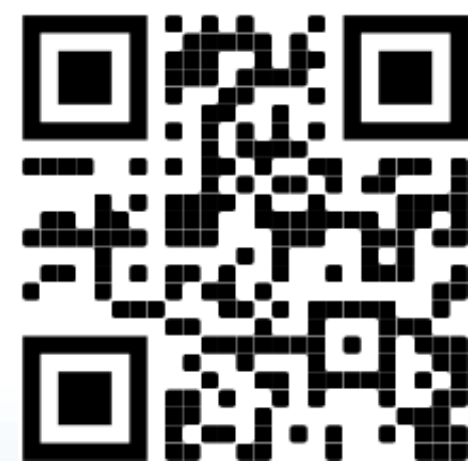


Microsimulation and the Risk of Eviction among Family Members

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Link to my personal webpage



UNIVERSITY OF MINNESOTA

Research Question

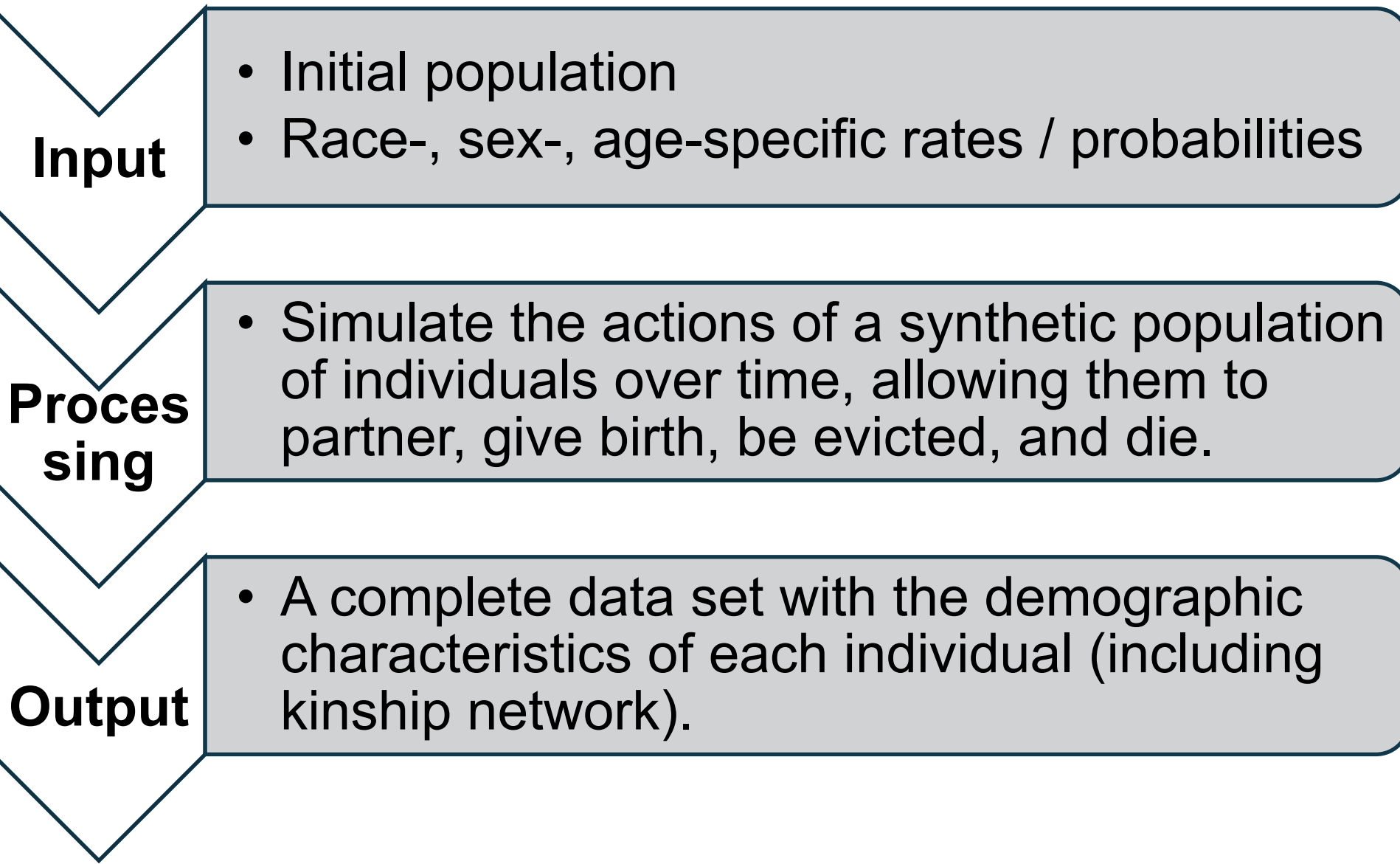
What are the risks of eviction among family members of black and white Americans?

Key Takeaways

- There are clear differences of magnitude in the black and white experiences of eviction among family members.
- For the 2000 cohort, the probability of parents/grandparents being evicted at age 2 for an average black individual is nearly 4 times higher than that for an average white individual.

Why Microsimulation?

- Information on family members are limited in housing surveys.
- The microsimulation approach allows us to infer people's lifetime trajectories of kinship and their experience related to kinship networks.



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Calibration of Input Rates

Input

Program used: SOCSIM

- Black and white populations were simulated separately.
- Initial population: 50,000 individuals in each group.

Simulation period: 1880-2019

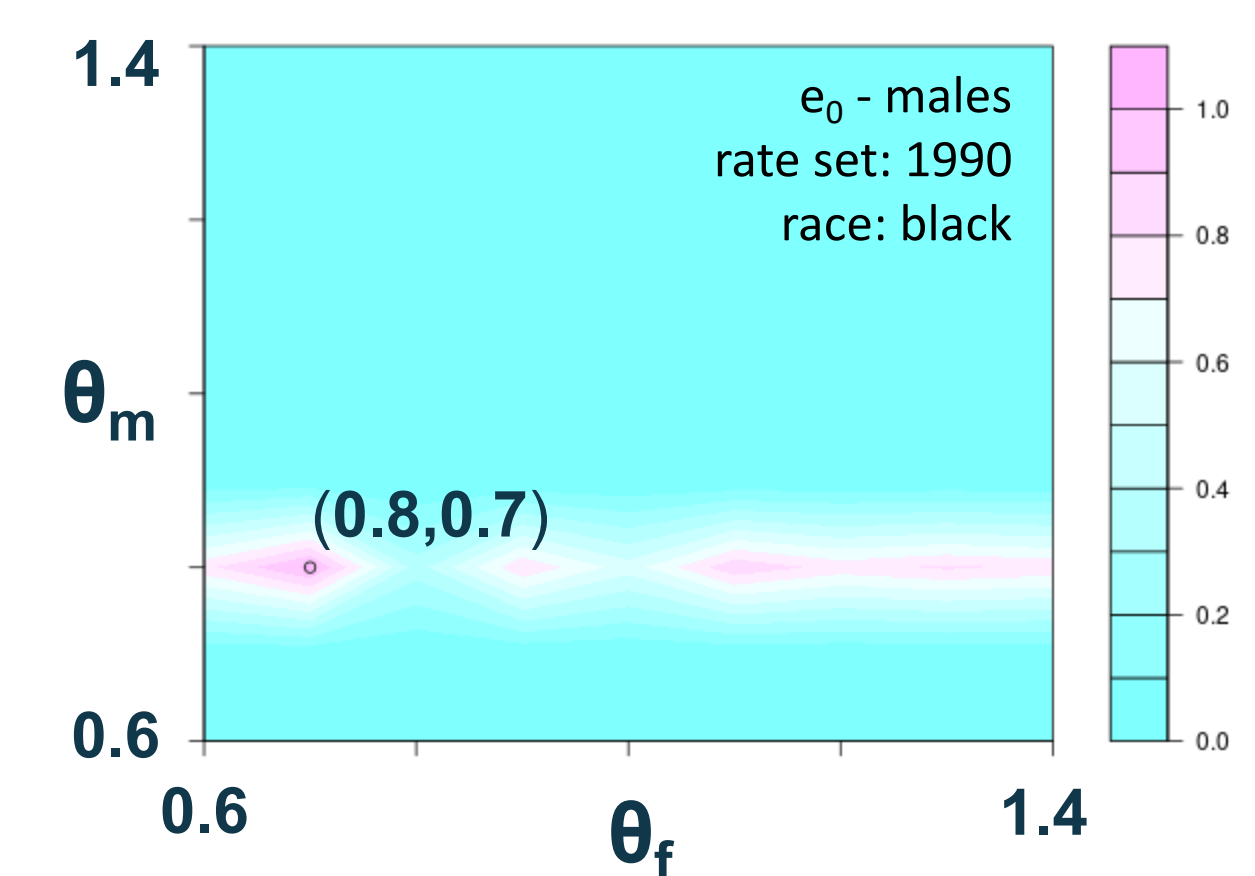
The simulation starts from 1880 to produce a population with a complete kinship structure.

Processing

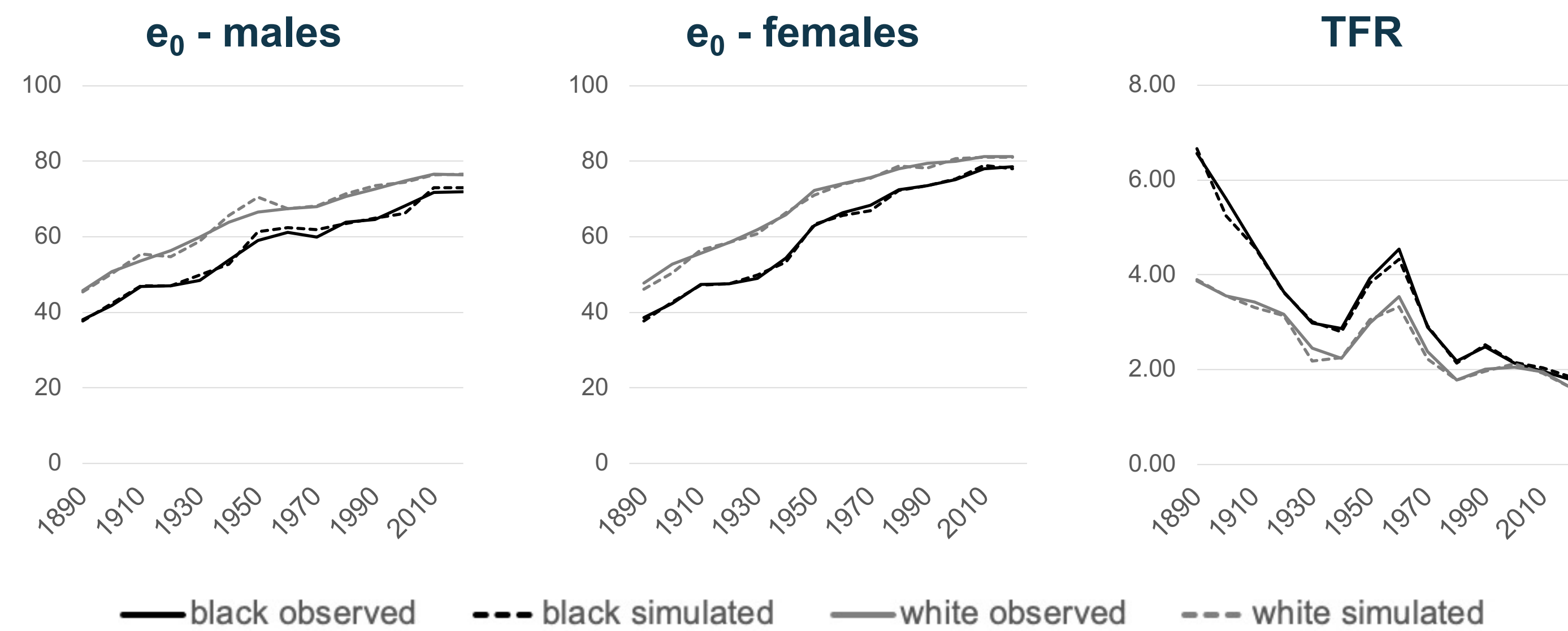
- I calibrate the input rates against the known e_0 s and TFRs.
- Two scaling factors (θ_m , θ_f) multiplicatively adjust the levels of mortality and fertility inputs.
- The pair that generate the highest likelihood value is chosen as the final re-scaling parameter set.

	Year	Source
Initial population	1880	(Ruggles et al., 2021)
Life expectancy at birth (e_0)	1880-1949	(Haines, 2008)
	1950-2005	(NCHS, 2019)
	2006-2019	(NCHS, 2019)
	1880-1939	(Haines, 2008)
Total fertility rate (TFR)	1940-1979	(NCHS, 1999)
	1980-2015	(Martin et al., 2017)
	2016-2019	(Martin et al., 2021)
Mean age at marriage; Proportion married before 45	1880-2019	(Elliott et al., 2012)
Eviction filings	2000-2019	(Eviction Lab, 2018; Hepburn et al., 2020)
Total population; Average household size	2000-2019	(Ruggles et al., 2021)

Example of Estimated Likelihood Surface



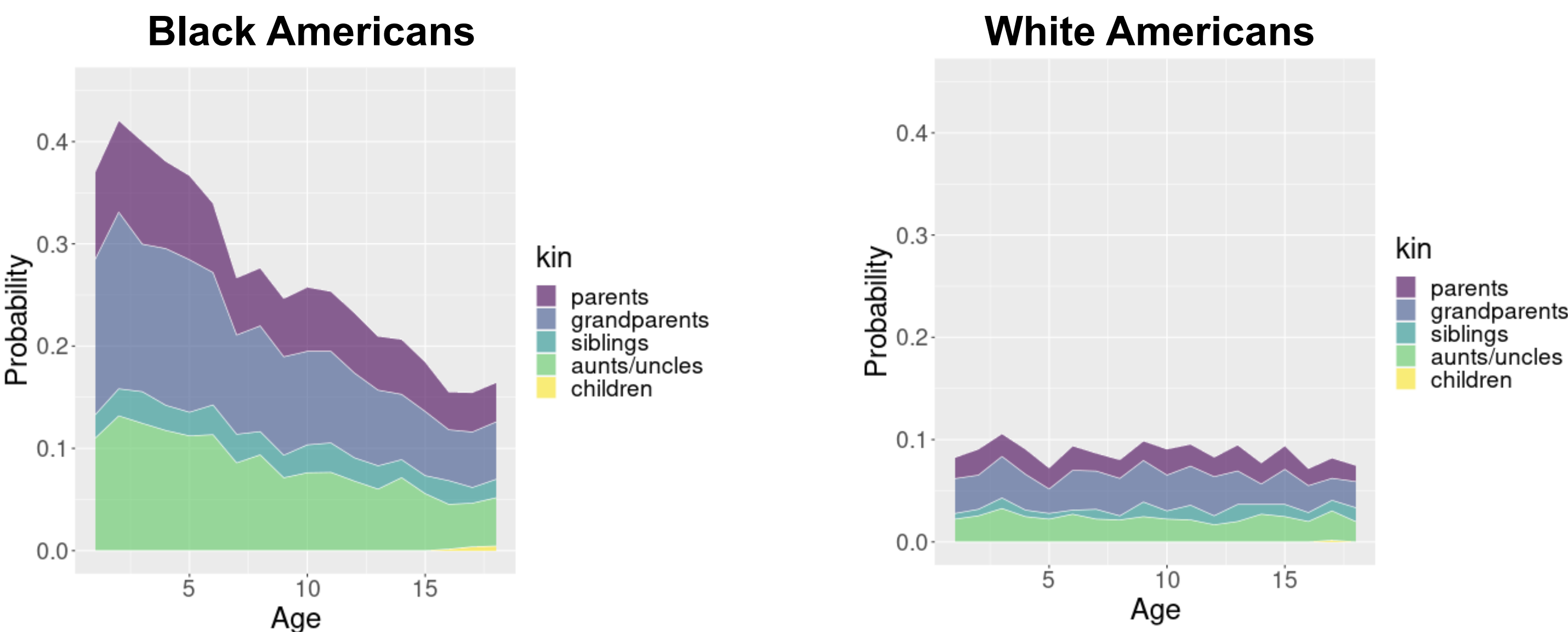
Observed vs. Simulated



Eviction Risks among Family Members

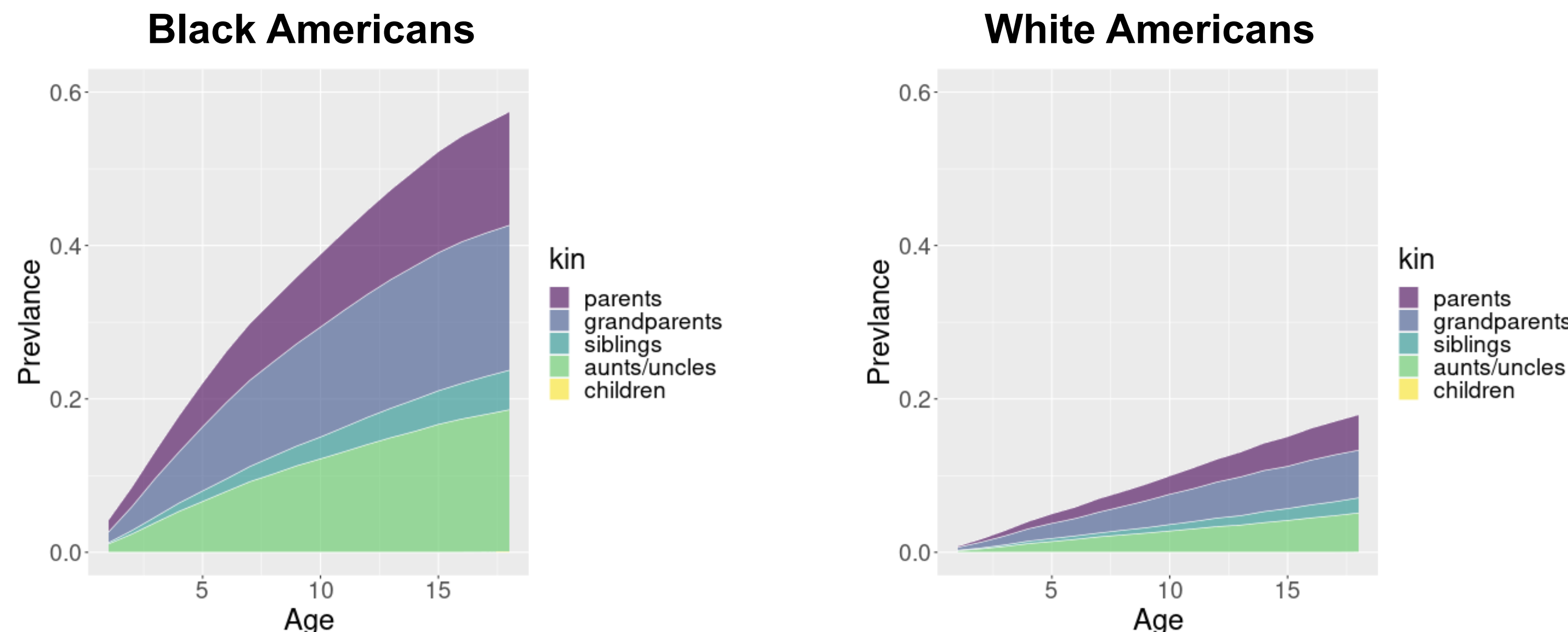
Probabilities of Eviction among Relatives over Age (The 2000 Cohort)

$$\frac{\text{Number of relatives being evicted for the first time}}{\text{Number of the 2000 cohort alive}}$$



Prevalence of Eviction among Relatives over Age (The 2000 Cohort)

$$\frac{\text{Number of living relatives who have ever been evicted}}{\text{Number of living relatives}}$$



Next Steps

- Extend the study period beyond 2019 (3 future eviction filing rate scenarios).