Monkeys Taste the Rainbow

By: The Fishquitoes

Introduction

When the Fishquitoes visited Monkey Jungle, we conducted two experiments in the Rainforest exhibit and two experiments in the Java Macaque enclosure. The monkey species we did experiments on in the rainforest were the squirrel monkeys, howler monkeys, and capuchins. The experiments were repeated two or three times as follows: Experiment One: *Pile Size Preference* (three trials); Experiment Two: *Scattered vs. Clumped* (two trials); Experiment Three: *Pile Placement/Elevated vs. Ground* (three trials); and Experiment Four: *Variety vs. No Variety* (two trials). These experiments were conducted using skittles and with the permission and help of Primatologist Dr. Evans.

For each of our experiments we had a null and alternative hypothesis and a predicted result. In the first experiment, *Pile Size Preference*, our null hypothesis was that the monkeys would not exhibit a preference between three pile sizes: small, medium, and large. Our alternate hypothesis was that the monkeys would have a preference and will not eat equally from each of the three pile sizes. We predicted that the monkeys would prefer to eat from the largest pile because they will exert less energy for more food. In our second experiment, *Scattered vs. Clumped*, we hypothesized that the monkeys would eat equally from a scattered distribution of skittles and a clumped pile of skittles. Our alternate hypothesis was that the monkeys would not eat equally from the scattered and clumped piles. We predicted that the monkeys would eat more from the clumped pile because they will not exert as much energy as they would eating from the
scattered pile. Our third experiment was *Pile Placement/Elevated vs. Ground*. Our null hypothesis was that the monkeys would eat equally from a pile placed on the ground and one placed on a stool (66 cm tall). We predicted that the monkeys would eat more from the pile on the stool because the monkeys are used to hanging and jumping on trees and the stool is like a mini tree. For our last experiment, *Variety vs. No Variety*, our null hypothesis was that monkeys would show no preference between a pile of mixed skittle colors versus a pile of only red skittles. Our alternate hypothesis was that there would be a preference and the monkeys would not eat equally from each pile. We predicted that the monkeys would prefer to eat from the mixed color pile because we thought the monkeys like variety in their diet.

**Methods**

First, we counted out skittles for each experiment. Then we put them in bags and labeled the bags according to how many skittles were in the bag and what experiment and trial they were going to be used for. We wrote down what experiments we were going to conduct and explained them to Dr. Gaines. When we arrived at Monkey Jungle we explained the four experiments to a primate expert, Dr. Evans, to make sure that the experiments were doable. We then went to the enclosure with squirrel monkeys, howler monkeys, and capuchins.

For the first experiment, *Pile Preference*, we laid out the bags of skittles in the following order: Trial 1- 10, 20, 30; Trial 2-20, 30, 10; and Trial 3-30, 10, 20. Then we observed the piles of skittles and how many monkeys were traveling to each pile. For the first trial of the second experiment, *Clumped vs. Scattered*, we placed the clumped pile on the left and the scattered skittles on the right. For the second trial, we placed the scattered
skittles on the left and the clumped skittles on the right. We observed the pile of skittles and recorded the data. Then we went to the Java Macaque enclosure to conduct experiments three and four. In Experiment Three, *Elevated vs. the Ground*, we placed one bag of skittles on a green stool 66 centimeters high and the other bag of skittles on the ground. We repeated this experiment three times. The final experiment we performed was *Variety vs. No Variety*. We placed a pile of mixed colored skittles and a pile of only red skittles on the ground approximately three feet apart. Each trial of each of the four experiments was five minutes long. After performing the experiments, we went back to The University of Miami and analyzed our data.

Results

In Experiment One, we expected the monkeys to eat from the largest pile. Instead, the monkeys ate from the pile that either they saw monkeys at or at a pile that they saw no monkeys at it. They tended to eat from the piles within their line of eyesight. In Experiment Two, we expected the monkeys to eat more skittles from the clumped pile than from those skittles that were scattered on the ground. They did prefer the clumped pile, but would eat from the scattered pile if the clumped pile was too crowded. In Experiment Three, we expected the monkeys to eat more skittles from the pile on the stool than the skittles on the ground. Instead, the monkeys ate the skittles on the ground first. In Experiment Four, we expected they would eat more skittles from the mixed pile than from the solid red pile. Instead, the dominant male prevented other monkeys from eating from both of the piles. However, before the dominant male came most of the red pile was gone. The dominant male then ate all of the mixed pile.
Discussion

In Experiment One, the results may have been affected by the hunger of the monkeys, so they would go to the pile closest to them in order to get more food. In Experiment Two, our results may have been affected by the number of monkeys at the piles. In Experiment Three, the results may have been affected by the comfort of the monkeys on the ground and also by the presence of the stool, which is a novel item that they had never seen before. In Experiment Four, the results were most likely affected by the aggressive dominant male behavior.