

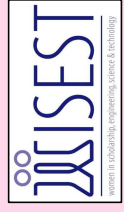
# Birds of a Feather Flock Together: Social Learning in Zebra Finches (*Taeniopygia guttata*)

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## Introduction

**Purpose:** Understanding how animal apply social learning strategy to construction behaviour

- Social learning theory predicts animal will use social information when they are unsatisfied<sup>1</sup>
- Zebra finches prefer stiff over flexible string when building nests<sup>2</sup>

**Prediction:** Birds that are satisfied (those that build with stiff string, Group 1) are more likely to copy (use social information) compared to birds that are unsatisfied (Group 2)

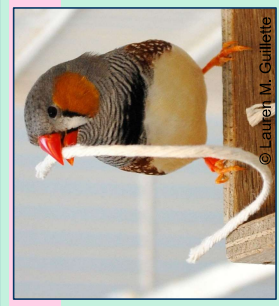


Figure 1: Male zebra finch building nest with stiff string

**Specific aim of project:** Do the behaviours of demonstrator pairs influence if observer pairs copy?

## Methods

**Subjects:** 35 male-female pairs of Demonstrators, nine scored

**Procedures:** Score behaviours of male and female Demonstrators from video recording during Phase 2 using Behavioural Observation Research Interactive Software (BORIS)<sup>3</sup>

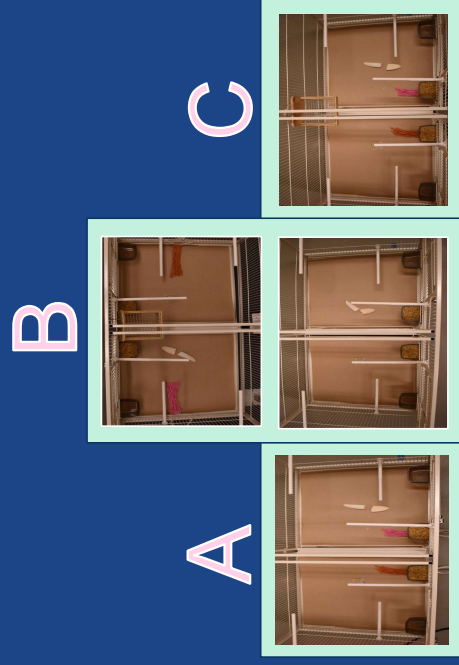
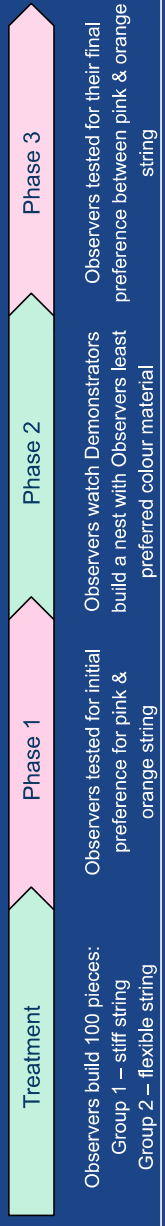


Figure 2: Column A, observer pair cage, phase 1. Column B, demonstrator pair cage (top) and observer pair cage (bottom), phase 2. Column C, observer pair cage, phase 3.

## Experimental design



## Behaviours scored

Behaviours scored	Behaviours scored
Nest/box	The bird is on/in the nest.
Demonstrated material interaction	When part of the birds' body (other than just tail) is in contact with demonstrated material.
Tied down material interaction	When part of the birds' body (other than just tail) is in contact with tied down material, not including when in nest.
Deposit	Bird drops material either into nest or bird is standing on top of nest box and drops material.

## Results

Behaviours of interest	R value	R-squared
Time female spent at nest / Male number of deposits	-0.491	0.241
Duration of female tied down / Duration of male tied down	0.521	0.271
Time female spent at nest / Male deposits per hour	-0.546	0.298

Figure 3: Correlation between behaviours of interest

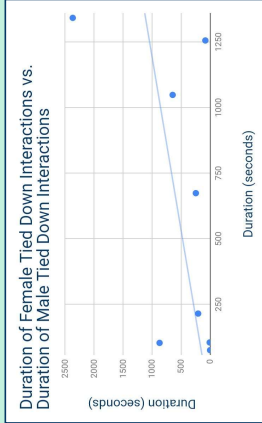


Figure 4: Correlation between duration of female interactions with tied down material and male interactions with tied down material

	Demonstrated Interaction		Tied Down Interaction		Nest Box	
	Male	Female	Male	Female	Male	Female
Maximum	2199	1839	1256	2370	8028	19658
Minimum	42	10	76	0	501	639
Average	1108	57	635	493	5474	9911

Figure 5: Duration (in seconds) of male and female behaviours, totaled from all demonstrator pairs.

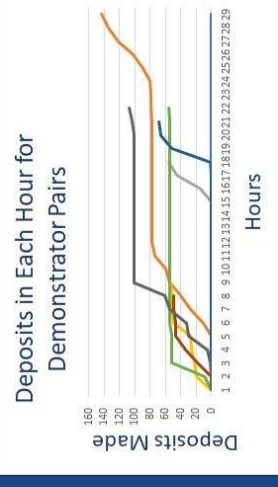


Figure 6: Comparison of deposits made in each hour across demonstrator pairs

## Conclusions

- Variation was observed in rates and durations of building between demonstrator pairs
- There was a negative correlation between the time the female at the nest with both the rate of deposits and number of deposits a male made which may warrant future investigation
- Contrarily, there was a positive correlation between female tied down material interaction and male tied down material interaction
- Research is ongoing; possibilities for further research in animal social learning

## Acknowledgements

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- Department of Psychology, University of Alberta
- Canada Summer Jobs

## References

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