

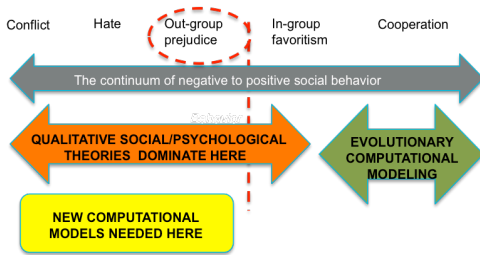
Indirect Reciprocity and the Evolution of Prejudicial Groups



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Objectives

- Prejudice: “An unfavorable opinion or feeling formed beforehand or without knowledge, thought or reason”
- Based on social and psychological theory
- Triggered by an **out-group**
- Leads to **negative behaviors**: “A problem of the century”

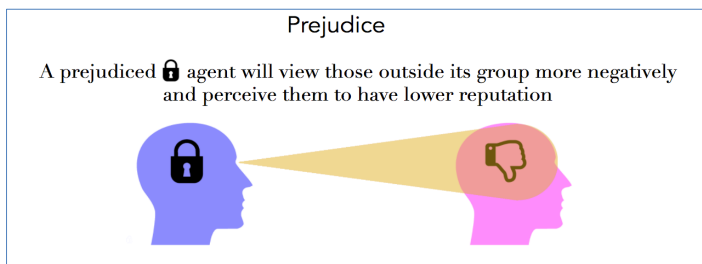
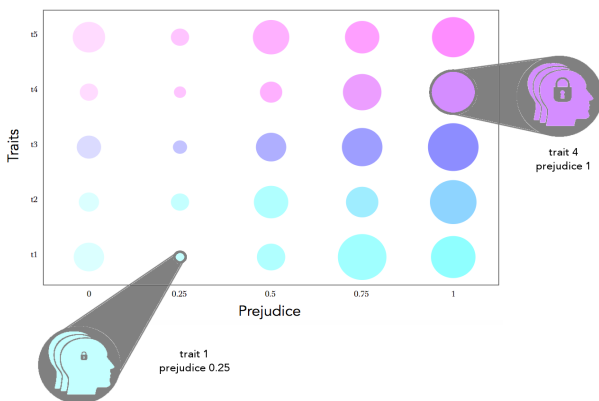


Technical Challenges

- Continuum of behaviour between **conflict** and **cooperation**
- **In-group** and **out-group** effects on individual humans
- Only a few models explore this **computationally**
- Computation allows theory to be studied **dynamically**

Approaches

- Agents group by traits and common prejudice level
- Traits: immutable characteristics that agents hold
- Prejudice level: extent to which an agent discriminates against an agent’s reputation outside its group

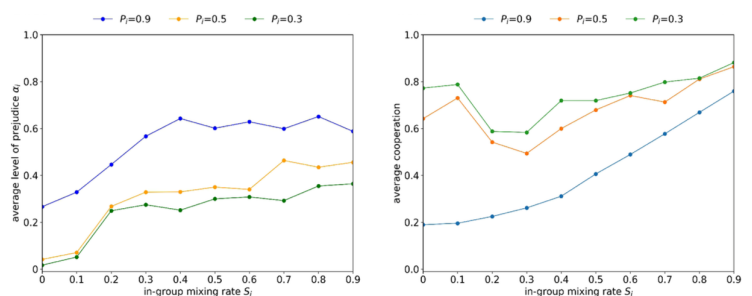
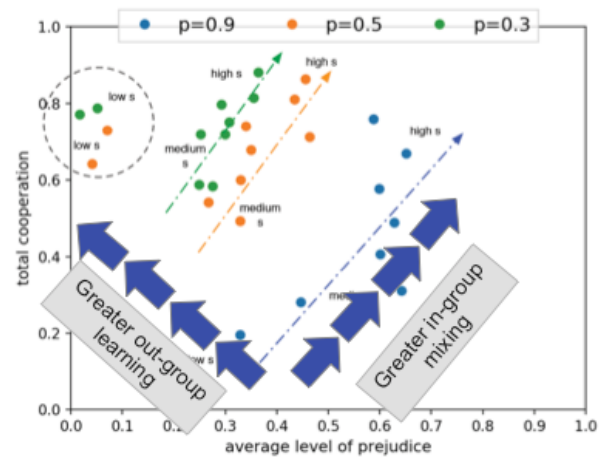


Military & Coalition Relevance

- Prejudice fuels many fractious phenomena between groups
- Leads to racism, sexism, hate crime, religious conflicts

Results

- Levels of prejudice are dependent on degree of **interaction** and **learning** from **in-group** versus **out-group**
- Prejudice **occurs without** complex human cognition
- **New**: relationship between cooperation and prejudice
- Consistency with elements of **intergroup contact theory**



Summary & Future Work

- Cooperation and prejudice can co-evolve
- Learning from wider population helps to diminish prejudice
- Natural phenomenon: easily triggered/hard to reverse
- Doesn’t require sophisticated cognition
- Implications for how coalitions function

Publication(s) & Impact

Whitaker, Roger M., Gualtiero B. Colombo, and David G. Rand. "Indirect reciprocity and the evolution of prejudicial groups." *Scientific reports* 8, no. 1 (2018): 13247.

This work featured in over 70 media outlets worldwide.