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Title:

What Is The Relational Event Model (REM)?

Abstract:

Sequence analysis has been used to identify common sequences for a set of individuals, using a cluster analysis-like algorithm. For example in the analysis of the daily activities (or life-courses) of people. However, sequence analysis, by definition, requires whole-sequence data for each individual, and does not take into account data collection. An alternative model-based approach is the Relational Event Model (REM). One of the strengths of a REM analysis is its ability to take into account data collection, and the events that are possible and/or observable at any point in the sequence. The data requirements for REM are also different to sequence analysis.

Network studies of social systems often aggregate social interaction event data into a single network within a particular time frame. Analysis of the resulting network can provide a useful insight into the overall extent of interaction in that time frame. However, through aggregation, information is lost about the order in which interactions occurred, and hence the sequences of actions over time. Many research hypotheses relate directly to the sequence of actions, such as the recency or rate of action, rather than to their overall volume or presence. I demonstrate how the temporal structure of social interaction sequences can be quantified from dis- aggregated event data using the relational event model (REM).

I provide empirical examples of REM analysis from the literature, including an example for individuals based on the American Time Use Survey, and a case study for social networks based on animal food sharing. I provide details of how the models may be fitted in R.