

# Social behaviour and endoparasites in Northern bald ibis (*Geronticus eremita*)



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## Introduction

In group living animals social context represents one of the most potent stressors. Chronic activation of the physiological stress response, although adaptive, may have pathogenic consequences, for instance by influencing parasite burden.

## Question

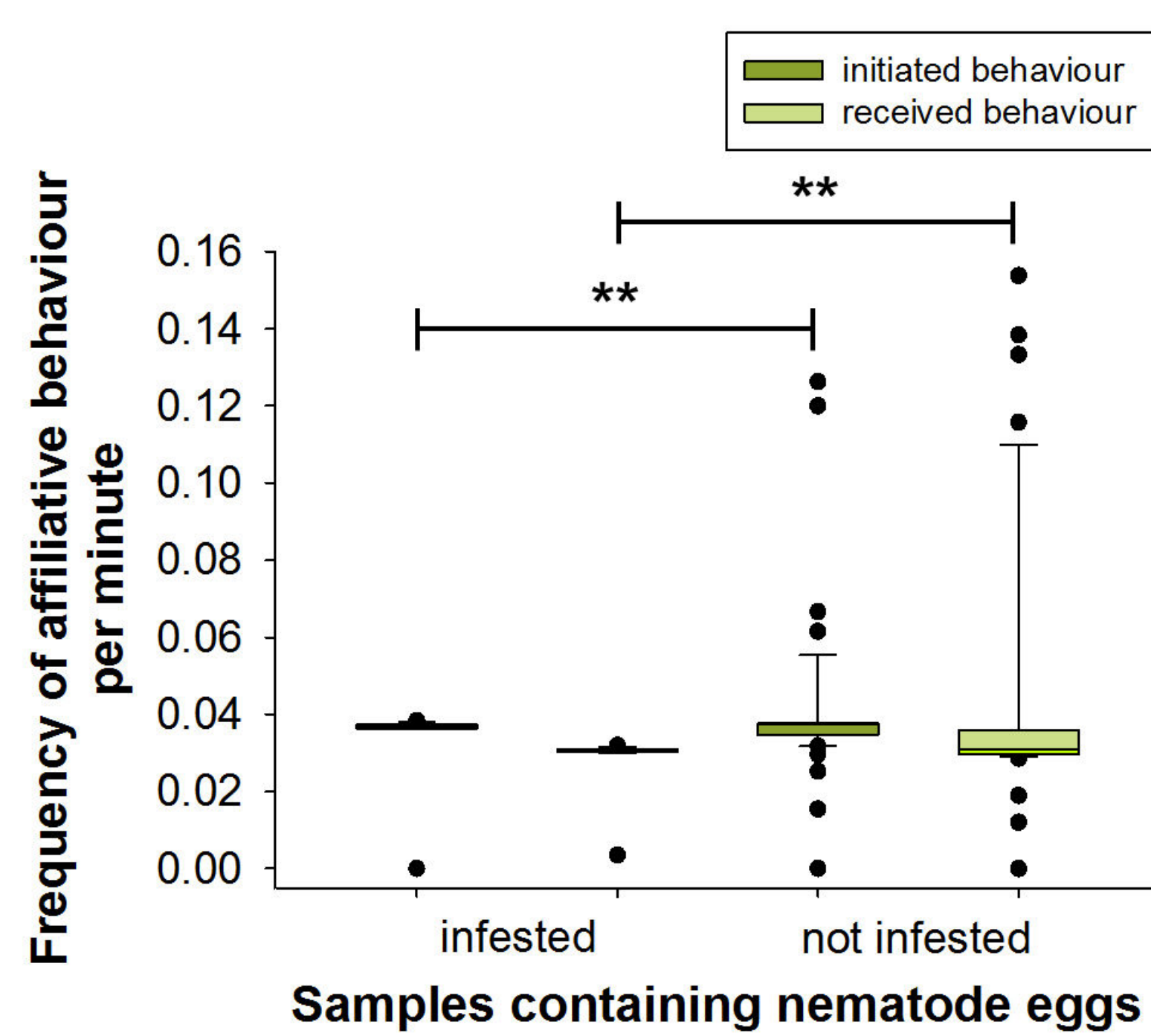
Do affiliative interactions influence parasite burden (excreted coccidian oocysts and nematode eggs) in Northern bald ibis?

## Methods

- *individually marked birds*  
free flying colony of the Konrad Lorenz Research Station
- *focal observations (5 min) from May to October 2015*  
initiated and received affiliative behaviours
- *dropping oocysts and egg count*  
using a McMaster counting chamber

## Results

parasite burden & affiliative behaviour



$N_{\text{individuals}}=31$   
 $N_{\text{samples}}=138$

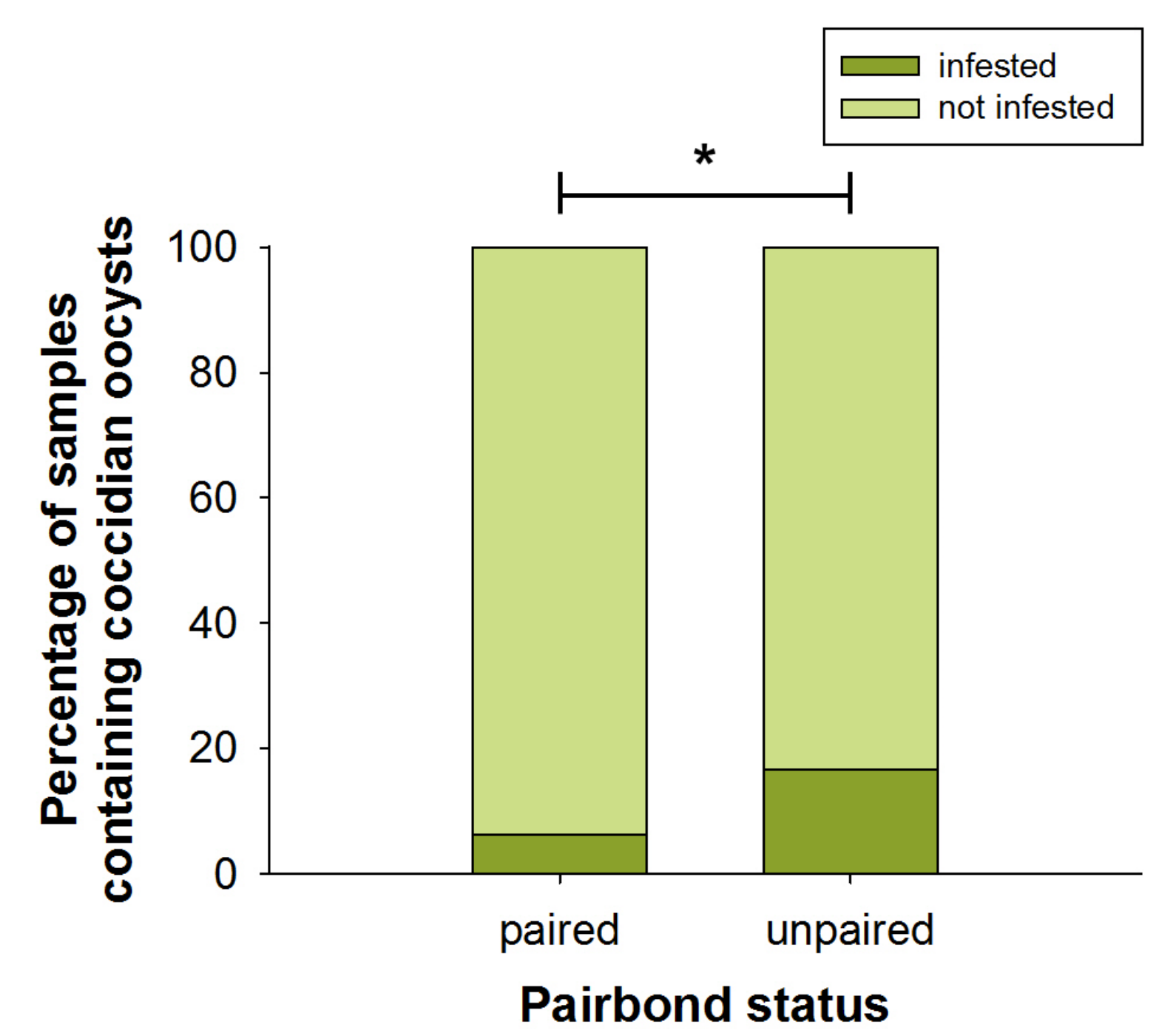
GLMM  
initiated behaviour:  $z=-2.92$ ,  $p=0.004$   
received behaviour:  $z=2.95$ ,  $p=0.003$

Individuals initiating and receiving affiliative behaviour with a high frequency excreted significantly less samples containing nematode eggs.



## Results

parasite burden & pair status



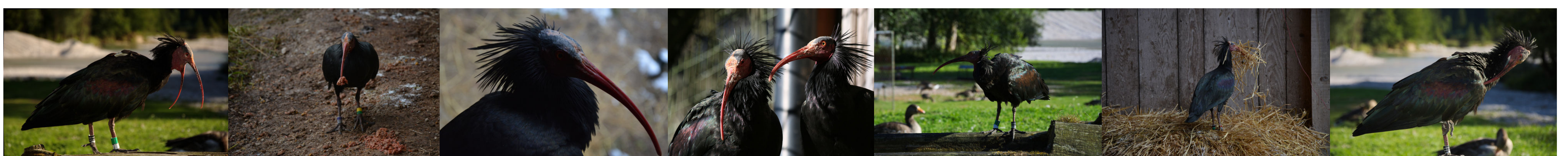
$N_{\text{individuals}}=31$   
 $N_{\text{samples}}=138$

GLMM  
pair status:  $z=2.35$ ,  $p=0.019$

Paired individuals excreted significantly less droppings containing coccidian oocysts than unpaired ones.

## Conclusion

Our results suggest that affiliative interactions decrease parasite burden. The mechanism behind is probably the dampening effect of emotional social support on corticosterone and the effect of this on the immune system. This is particularly evident in breeders, which may buffer their stress load by exchanging high frequencies of affiliative behaviour.



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