

Bright Night, Lite Flight ? Not Quite...

Consistent Decisions? They have a Disposition!

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The Green Anole (*Anolis carolinensis*) is the only member of the large Anolis genus endemic to North America. We studied six Green Anoles to learn more about animal personalities.

Animal personalities refers to how animals within a population will respond differently to the same stimulus.



https://en.wikipedia.org/wiki/Carolina_anole#/media/File:Anolis_carolinensis.jpg

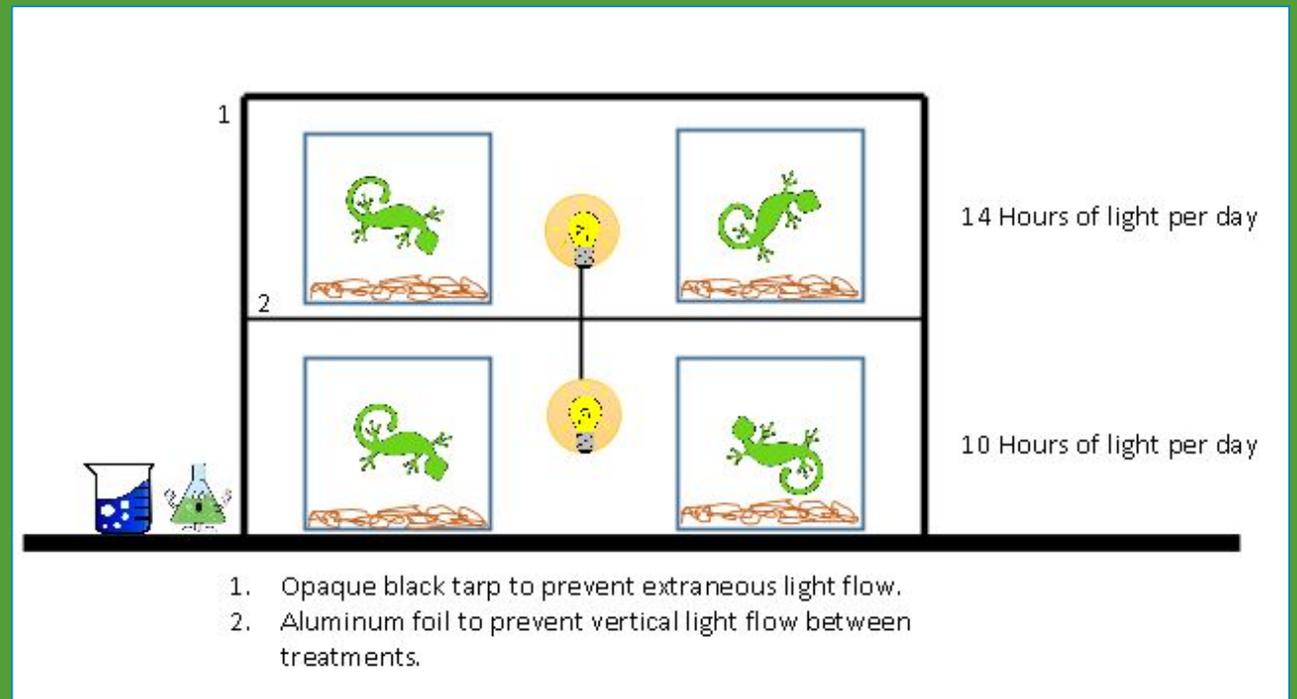
[https://en.wikipedia.org/wiki/Carolina_anole#/media/File:Anolis_carolinensis_\(male%26female\)_by_Robert_Michniewicz.jpg](https://en.wikipedia.org/wiki/Carolina_anole#/media/File:Anolis_carolinensis_(male%26female)_by_Robert_Michniewicz.jpg)

Studies done on wild populations of animals risk inherent bias due to the difference of sampling “bold” and “shy” individuals [1]; a better understanding of animal personality allows for more robust studies of animal behavior in the field.

Experimental Design and Results (Part 1):

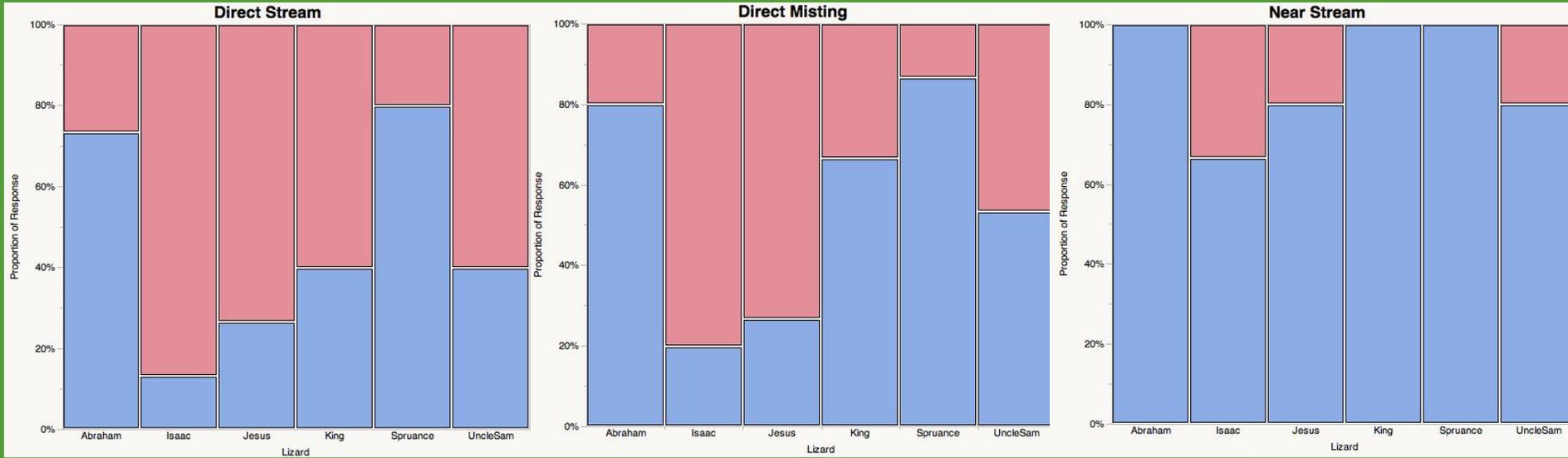
Hypothesis: Lizards would exhibit markedly different behaviors personalities from each other, regardless of light treatment.

To compare lizard behavior in different seasons we set up one experimental condition with summer light (14 hours a day) and winter light (10 hours) [2] and compared their behavioral response in the severity of their escape attempt to their color (which is linked to the levels of stress hormones in their blood [3]). Three lizards were subjected to each light condition (six lizards in total). Lizards were sprayed with water to elicit an escape response.



Experimental Design and Results (Part 2):

■ Lesser Escape Response
■ Greater Escape Response

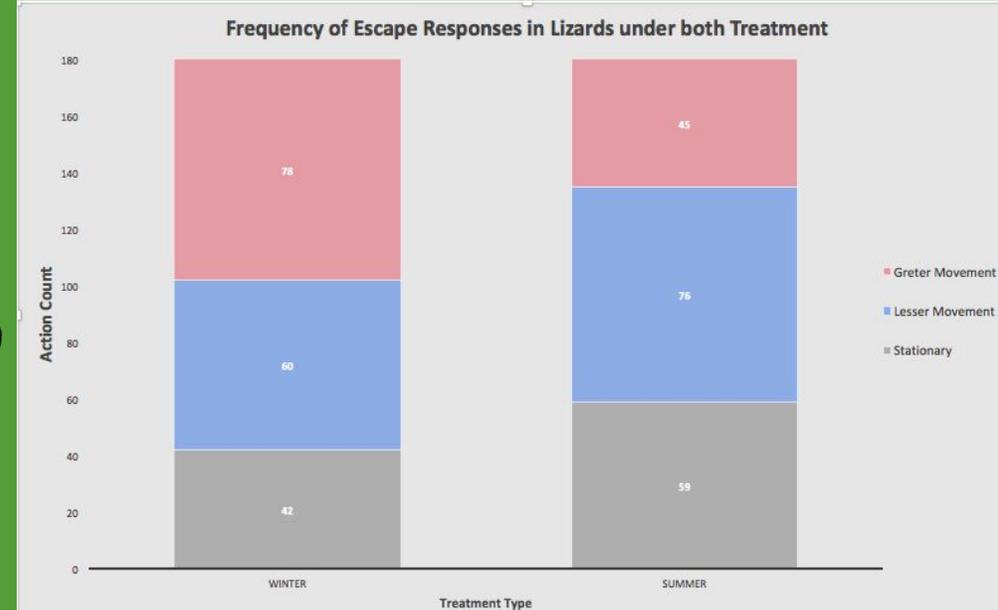


Direct stream and misting stimuli elicited responses that were significantly different between lizards.

The frequency of escape responses for lizards also differed depending on the treatment they underwent. (Surprisingly, lizards in the summer treatment were less likely to exhibit greater escape responses.)



Direct Stream $p=0.0005$, Direct Misting $p=0.0002$



We Conclude That:

Animals have different personalities that affect their behavior.



Future Directions:

- Would extreme light conditions (i.e. 3 hours of light a day) exhibit even more significant response?
- Do animal personalities change in response to the environment?

References:

[1] Carter A J., Heinsohn R., Goldizen A W., Biro P A. 2012. *Boldness, trappability and sampling bias in wild lizards*. *Animal Behaviour*, 83, 4: 1051-1058. Online

[2] U. S. Naval Observatory, Astronomical Applications Dept. *Columbia, South Carolina, Duration of Daylight for 2016*. 12/8/16. Online.

[3] Greenberg N. 2002. *Ethological Aspects of Stress in a Model Lizard, Anolis carolinensis*. *Integrative & Comparative Biology*, 42, 3: 536-540. Online.

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