

## University of Groningen

### Social networks and intergroup conflict

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## Summary of notations

| notation                                      | meaning  | special assumptions  |
|---|--|--|
| <b>payoff parameters</b>                      |  |  |
| $v$   | victory payoff (temptation)  | $v > e > 0 > c > d$  |
| $e$   | payoff for free-riding (bonus)   | $v > e > 0 > c > d$  |
| $p$   | peace payoff   | $p = 0$  |
| $c$   | clash payoff (punishment, draw)  | $v > e > 0 > c > d$  |
| $d$   | payoff for defeat (the sucker's payoff)  | $v > e > 0 > c > d$  |
| $s$   | selective incentives   | $s > 0$  |
| $b$   | behavioral confirmation payoff   | $b > 0$  |
| $t$   | traitor's payoff   | $t > 0$  |
| <b>structural parameters and indexes</b>      |  |  |
| $\{A, B\}$                                    | the set of groups  | $A \cap B = \emptyset$   |
| $n_A, n_B$                                    | group sizes  | $n_A \geq 2, n_B \geq 2$   |
| $\alpha, \beta$                               | proportional group sizes   | $\alpha = n_A / n_{A+B}, \beta = 1 - \alpha$                                       |
| $f_i$   | number of fellow neighbors of individual $i$   |  |
| $g_i$   | number of neighbors of $i$ from the other group  |  |
| $k_A^*, k_B^*$                                | minimal contributing sets for group collective action  | $0 \leq k_A^* \leq n_A, 0 \leq k_B^* \leq n_B$                                     |
| <b>simulations</b>                            |  |  |
| $S$   | grid size  | $S \geq n_{A+B}, S = RC \geq 6$  |
| $R, C$  | number of rows and columns in the grid   | $R > 0, C > 0$   |
| $\pi$   | proportion of inhabited cells  | $\pi = n_{A+B} / S$  |
| $T$   | total number of dyadic connections in the grid   |  |
| $\delta$                                      | the proportion of network relations (nonempty dyads)   |  |
| $\phi$  | the proportion of fellow ties (clustering, segregation)  |  |
| $\gamma$                                      | the proportion of opposite ties (exposure)   | $\gamma = 1 - \phi$  |
| $\rho_A$                                      | the proportion of ties between members of group $A$  | $\rho_A + \rho_B = \phi$   |
| <b>decisions</b>                              |  |  |
| $\omega_A, \omega_B$                          | vector of strategy choices of group $A$ and $B$<br>(dimensions $n_A \times 1$ and $n_B \times 1$ ) | $\omega_i = 1$ if $i$ contributes  |
| $k_A, k_B$                                    | number of contributors in the groups   | $0 \leq k_A \leq n_A, 0 \leq k_B \leq n_B$   |
| <b>notations in the experimental analysis</b> |  |  |
| $r$   | round number   |  |
| $P_{rix}(\omega_i = 1)$                       | probability of contribution in decision round $r$ of actor $i$ in experimental session $x$         |  |
| $P_{rix}$                                     | contribution propensity in decision round $r$ of actor $i$ in experimental session $x$             | $P_{rix} = \ln \left( \frac{P_{rix}(\omega_i = 1)}{P_{rix}(\omega_i = 0)} \right)$ |
| $\alpha_0$                                    | baseline contribution propensity   |  |
| $\varphi_x$                                   | session level error term   | $\varphi_x \sim N(0, \rho^2)$  |
| $\varepsilon_{ix}$                            | subject level error term   | $\varepsilon_{ix} \sim N(0, \sigma^2)$   |
| $\xi_{rix}$                                   | intra-individual variation   |  |