Seasonal Influences on Squirrel Behavior

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Abstract

Squirrels are one of the most common animals in New York City, yet little research has investigated how seasonal changes influence their behavior. The purpose of the current study was to compare if New York squirrels behave differently in the winter as compared to the summer. It was hypothesized that squirrels will jump, freeze and climb more in the winter as compared to the summer. The subjects were squirrels (*N* = 83) in Central Park, observed over the winter (spring semester) of 2016 and 2017 (*n* = 47) and the summer (fall semester) of 2015 and 2016 (*n* = 36). Researchers observed the squirrels for 20 minutes and recorded each time a squirrel’s behavior changed. Contrary to the hypotheses squirrels did not jump more in the winter as compared to the summer. Squirrels did climb and freeze more in the winter as compared to the summer, however, the differences were not significant… Future researchers…

*Keywords*

Seasonal Influences on Squirrel Behavior

 General sentence about squirrels (latin name) and New York and maybe Central Park. Hopewell, Leaver and Lea (2008) found that changes in food availability influenced squirrels’ behaviors in the United Kingdom. Other researchers in the United Kingdom have found that food availability differs depending on seasons (Gurnell, 1996; Holmes & Bond, 2050). Holmes and Bond (2050) found that squirrels were more active when there was greater food availability. Therefore, squirrels may behave differently in winter as compared to the summer. The purpose of the current study was to compare if New York squirrels behave differently in the winter as compared to the summer.

 Hopewell et al. (2008) investigated if squirrel search time changed depending on food availability. The study was conducted on a college campus in the United Kingdom. The researchers manipulated the levels of food availability. The researchers found that the squirrels’ search time, as defined as…., increased as the number of nuts decreased. In addition, squirrels’ travel time decreased as the number of nuts decreased. Therefore, food availability appeared to influence the squirrels’ behaviors. However, Hopewell et al. (2008) did not consider how different seasons might influence squirrels’ behaviors.

 Gurnell (1996) demonstrated how squirrels’ behaviors changed depending on the season. Brief method? Elaborate on the findings? Gurnell (1996) and Hopewell et al. (2008) focused exclusively on squirrels in the UK.

 Holmes and Bond (2050) extended previous findings and showed that squirrels in Wisconsin behaved differently in different seasons. What did these researchers do? Previous researchers have found that squirrels in the UK change their behavior depending on the season (Gurnell, 1996) and on food availability (Hopewell et al., 2008). (You can come up with your own justification this is an example format: What they do in the UK. Why it matters for season? And what about NY? Squirrels on UK college campuses mainly forage their food from trees. Foraged tree foods may be more abundant in certain seasons and this may contribute to the observed differences in squirrel behavior. In contrast, the New York squirrels in the current study have access to city garbage throughout the year and therefore squirrel behaviors may not change depending on the season. Big city – lots of people, less nature – more trees on the UK campus, human interaction? Eating from garbage here, but eating from trees UK, climate? This study aimed to discover… It was hypothesized that \_\_\_\_\_\_

**Method**

**Subjects**

The subjects were squirrels (*N* = 83) in Central Park. The squirrels were observed over the winter (spring semester) of 2016 and 2017 (*n* = 47) and the summer (fall semester) of 2015 and 2016 (*n* = 36).

**Measures**

Researchers used the Eastern Gray Squirrel Ethogram provided by the Hunter Psychology Department to document squirrels behaviors. The ethogram has not been tested for reliability or validity. Researchers recorded 15 behaviors including *jump*, *climb* and *freeze.* Jump was operationalized as “\_\_\_\_\_\_”. Climb was operationalized as “\_\_\_\_\_\_”. Freeze was operationalized as “\_\_\_\_\_\_\_”.

**Procedure**

Researchers observed the squirrels in Central Park Park (cross streets? Entrance? More specific location?). Squirrels were followed for 20 minutes and recorded each time a squirrel’s behavior changed. For example, when a squirrel climbed - regardless of the amount of time it climbed - it was coded as one climb. Then when a squirrel stopped climbing and froze that was coded as freeze. What else was part of the step by step process?

**Results**

An independent samples *t-*test was used to compare squirrel behavior in the summer and the winter. Results indicated that squirrels dug less in the summer (*M* = 3.11*, SD* = 4.83) as compared to the winter (*M* = 5.00*, SD* = 5.11), however the differences were not significant, *t*(81) = -.1.71, *p* = 0.09 . In addition, 2nd behavior that was hypothesized… in the summer (*M* =, *SD =*) as compared to the winter (*M* =, *SD =*), however the differences were not significant, *t*( ) =  , *p* = . Furthermore, squirrel jumping behavior… **(Please give exact *p* value! Please use consistent decimal places – two or three is ok, just be consistent!)**

**Discussion**

Contrary to our original hypotheses squirrels did not jump more in the winter as compared to the summer. Squirrels did climb and freeze more in the winter as compared to the summer, however, the differences were not significant. In contrast to the previous research (Gurnell, 1996)… Similarly to other research… Briefly summarize previous work on seasonal differences and what we found.

A weakness of the current study was that the observation period was only 20 minutes long…(think critically about the issues we may have had in the experimental design or external factors that may have influenced the results). Connect the weakness to the results. One strength of the study was….

 Concluding paragraph… Summarize overall in a sentence or so. Future researchers can….

References

Gurnell, J. (1996)……

Hopewell, L. J., Leaver, L. A., & Lea, S. E. G. (2008). Effects of competition and food availability on travel time in scatter-hoarding gray squirrels (*Sciurus carolinensis*). *Behavior Ecology,19*(6), pp. 1143-1149. doi: 10.1093/beheco/arn095

Holmes, A. B., & Bond, L. M. (2050).