

Development of Social Network Analysis

What is SNA?

- Social Network Analysis (SNA) - study of social relations among a set of actors
- Focus is on relationships between actors than attributes of individual actors
- Types and patterns of relationships emerge from individual connectivity - takes a global view on social structures
- Network structure provides opportunities / imposes constraints on individual actors based on flow of resources in network

SNA is different from traditional social science approach

- Example:
- Performance of individuals in a scientific community by no. of publications
- Traditional social science computes based on attributes such as amount of grants they attract, their age, the size of the team etc.
- But SNA focus on the interdependencies within the research community
- Patterns of relationships that scientists have and the potential benefits or constraints such relationships may impose on their work
- As it is different, need new set of concepts and new methods for data collection and analysis

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- The concepts and methods of network analysis are represented in formal description of networks as graphs
- Analysis method from graph theory are applicable to the graph representation of social network data
- *Defining in a formal* model of networks helps to get precise value in research for comparing results across literature
- Data collection done using standard questionnaires and observation techniques
- Records of social interaction used to build a model of social networks (e.g. databases, meeting notes, newspaper articles etc.)

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- SNA - convergence of several streams of applied research in sociology, social psychology and anthropology
- Concepts of network analysis developed independently by various researchers
- Example: formal description of social groups, network representations in anthropology, workgroup behavior, network of overlapping “cliques”
- Sociogram - adoption of a graph representation of social networks by Moreno led to **convergence of SNA**
- Nodes represents individuals, edges personal relationship

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- Sociogram honoured formal treatment of network analysis based on graph theory
- SNA applied in many new applications - necessitates, new theories development of methods, interpretation of outcomes
- vocabulary, models and methods of network analysis also evolving to handle more complex data sets, dynamic network
- Social Network Analysis journal is dedicated largely to methodological issues of SNA
- Explosion of network literature in 2 fields of SNA – Data Analytics (from electronic data), SNA applied in other fields (e.g. electric grid)