Mate choice across four contact zones and two ecotypes

Littorina meeting, Tjärnö

Samuel Perini

14/05/2018

Aim

The impact of the mating patterns on the evolution of reproductive barriers between the two ecotypes of *Littorina saxatilis*

1. The relationship between the probability of mounting and the sizes of the mating pairs

Aim

The impact of the mating patterns on the evolution of reproductive barriers between the two ecotypes of *Littorina saxatilis*

1. The relationship between the probability of mounting and the sizes of the mating pairs
2. Changes in the relationship across shores and between ecotypes

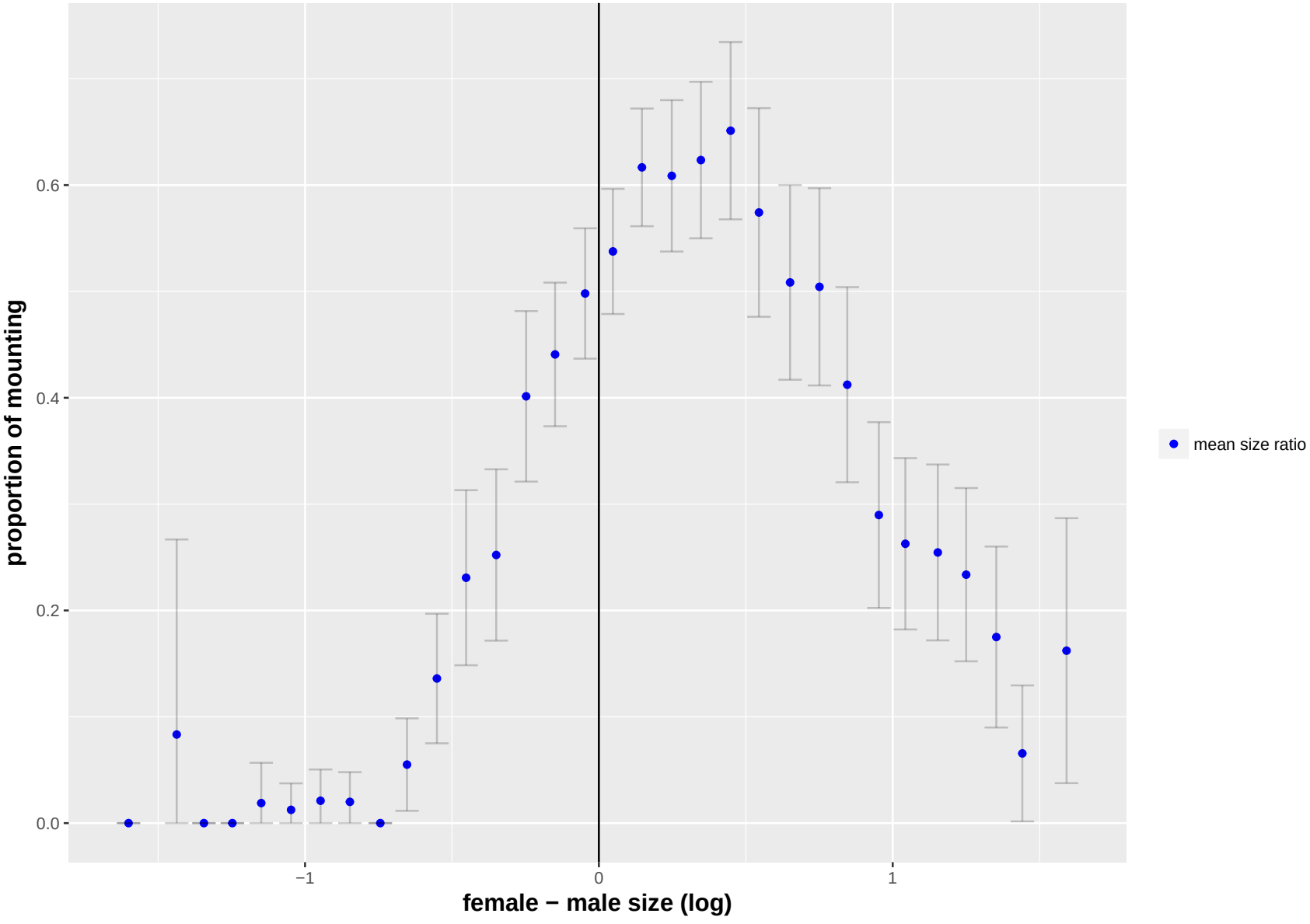
Mating experiment - Data

1. The relationship between the probability of mounting and the sizes of the mating pairs

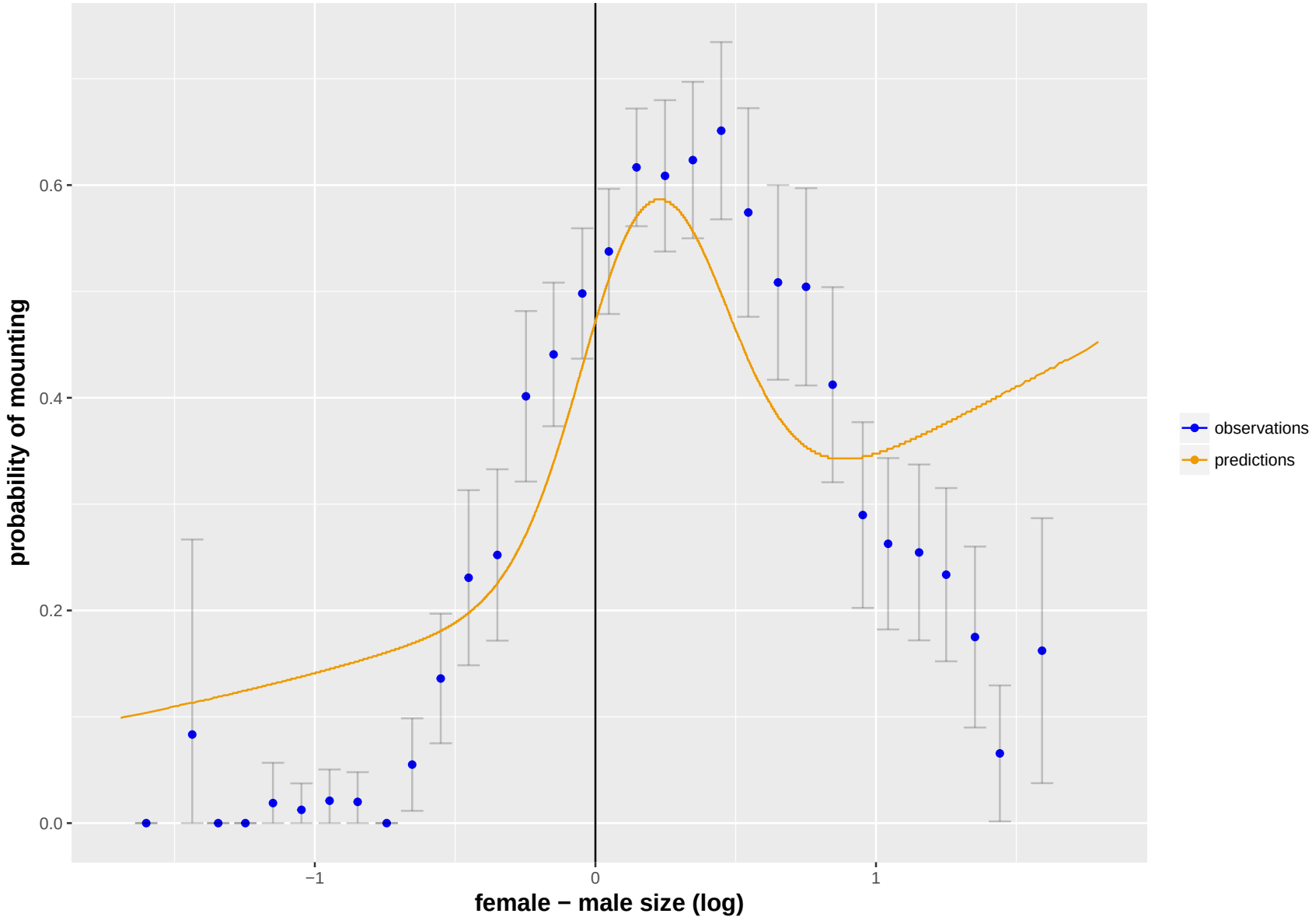
- Binary response variable: mount YES or NO

- Explanatory variable: shell size

Mating experiment - Data



Mating experiment - Model

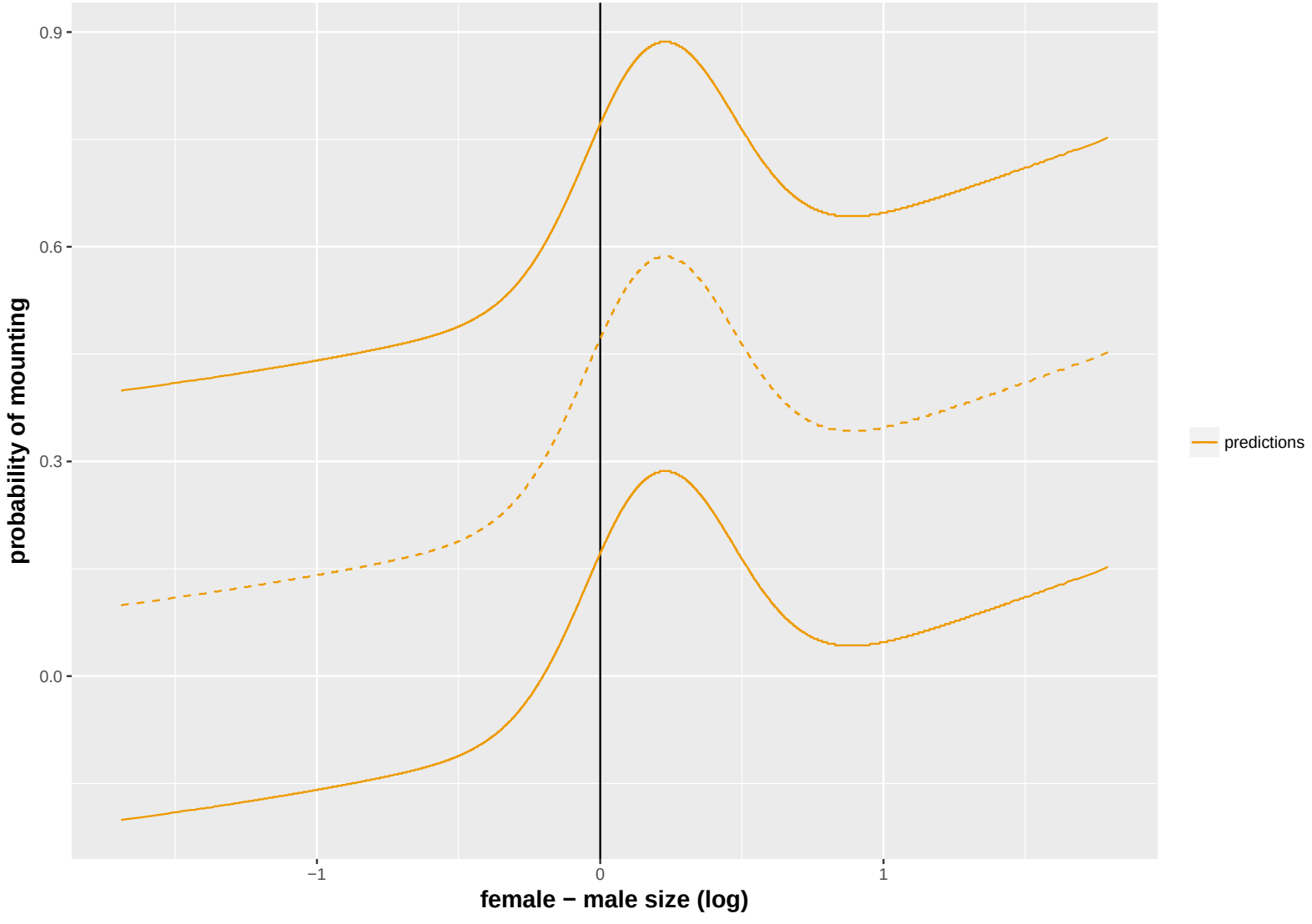


Mating experiment - Parameters

- *level* = intercept
- μ = preference
- σ = choosiness
- γ = slope

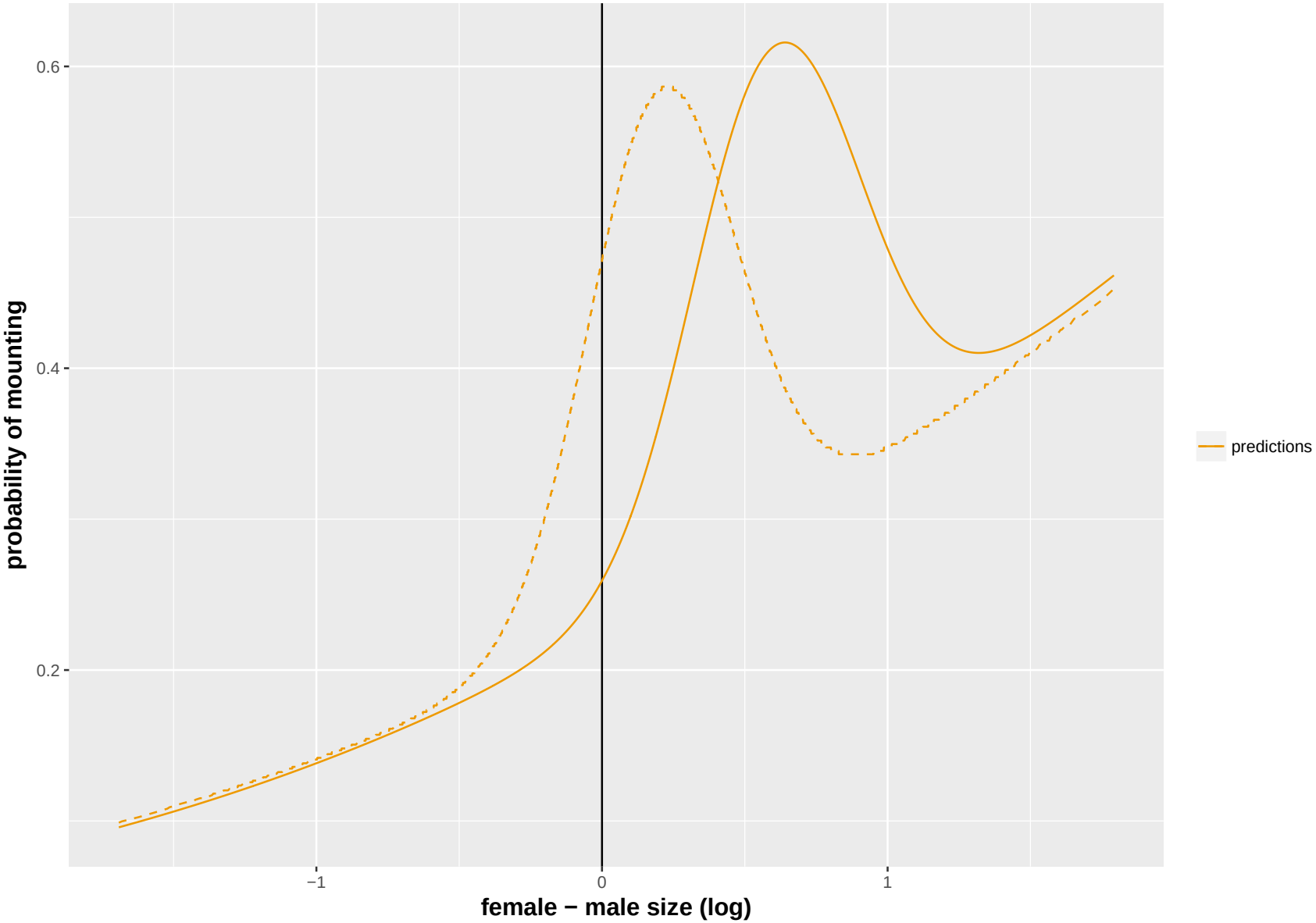
Mating experiment - Parameters

- *level* = intercept or snail activity



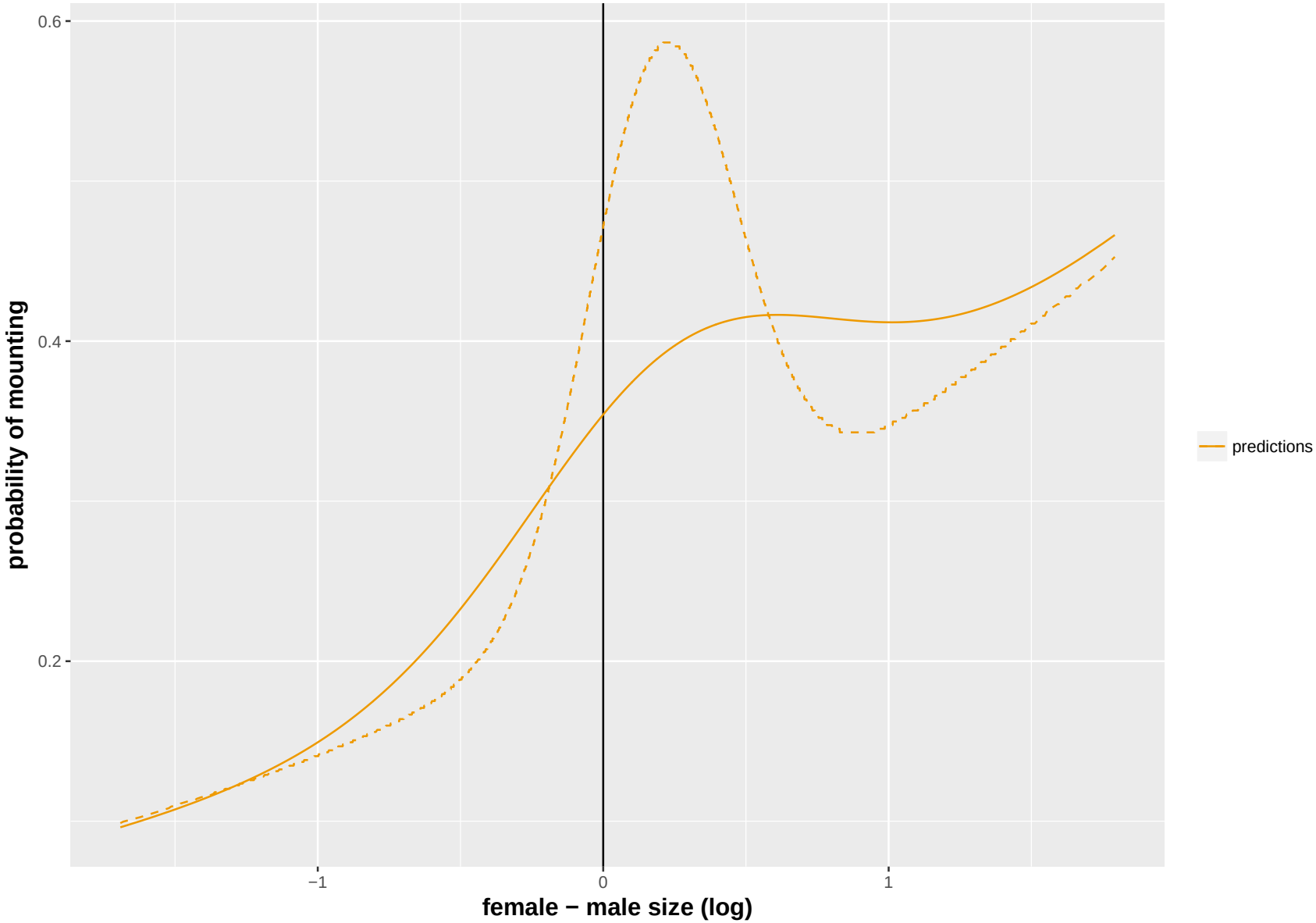
Mating experiment - Parameters

- μ = preference or preferred trait value



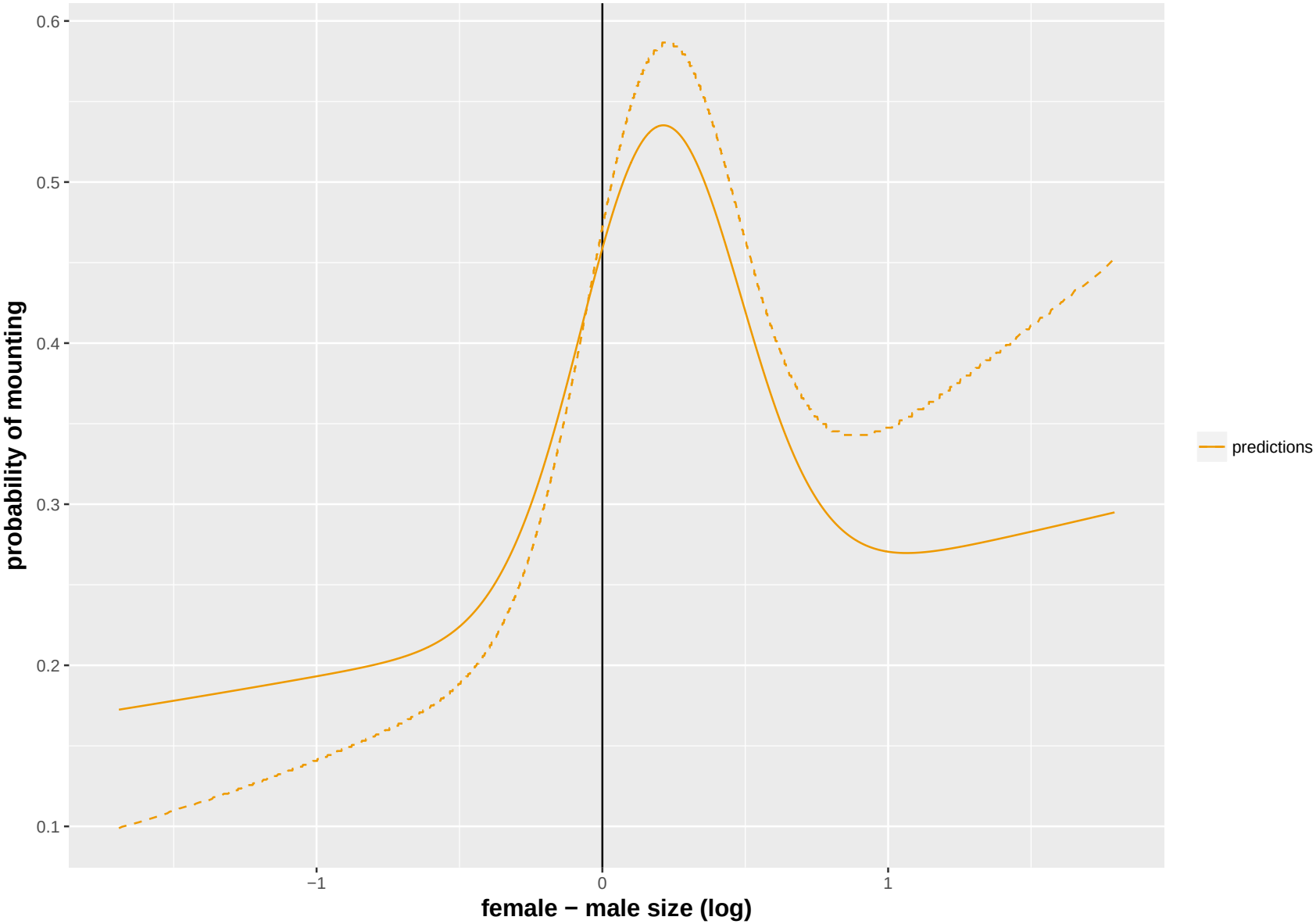
Mating experiment - Parameters

- σ = choosiness or strength of preference

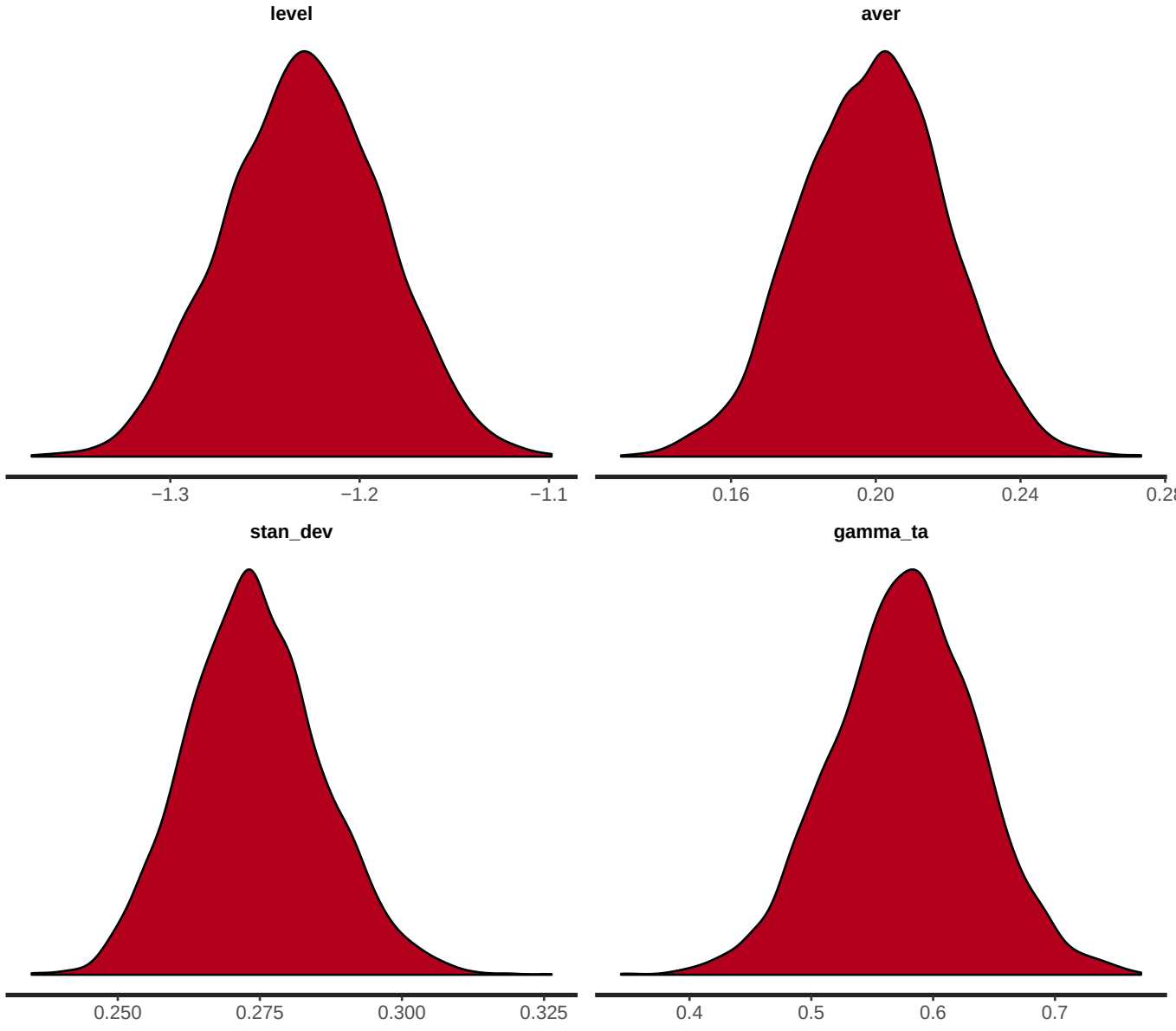


Mating experiment - Parameters

- γ = slope or tail asymmetry



Mating experiment - Parameters

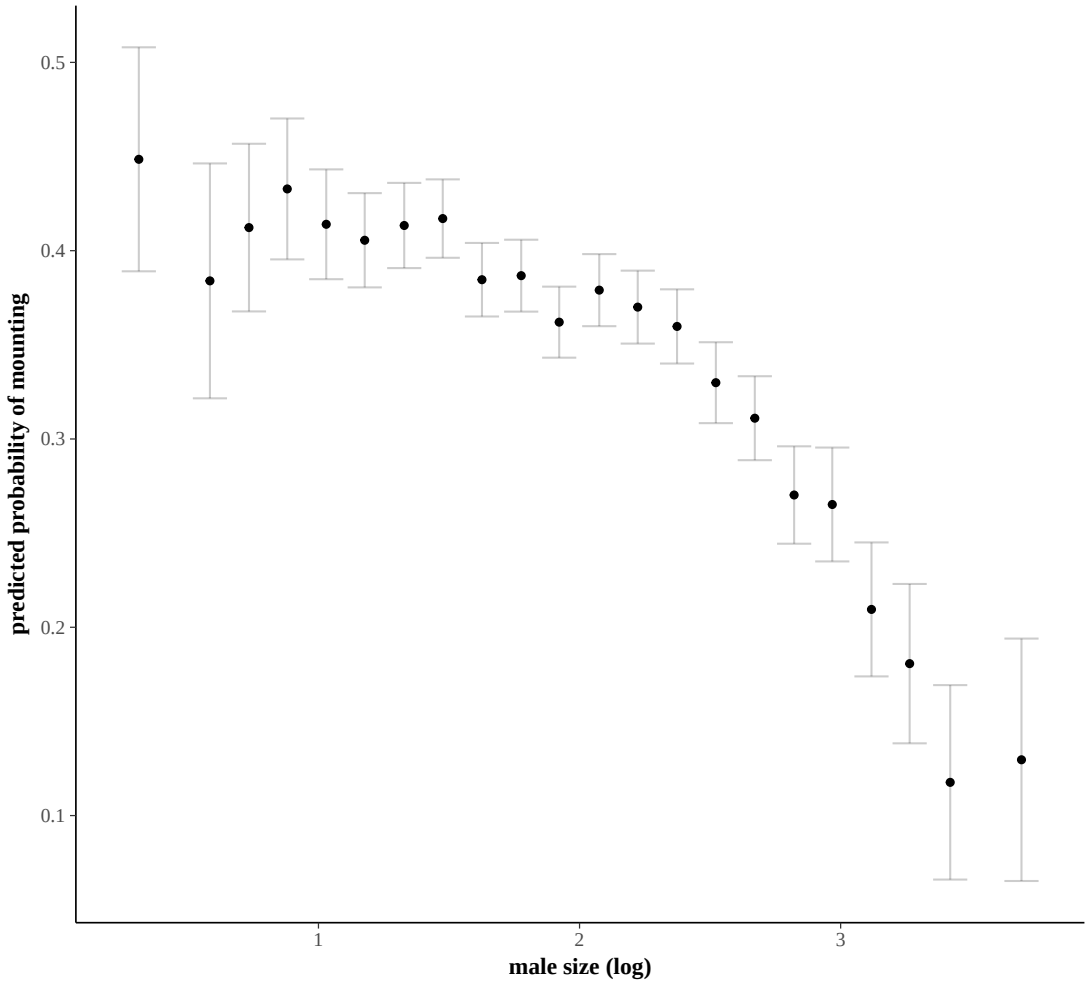


Field simulations - Data

- male and female sizes are sampled from a normal distribution with μ and σ of the test snails (phenotypic clines)
- mating pairs are formed assuming that every female has at least one successful mating (sexual selection on males)

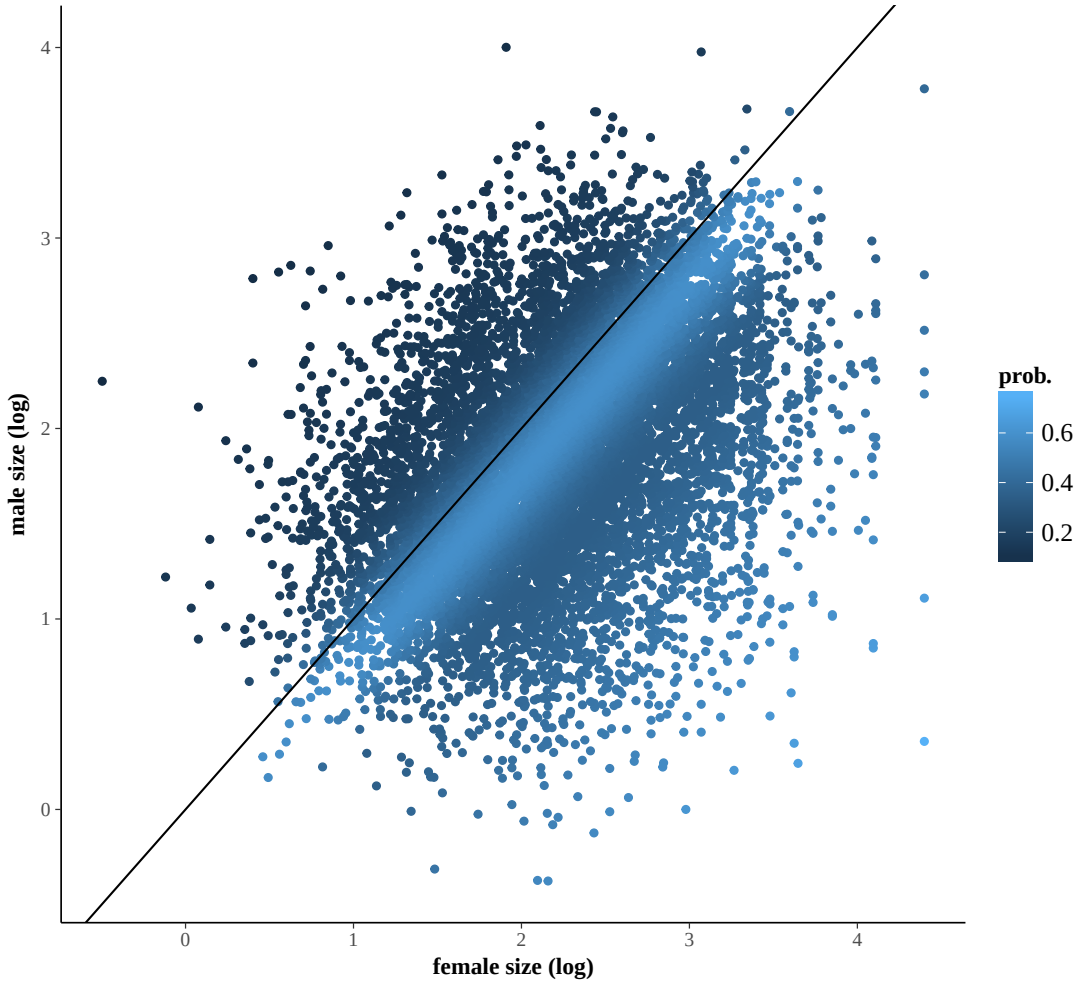
Field simulations - Sexual selection

correlation between male trait value (size) and mounting success

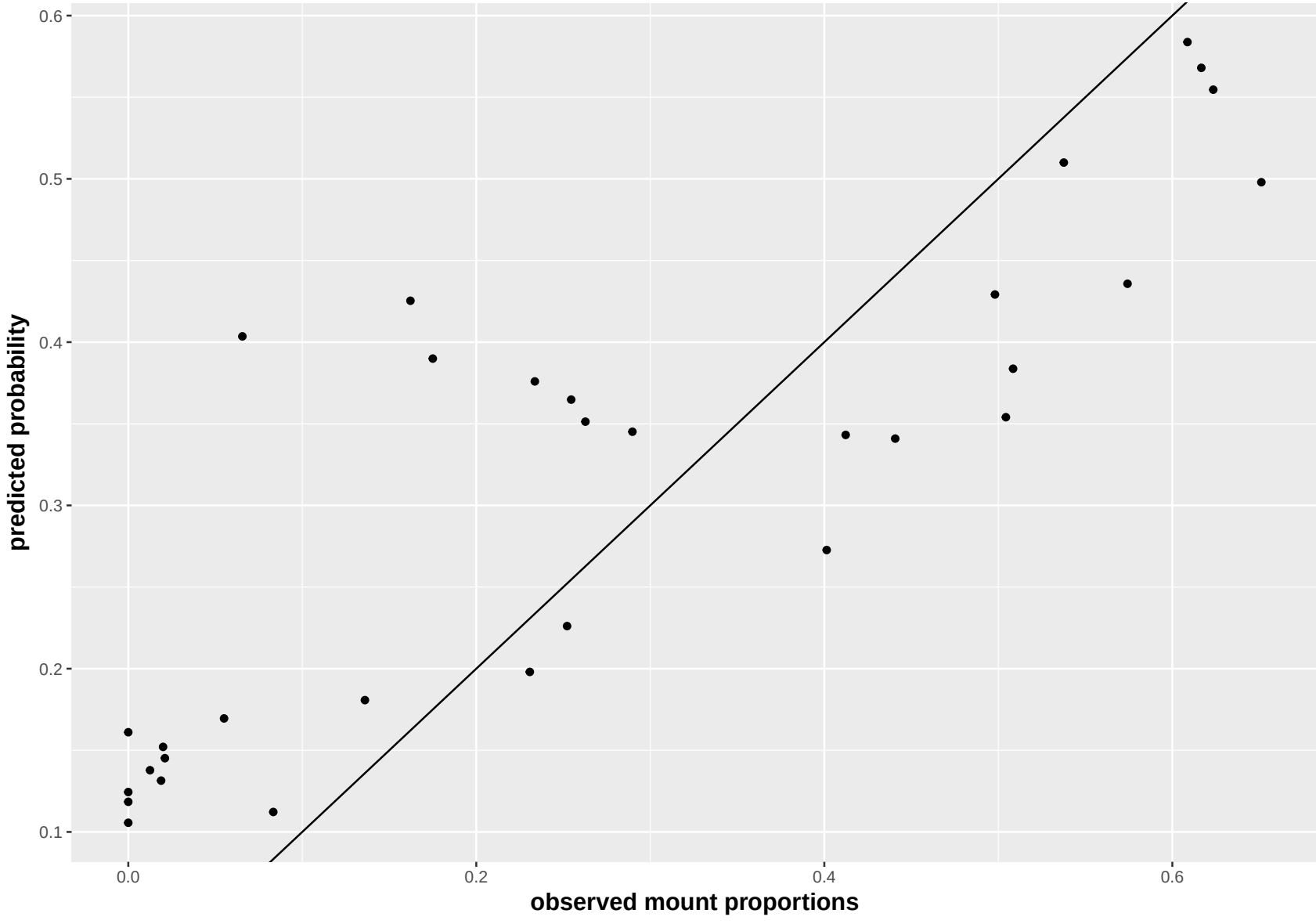


Field simulations - Assortative mating

correlation of trait values (size) in mating individuals



Posterior predictive checks



Posterior predictive checks

Next

- Changes in the relationship across shores and between ecotypes
- Compare the models
- Influence of mating pattern on phenotypic clines and barrier to gene flow (Marina R)