

The background of the slide is a blurred collage of data-related images. On the left, there's a red-to-blue gradient. The central and right portions feature various data visualizations, including a line graph with a jagged peak, a network graph with nodes and edges, and a grid of data points. The overall color palette is dominated by dark blues, light blues, and reds.

# Social Network Analysis: Data collection

Song Yang, Ph.D.

University of Arkansas

# Full network versus ego- centric network

## Ego-centric network

- Follow conventional sampling, adding ego-centric questionnaire items
- Statistical analyses bears no difference between ego-centric and non-network studies, except for network features.

## Full network/complete network

- Restrict to a finite set of population bounded by a certain limit (classrooms, classes, clubs, or other boundaries imposed by researchers)
- Many social network methodologies refer to analyzing full/complete network.

# Boundary specification

Where to draw the boundary of the population you want to study

Wait, isn't boundary delimit self-evident?

- Classes, clubs, churches, work teams,

Not in every case (realistic and nominalist)

- Realistic approach: researchers adopt the presumed subjective perceptions of system actors themselves, defining boundaries as the limits that are consciously experienced by all or most actor in the entity. Actors and relations are included/excluded to the extent that other actors judge them to be part of the network
- nominalist approach: researchers adopt a priori conceptual framework the delineates the boundary of the network (boundaries can be real or conceptual)

three  
methods

Positional

Reputational

Event-based

## Positional methods

Researchers sample from among the occupants of a formally defined position

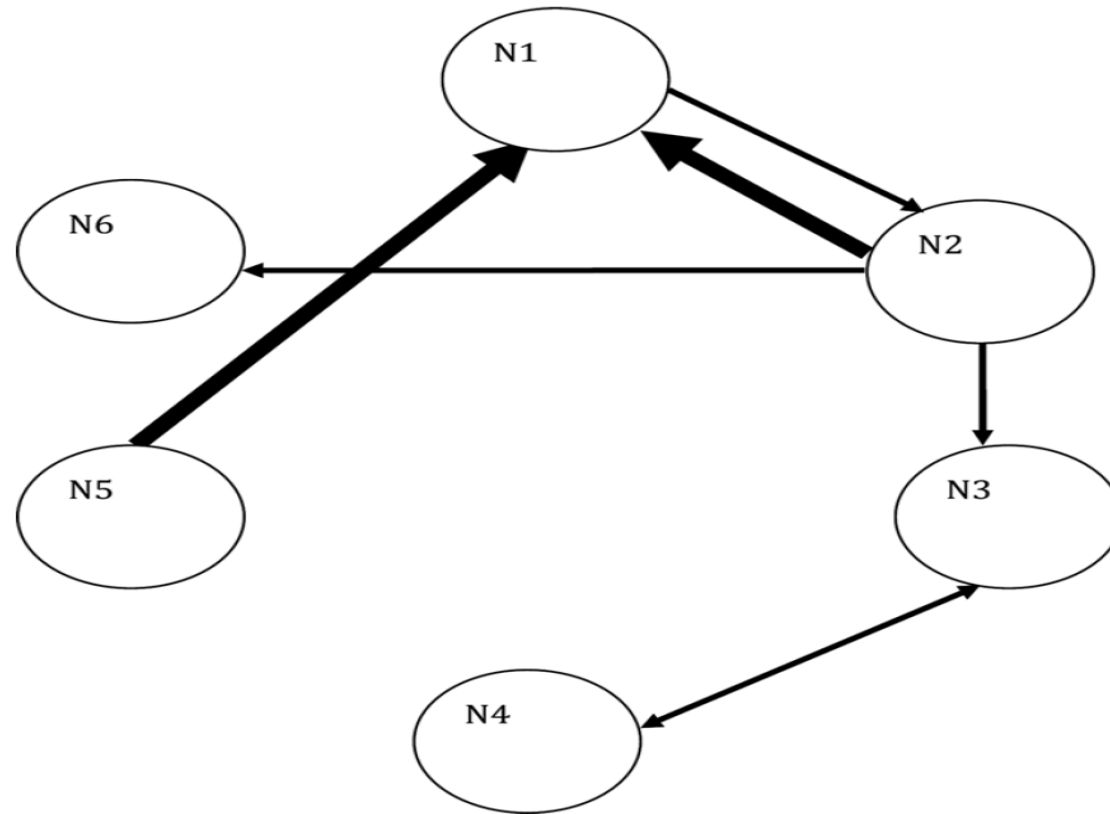
Students in a classroom (Morimoto and Yang 2013)

Corporate board of directors (Useem 1979)

Coworkers in a workplace (Krackhardt and Killduff 1999)

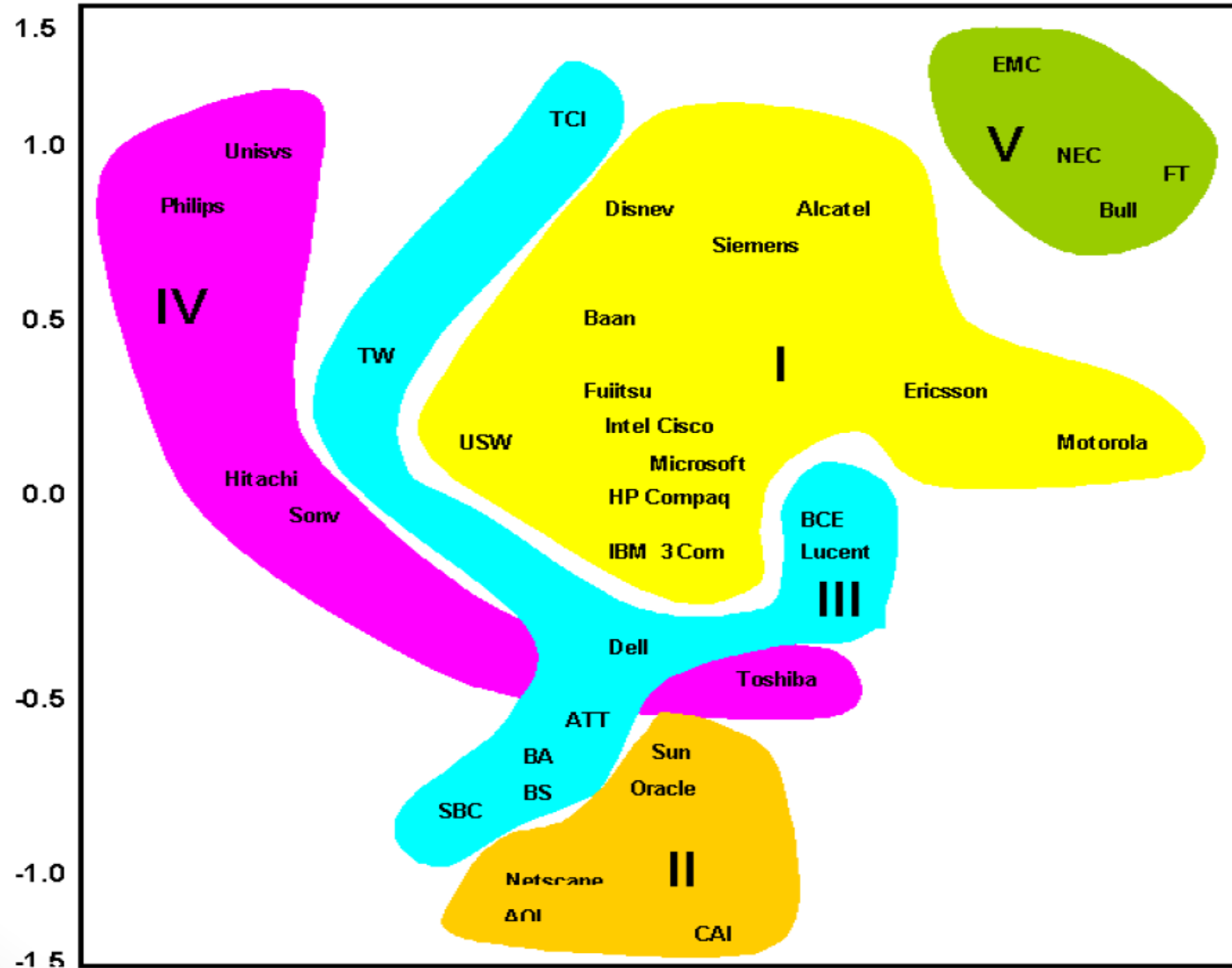
List of IT companies in Fortune 500 and Global 1000 (Knoke 2001)

# Morimoto and Yang (2013)



**Figure 2** Valued graph of friendship network of the cohort 2006 ( $N=6$ ).  
*Note.* Mere classmate: no line; academic friend:  $\rightarrow$ ; confidants:  $\Rightarrow$ .

# Strategic alliances in the 1998 core GIS



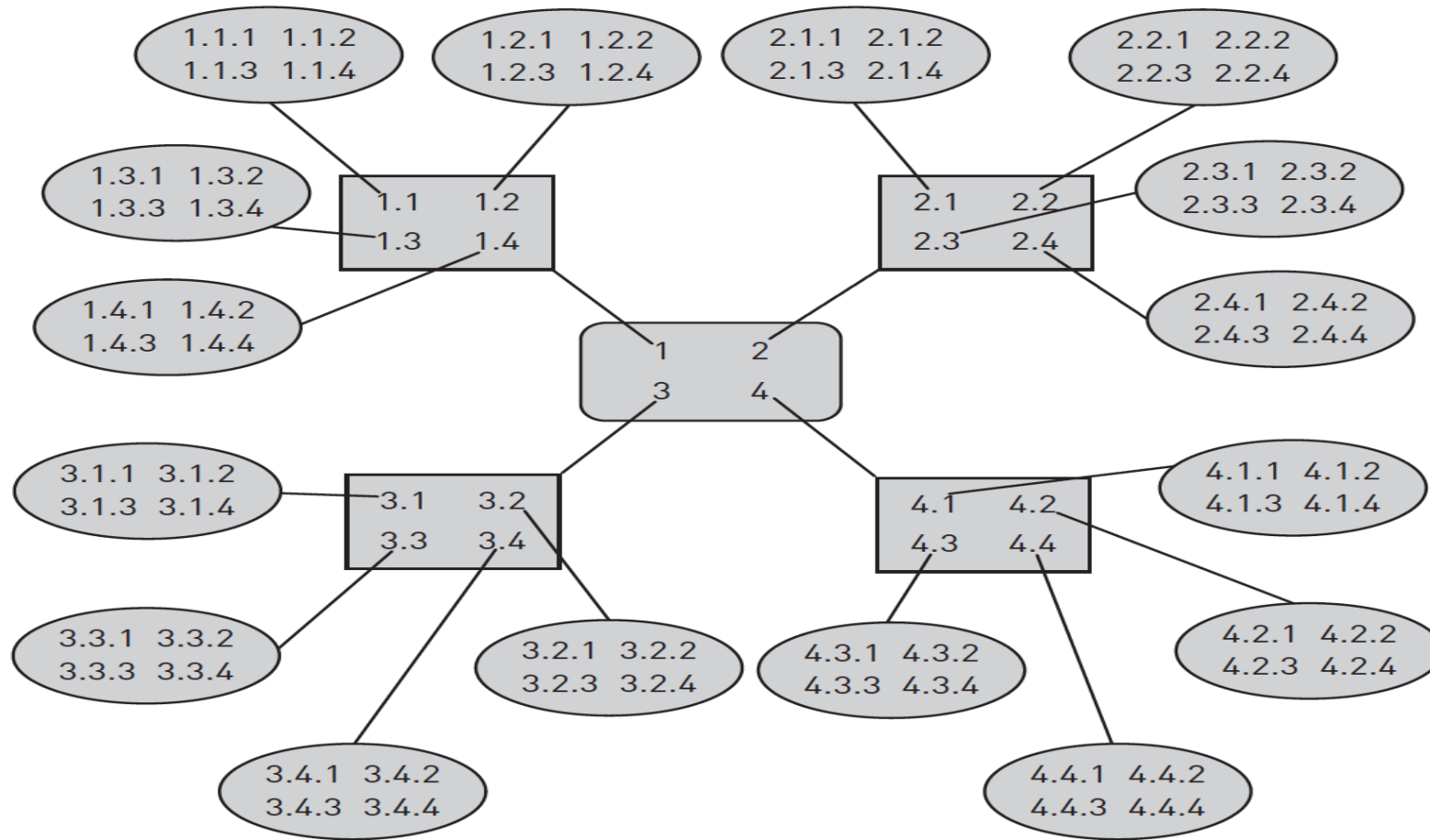
# Reputational Approach

- Researchers rely on the “knowledgeable” informants to include additional actors in the study.
- Snowballing
- Hidden population
- Fixed list versus expanding selection



Snowballing:  $N = n^1 + n^2 + n^3 + \dots n^k$

**FIGURE 2.1 • Hypothetical Situation of a Snowball Sampling**



# Hidden population

- Drug dealers
- Drug users
- Illegal immigrants
- HIV/AIDs patients
- Anti-government militias
- terrorists

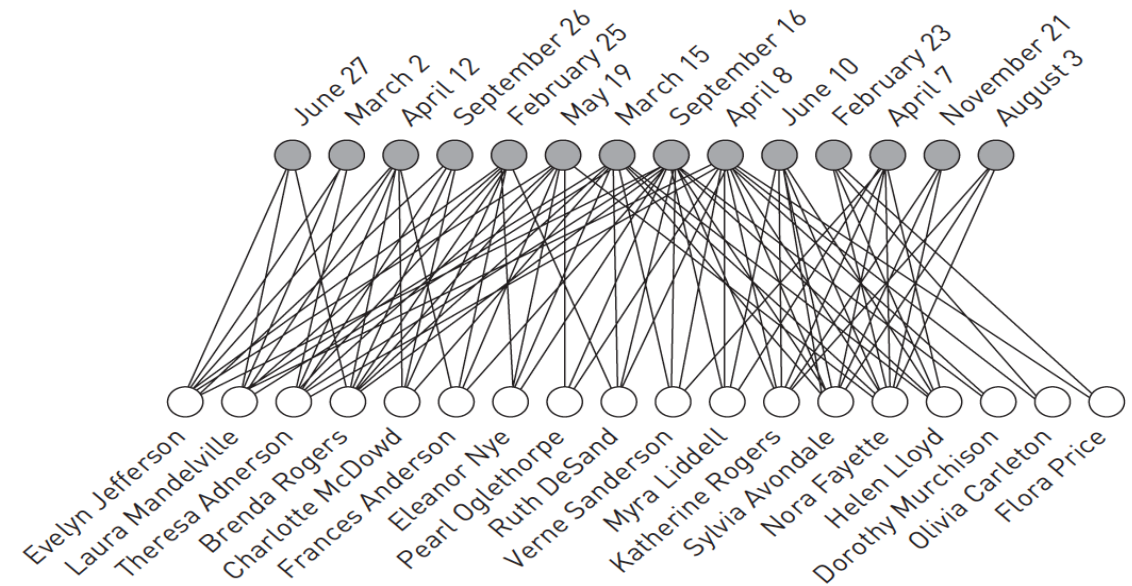
# Event-based method

- Using actor's participation in certain event to establish inclusion in the network for studies

## SOCIAL NETWORK IN ACTION: USING AN EVENT-BASED STRATEGY TO IDENTIFY ACTIVE PARTICIPANTS

In his study on political power in New Haven, Connecticut, Robert Alan Dahl (1961) used participation in the making of key decisions as the basis of selection – a selection criteria neither dependent on people's formal affiliation or position with an organization nor on their perception by other actors. Such a strategy ensures that those included are active participants of the organization and excludes those who, despite their affiliation with the organization, do not actively engage in the decision-making process.

FIGURE 1.6 • Affiliation Network of the "Southern Women Study"



Note: Adapted from Newman, M. E. (2010). *Networks: An introduction* (p. 39). New York, NY: Oxford University Press.

# Approaches and methods

**TABLE 2.1 • Cross-tabulation of Topology of Social Network Samplings**

Approach	Realistic Strategy	Nominalistic Strategy
Positional approach	Research informants identify additional informants by using social positions or organizational affiliation as threshold for inclusion.	Researchers identify informants by using social positions or organizational affiliation as threshold for inclusion. Examples are Morimoto and Yang's (2013) classroom friendship network study and Knoke's (2001) GIS network analysis.
Reputational approach	Research informants identify additional informants by using reputation as threshold for inclusion. Example of such approach is Knoke and Laumann's (1982) network analysis of U.S. energy and national health policy domain.	Researchers identify informants by using reputation as threshold for inclusion.
Event-based approach	Research informants identify additional informants by using participations in certain events as threshold for inclusion.	Researchers identify informants by using participations in certain events as threshold for inclusion. Example includes Freeman and Webster's (1994) beachgoer study.

# Questions

1. A team of researchers is interested in how social networking lends support to victims of sexual assaults. They plan to start with a sampling of victims. If you are the consultant assisting with the sampling, describe the sampling design using the realist strategy. What is the sampling design if they are to use the nominalist strategy?

A scholar is interested in studying friendships formed among first-year students in a university dormitory. Can you help him to draw the network sample using the event-based approach?