

Aggressive Sexual Behavior Escalation in Male Guppies

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How does male sexual aggression and courting change in the presence of other males?



<http://aquatic-photography.com/gallery/misc.php?do=printimage&i=7439>

- Males benefit from a greater number of displays when courting females
- Female response is usually based on rate of courtship
- In the presence of other males, will they display less and show more aggressive tendencies in order to better attract the female?
- Males will have to work harder in order to “defeat the competition”

Experimental Design

***Hypothesis:* As the number of males increases, male guppies will decrease their rate of displays and increase aggressive courtship behavior, which manifests as nipping the female.**



<http://www.ppaquarium.com/view.asp>

- **Males & females isolated 2 weeks prior**
- **Treatments: 1 male, 2 males, and 4 males**
- **A single novel female was used for each trial**
- **Trials lasted for 10 minutes**
- **Behaviors observed: Displays, Speed Spurts, and Female Nips**
- **8 males used, identified and numbered prior to trials**
- **62 total trials performed**

Results and Data Analysis

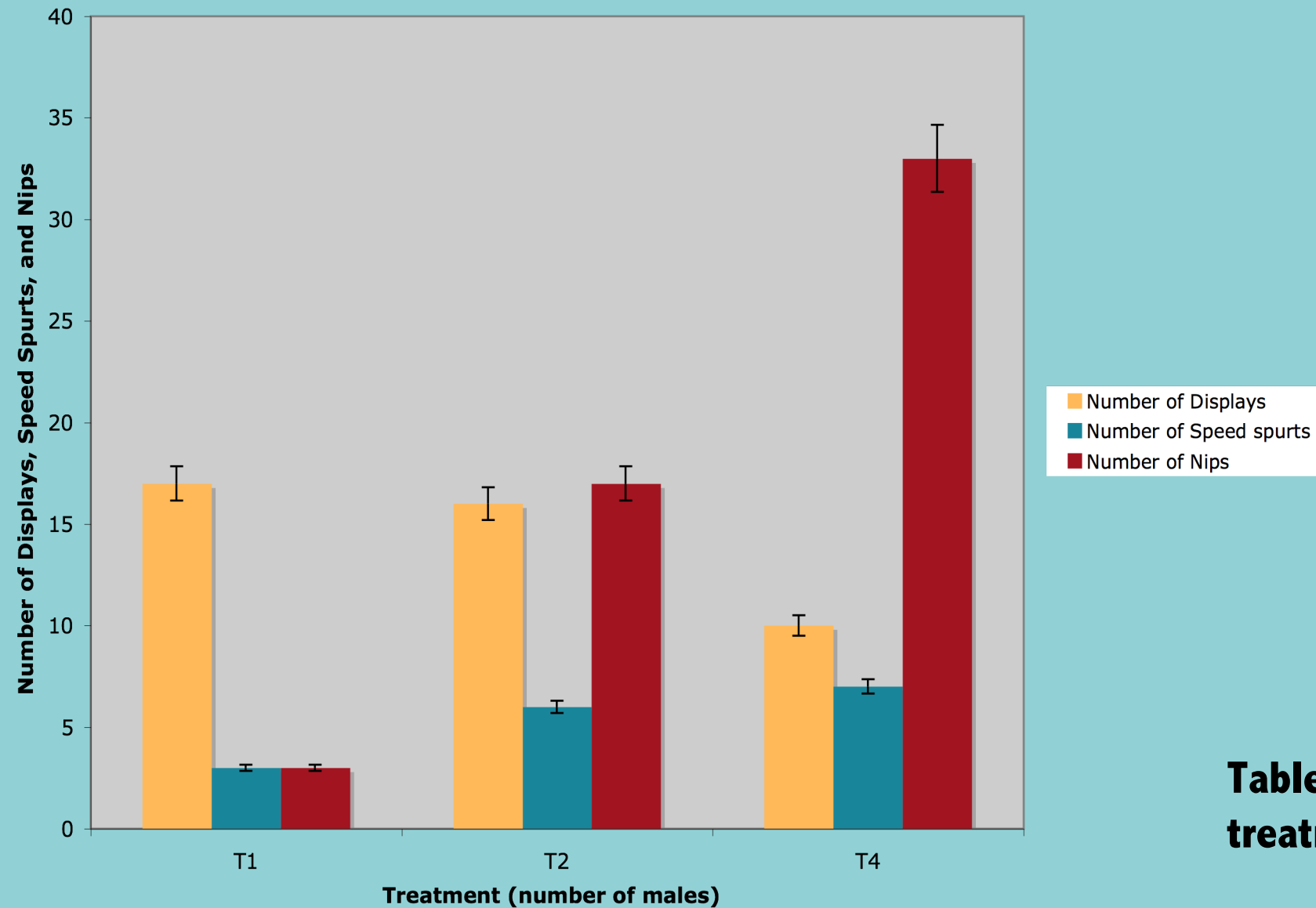


Figure 1. Relationship between the number of males in a trial and the number of displays, speed spurts, and nips

Results:

- Males show significantly more nipping behavior in the presence of more males
- No significance in difference in number of displays or speed spurts
- However, there was a noticeable decrease in the number of displays as males in the trials increased, though not significant

Table 1. P-values of the behaviors across all three treatments

<i>Behavior</i>	<i>P-Value</i>
Displays	0.1384
Speed Spurts	0.3157
Nips	0.0323

We Conclude that:

Male guppies focus more on aggressive mating tactics when in the presence of more males, but do not decrease display rate significantly, since this has been shown to lead to copulation

Future Directions:

We focused on the effect that an increase of males will have on other males in the population, but what effect does this have on the females? Future experiments could focus on the effect the aggressive behaviors of the males have on the females and the rate and success of copulation.

References:

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