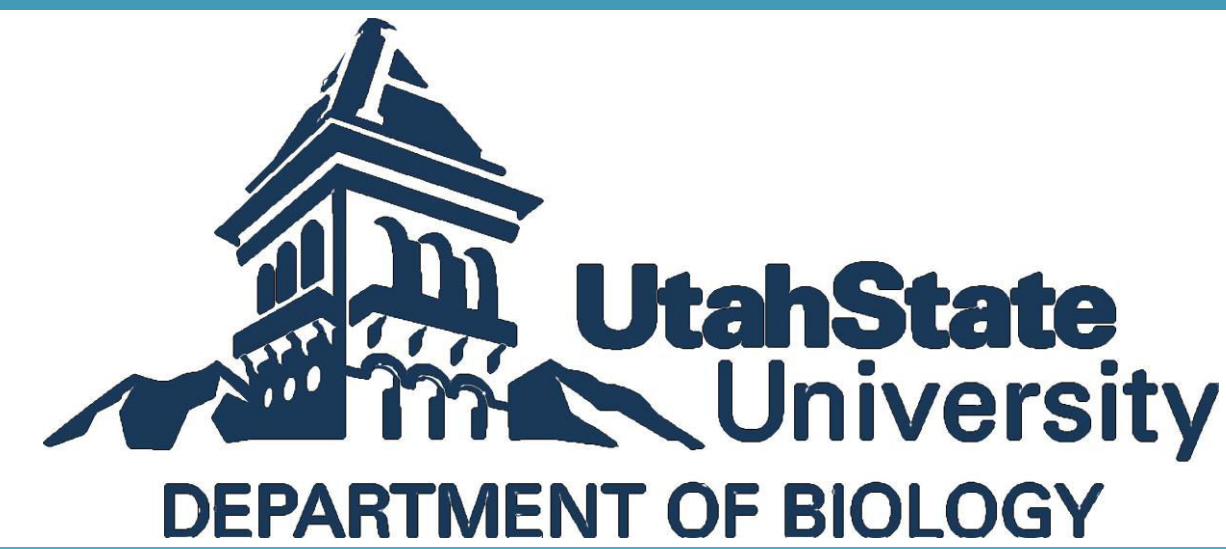


Do Female Guppies Really Know What They Want?

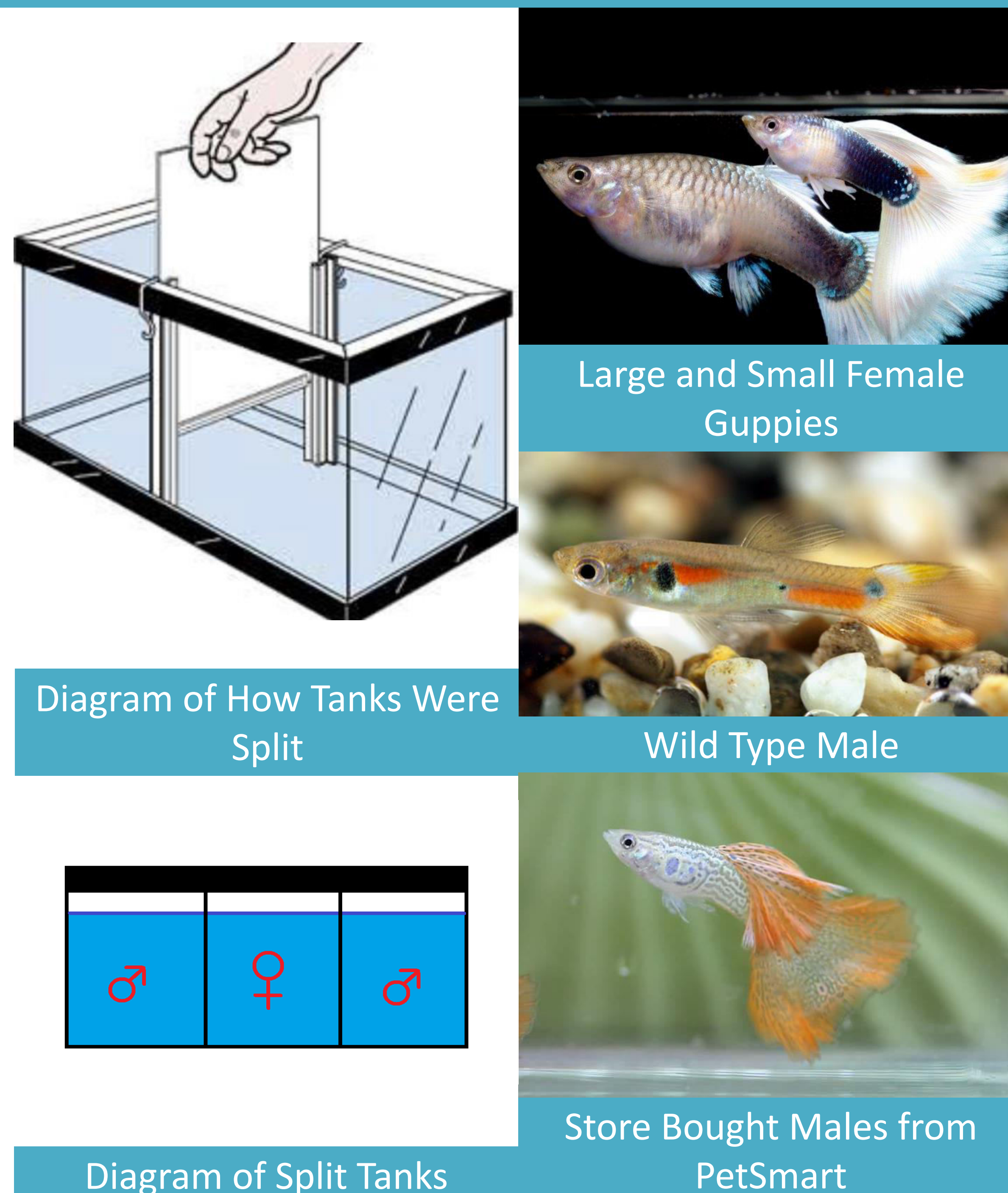
Jennica Blasi, Abby Keuhl-Coe, Hanna Kirkland, Michael Larson

Utah State University Undergraduates
Dr. Kimberly Sullivan, Utah State University Faculty Mentor



Introduction

- Hypothesis: Female guppies do not influence each other's choice of male guppy
- Predictions: If female guppies do not influence each other's choice in males, then most female guppies will choose the same male whether alone or in the presence of other females
- Choice is defined as which pane of glass the female interacts more with from 1 to 3 minutes after being introduced to the tank
- 34 Females were used, 17 small and 17 large



Methods

- Two tanks covered in blue parchment paper
- Two males of the same type, wild or store bought, are placed into the tank on the outer sections
- Two females are used
- Female 1 is placed in tank one and her choice is observed.
- Female 2 is added and her choice is observed and any change to female 1's choice is observed
- Female 1 is removed and any change to female 2's choice is observed

Results

- Change in General
 - There were far more instances of no change than of change as shown in Figure 1
 - In a Chi-squared analysis of the data there is a Chi-squared value of 5.09 and a P value of $< .05$ showing that the amount of change is significant
- Small versus Large Females
 - Small females exhibited 1 change more, but this is not a significant difference
- Acknowledgements:
 - Dylan Hopkins, Utah State Graduate Student and Guppy Caretaker

Sexual Preference Change in Female Versus Female Guppy Interaction

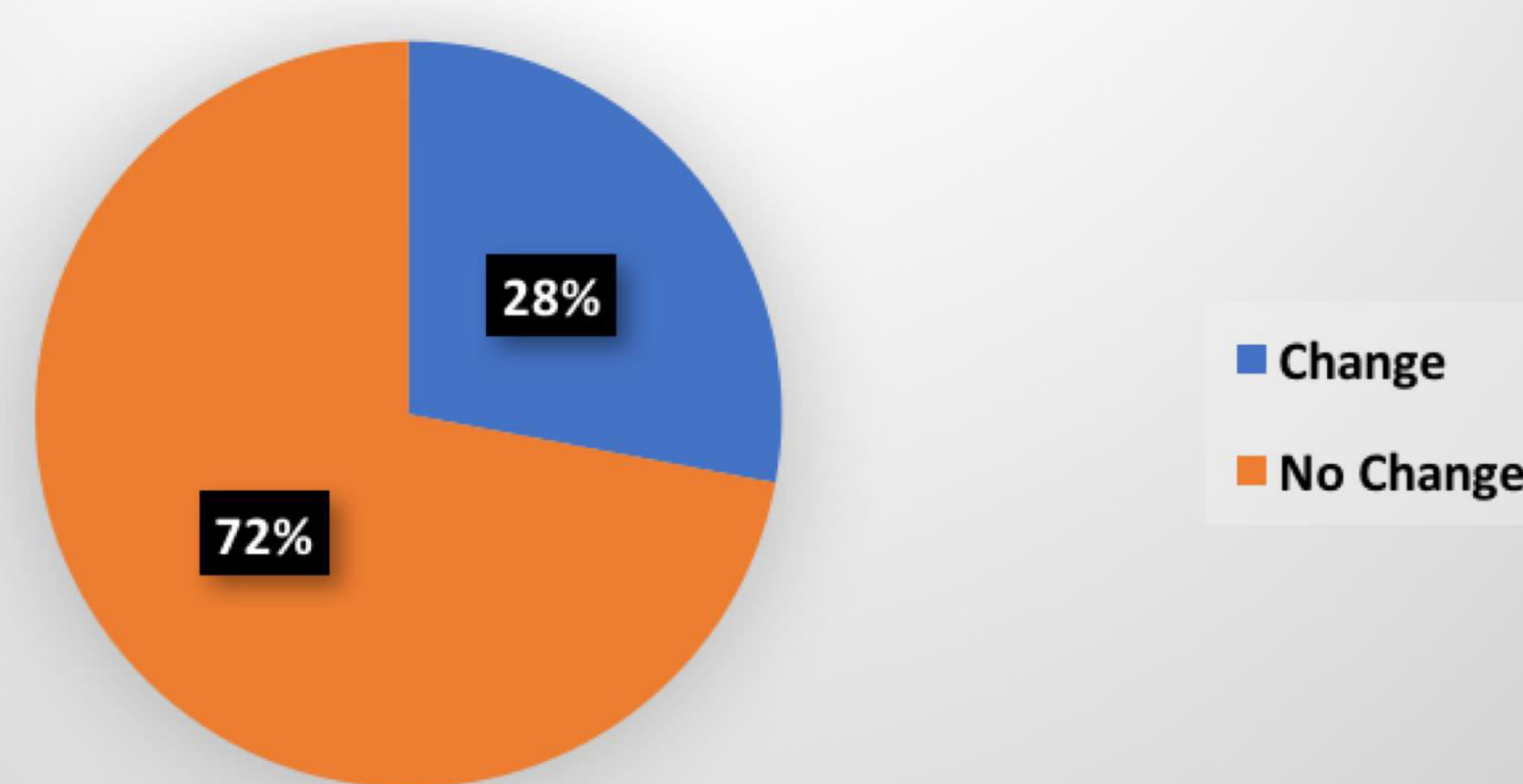


Figure 1. Change Compared to No Change

Sexual Preference Change in Small Versus Large Female Guppy Interaction

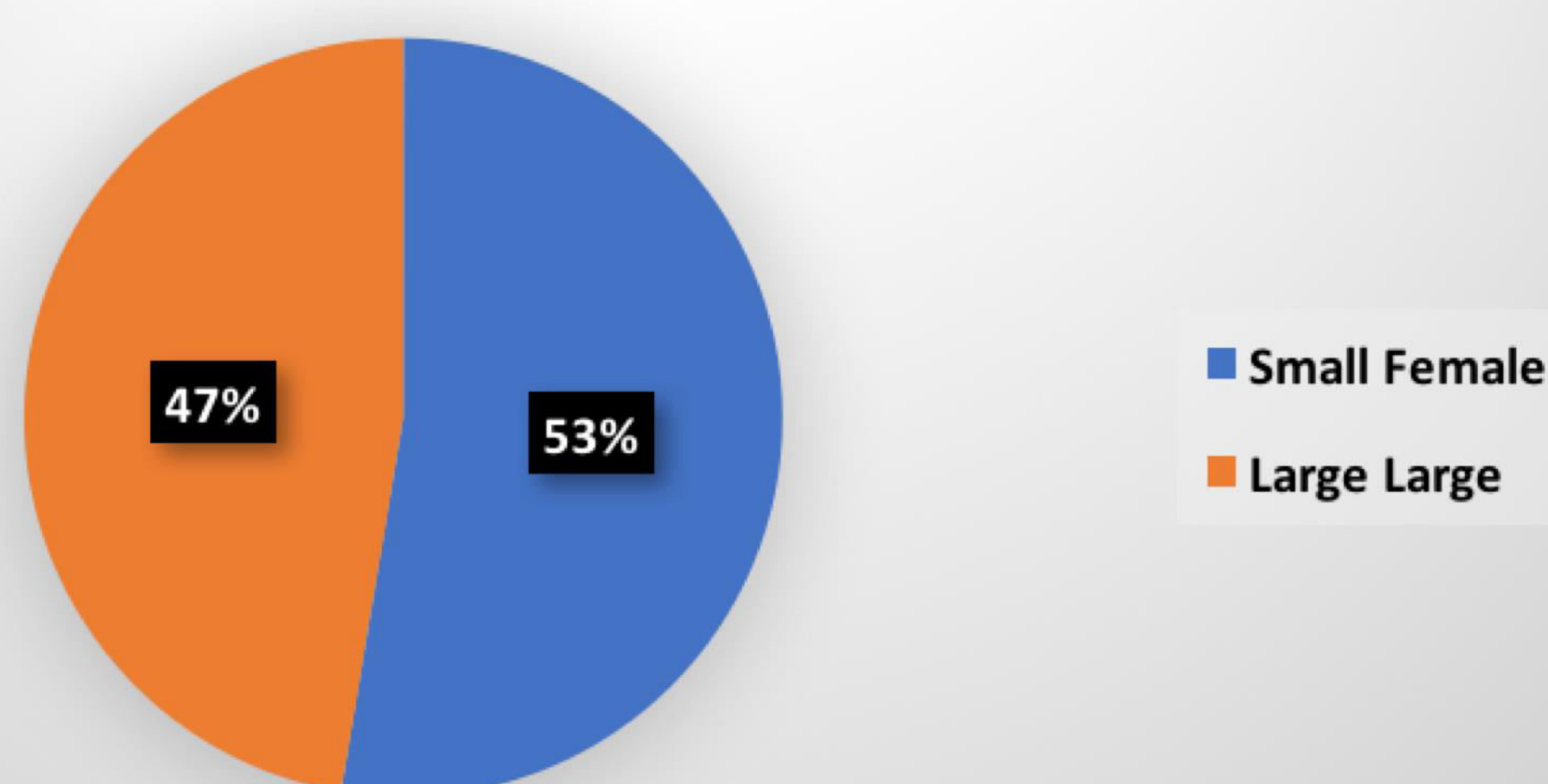


Figure 2. Small vs Large Change Comparison

Conclusion

- It was concluded that there was a significant change in female guppy choice when in the presence of another female rejecting our original hypothesis
- This does not say for certain that this is caused from females competing with each other, but there are changes in behavior
- Continued additional testing would help to further the understanding of female competition in guppies

Legend: Figure 1 shows the change in overall sexual preference change in all of the females.

Figure 2 shows the sexual preference change in small females versus large females

No Animals were harmed in the conducting of this research in accordance with IACUC 2674