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One Phenomenon, Multiple Models: Status Differentiation from Face-to-Face Interaction

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Background

- Members of different social groups are often perceived differently in terms of competence and social worth (i.e., status) in society

- Common examples:
  - Whites vs. non-whites in the US
  - Hungarian majority vs. Roma minority
  - Men vs. women

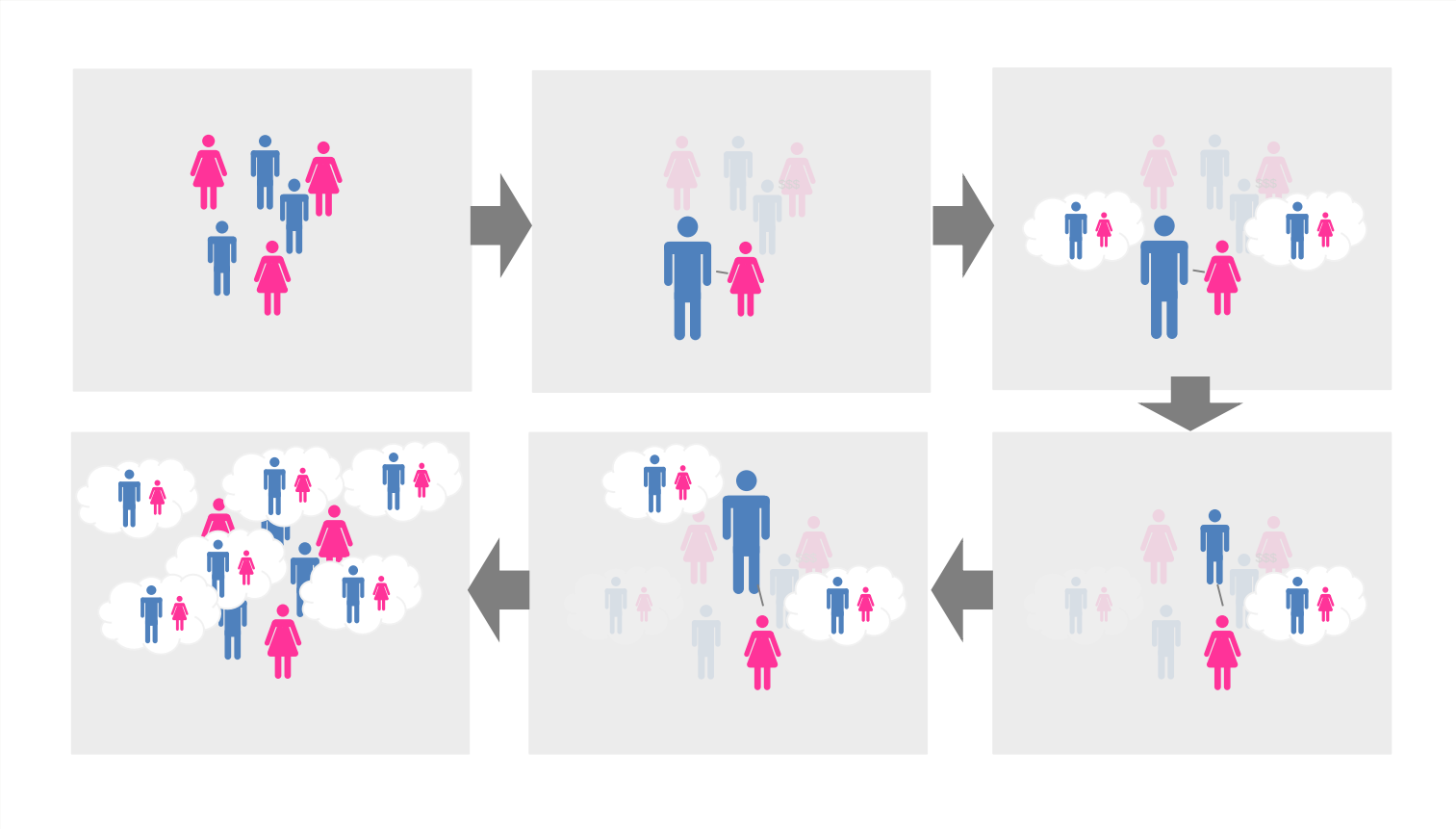
- Status affects important life outcomes, e.g.:
  - Economic success
  - Health
  - Mortality

Background

- Sociologists have traditionally assumed that status differences emerge from systematic resource differences between the members of different groups

- Status construction theory (SCT) provides an alternative explanation that does not require resource differences between social groups

SCT: A primer



Open questions

- Belief formation depends on apparent consensus in local interaction contexts

  → How likely is it that such consensus emerges spontaneously?

- Belief diffusion depends on interactions between the members of society

  → How do typical spatial characteristics of interactions affect the diffusion of status beliefs?

Multiple models

Model 1

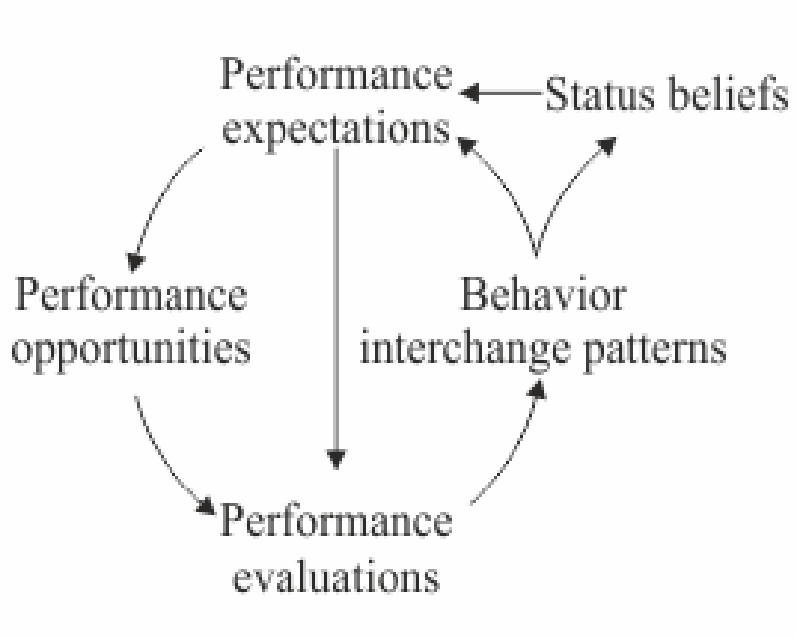
Grow, A., A. Flache, and R.P.M. Wittek. 2015. An Agent-Based Model of Status Construction in Task Focused Groups. *The Journal of Artificial Societies and Social Simulation*, 18(2): 4.

Model 2

Grow, A., A. Flache, and R.P.M. Wittek. 2017. Global Diversity and Local Consensus in Status Beliefs: The Role of Network Clustering and Resistance to Belief Change. *Sociological Science*, 4: 611-640.

Multiple models: Spontaneous emergence of consensus (M1)

- Task-focused interaction in small groups, interactions take place in cycles
- Dyadic status differentials can emerge spontaneously
- Observed differentials can induce status beliefs
- The more consistent the observed differentials are, the more likely it becomes that beliefs emerge
- Beliefs can affect subsequent hierarchy formation
- Interactions and their outcomes are modelled probabilistically, based on empirically observed interaction patterns

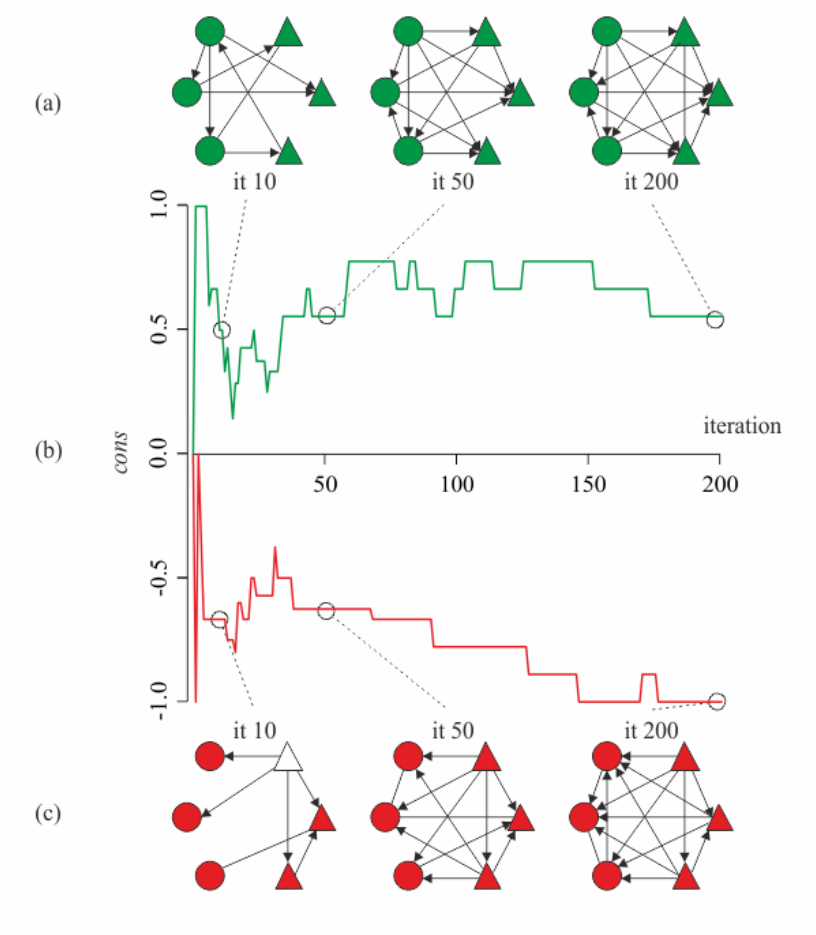


$$e_{ij,t} = .8^{\#neg_{ij,t}} - .8^{\#pos_{ij,t}}$$

$$E_{i,t} = \frac{\exp\left(e^{*}_{ji,t}\right)}{1+\exp\left(e^{*}_{ji,t}\right)}$$

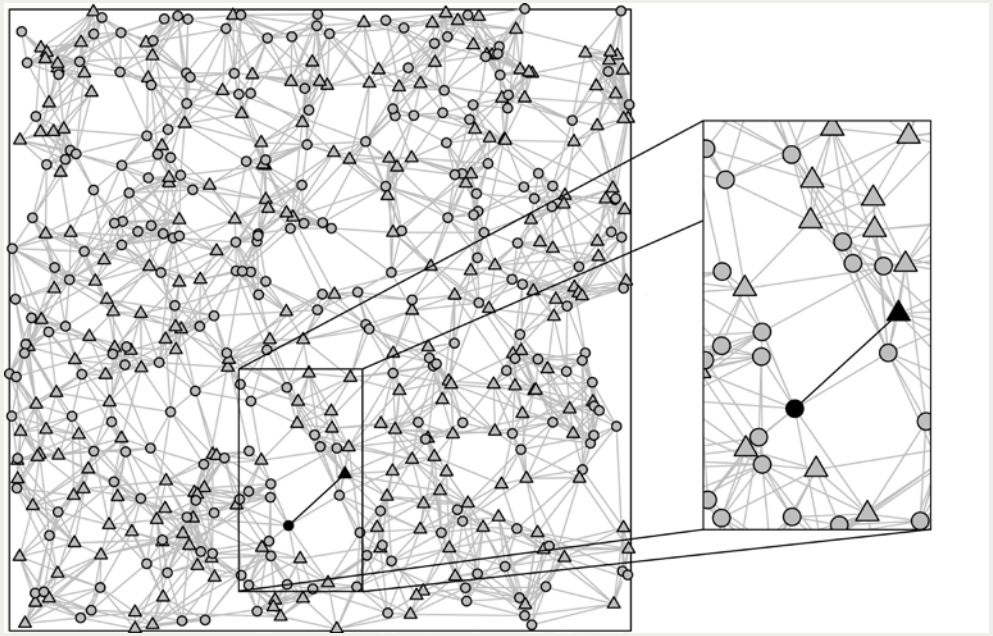
Multiple models: Spontaneous emergence of consensus (M1)

- Simulation experiments show that there is a strong tendency for consensus to emerge
- This is robust to changes in the model's free parameters
- This happens even when status beliefs cannot reinforce existing hierarchical differences



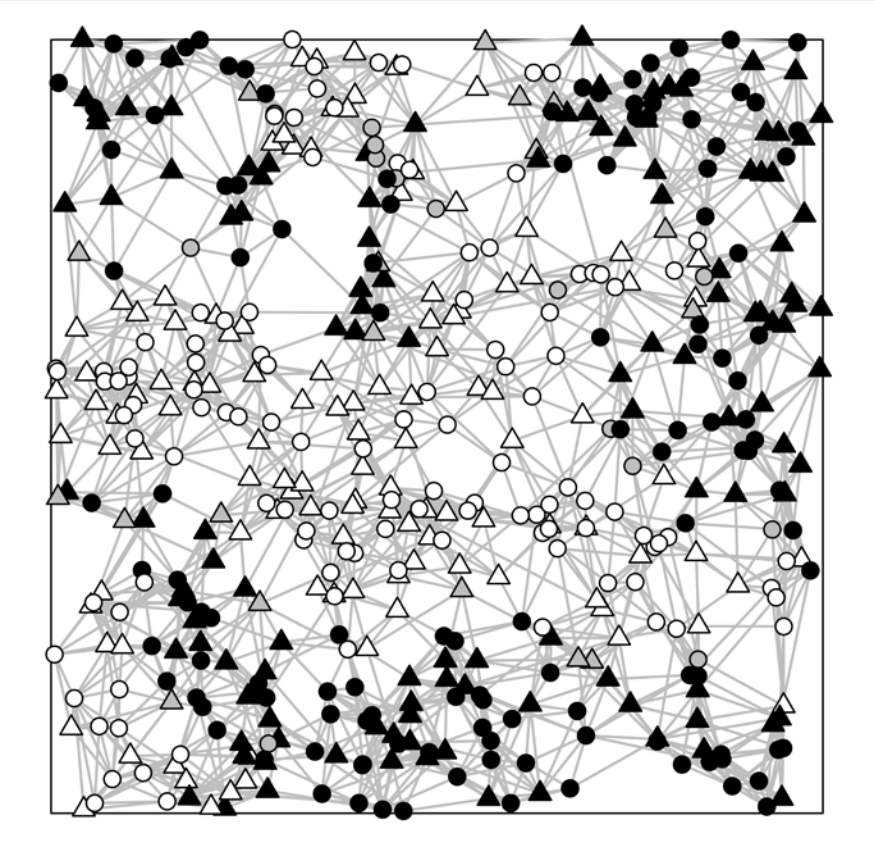
Multiple models: Spatial characteristics of interactions (M2)

- Task-focused interactions in dyads of spatially distributed individuals
- Interaction opportunities are represented by network ties
- Existence of network ties affected by spatial distances
- The resulting structure is a spatially clustered network: many local ties, few long-distance ties



Multiple models: Spatial characteristics of interactions (M2)

- Simulation experiments show that there is a tendency for local consensus and global diversity in status beliefs to emerge
- This hold as long as networks are spatially clustered and as long as local consensus can ward off outside influence



Synopsis

Model 1	Model 2
Detailed, empirically founded representation of interactions in small groups	Simple representation of interactions in small groups
Neglects the larger societal structures in which small-group interactions might be embedded	Detailed, empirically founded representation of larger societal structures in which small-group interactions might be embedded

Differences motivated by different analytical goals

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Comments or Questions?

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