

Sequence analysis and network analysis:
an attempt to represent and study sequences
by using NetDraw

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Abstract:

The article presents some alternatives to plotting and analyzing sequences as networks. The point of view proposed is to consider sequence patterns as oriented graphs. Events are treated as nodes in the graph while the arcs, i.e. the ties between events that connect the nodes, are defined by the transitions of subjects between temporally adjacent events. The idea behind the representations discussed is that the patterns combine to form an underlying narrative structure more complex than can be depicted through a network.

The purpose of the paper is to find alternative ways to study sequences. On the one hand, it explores ways different from those of existing visualizations of sequences. On the other hand, it explores alternative ways to extract the information contained in the sequences. The aim in both cases is to find new perspectives from which to study sequences. The overall goal is to open the doors to new ways of identifying potential patterns or underlying structures.

Several graphic examples are provided in the attempt to highlight the limits and potentials of this approach to the study of sequences. The paper uses, for the examples and analysis, data and results of a recent study conducted by myself on class careers in Italy.