Neophobic response of gray jays (*Perisoreus canadensis)*

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Introduction

- Personality traits, such as aggression, have been shown to facilitate dispersal and range expansion of passerine birds[1]. Individual differences in exploration of a novel environment have also been linked to the annual adult survival rate[2].
- Little is known about the personality traits in gray jays (*Perisoreus canadensis,* family corvidae), which are found in boreal forests across North America.
- The purpose of the research is to determine if neophobia, the fear of novelty, is a consistent personality trait within gray jays and examine potential sex and age differences in the neophobic responses of gray jays.

Methods

- A novel object (plexiglass box) was placed within 19 different territories during the fall, the non-breeding season, where gray jays (n=49 total) live year-round in family groups.
- Raisins were placed on top of the novel object and the actions of the gray jays were coded from video files until each bird had taken a raisin from the top of the object.
- The latency in time from when a gray jay lands on top of a wooden pole beside the novel object and when the gray jay lands on top of the object was used to quantify individual neophobic responses.
- Raisins on top of another novel object (blue lid) were also used as a second measure in order to confirm that the latency to approach a novel object was consistent across contexts and human observers.

Figure 1. **Front view of the novel object with raisins placed on top.**

Results

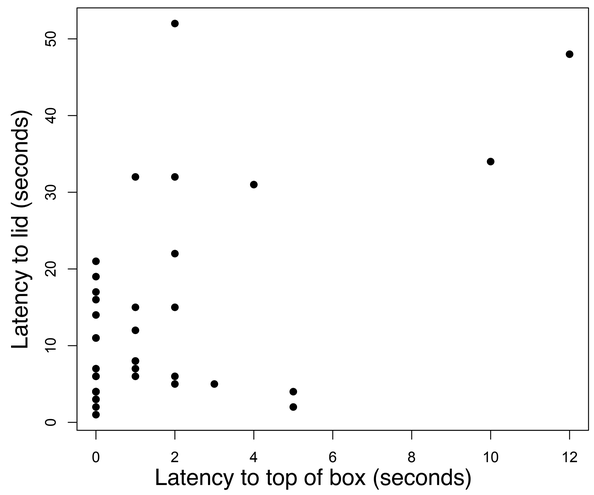

Figure 2. **Latency to contact separate novel objects.** Spearman rank correlation, n = 40 individuals: rho = 0.359, S = 6835.9, p-value = 0.023.

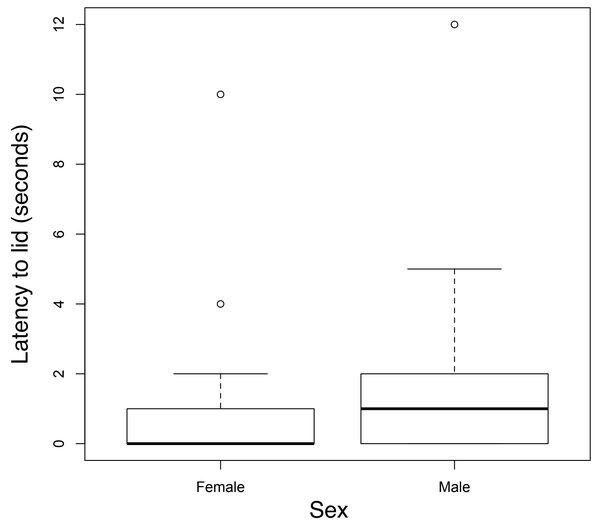

Figure 3. **Latency to land on the top of the box as a function of sex.** Wilcoxon rank sum test, n = 42 individuals: W = 166.5, p-value = 0.171.

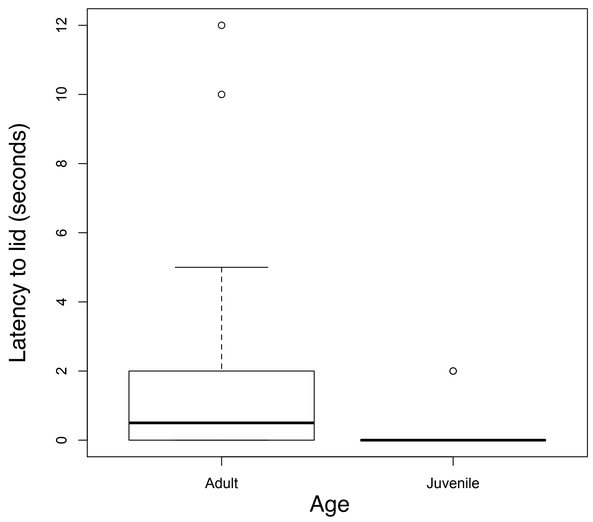

Figure 4. **Latency to land on the top of the box as a function of age.** Wilcoxon rank sum test, n = 43 individuals: W = 194.5, p-value = 0.176.

Conclusions

A Spearman rank correlation shows a significant positive correlation between the latency to contact the two novel objects. It can be concluded that the neophobic response tends to be consistent among individual gray jays.

The Wilcoxon rank sum test indicates that the neophobic response of gray jays was not significantly related to the sex or age of gray jays.

The results contribute to the general knowledge of personality traits within corvids and provides a first step in investigating the ecological and life-history correlates of these traits in this wild population.

Future studies

Future studies can be completed with a larger sample size or at a different time of year to determine if the personality traits are affected by other factors such as the presence of chicks.

References

[1]Duckworth, R.A. Badyaev, A.V. 2007. Coupling of dispersal and aggression facilitates the rapid range expansion of a passerine bird. PNAS. 104(38):15017-22.
[2]Dingemanse, N.J. Both, C. Drent, P.J. Tinbergen, J.M. 2004. Fitness consequences of avian personalities in a fluctuating environment. The Royal Society. 271(1541):847-852.

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