Can hens teach one another?
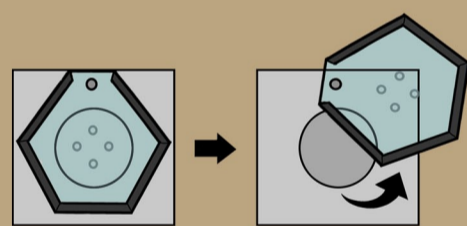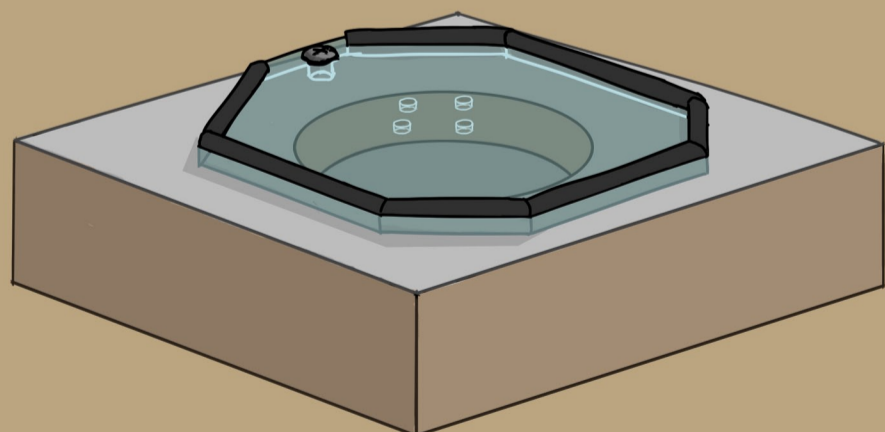
Introduction

The domesticated phenotype includes changes in the size of a number of brain areas. Possibly, a shift in cognitive function occured as domestic chickens (here, White Leghorn layers, WLs) separated from Red Junglefowl (RJF).

The goal of this experiment was to assess whether RJF and WLs are able to learn a puzzle-opening task from a demonstrating conspecific and determine if notable differences in social learning exist between the two subspecies.
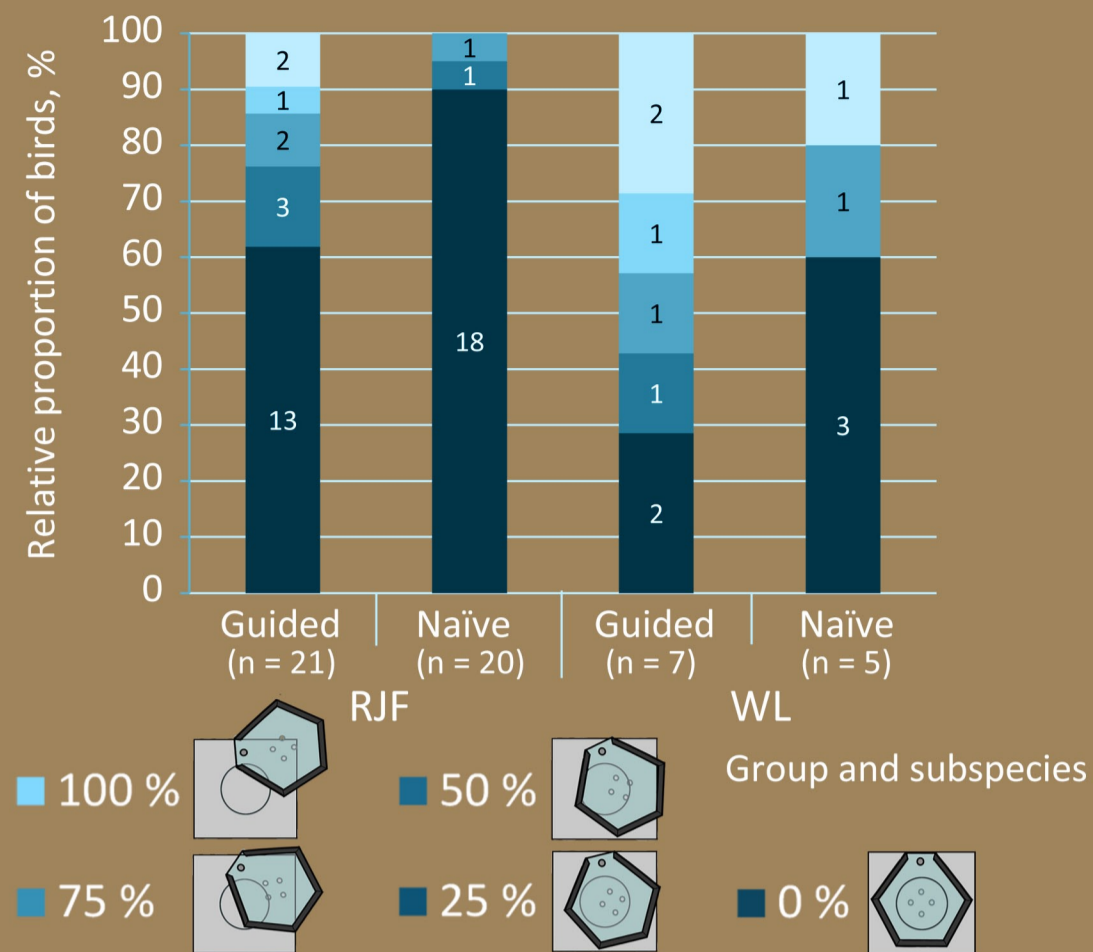
Methods

Two pre-trained birds demonstrated how to push away a lid from a puzzle apparatus to receive food. Guided observers were given the same task after 5 demonstrations, while naïve ones had no demonstrations.
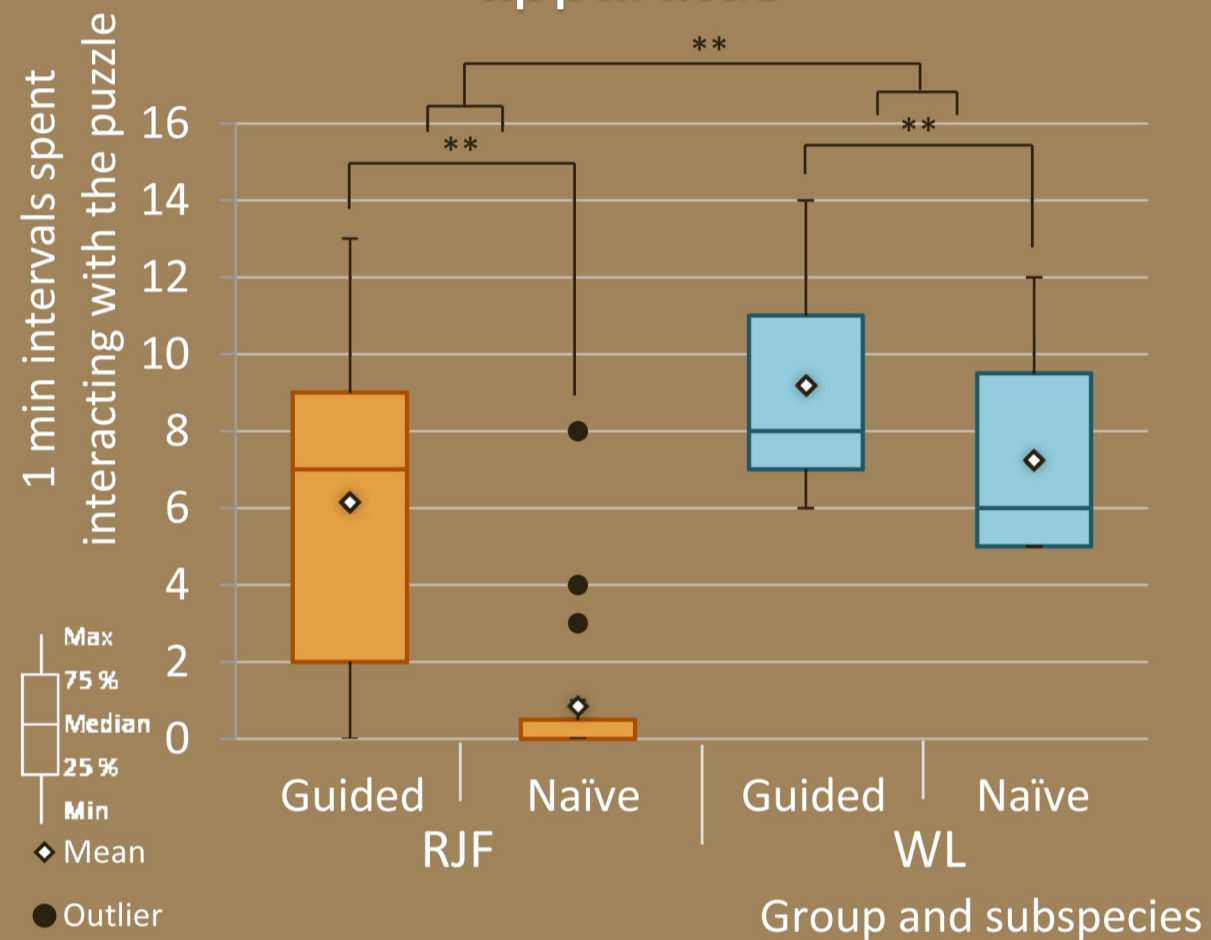
Results

How far did the birds push open the lid?

Relative proportion of birds, %

Guided (n = 21) — RJF: 2, 1, 2, 3, 13
Naïve (n = 20) — RJF: 1, 1, 18
Guided (n = 7) — WL: 2, 1, 1, 1, 2
Naïve (n = 5) — WL: 1, 1, 3

Group and subspecies

Legend:
- 100 %
- 75 %
- 50 %
- 25 %
- 0 %

Time spent interacting with puzzle apparatus

1 min intervals spent interacting with the puzzle

Guided / Naïve — RJF
Guided / Naïve — WL

** ** **

Max
75 %
Median
25 %
Min
◇ Mean
● Outlier

Group and subspecies

Pecks directed at puzzle apparatus

Number of pecks

Guided / Naïve — RJF
Guided / Naïve — WL

*** *** ***

Max
75 %
Median
25 %
Min
◇ Mean
● Outlier

Group and subspecies

Females of both subspecies learn from observing a conspecific, and Red Junglefowl are more efficient than White Leghorns.

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