A dynamic game theoretical model predicts variance in choosiness when mate availability fluctuates

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A DYNAMIC GAME THEORETICAL MODEL PREDICTS VARIANCE IN CHOOSINESS WHEN MATE AVAILABILITY FLUCTUATES

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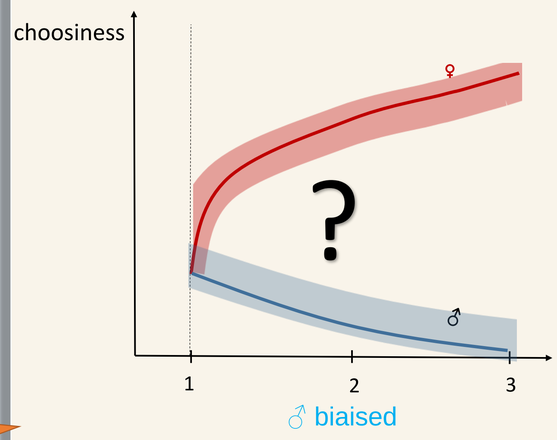
INTRODUCTION

You are in the market for love, you want a partner of good quality to have many and healty childrens. You have same sex competitors looking for mates therefore available partners become scarcer.

How choosy should you be?

test your choosiness!

OBJECTIVES



Operational Sex Ratio
=
Adult Sex Ratio × Latency period

Under what conditions should between sexes divergence evolve? Can choosiness evolve in the most common sex?

Do we observe intra-sex variance in choosiness and it is possible for both sexes?

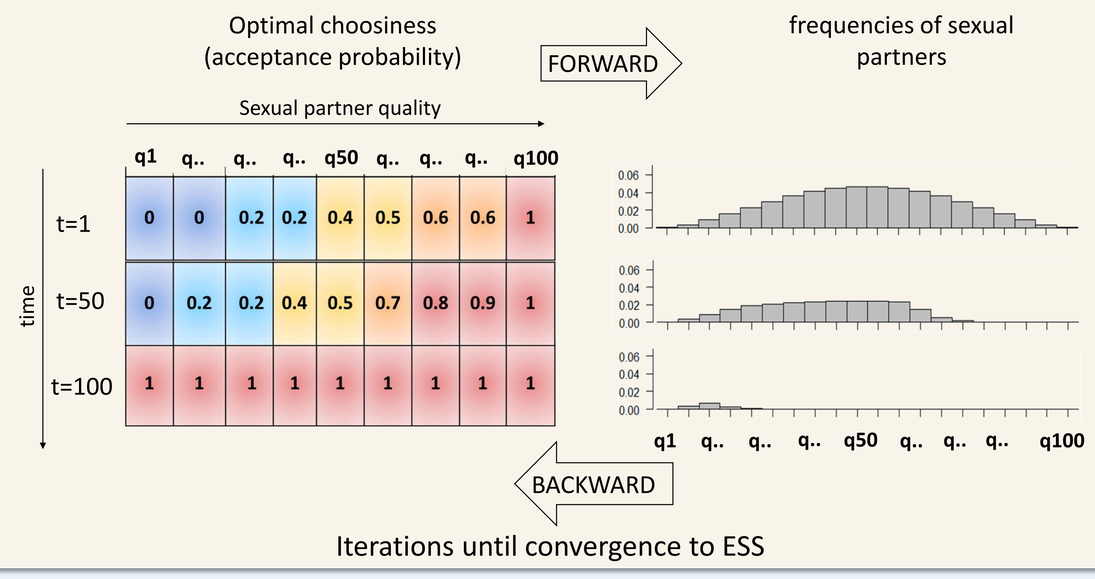
Is flexibility in choosiness an optimal strategy for a large span of mating systems ?

METHODS

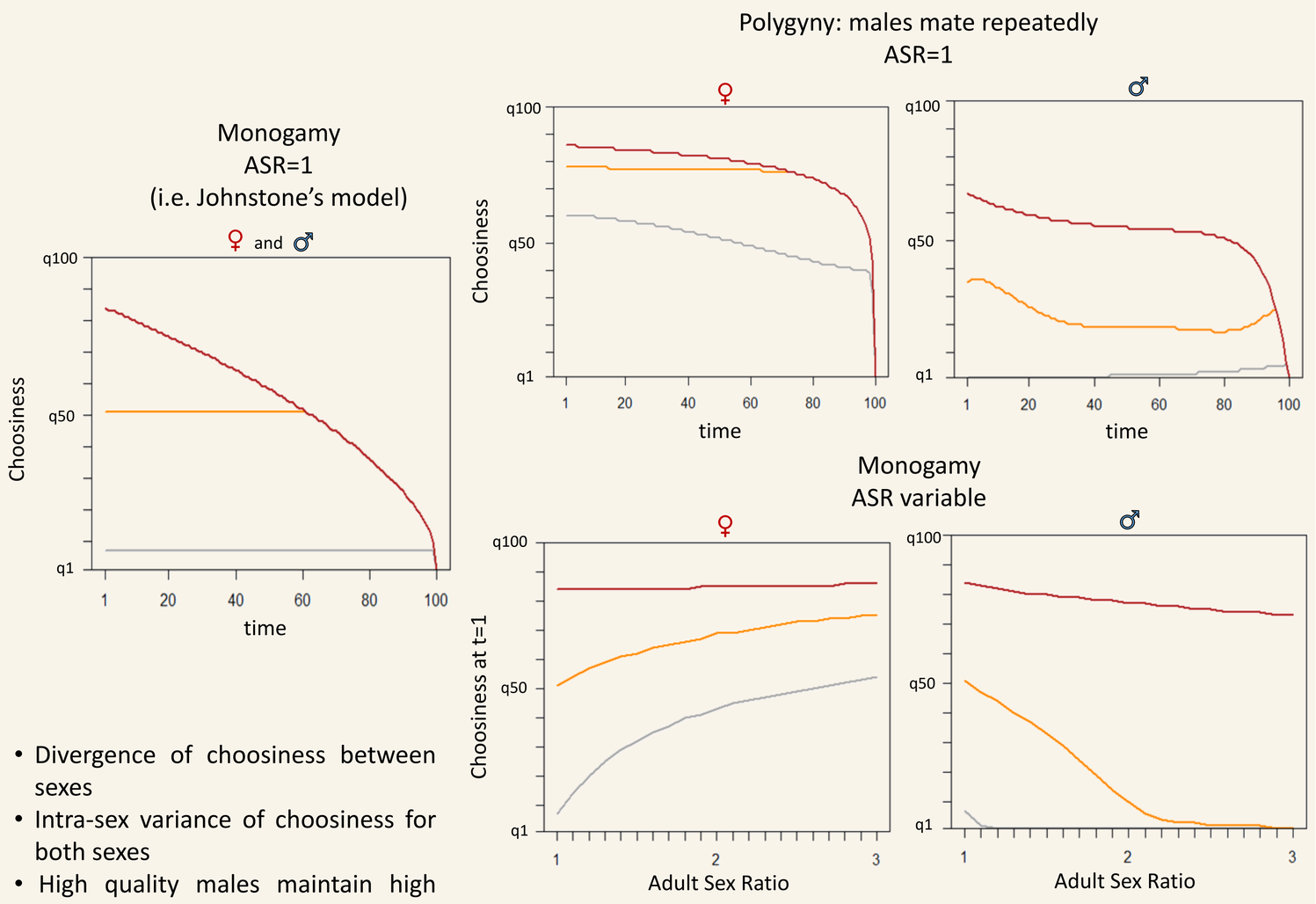
The theoretical game model (1-2)

- Individuals compete for mate
- The breeding season is finite
- The fitness payoff of an individual depends solely on the quality *q* of his mating partner.
- Different mating systems are considered:
  Monogamy: individuals mate once
  Repeated mating (from polygyny to polygynandry): males and females can mate repeatedly and become available again after a latency period

Dynamic Programming

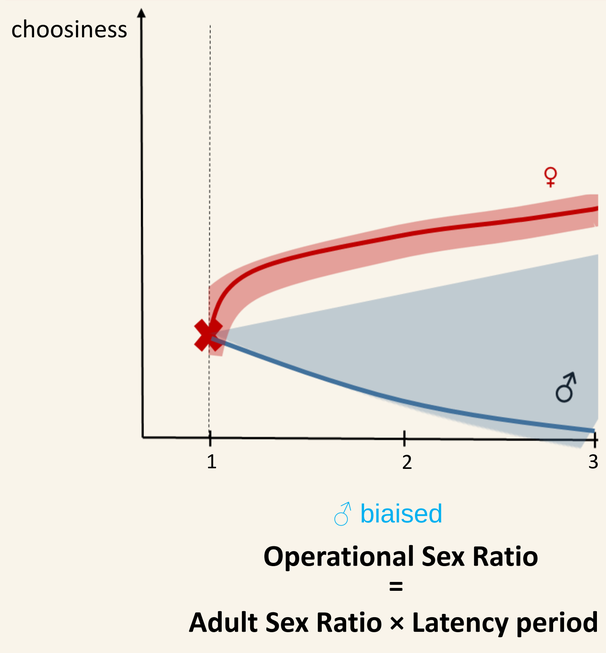


RESULTS



- Divergence of choosiness between sexes
- Intra-sex variance of choosiness for both sexes
- High quality males maintain high level of choosiness

CONCLUSION



Operational Sex Ratio
=
Adult Sex Ratio × Latency period

- Difference between the choosiness of males and females arises in asymmetric mating systems
- Despite this divergence between sexes, the model does not predict lack of choosiness in the most common sex
- Maintenance of intra-sex variance and flexibility in choosiness
- Consistency of our results with empirical studies (3-4)

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