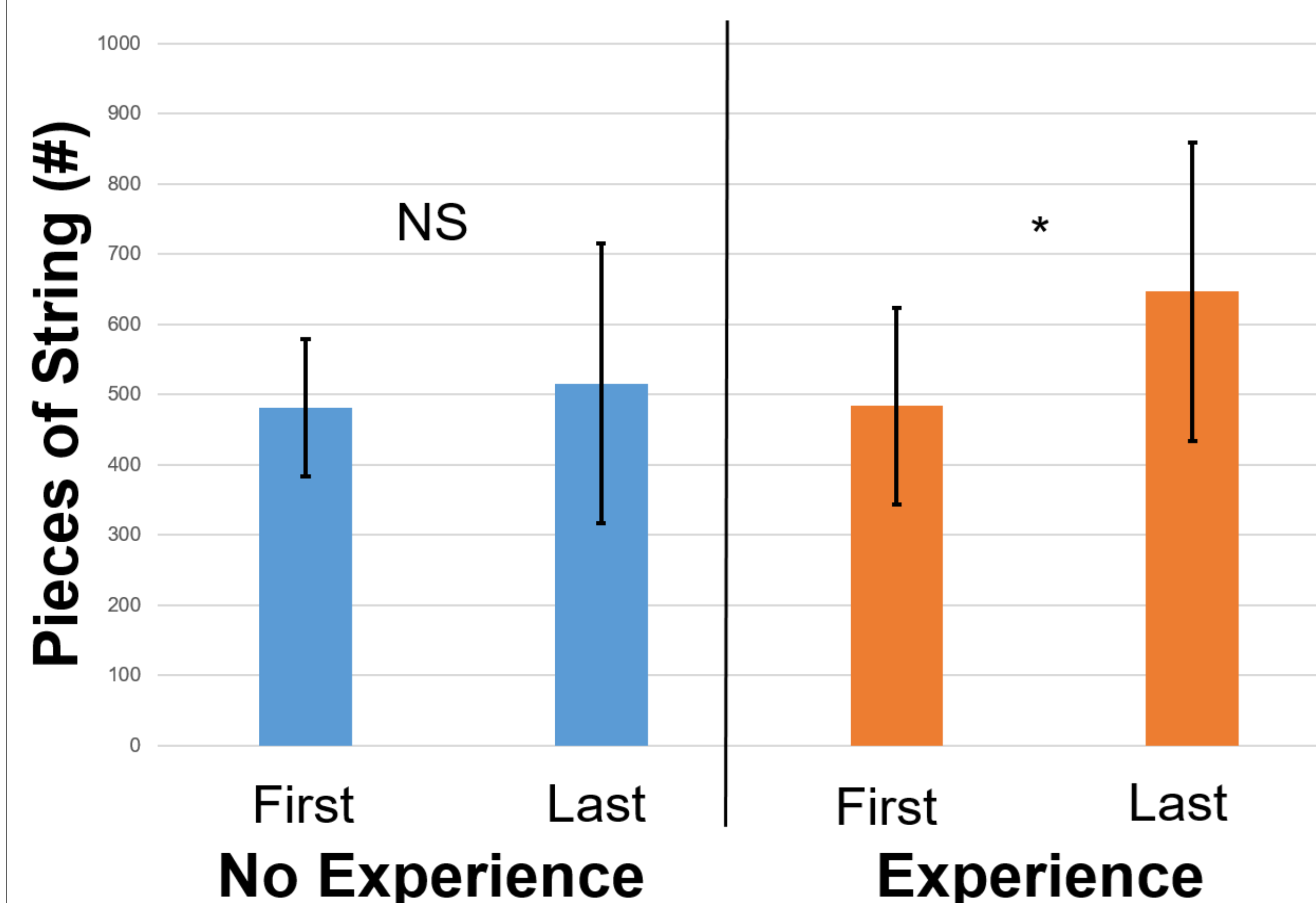


**Figure 2.** No significant difference in the amount of fibre (y-axis) for the first and last nests built by both experienced ( $t = 1.43$  (df = 7),  $P = 0.10$ ) and inexperienced pairs ( $t = -0.09$  (df = 6),  $P = 0.47$ ).



Top-down view of coconut fiber nest

### Results (String)



**Figure 3.** No significant difference for amount of string (y-axis) in first and last nests of inexperienced pairs ( $t = -0.95$  (df = 7),  $P = 0.19$ ).

Significant increase in amount of string used by experienced pairs ( $t = -1.94$  (df = 6),  $P = 0.05$ ).



Top-down view of string nest

### Conclusion

**Inexperienced builders (S-C & C-S)**

No change in amount from first to fifth nest by inexperienced pairs.

**Experienced builders (S-C)**

No change in the amount of coconut fibre nests built by pairs with prior experience using string.

**Experienced builders (C-S)**

Pairs with prior experience using coconut fibre build larger string nests over time.

### Summary

Not all building experiences are the same. Prior experience with coconut fiber affected subsequent string nests but the reverse was not true.

### References

- [1] Laidre, ME (2021) *Curr. Biol.* 31, R1458-64
- [2] Breen, AJ, Guillette, LM & Healy, SD (2016) *Comp. Cogn. Behav. Rev.* 11, 83-102
- [3] Bailey, IE, Morgan, KV, Bertin, M (2014) *Proc. Royal Soc. B* 281, 1-6