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Sexual Selection in the Intertidal Jumping Spider

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Introduction

The Intertidal Jumping Spider (*Terralonus californicus*) exhibits sexual dimorphism. Males have proportionally longer forelimbs than females compared to body size. Male forelimb size and cephalothorax width scale proportionally¹.

It is well known, and evident through observation of interactions between individuals that jumping spiders have exceptional vision. They can very clearly see each other and the signals the other is conveying, which leads us to think what effects the limbs behind these signals might have on sexual selection.

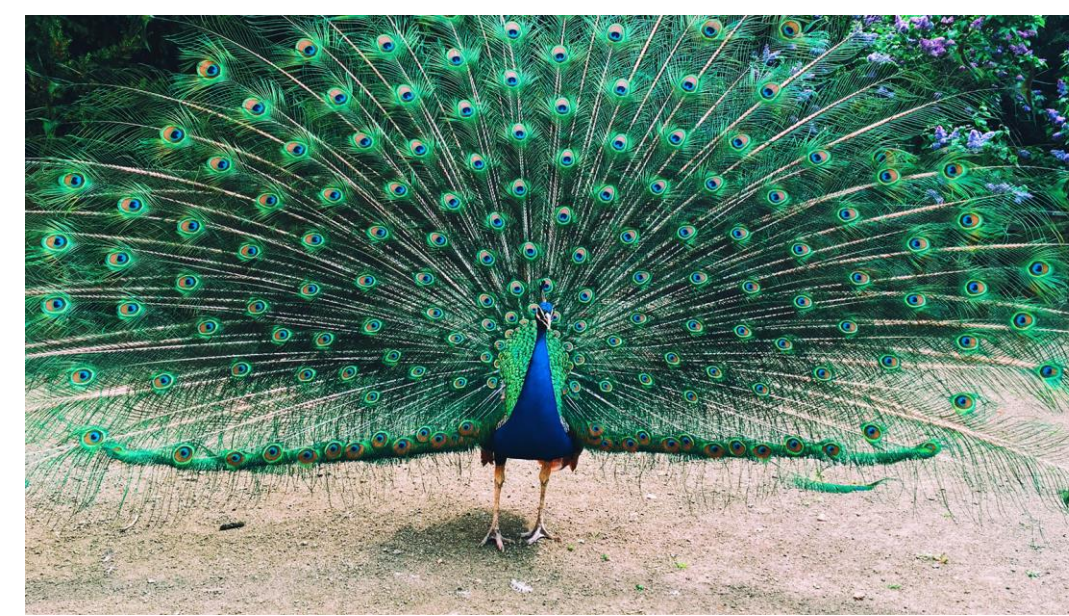
Charles Darwin proposed two types of sexual selection²:

Intrasexual selection
"Armaments"

Intersexual selection
"Ornaments"



https://en.wikipedia.org/wiki/Red_deer



<https://animals.howstuffworks.com/birds/peacock-feathers.htm>

Hypotheses

1. Male forelimbs function as "armaments", they affect intrasexual interactions.
2. Male forelimbs function as "ornaments", they affect intrasexual interactions.

Methods

- Collected spiders from the rocky intertidal zone, stored them in plastic vials, and fed them fruit flies.
- Placed two individuals in an arena and recording the trial.
- Photographed forelimbs, hindlimbs and cephalothorax width
- Used R to compile the data into charts



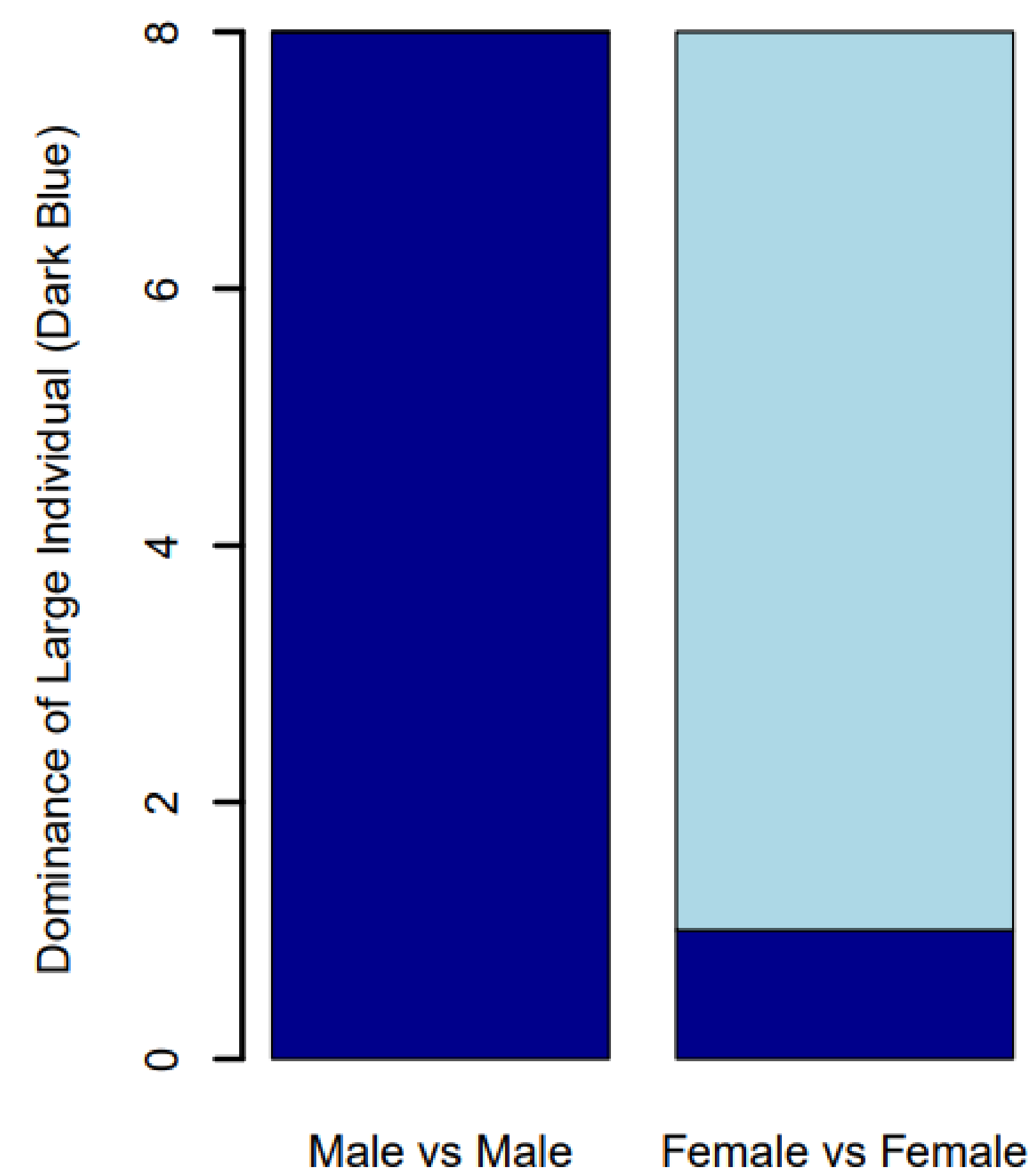
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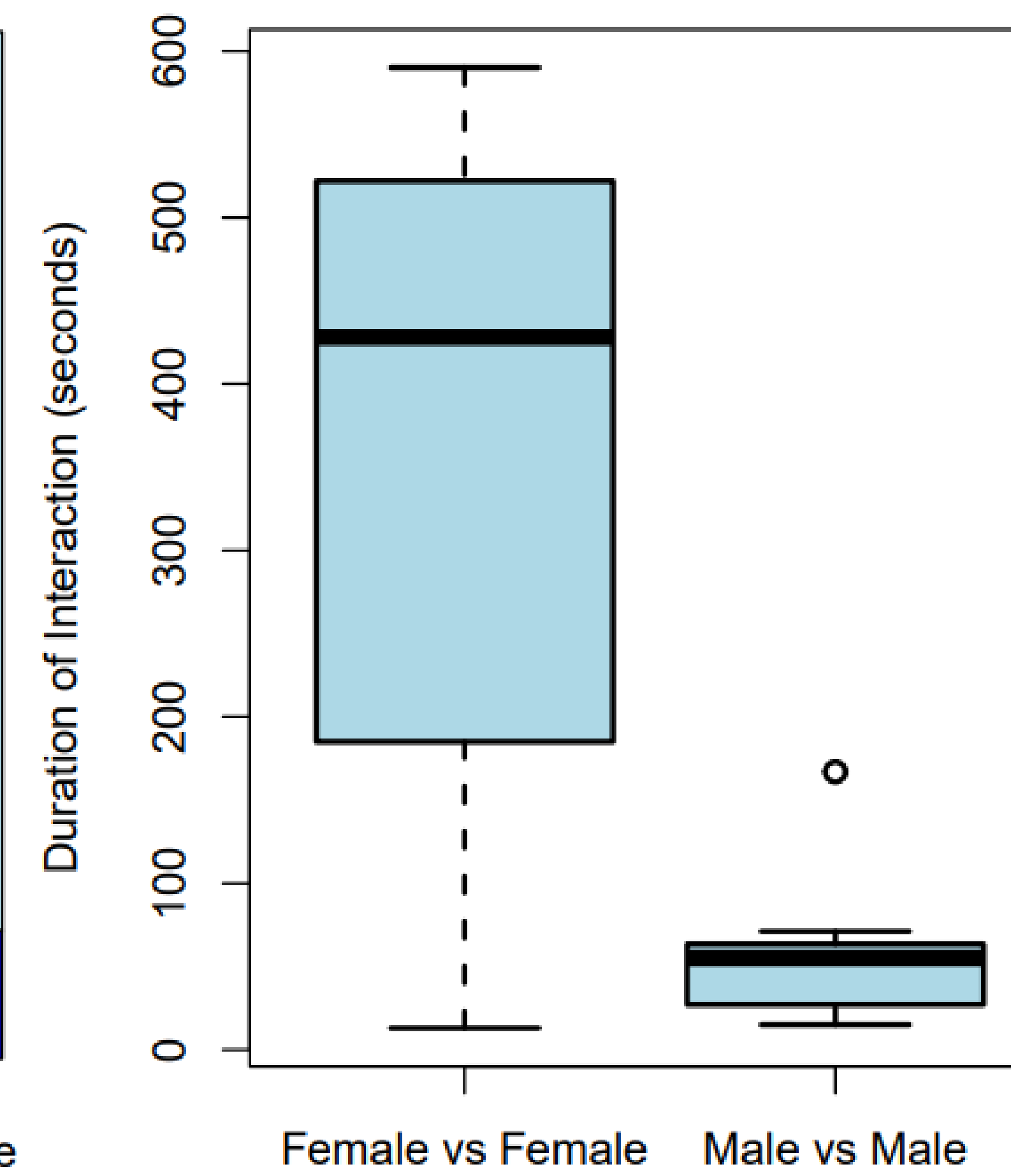
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Results

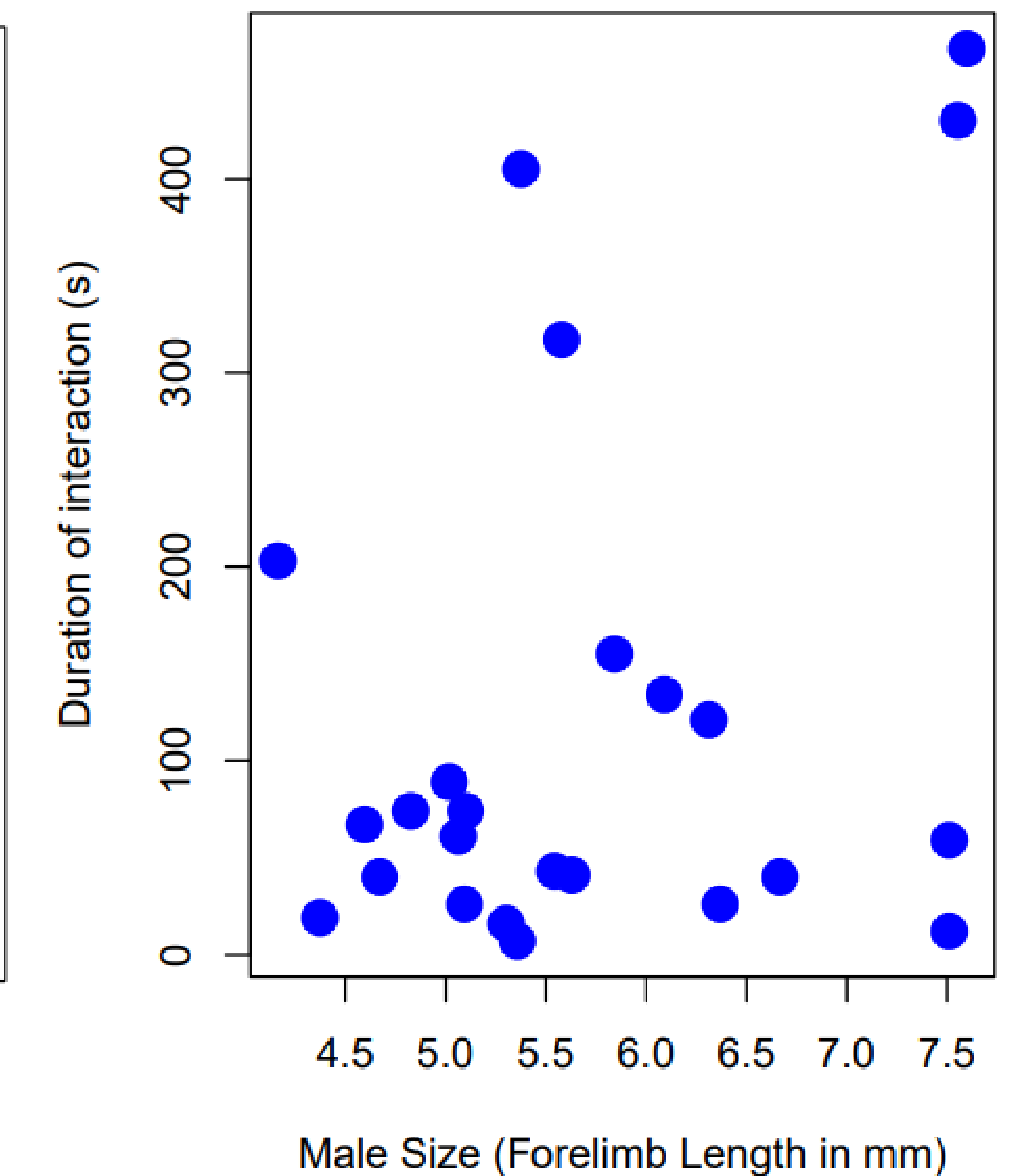
Male contest winners were decided entirely by size



Male contests finished very quickly compared to female contest



Male size had little effect on duration of male-female interactions



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Conclusions

- Hypothesis 1. was supported, male forelimbs do function as armaments, since male-male trials were decided by size.
- Hypothesis 2. was not supported, male forelimbs do not function as ornaments, since male size created no significant trend in duration of male-female interaction.



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Literature Cited

- 1 Hentschel, D. 2022. *Sexual Dimorphism in Forelimb Lengths of Intertidal Jumping Spiders (Terralonus californicus) and Implications for Current Theory on Allometric Patterns and Trait Function*, Honours Thesis, Uvic.
- 2 Darwin, C. 1871. *The Descent of Man and Selection in Relation to Sex*. J. Murray, London.

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