
The Positional Approach to Network Analysis

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Abstract

The positional approach is a recent methodological innovation intended to narrow the gap between substantive theory and mathematical analysis of social networks. By breaking down current methods into meaningful and manageable decision steps it explicates hitherto tacit assumptions, suggests means to overcome them, and smoothly generalizes approaches to valued, multiplex, multilevel, and temporal data. It also facilitates the incorporation of more qualitative observations and produces more nuanced results.

All of this is achieved with the help of a simple conceptual change, defining the network position of an actor as the aggregate of direct and indirect relationships and attributes. Starting from this key concept, the network position, state-of-the-art methods of analysis turn out to be special cases of positional comparisons and evaluation. The characterization of actors by their positions can be thought of as a form of conjoint measurement, and exploits a richer array of non-quantitative mathematical tools.

Methodologically, it allows to separate the substantive argumentation of what defines a position from the formal analysis of the network it is embedded in. An important benefit of the genericity of the positional many new methods obtained from alternative instantiations. Moreover, it facilitates basic research by identifying relevant problems without requiring domain-specific background knowledge.

The workshop is an introduction to the positional approach starting from first principles. It is centered around use cases that cover a broad range of social network application domains. We will discuss the relative utility of positional and current state-of-the-art approaches and identify how method selection can be better informed by substantive theory. If desired, participants can submit example data or research designs to be discussed in the workshop. (This is a half-day workshop. Elementary previous knowledge of network analysis is required.)

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