How Does Female Presence Affect Male Bill Swiping in Lance-Tailed Manakins

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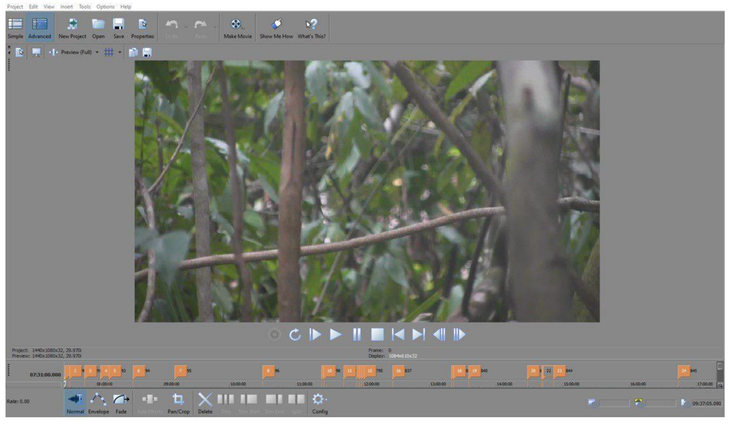
Introduction

This research on the lance-tailed manakin is based in the idea to discover both why the birds bill swipe on the dance perch as well as the potential biological significance of the bill swiping in reproducing. The research question I am investigating is," What is the reason that male lance-tailed manakins bill swipe on their dance perch." My prediction is that the male lance-tailed manakins bill swipe out of excitement that a female is in the vicinity and take out this excitement in the form of a bill swipe. The background research and knowledge that has gone into this lab is immense. Dr. DuVal and her lab team have in the past, and are currently conducting, field research in Panama to answer questions like mine and others that may arise surrounding the birds' behavior. I am only one of many that are working to answer questions surrounding these birds as many others on the team have all worked to answer similar questions to mine potentially.



This figure displays the software and the view of the video processing that takes place in order to attain the data for analysis.

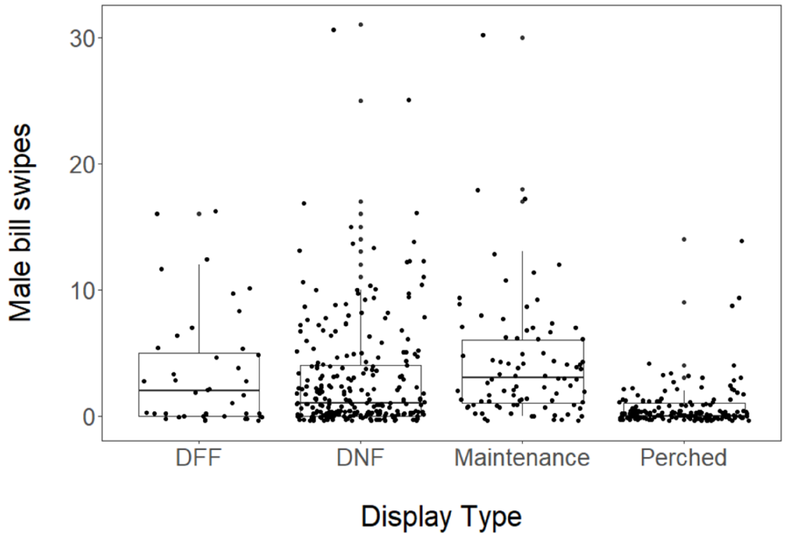
Methods

- Field study in Panama uses video cameras to record footage for video processing used to analyze results in lance-tailed manakins
- On site, the team experimentally removes preen oil from the dance perch for other research within the lab and then allows the birds to use the perch for the rest of the day.
- The researcher then processes video by recording time, length, and other details about the birds' activities including the bill swiping to investigate the cause for male bill swiping frequency.
- Additionally, video processing is ongoing, meaning that conclusions have not yet been drawn about the causation for bill swiping.

Results

	Estimate	Std. Error	z value	p-value
(Intercept)	-0.34	3.11	-0.11	0.91
treatment_type - Control	0.69	1.75	0.40	0.69
treatment_type - Ethanol	-0.38	1.82	-0.21	0.83
Dance_type - DNF	-0.28	2.21	-0.13	0.90
Dance_type - Maintenance	-2.96	2.30	-1.29	0.20
Dance_type - Perched	1.71	2.32	0.74	0.46
Nbr_of_males	-6.38	1.44	-4.42	**0.00001**

These are the results from running the statistical model of all the data and the numbers in the figure represent a lack of statistical significance in support of the lab's experiments.



- DFF is a display with female
- DNF is a display with no female

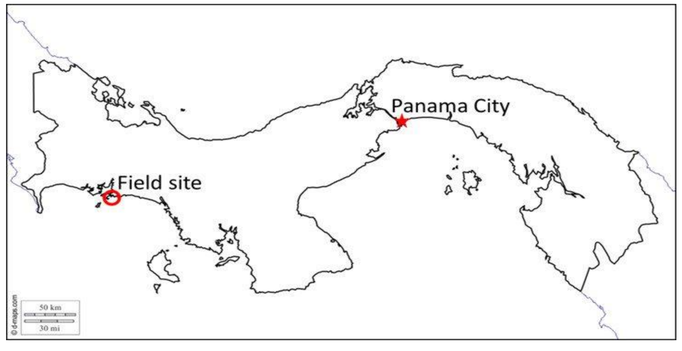
This figure is a plot of the field observations so far and shows that display type does not have a significant statistical affect on the number of male bill swipes in lance-tailed manakins.

Discussion

The results in both figures display that there has thus far been no significance between the multiple independent variables and the frequency of male bill swiping. This means that the results do not support the hypothesis that males bill swipe out of excitement of a female in the vicinity. Therefore, the reason for bill swiping in male lance-tailed manakins is subject to further research which is currently being done in the DuVal lab with incoming footage still arriving.

Conclusion

The research has therefore yielded that there is support for the null hypothesis that there is currently no relationship found between female presence and male bill swiping. This finding lays a path for new research to be done on manakin bill swiping, such as weather bill swiping may be a result of food stuck on a bird's beak, or possibly other causes not yet considered.



References

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