

Color and Size Preference in Guppy Mate Choice

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Introduction

Natural selection is the well-documented phenomenon that drives evolution. A subcategory of this, sexual selection, is equally as important when it comes to determining which members of a species will pass on their genes and which will not. In some cases, like humans for example, mate-choice preference is easy to examine; we can simply ask a person what they look for in a partner. When it comes to guppies, however, mate-choice preference is harder to discern. We know that in many species, larger mates are preferred because a larger size conveys better health which means a greater chance that the healthy genes will be passed on. Similarly, in guppy populations orange coloring may be an indicator of health. However, the question remains: do either of these factors influence female guppy mate-choice preference?

Methods

- Two evenly spaced dividers were placed in a tank to make three equal partitions
- One female was placed in the center partition, one male was placed in each lateral partition
- A “midline” was drawn on the center partition to split it into two halves
- Each female was timed for three minutes, the side she spent the most time on was her “mate choice”
- 20 three minute trials were run for each hypothesis
- H1: Females will prefer orange males
- H2: Females will prefer large males
- Visual inspection was used to determine color and size of male guppies
- New males and females were used for every trial (40 females, 80 males)

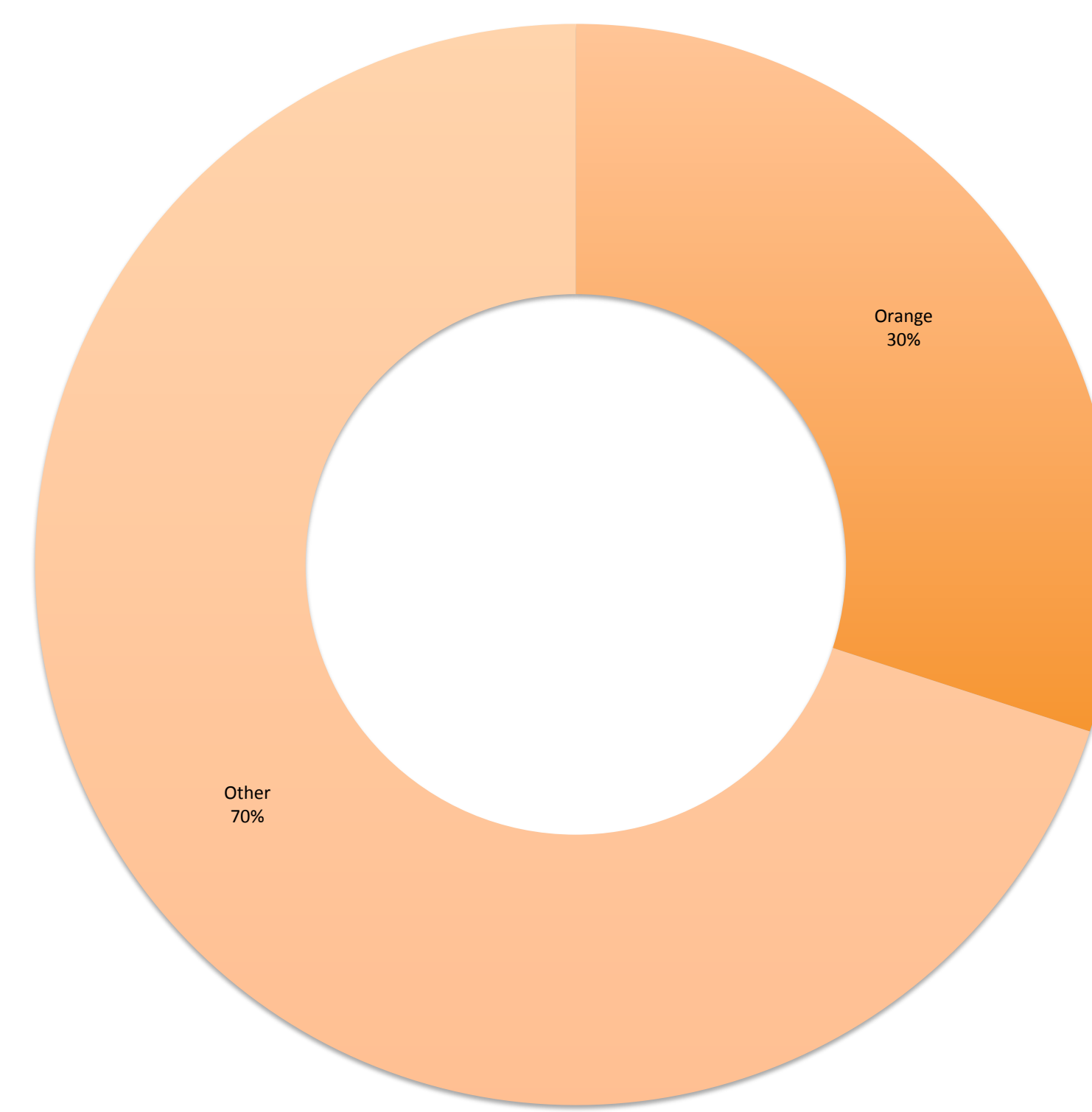


Figure 1

Figure 1 illustrates that in 30 percent of the color specific trials females preferred orange males over males of another color.

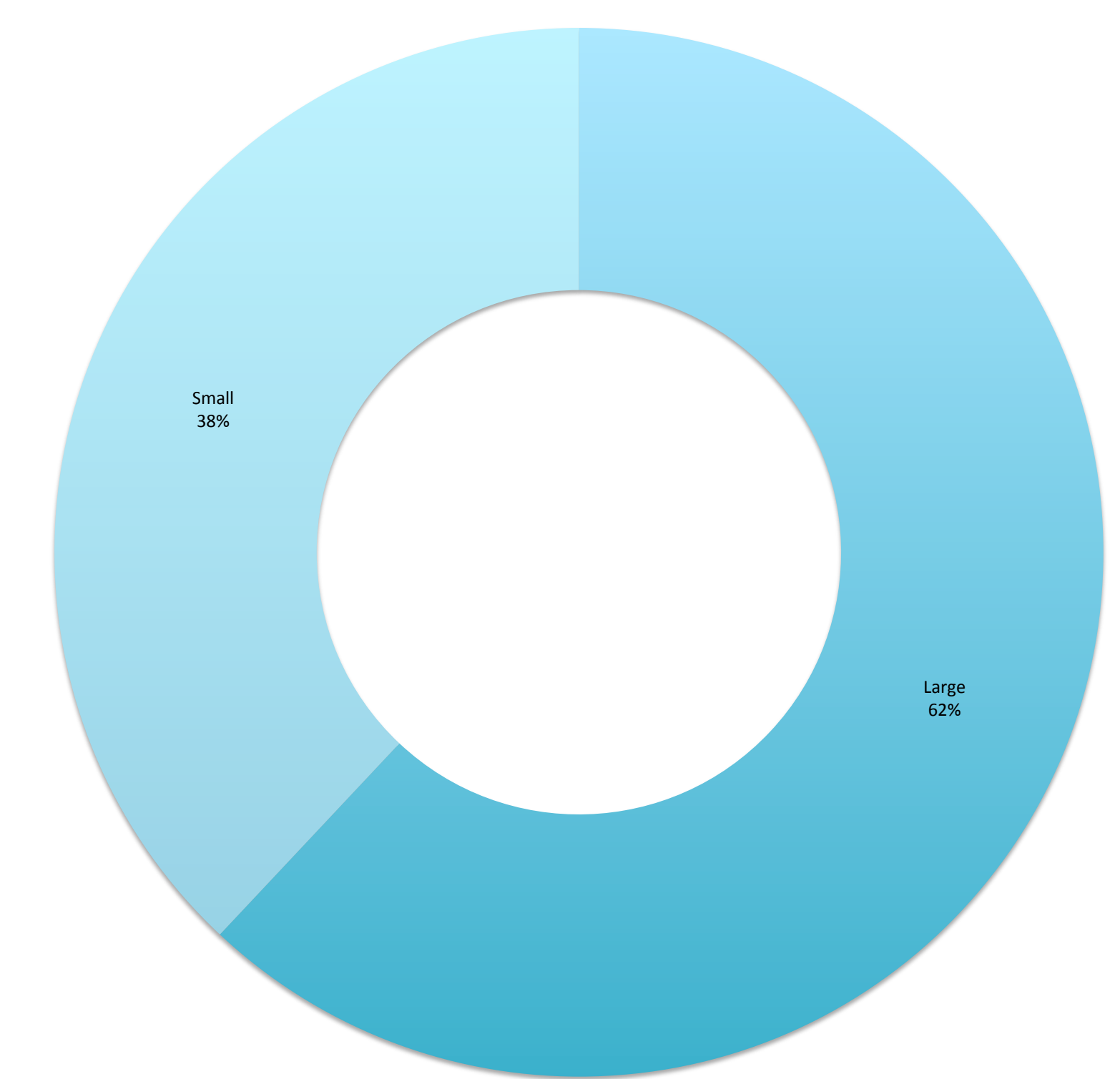


Figure 2

Figure 2 illustrates that in 62 percent of the size-specific trials, females preferred large males over small males.

Conclusions

While no apparent preference for orange color was demonstrated by the female guppies, we saw evidence of a possible correlation between female mate choice and the size of males.

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