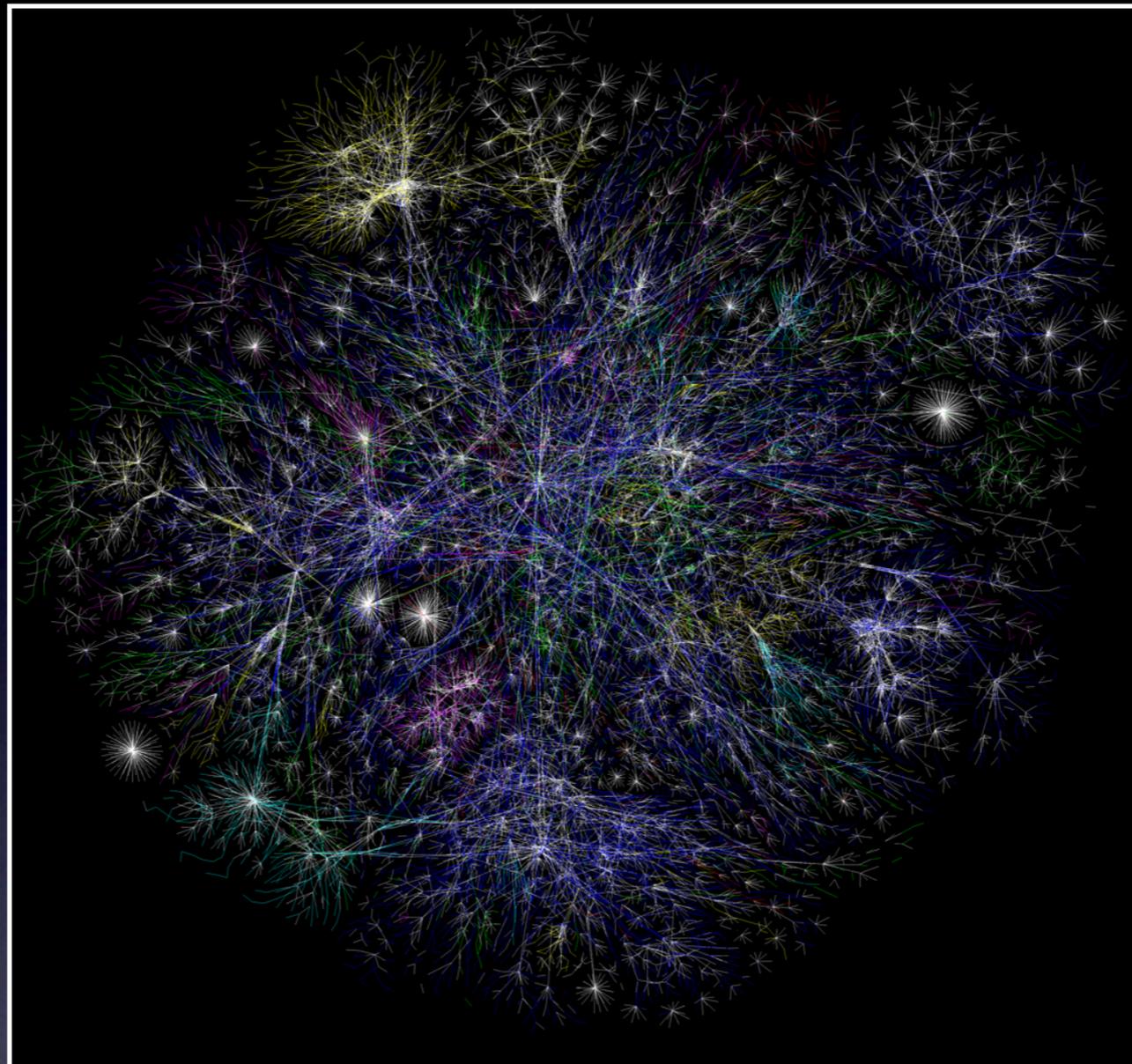
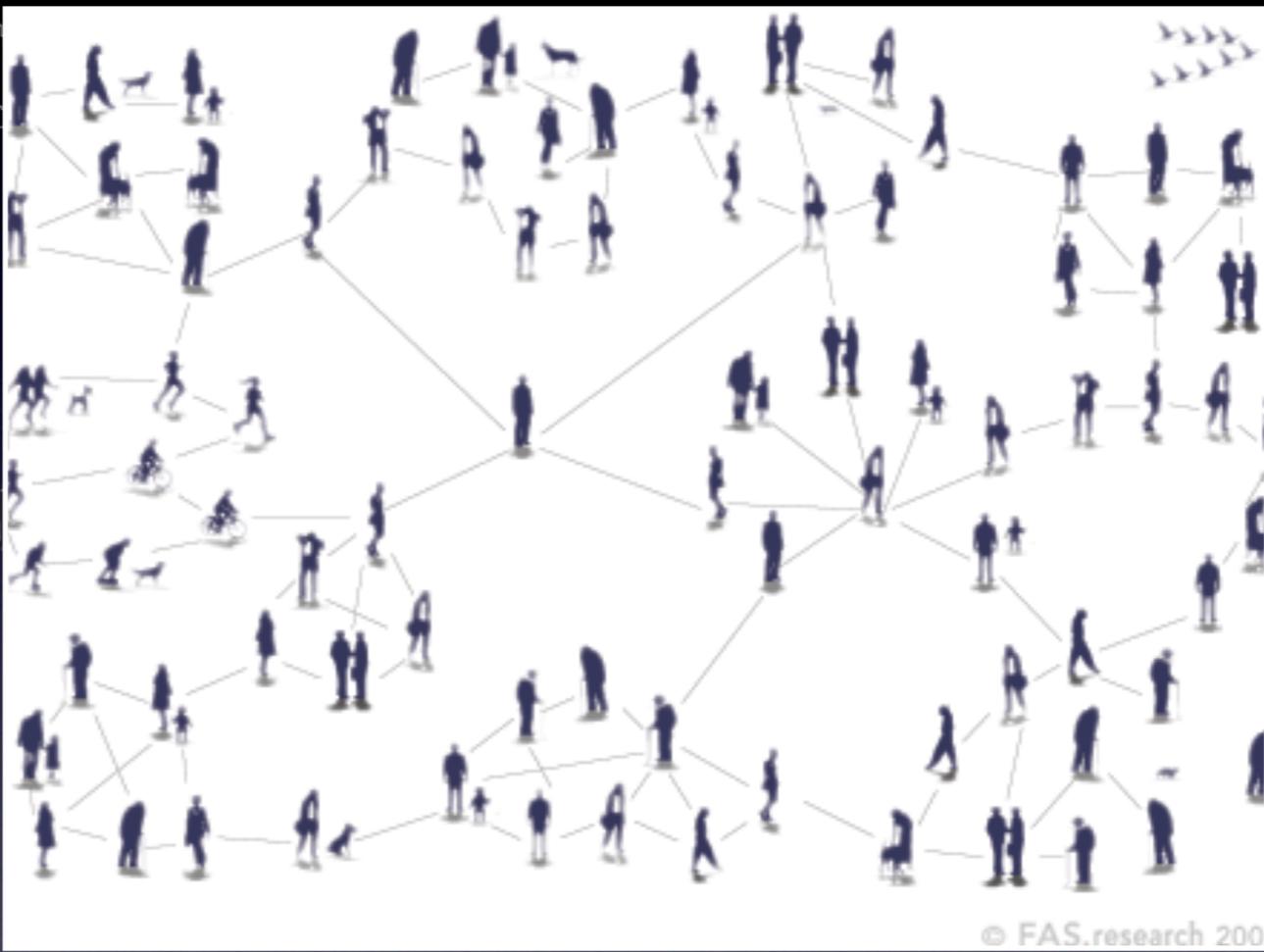
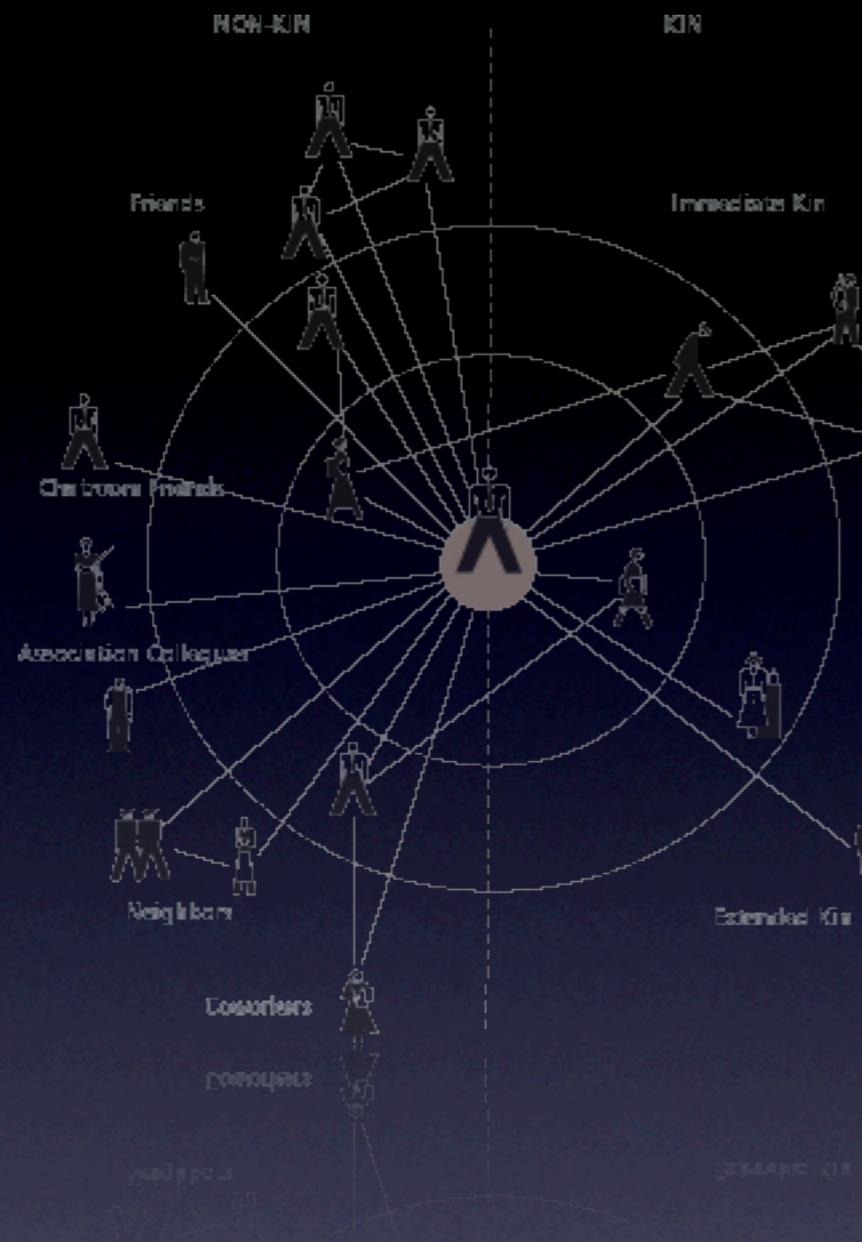


C2 Network Analysis: Insights into Coordination & Understanding

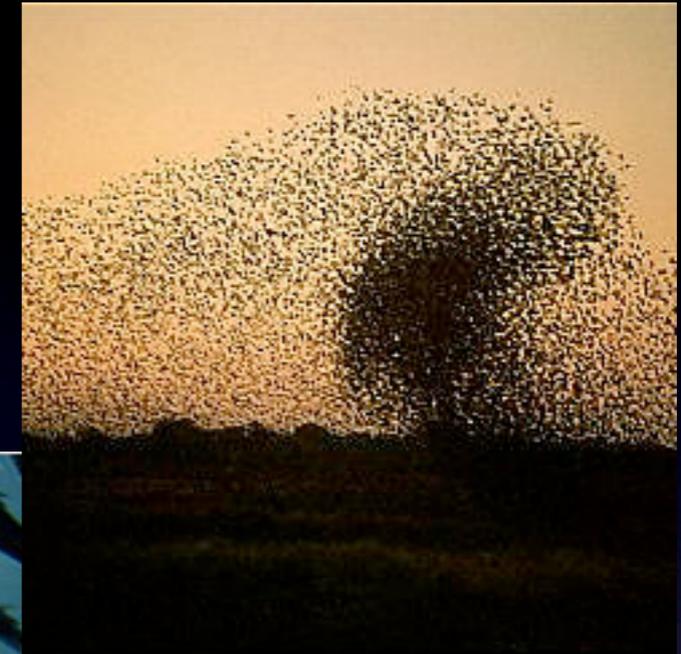
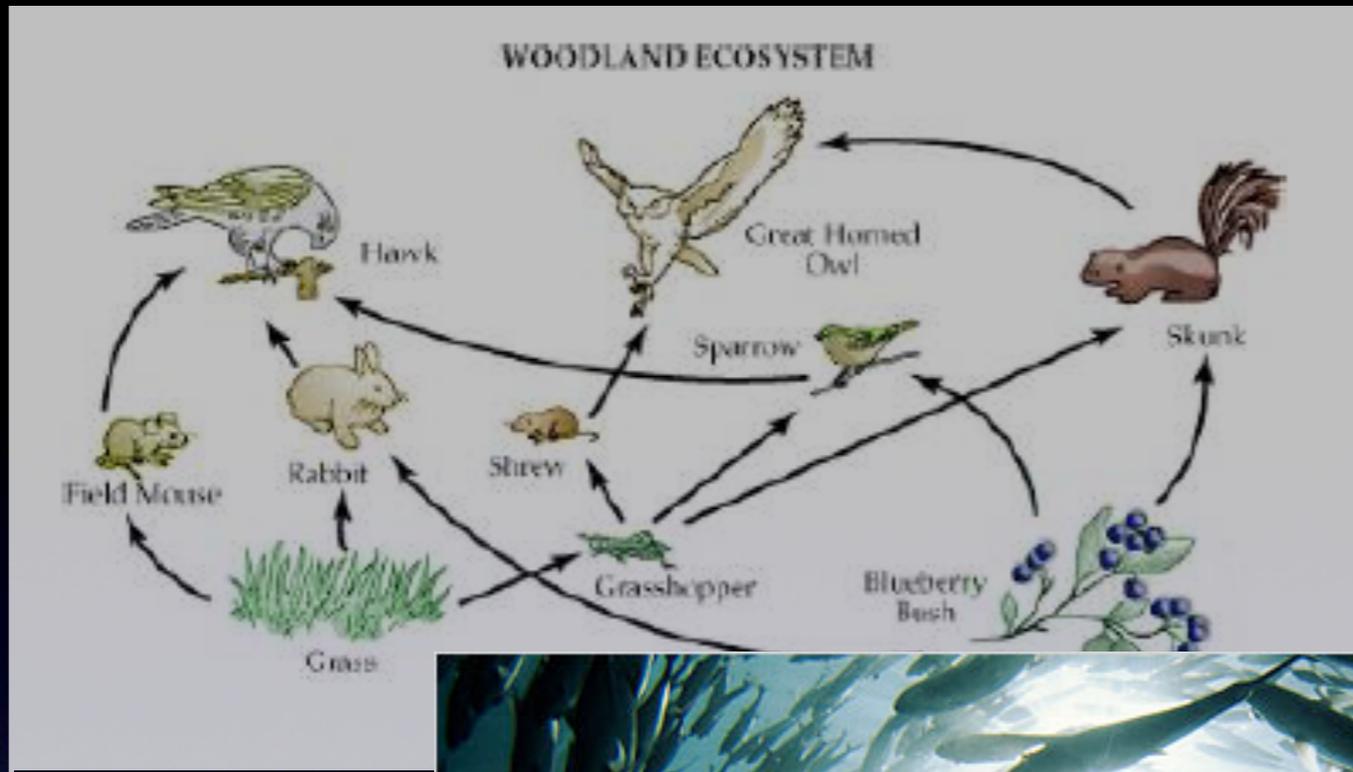
Jeffrey T. Hansberger, Ph.D.
Army Research Laboratory



Networks: Internet



Networks: Social



Networks: Biological

Introduction

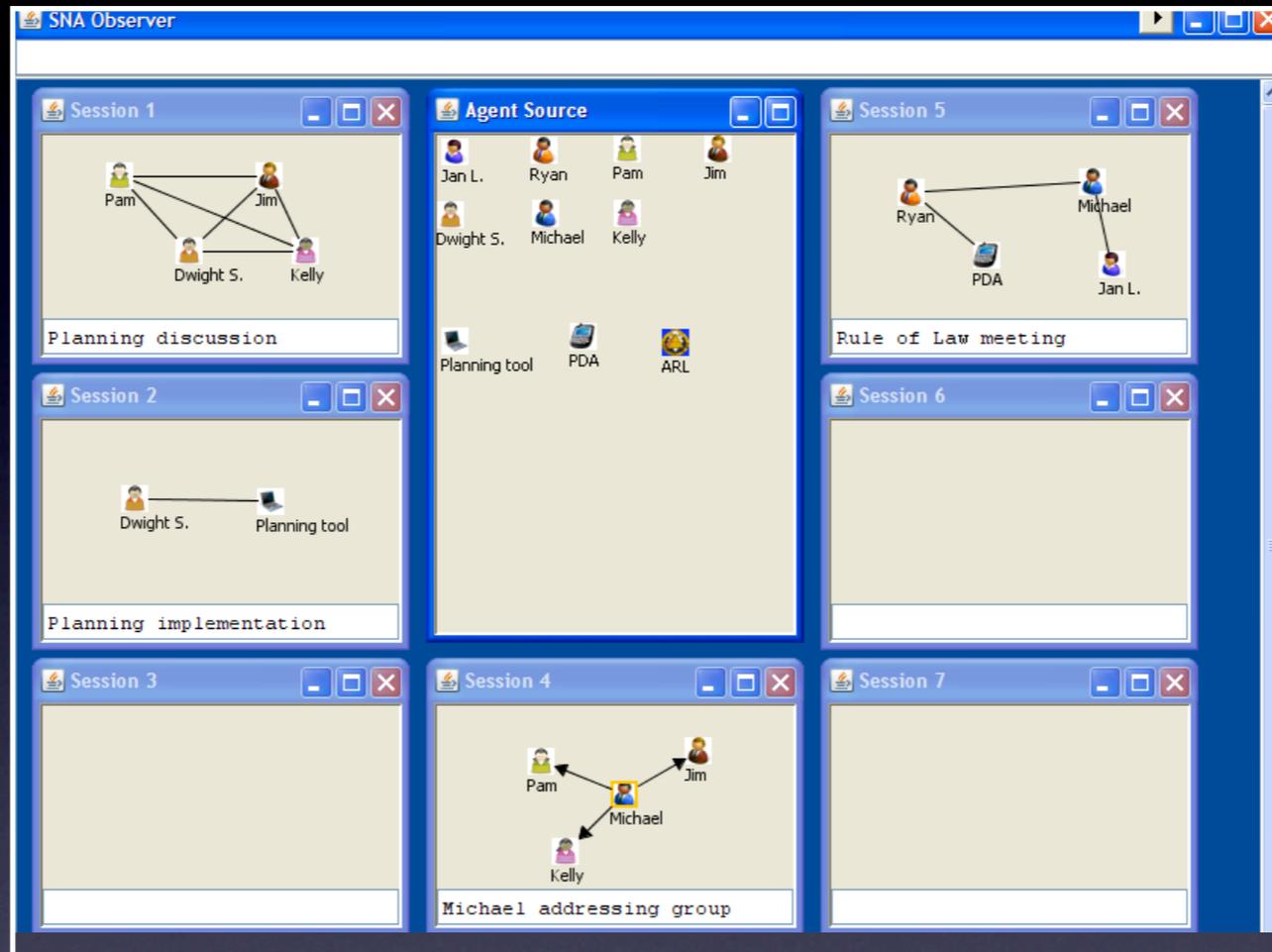
- Coordination across agents
 - Social & Dynamic Network Analysis
- Mental Models
 - Structural Knowledge Analysis

Network Analysis

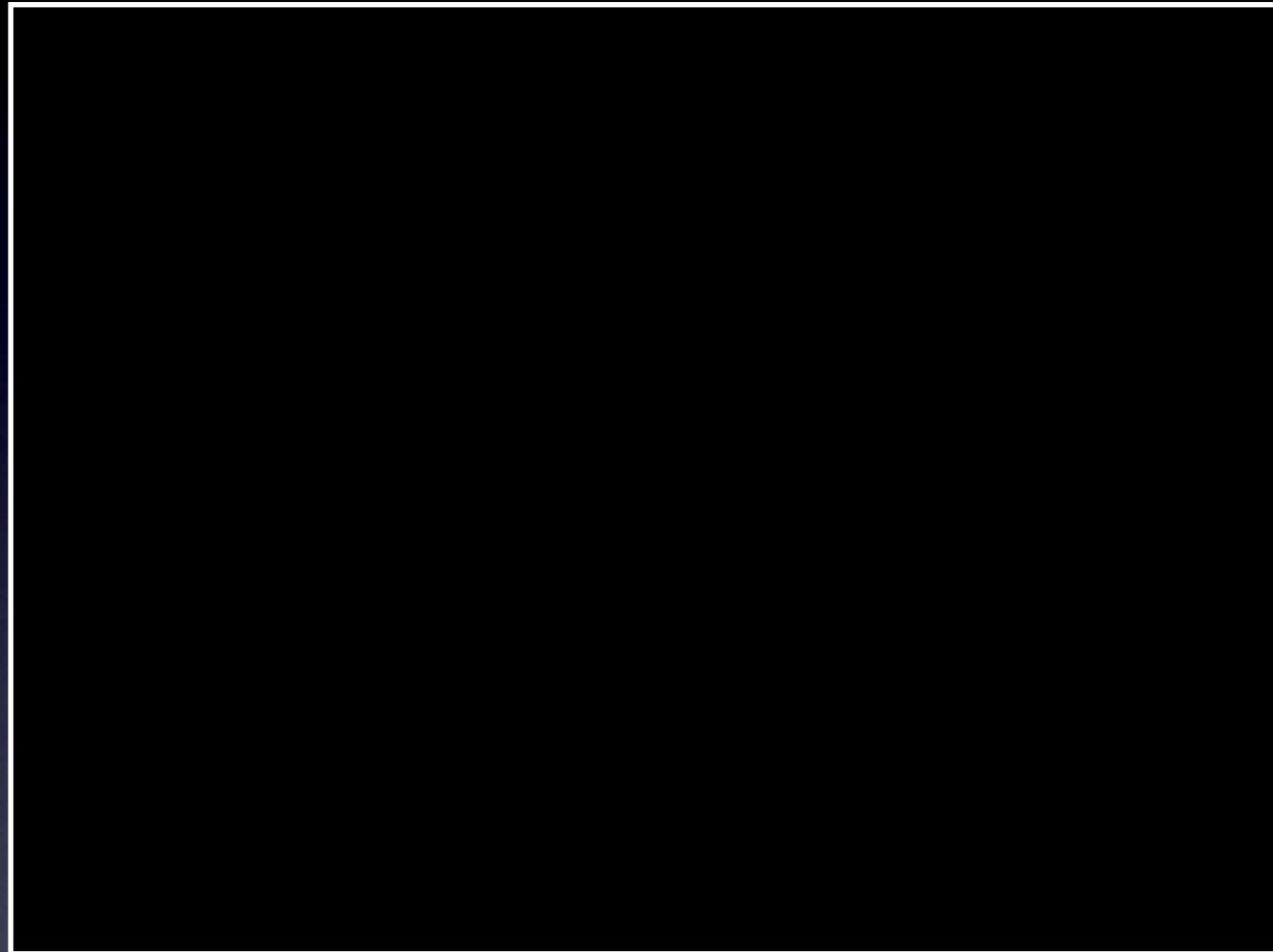
Snapshots in time

vs.

Continuous data stream

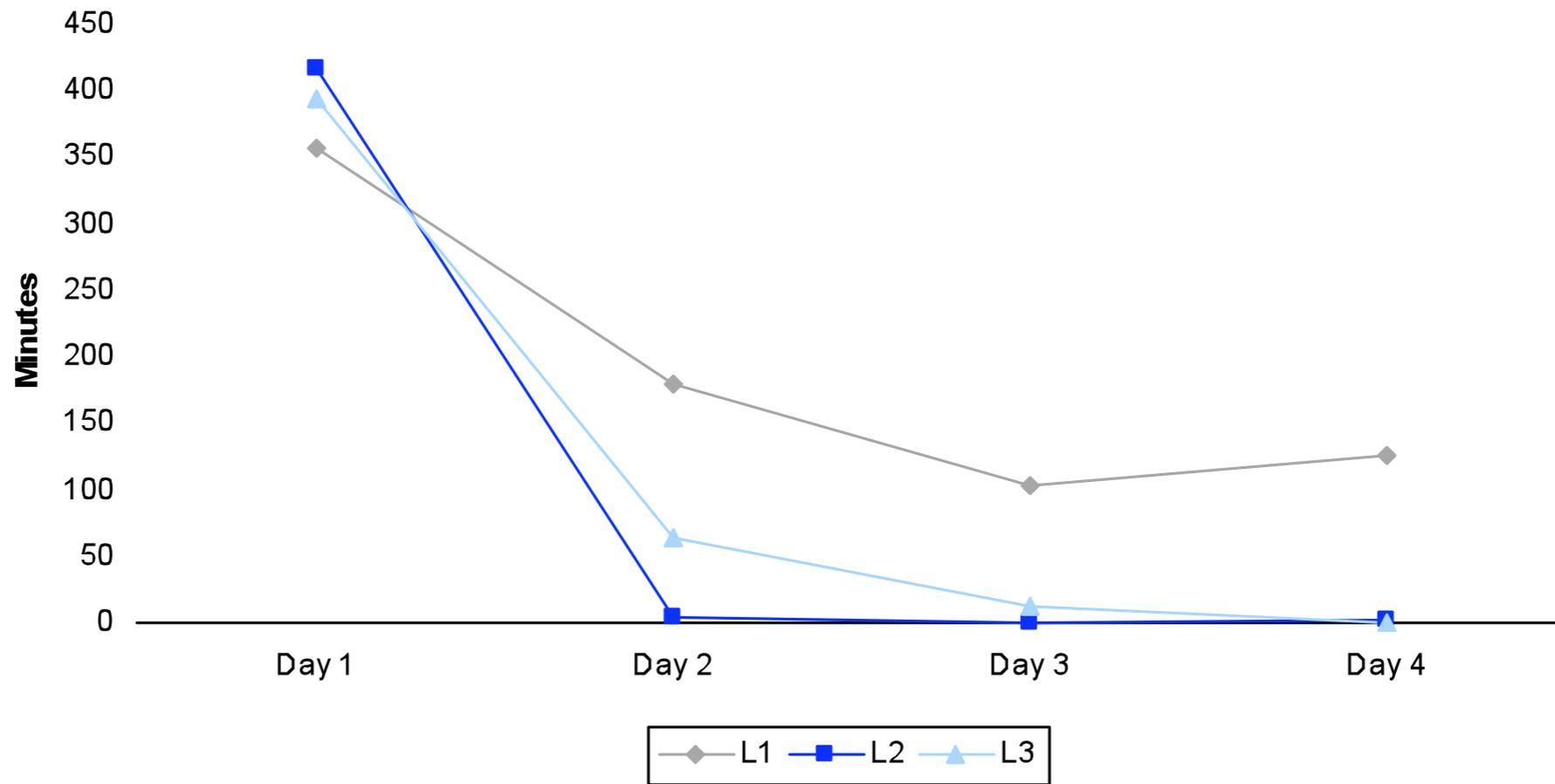


Data Collection

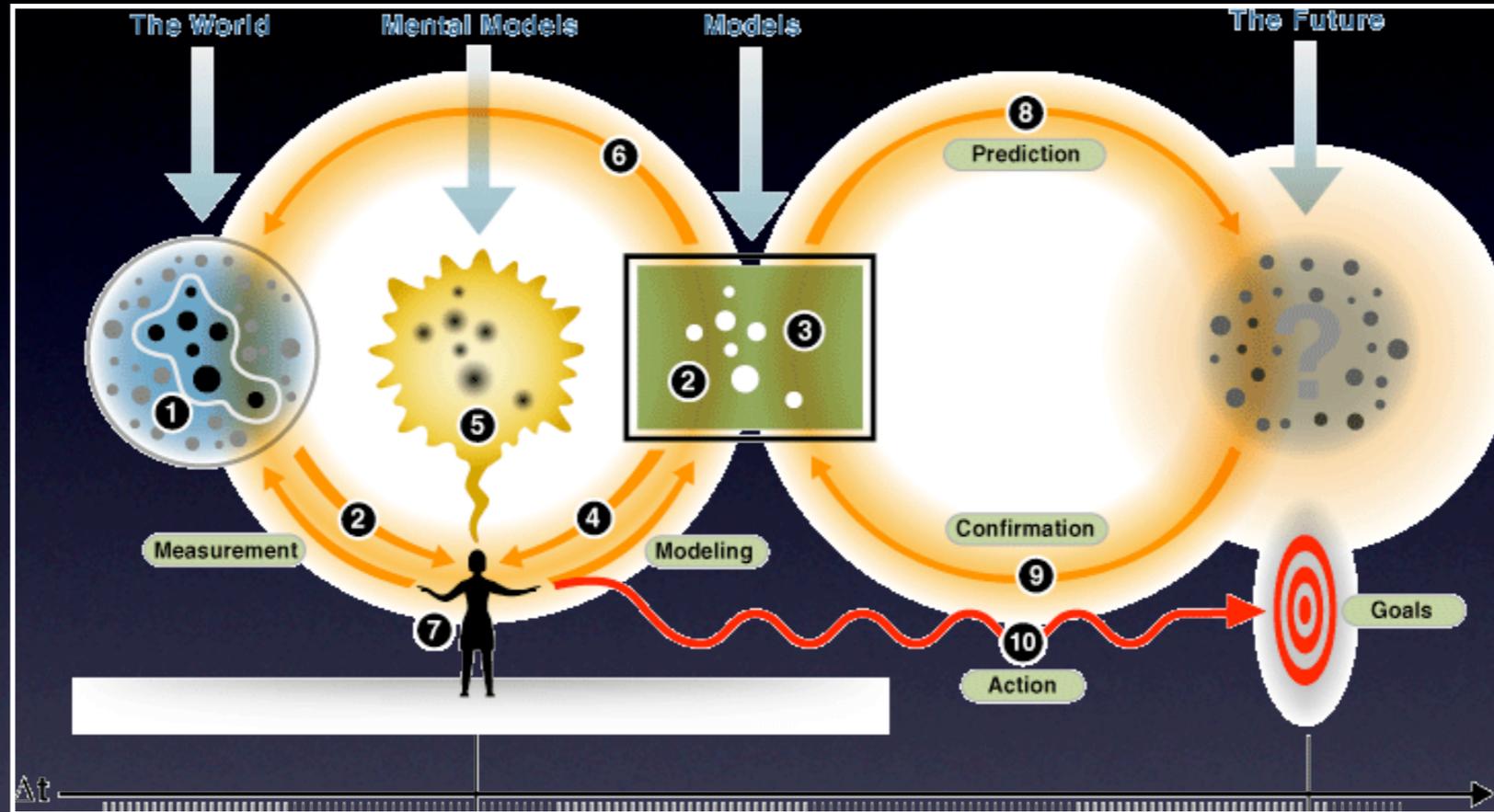


SNA Animation Example

COMPOEX Tool Use Among Leadership - Total Time



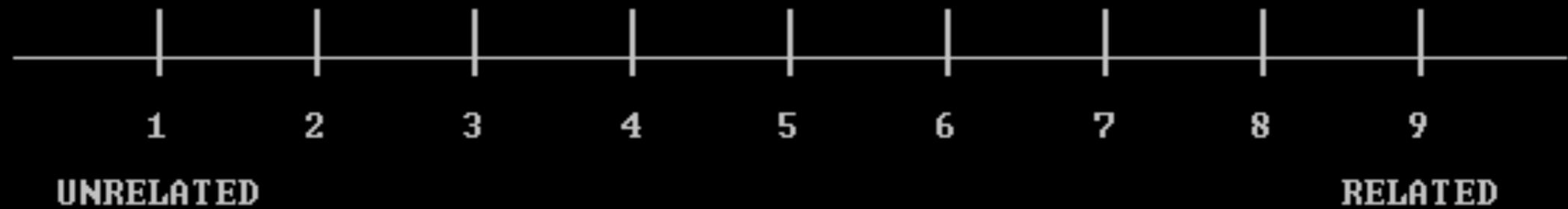
Sample Results



Mental Models



Measuring Structural Knowledge



Oil revenue
Security line of operation

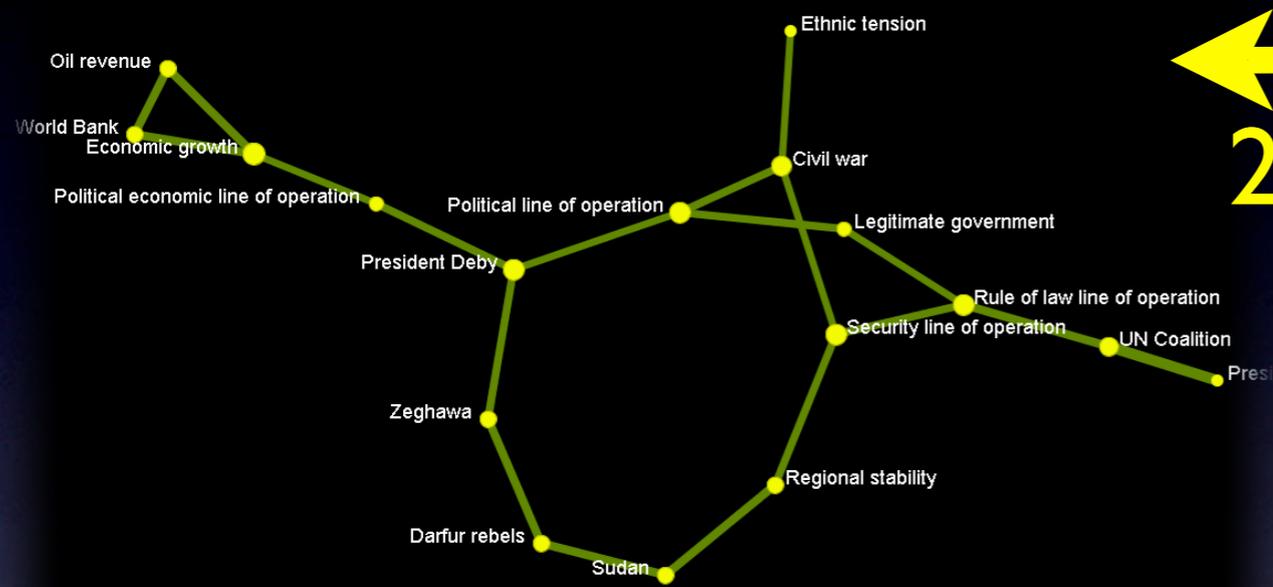
Enter: <1 through 9> followed by <SPACE>

135 Ratings to go.

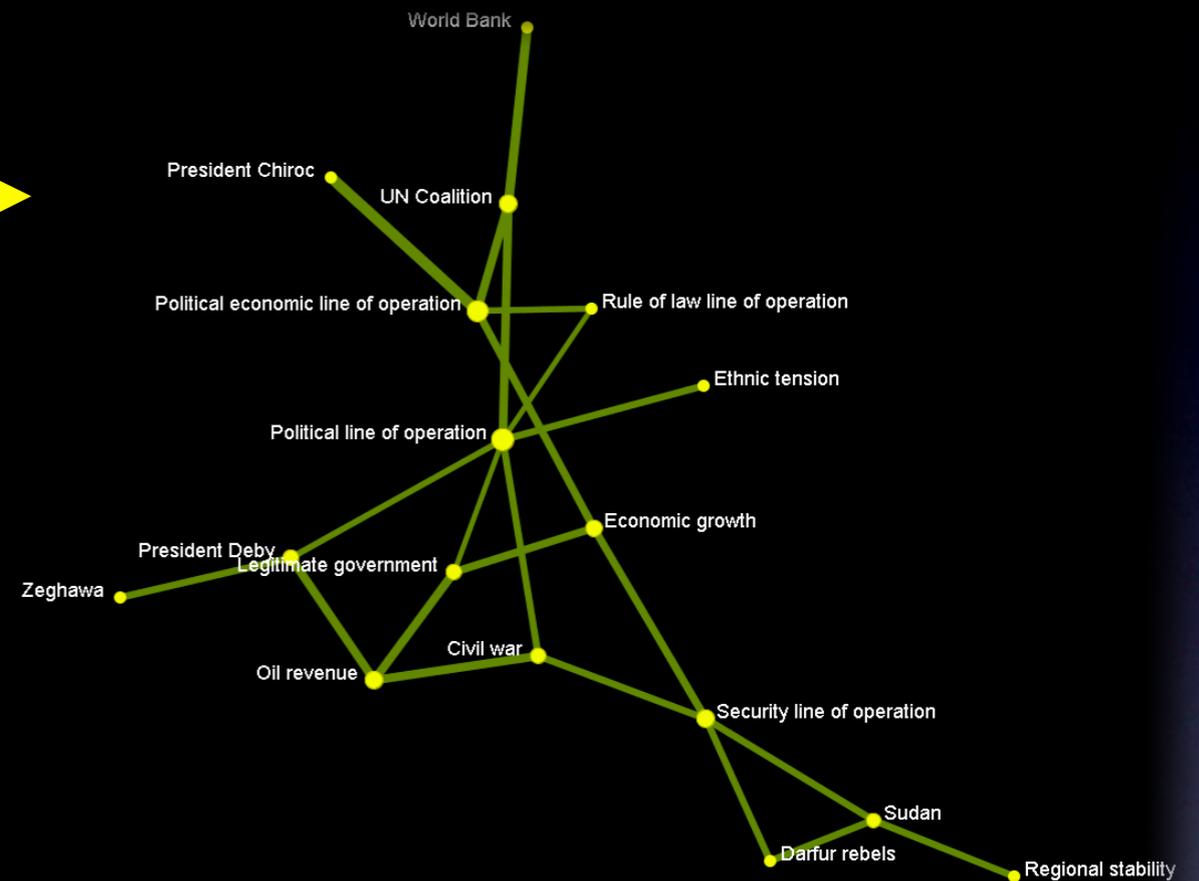
132 Ratings to go.

Enter: <1 through 9> followed by <SPACE>

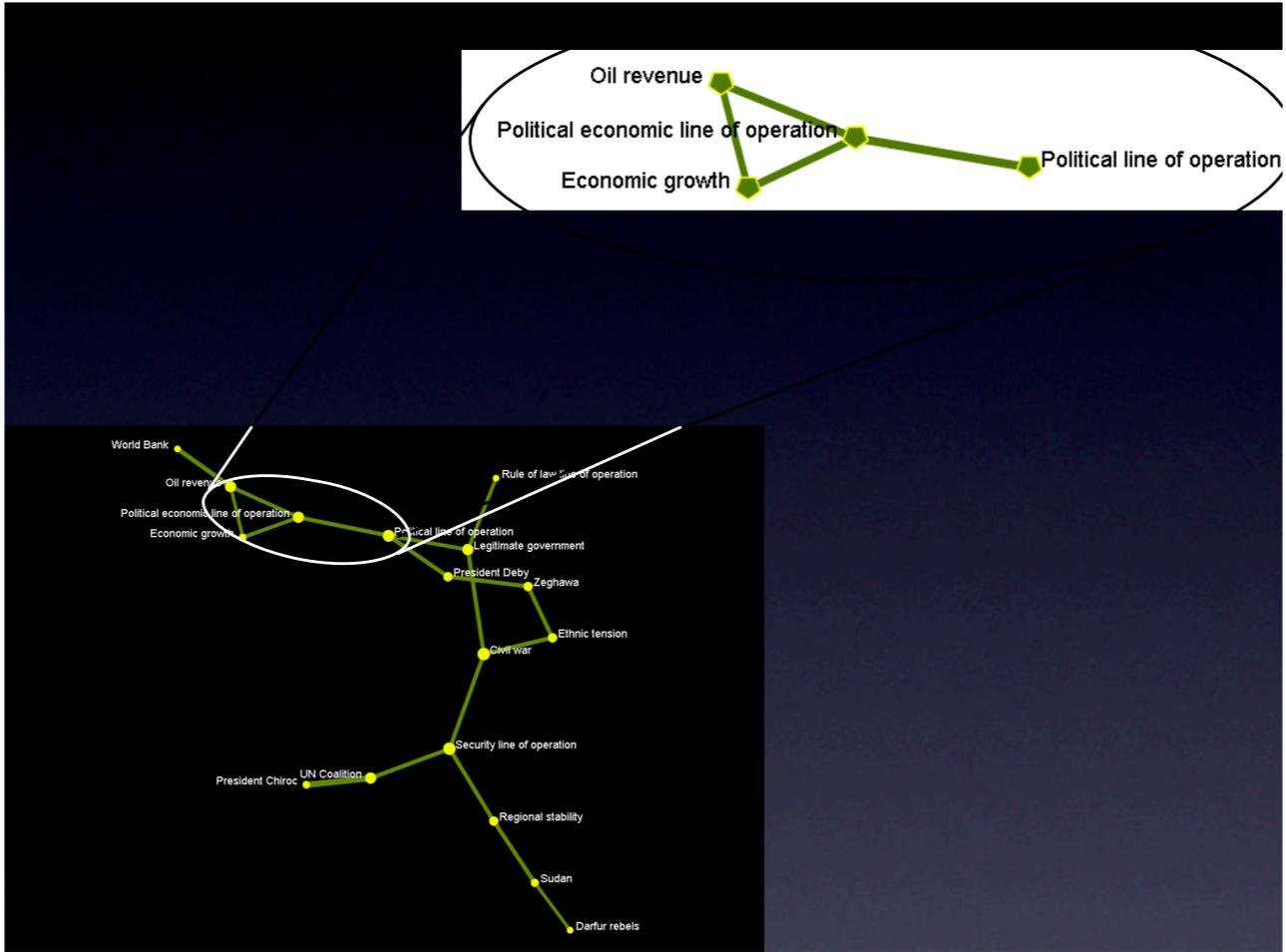
Pair-wise Evaluations



↔
26%



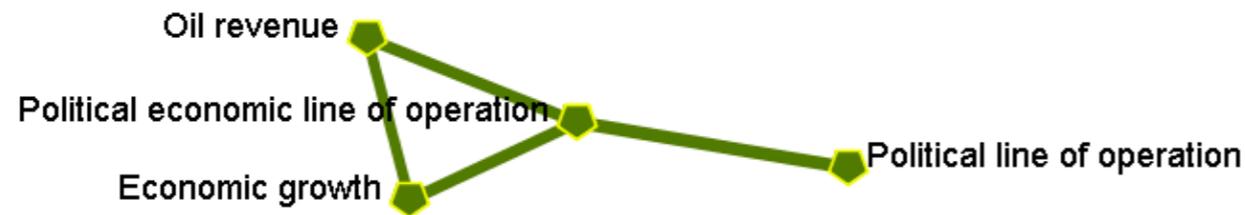
Over-time Comparison



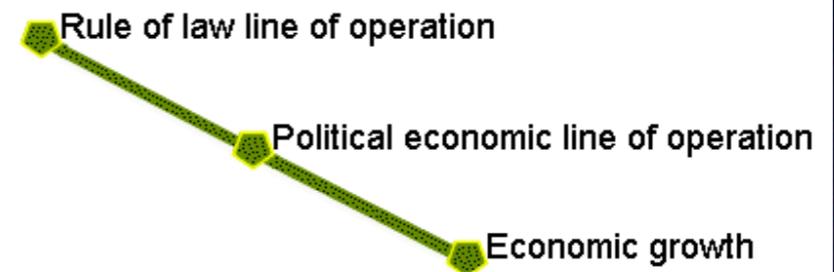
Sub-component Analysis

Political Economic Line of effort Concept Focus

CPT Team



Non-CPT Team



Sub-component Comparison

Summary

- Analytic toolbox for Distributed Cognition
 - Coordination across agents
 - Mental Models
- Strong theoretical framework
- Future Directions

Questions & Comments