1. The network-behaviour panel data are the outcome of a continuous-time Markov chain:

The Markovian assumption postulates that future events are conditionally independent from past events given the present, but this can be an oversimplification of certain networks like friendship because actors have memories of the past and are influenced by it regardless of the present state. For example, certain arguments don’t lead to an immediate fall out of the friendship, however discontent can stack up over time and influence future decisions.

The assumption can be reasonable for the coevolution of processes such as diplomatic ties between countries where the relationships are very formal and strongly depend on present conditions.

1. Actors control their outgoing ties and behaviour

In this case, friendship is reasonably modelled by SAOMs, because a (sane) person has the freedom to choose which people to befriend at any point of time and how to behave. This doesn’t work for hierarchical ties, like the structure of a company. Indeed, in this case not all actors can choose who is their superior, but it is forcefully assigned to them.

1. At each step: only one tie can change, or the behaviour can increase or

decrease by one level.

This does not hold for very connected and small networks because usually any action or event influences more than just one tie between two actors. For instance, in friendships completely falling out with someone usually means not being in friendly terms with their friends too. Moreover

1. Actors have full knowledge of the network and behaviour

The assumption seems reasonable for adequately small networks but fails to work when it becomes excessively large or very sparse because it is very possible for information to not reach all actors.