

STATISTICAL RETHINKING 2026

HOMEWORK B05

The data in `data(Monks)` are “like” and “dislike” nominations by 18 monks living in the same monastery over three time periods. A sociology phd student collected these data while living in the monastery and studying their internal politics. The observed variables are counts from 0 to 3 of times monk A nominated monk B as liked or disliked.¹ Each row in the data is a pair of monks (a dyad). The variables are:

- `A`: Index number for first monk in dyad
- `B`: Index number for second monk in dyad
- `like_AB`: Number of times A nominated B as liked
- `like_BA`: Number of times B nominated A as liked
- `dislike_AB`: Number of times A nominated B as disliked
- `dislike_BA`: Number of times B nominated A as disliked

We will focus on only the “like” nominations, for simplicity. But you can easily analyze the “dislike” data using the same models, if you are curious.

Use a social relations model, as presented in lecture. Estimate the amount of reciprocity in “like” nominations within dyads, as well as generalized receiving effects. Since each monk only named 3 likes, the amount of “giving” is fixed by design in these data, so you only have to consider receiving. Can you identify any individuals who are particularly liked, independent of the dyadic relations?

¹Source: Sampson, S. F. 1968. A novitiate in a period of change: An experimental and case study of relationships, Unpublished PhD dissertation, Department of Sociology, Cornell University.