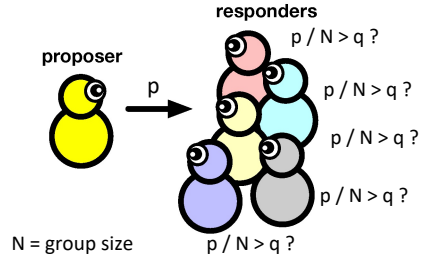


Eliciting fairness in multiplayer bargaining through network-based role assignment

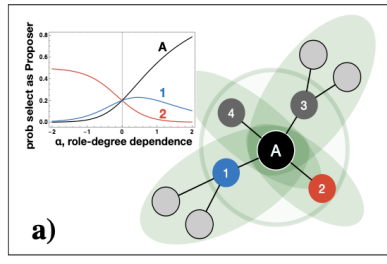
Andreia Sofia Teixeira*, Francisco C. Santos, Alexandre P. Francisco, Fernando P. Santos

Multiplayer Ultimatum Game



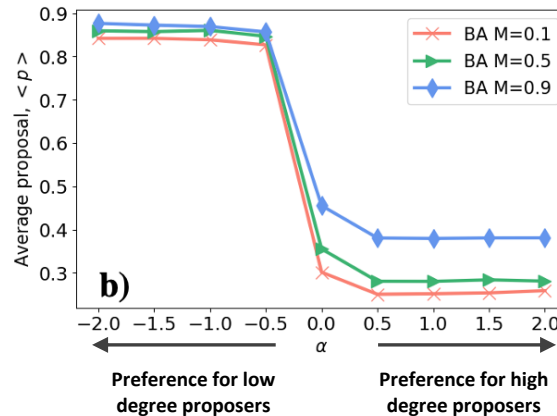
Bargaining in heterogenous networks

- A Proposer is chosen given its degree in the network. **Fig a)** contains an example of the probability of role assignment.
- Scale-free networks as the base interaction to allow heterogenous group formation.



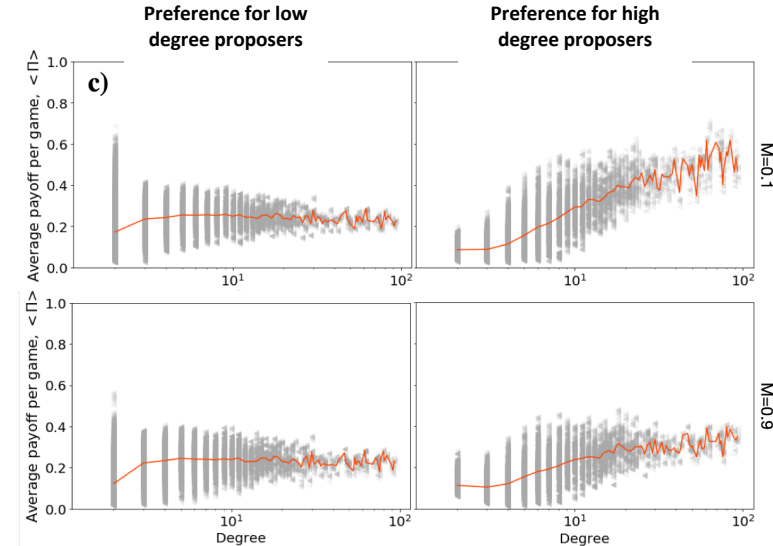
Who makes fair proposals?

- When the proposer is chosen, a proposal p is made to the group. Each responder will accept the proposal if p/N (group size) is higher than q (strategy to accept).
- In the group **at least a fraction of M must accept** so the proposal is accepted.
- We observe that **low-degree proposers increase fairness** in the amount proposed on average in the population – **Fig b).**



How to balance the unfairness of the hubs?

- High-degree Proposers lead to unequal payoffs within the population as they obtain higher average values than low-degree nodes.
- When a higher M is required for the proposal to be accepted the average payoff becomes less unfair across the population.**



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