

- $N_g$  groups  $g_k$  with  $N_M^k$  group attitude  $G_k$
- Group update
  - Timescale  $\Delta T_g$  with probability  $\Phi_g$

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$$A_k = 1$$
, if  $\frac{1}{N_M^k} \sum_{i=1}^{N_M^k} B_i > \theta_{IN}$ 

- Injunctive norm  $IN_i \in_R \{A_1, \dots, A_{N_m}\}$
- N=400 agents  $a_i$  with behaviour  $B_i$  in random network with  $\rho=0.05$
- Agents member of  $N_m$  groups
- $N_n^i$  nodes  $a_i$  connected to  $a_i$

- Descriptive Norm
  - $DN_i = 1$ ,  $if \frac{1}{N_n^i} \sum_{j=1}^{N_n^i} B_j > \vartheta_{DN}$
- Social update, timescale  $\Delta T_a$

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$$p_{E_1 \to E_2} = \frac{1}{1 + \exp(-k(w_{DN}DN_i + w_{IN}IN_i - w_h h_i))}$$

- Extraction of Resource with Effort  $E_i \in [0.5, 1.5]$  depending on behaviour  $B_i \in [0, 1]$
- Resulting in sustainable or unsustainable Harvest  $h_i=E_i\,s$
- Logistic resource growth in limited environment
- $-\frac{\mathrm{d}s_i}{\mathrm{dt}} = s_i(1-s_i) -$