

Know Your Enemy

Meg Moeller, Jason Leonard, and Neil Evans

Reed College Bio342

- Territory owning crabs in the wild have been found to be more aggressive towards non-neighboring crabs than neighboring crabs*.
- This is known as the “**dear enemy**” phenomenon.
- However, it is not known whether this is because neighbors recognize each other or if the crabs have less to lose in neighboring fights.

Will neighboring fiddler crabs recognize each other when placed in a neutral area?



Behavioral Coding During Agonistic Interactions:

Hypothesis: Crabs will fight strangers more intensely than neighbors.

Crabs:

- 8 male fiddler crabs (*Uca pugilator*)
- Labeled with whiteout on four carapace quadrants
- Measured weight, claw length, and carapace width using ImageJ



Ethogram**

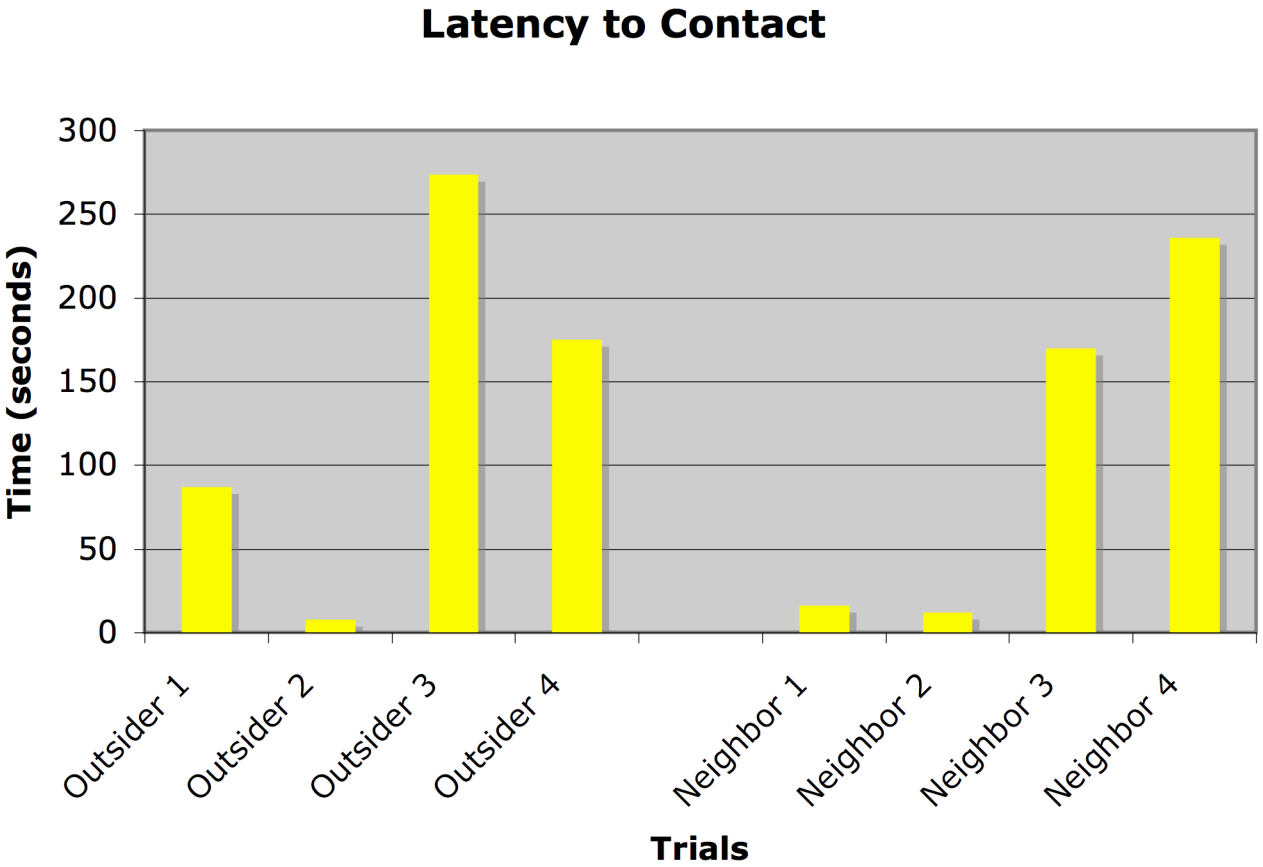
Behavior	Description
1	No claw-claw or claw-body contact
2	Claw contact, some pushing
3	Claws intertwined, sawing/rubbing
4	Claws intertwined, pushing
5	Mutual forceful claw closure
6	Lifting, flipping, or throwing

Fighting:

- Crabs fought twice, once with neighbor once with outsider
- Fights lasted 20 minutes
- Arena was a triangular enclosure in a sandy-bottomed tank that none of the crabs had been in until their first fight
- Observers agreed on behavior coding during recording

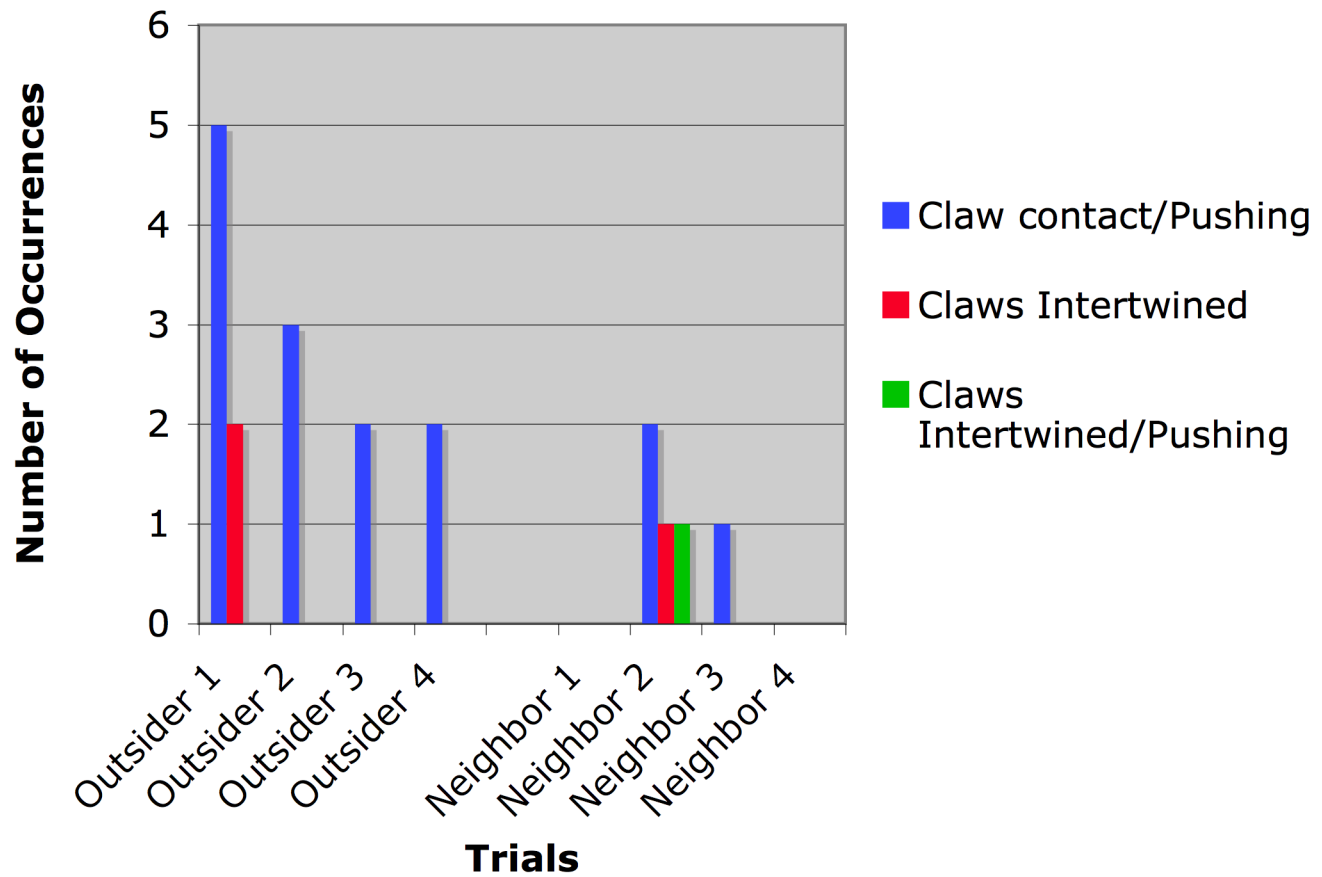
High Claw Contact with Outsiders

High individual Variation



•Latency to contact also showed no significant effect

Recorded Behaviors



•Occurrences of behaviors showed no significant effect, but a possible trend



Preliminary Results Direct Future Research

Non-aggressive contact behavior should be included in future ethogram.

Sample sizes must be increased.



* Booksmyth, I., Jennions, M. D., & Backwell, P. R. Y. (2010). Investigating the 'dear enemy' phenomenon in the territory defence of the fiddler crab, *Uca mjoeborgi*. *Animal Behavior*. 79: 419-423.

** Pratt, A. E. & D. K. McLain. (2006). How dear is my enemy: intruder-resident and resident-resident encounters in male sand fiddler crabs (*Uca pugilator*). *Behaviour*. 143: 597-617.