

IBIS - Decision on Manuscript ID IBIS-2022-OAR-014

Richard Fuller <onbehalf@manuscriptcentral.com>

Dom 9 Abr 2023 03:16

Para: Katarzyna Wojczulanis-Jakubas <katarzyna.wojczulanis-jakubas@ug.edu.pl>

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08-Apr-2023

Dear Dr Wojczulanis-Jakubas:

Ibis manuscript # IBIS-2022-OAR-014 entitled "Foraging, fear and behavioural variation, a lesson from hummingbirds". I have now received reports on your manuscript paper from two independent referees and an Associate Editor. In view of the criticisms received, and given the acute competition for journal space, I regret that I am unable to consider the manuscript further for publication in Ibis.

While the reviewers had somewhat divergent views on the manuscript, ultimately the relatively limited size of the dataset, slightly suboptimal experimental design, and small number of days over which observations were gathered, makes it difficult to be completely confident about the results and interpretation. I am sorry that I am not able to offer you a more positive response on this occasion, and I sincerely hope that you will find the referees' reports useful in revising the paper for another journal.

Publishing work can be a challenging process. This feedback is intended to be useful to you to aid in further submissions, and it is not a judgement about your quality as a researcher. I hope that the outcome in this instance will not discourage you from submitting manuscripts in the future to our journal and others.

Thank you for considering Ibis for the publication of your research.

With best wishes,
Prof. Richard Fuller
Editor, IBIS
r.fuller@uq.edu.au

Reviewer(s)' Comments to Author:

Reviewer: 1

Comments to the Author
Review of IBIS-2022-OAR-014

The authors of this manuscript sought to examine the foraging behavior of long-billed hermits in response to varying levels of risk at feeders. In particular, the authors examined foraging efficiency, in this case defined as the proportion of time spend feeding during a visit. Hummingbirds are often overlooked with regards to studies of avian antipredator behaviors and I applaud the authors attention to this important gap in our knowledge. However, the study was conducted over very few

days and with a testing procedure that I feel does not adequately account for temporal or spatial variations. Furthermore, I found their findings and presentation of their results difficult to follow and their introduction and discussion lacking depth and inclusion of critical papers. The writing is sufficient for understanding what the authors are communicating, but there are many typos and grammatical errors which will need to be addressed before the paper is published. I will focus on my comments on primary issues related to the scientific aspects of the paper.

Abstract:

- The dependent variable of foraging efficiency should be defined in abstract as are your measured variables.

Introduction:

- Arguments are unclear in lines 31-35.
- The authors state that there is "lack of relevant literature" (Line 78). However, there is an incredible library of hummingbird-foraging-risk-related papers that are not used in any capacity in this paper. For example, Lima 1991, Carr and Golinski 2020, Galindo-Gonzalez and Ornelas 2002 just to name a few. Overall, I find that this paper is lacking sufficient depth and analysis of existing literature, particularly in the area of hummingbird behavior and their responses to noxious insects.

Methods:

- Are "arousal" and "exploration" measured here truly independent or are they correlated measures? Seems as though the number of feeders used during the visit (exploration) would be tied directly to the amount of movement (arousal)
- Report nectar concentration when you discuss feeders themselves (line 99)
- What was the distance between the camera and the feeders? (Line 111)
- Clarify that bullet ants were added to all three feeders. This is not obvious unless the reader views the supplemental video (Line 113). How were bullet ants affixed to the feeders?
- Do the authors have concerns regarding habituation to the bullet ants at the feeders?
- The research was conducted over a period of 2 weeks with 5 sessions total, each completed on 1 day, therefore only five days of observations total. Only three of those 5 sessions included observations with dead bullet ants on feeders. Of those three sessions, two were conducted in the morning and one in the afternoon. Hummingbird behavior is known to vary markedly from day to day and from morning to afternoon hours with fluctuations exacerbated by changes in environmental conditions. Though the observations reported are interesting and thought-provoking, five total days of observation are, in my opinion, not sufficient to make confident conclusions given their inconsistency. For that reason, I withhold thorough comments on the statistical analysis and results.
- Please explain your $df = 137.97$. (Line 126)
- Three hours between morning and afternoon produces considerable variation in bird behavior so this statement is an unfounded one (Line 128: "Since each experimental session was completed within three hours...any potential day effect should not bias comparison of the control and experimental phases."). I respectfully disagree that time of day can be disregarded. Conducting all control experiment first with high-risk condition second is a notable flaw of the study design.
- Report \pm SE for each report of averages (Line 132, 134)
- Line 135 - 136: Reasoning behind conducting control observations prior to experimental tests contradicts earlier statement that LBHs don't leave or avoid feeders with bullet ants.
- Line 145: What is meant by a "considerable number of visits"? Can this be quantified?
- Line 147: Define your metric of "foraging efficiency" here
- Line 164-165: remove "/s" from units as this implies that duration of feeding interval and breaks were measured as rates.
- Line 172: "bird's two positions" not "two bird's positions"; Pythagorean theorem
- Line 175: What is referred to as "foraging efficiency" seems to be a misnomer. What was measured was the proportion of the total visit that the bird spent feeding. Re-naming this metric

would be a more accurate reflection of what was actually measured as "efficiency" would be affected by many aspects of foraging behavior when only proportion of time feeding was considered

Discussion

- The discussion is lacking both depth and breadth with respect to support from the primary literature.
- Line 238: The authors reference the wide range of hummingbird predators, which is true. However, the authors previously state that bullet ants are not predators of LBHs. Careful distinction must be made between predators and threatening encounters which are two very different selective pressures with different behavioral responses. For this reason, many of the ties that the authors make to important ecological concepts (e.g., risk allocation hypothesis) are tenuous as the results are presented here.
- In general, the discussion would benefit from referring to figures presented in the paper.
- Line 266: Do the authors believe that these LBHs are exhibiting high risk-aversion if they do not avoid feeders with bullet ants? It seems that these powerful statements are unfounded given the results of this paper. Furthermore, it doesn't seem as though statements about personality can be made given that individual was a random factor in the analysis. It would be interesting to see the results of a repeated-measures analysis, though perhaps sample size would not permit such an analysis to be conducted.

Acknowledgements incomplete

Figures

- Figure 1: report +/- SE following average.
- Figure 3: This would be valuable if presented with the data points.
- Figure 4: report what shaded regions represent in figure

Reviewer: 2

Comments to the Author

Dear authors,

After carefully reading the manuscript "Foraging, fear and behavioural variation, a lesson from Hummingbirds", I consider it should be accepted with minor revisions. Congratulations, the manuscript is well written and covers a very interesting subject, as well as providing a good and up-to-day review of the literature.

In the methodology, the procedures performed were well described. I just missed a more detailed explanation about the habituation of hummingbirds. How much time was used for the hummingbirds to habituate to the feeders on site? Did the experiment session start the day after the habituation period? Were the feeders available throughout the study or were they removed at night or for a few days? If they remained in the area, was "nectar" available throughout this period?

The discussion is very good and the suggestion to investigate the personality of birds in foraging efficiency is very relevant. However, I was wondering if other features of individuals, such as weight and beak size, might be related to foraging efficiency even on artificial flowers.

The concluding paragraph could be improved by highlighting the main results achieved.

Please, see the additional suggestions (minor issues) below:

- Line 23: "predator", "prey" and "repeatability" are not good keyword for this study. For instance, instead "predator" and "prey", "predation risk" better represents what was done in this study.
- Line 96-97: When you captured and marked the hummingbirds, did you weigh them? Did you make any morphometric measurements? Could these features be related to individual foraging

efficiency?

- Line 98-99: How much time was used for the hummingbirds to habituate to the feeders on site? Did the experiment session start the day after the habituation period? Were the feeders available throughout the study or were they removed at night or for a few days? if they remained in the area, was "nectar" available throughout this period?
- Line 124: "Since he time..." change to "Since the time..."
- Line 209: "while the outcome..." The sentence could begin with "The outcome of single..."
- Discussion: Besides the personality of the individuals, what other features of hummingbirds may be related to foraging efficiency?
- Line 410: The "Sih and McCarthy (2002)" was not used in the text of this manuscript.
- Line 457: It would be useful to include what was represented by the gray area and the dot.

Associate Editor's Comments to Author:

Associate Editor: Butler, Simon

Comments to the Author:

This paper reports the response of long-billed hermits to the presence of bullet ants on feeders as a system to explore variation in different components of foraging behaviour to perceived risk. Both reviewers recognise that the manuscript addresses an interesting and understudied aspect of foraging and vigilance behaviour. Reviewer 2 highlights some minor points for revision but reviewer 1 has a number of more substantial concerns around experimental design, particular the very low number of survey periods and constricted time period over which these were undertaken. There are also concerns around the fixed structure of experiments, with control periods always coming first in the sequence, that aren't adequately dealt with or discussed. Unfortunately, these limitations substantially restrict the interpretation of results presented and their wider generality.

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FEEDBACK

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