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## Exponential Random Graph Modelling of 3-Layer Socio-Cultural Data

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We explore the possibilities of statistical modelling of 3-layer socio-cultural data (see Basov and Kholodova, 2022). In particular, we juxtapose two theoretical perspectives on the creation of meaning in joint practice and interaction. On the one hand, symbolic interactionism argues that joint material embeddedness, especially creative practice, enables creation of shared cultural meanings. On the other hand, phenomenology and social constructivism maintain that shared meaning emerges in everyday life interaction. We jointly model effects corresponding to each of the perspectives using the unique multi-source longitudinal dataset on five European creative collectives that share working and living spaces. The data include both within- and cross-layer relations between individuals, objects, and words. Shared meaning is captured (separately for creative and for everyday objects) as individuals' similarities in the descriptions of the objects both of them used, based on relations between words applied to the same objects by dyads of individuals. These similarity matrices are combined with social ties between individuals into multiplex socio-semantic networks (Basov and Brennecke, 2017). Series of exponential random graph models (ERGM) for multiplex networks examining the effect of social ties on similarities of meanings of everyday and creative materiality are estimated. In the long term, social ties stimulate similar meanings of both creative and everyday physical objects, which is not the case in the absence of social ties. In the short term, social ties are associated with similar meanings of creative objects (the interactionist argument), but not of everyday objects (the phenomenology/constructivism argument). The issues of (1) simultaneously incorporating different types of social ties captured at different time waves in quasi-longitudinal ERGMs, and (2) conducting proper longitudinal modelling of these data are to be discussed.

### Keywords

symbolic culture, material culture, social structure, ERGM

### Topics

- Statistical methods and models for network analysis

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