



# Human Mate-Search Times

PSC 120 Group 1



# Introduction

- Social environment is critical to mate-choice decision-making dynamics (Smaldino & Schank, 2011)
  - Existing models, however, exclude diverse sexual orientations (e.g., lesbian, gay, bisexual) and familiarity as a rule of attraction
- Three primary rules of attraction: **Similarity, Proximity, Familiarity** (Reis et al., 2011)
- Our model aims to simulate real-world mate-choice scenarios by taking into consideration prevalence of different sexual orientations, individual preferred traits in a partner, and likelihood of partnering with someone as a result of proximity, similarity, and familiarity.

# Research Question & Hypothesis

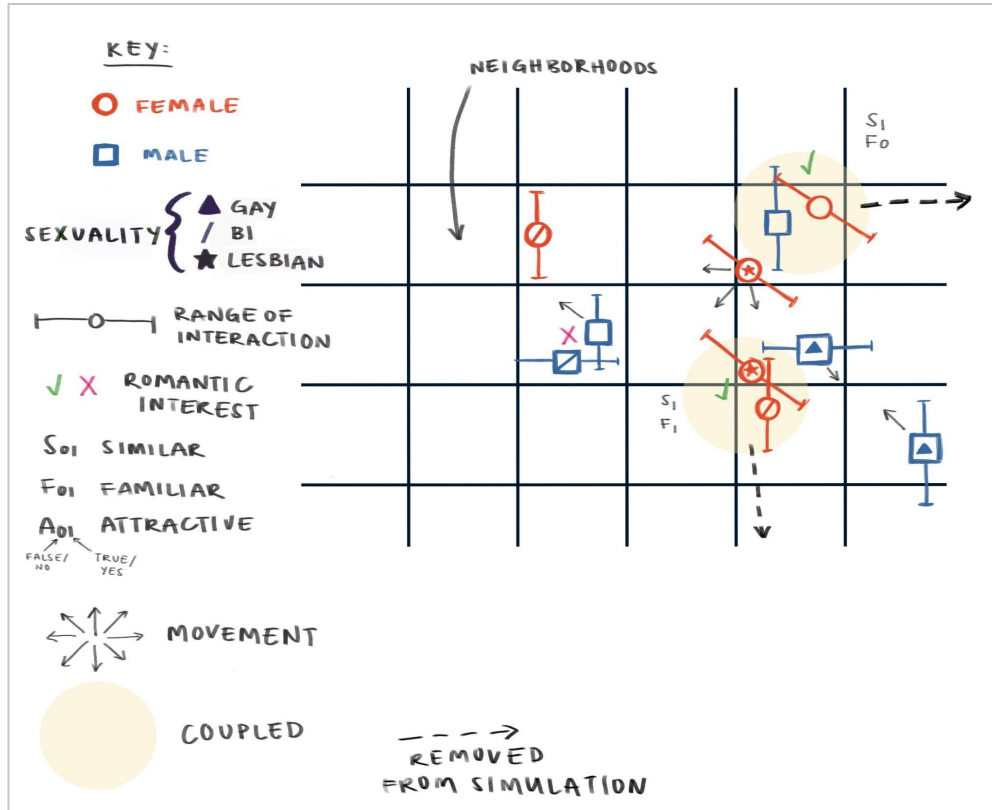
## Research Question:

What is the role of familiarity (i.e., having previously interacted with another individual) and sexual orientation (e.g., heterosexual, gay, lesbian, bisexual) on overall human mate-choice search time?

## Hypothesis:

We expect familiarity to decrease mate-search times across all sexual orientations. Alternatively, we expect non-heterosexual sexual orientations to increase mate-search times. Search radius and movement sizes of agents will have a negative relationship with mating speed

# Methods - Process Diagram



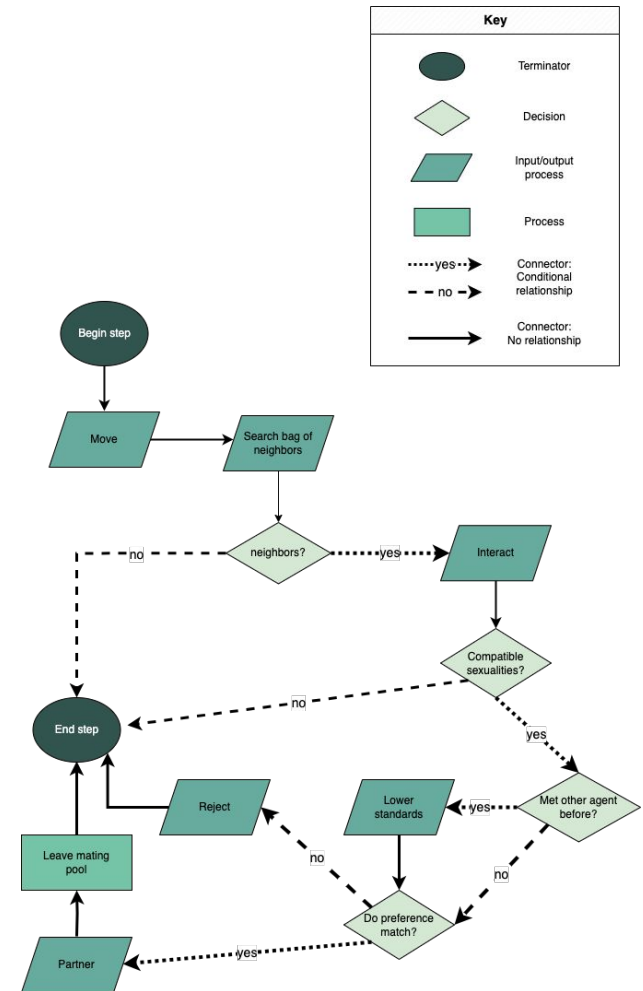
- Agents (N=50) are assigned sexualities according to real-world demographics (e.g., 4% lesbian, 4% gay, 6% bisexual)
- Agents are assigned neighborhoods (10x10) which determine the other agents they share familiarity (widen preference threshold) with
- Agents move randomly across the grid until they find another agent to interact with
- Coupled agents are promptly removed from the simulation

# Methods – Decision Diagram

Agent interactions involve a series of compatibility checks, where agents assess according to their standards:

- Sexual Orientation?
- Similarity/Attractiveness?
  - Is other agent's score within current agent's preference threshold?
- Familiarity?
  - Increases preference threshold

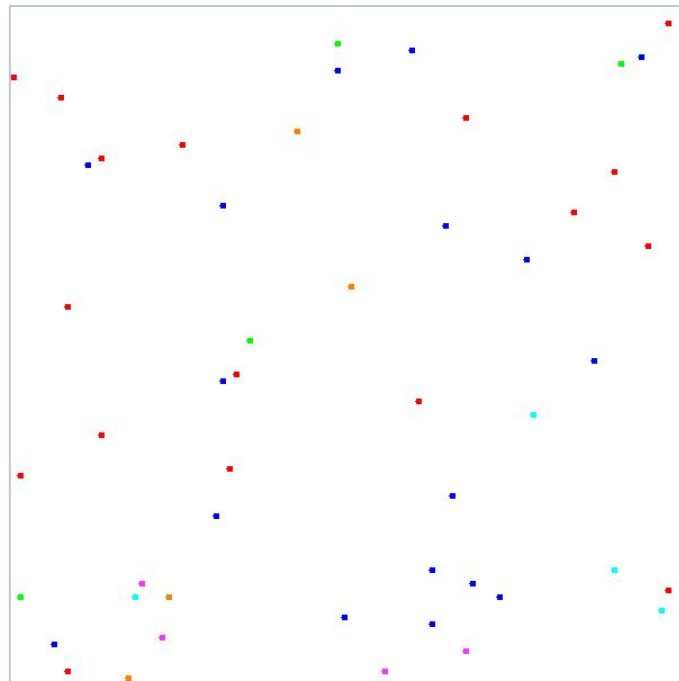
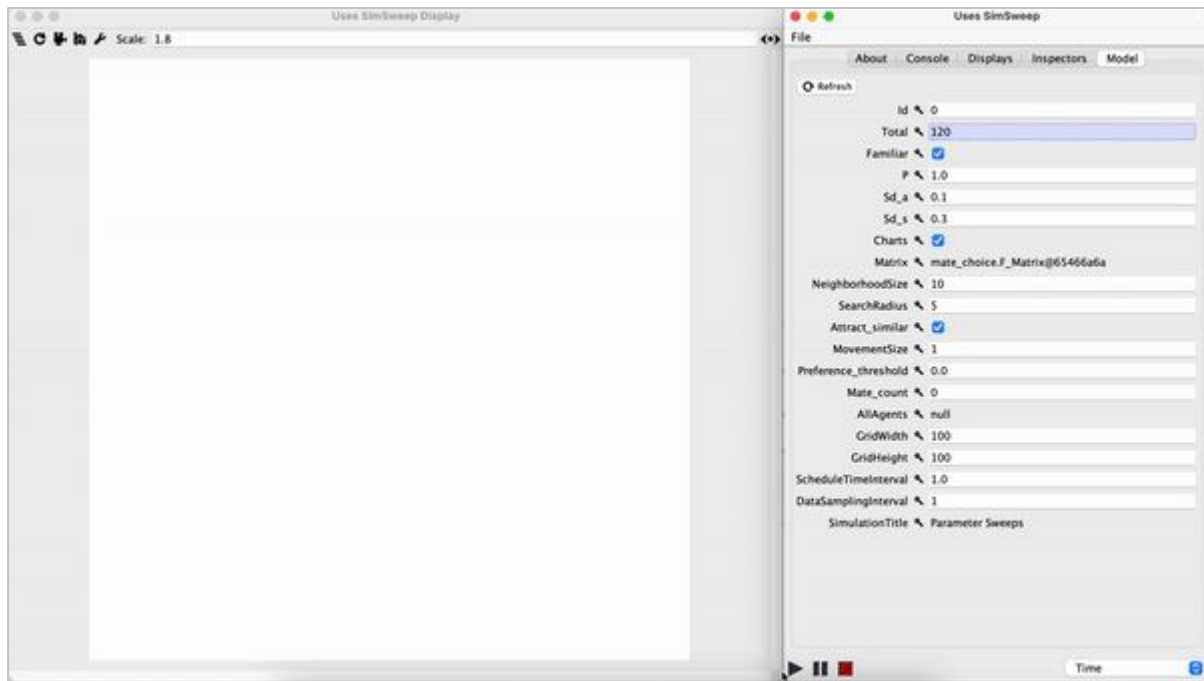
**\*\*A single simulation will either assess similarity OR attractiveness. For this test, attractiveness was run alongside familiarity.\*\***



# GUI Demo

Simulation runs based on Attraction and Familiarity rules (Note: simulation not shown until the end)

Starting distribution of all agents (N = 120)



# Results/The Issue With Our Data

- In short, our code did not mesh well with the data collection program we used.
- Some of the issues included:
  - Incorrect number of starting agents
  - Simulation crash after only a couple of sweeps and 10 repetitions
  - General inconsistencies in the results
  - Simulation would not run when given more than 50 agents (not an appropriate number for the distribution of sexualities)
  - Parameters would not sweep when ran

# Of Agents									
212268	Sweep Number:	1							
212269	neighborhoodSize	10							
212270	attract_similar	false							
212271	familiar	false							
212272	Step	Reps	N	gay	lesbian	stright_m	straight_f	bi_f	bi_m
212273	0.000	10.000	48.000	0.021	0.021	0.458	0.458	0.021	0.021
212274	1.000	10.000	47.600	0.021	0.021	0.458	0.458	0.021	0.021
212275	2.000	10.000	46.100	0.022	0.019	0.462	0.458	0.019	0.022
212276	3.000	10.000	44.300	0.020	0.018	0.460	0.460	0.020	0.023
212277	4.000	10.000	43.000	0.019	0.018	0.460	0.465	0.019	0.023
212278	5.000	10.000	41.800	0.019	0.019	0.459	0.464	0.019	0.024
212279	6.000	10.000	41.200	0.020	0.019	0.458	0.464	0.020	0.020
212280	7.000	10.000	40.100	0.020	0.017	0.458	0.464	0.020	0.018

# Interpretation of (Questionable?) Results

- When familiarity was not present in the simulation, lesbian and bisexual agents left the simulation faster
  - When testing similarity, all bisexual agents were removed by step 380
  - When testing attractiveness, all bisexual agents were removed by step 121
  - Comparatively, testing similarity with familiarity showed that all bisexual agents left by step 1407
  - Lesbian agents were removed first in every simulation without familiarity
- Heterosexual agents were consistently the last agents to remain in the simulation
  - Not a single simulation ran had them all removed by the end of the 5,000 step limit.



# General Discussion

Even though our data may be unexpected and potentially skewed, we can still attempt to make some inferences regarding our expectations:

- Non-heterosexual agents were actually faster in finding pairs than heterosexual agents
  - Likely due to the distribution of sexuality—less agents in a group creates less need for multiple mating choices
- No incompatible agents at the end— it was more that they could not find each other.
- Current data points to familiarity potentially slowing down the mating process (tests ran when familiarity = false provided relatively faster mating for some sexualities)

# Conclusion

- Evidence against our initial hypothesis
- Importance of social environment in human mate-choice dynamics
- Better understanding of the multitude of factors which impact one's ability to find a suitable mate
- Emphasizing inclusive research/breaking away from WEIRD samples
- Future research should continue more inclusive simulations (e.g., consensual non monogamy) and providing consistently accurate data

