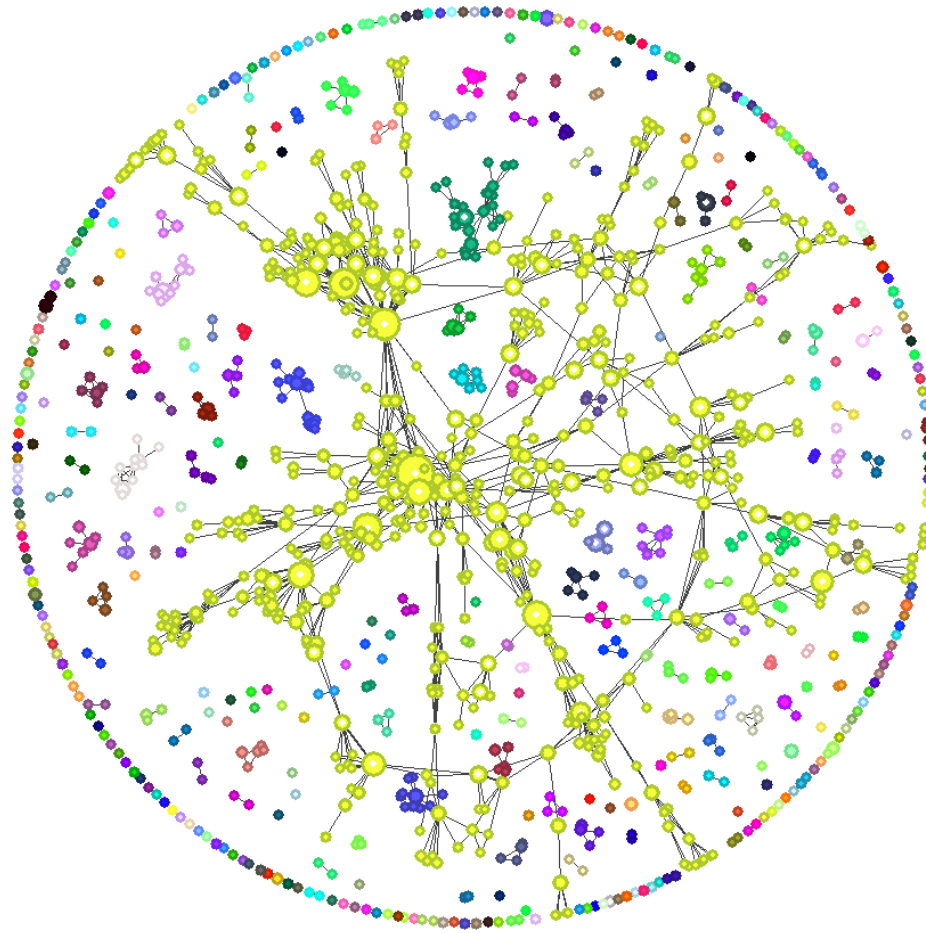
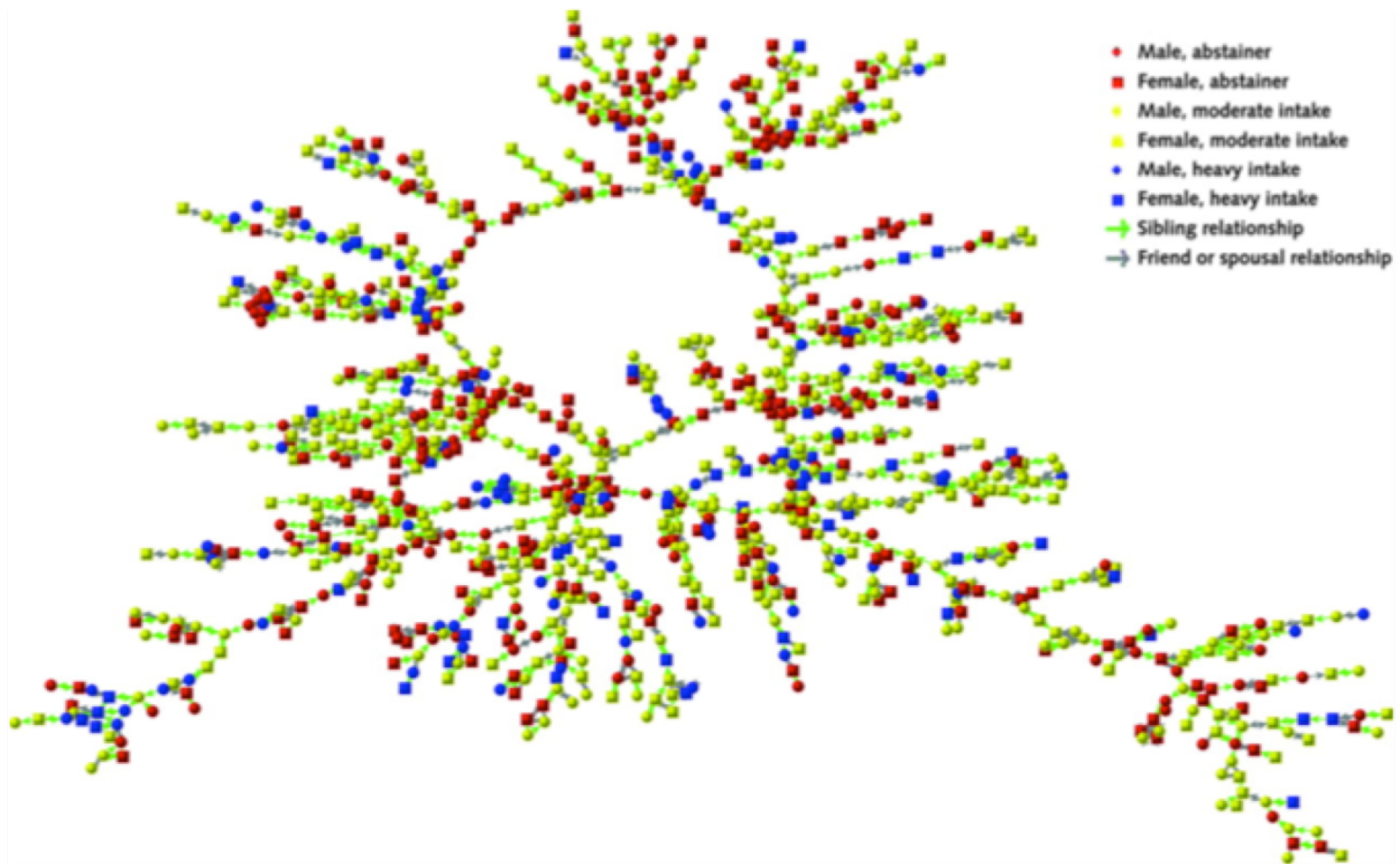


Social network analysis

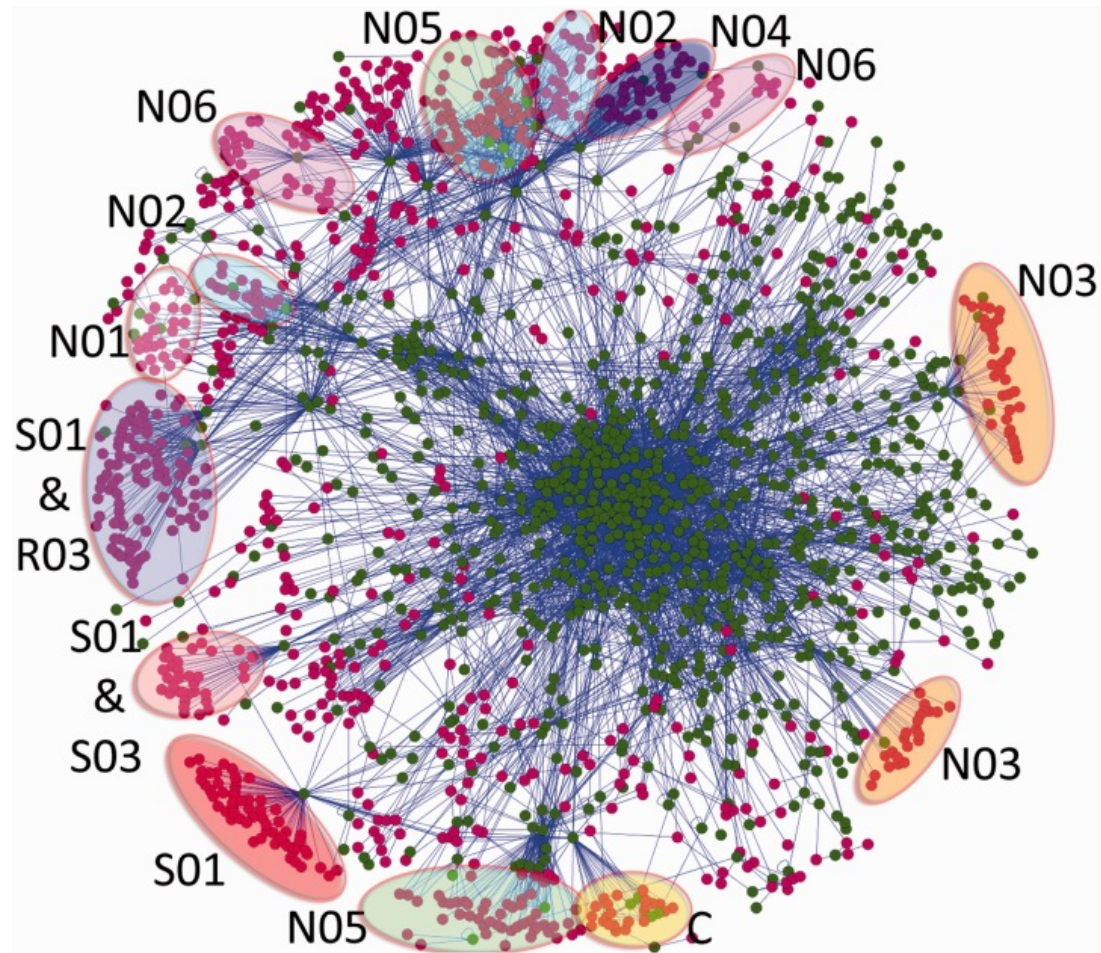
Co authorship



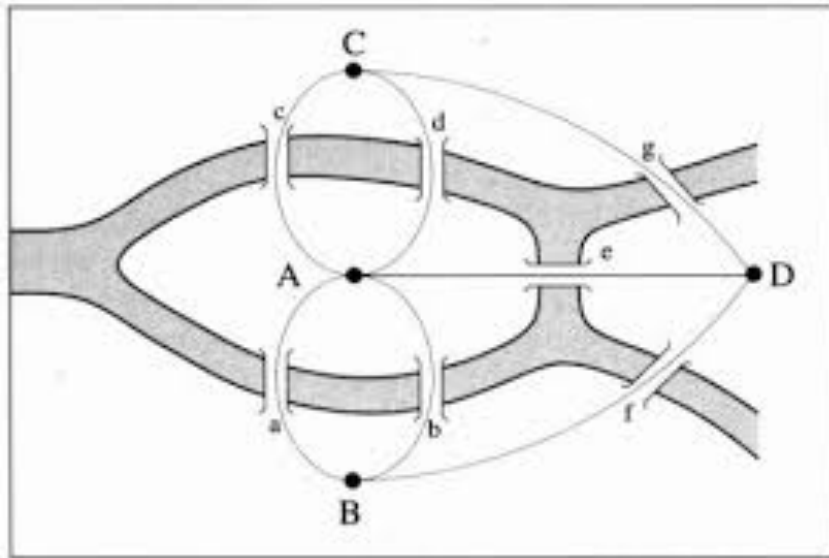
Alcohol consumption behavior



Protein protein interactions

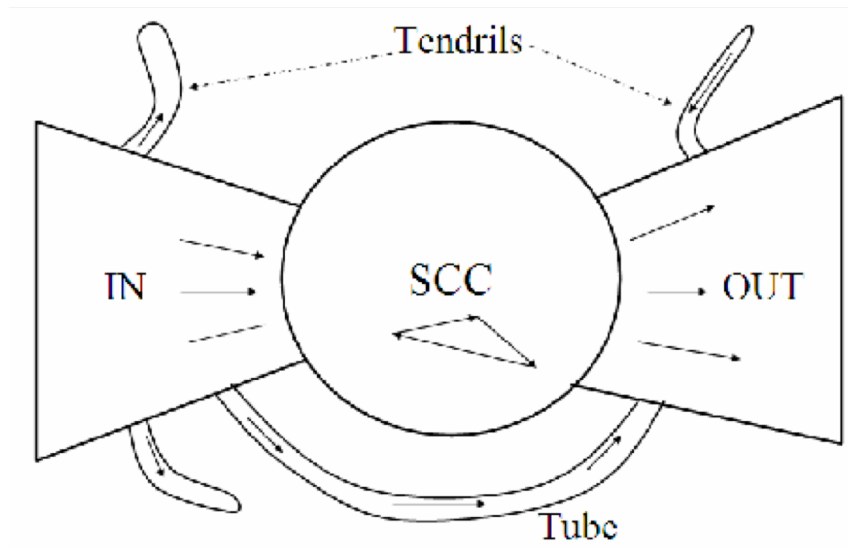


How old is SNA?



- In 1934 Jacob Levy Moreno describes the relationships among class mates as a social network
- In 1735 Euler uses techniques of SNA to solve the seven bridges of Königsberg problem

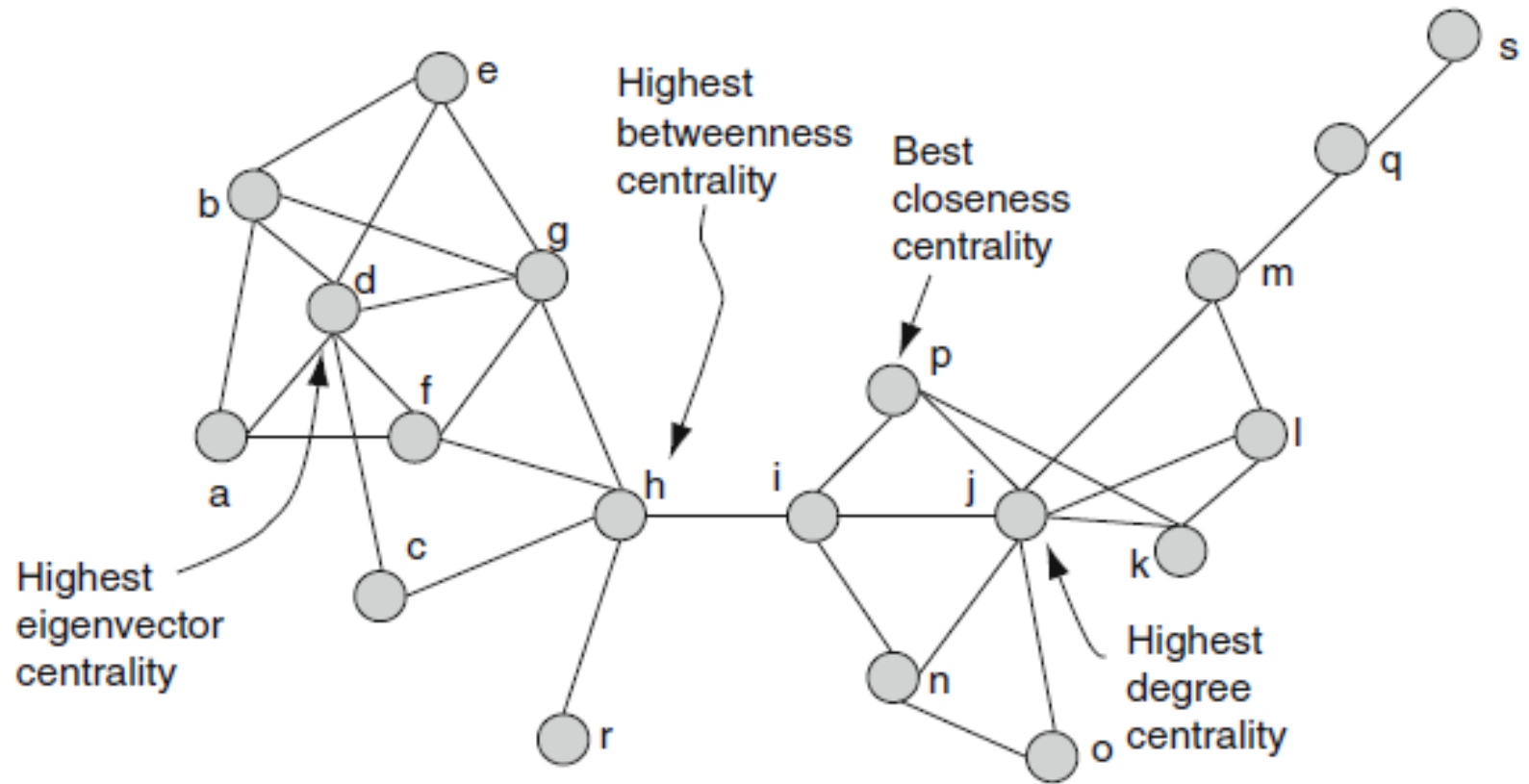
How big are social networks



Centrality measures

- Degree: measures the probability of receiving information
 - Information hubs
- Betweenness: measures the information flow traffic that a node spreads through the network.
 - Critic resources in business process
- Closeness: measures how easy is to reach a node.
 - Resource positioning
- Eigenvector centrality: used to calculate node influence in the network.
 - Page rank

Centrality measures

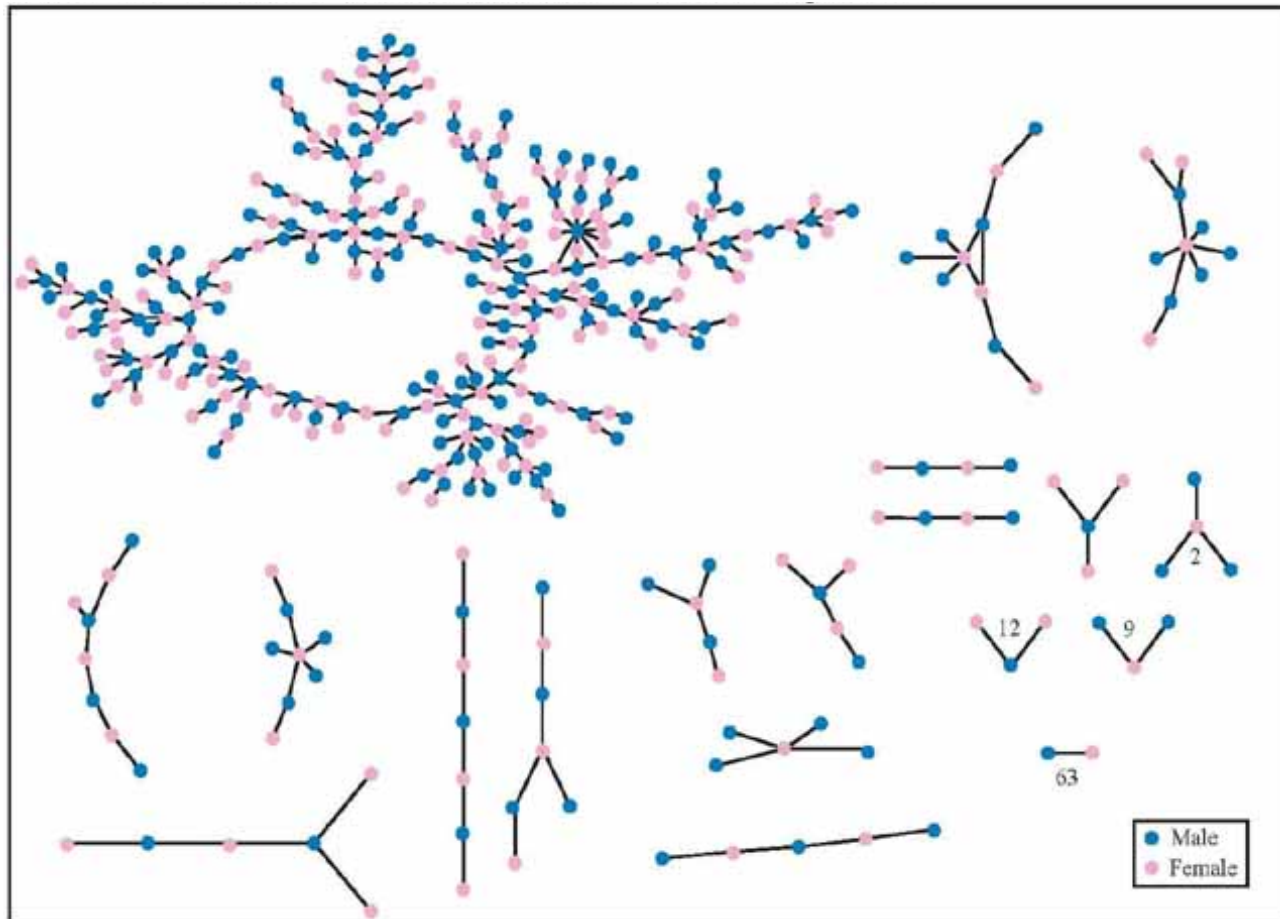


Network flow

SALLY FORTH By Greg Howard

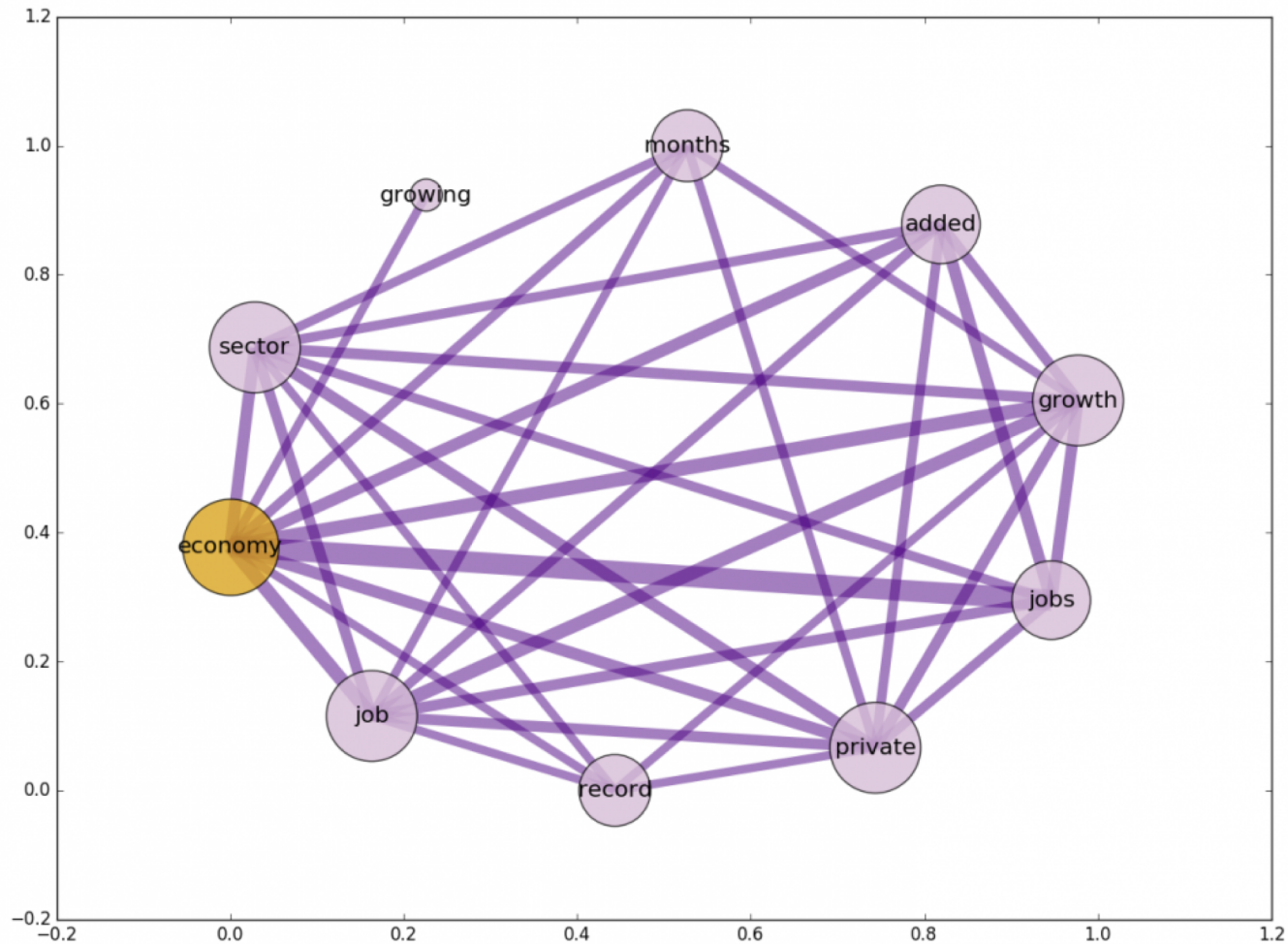


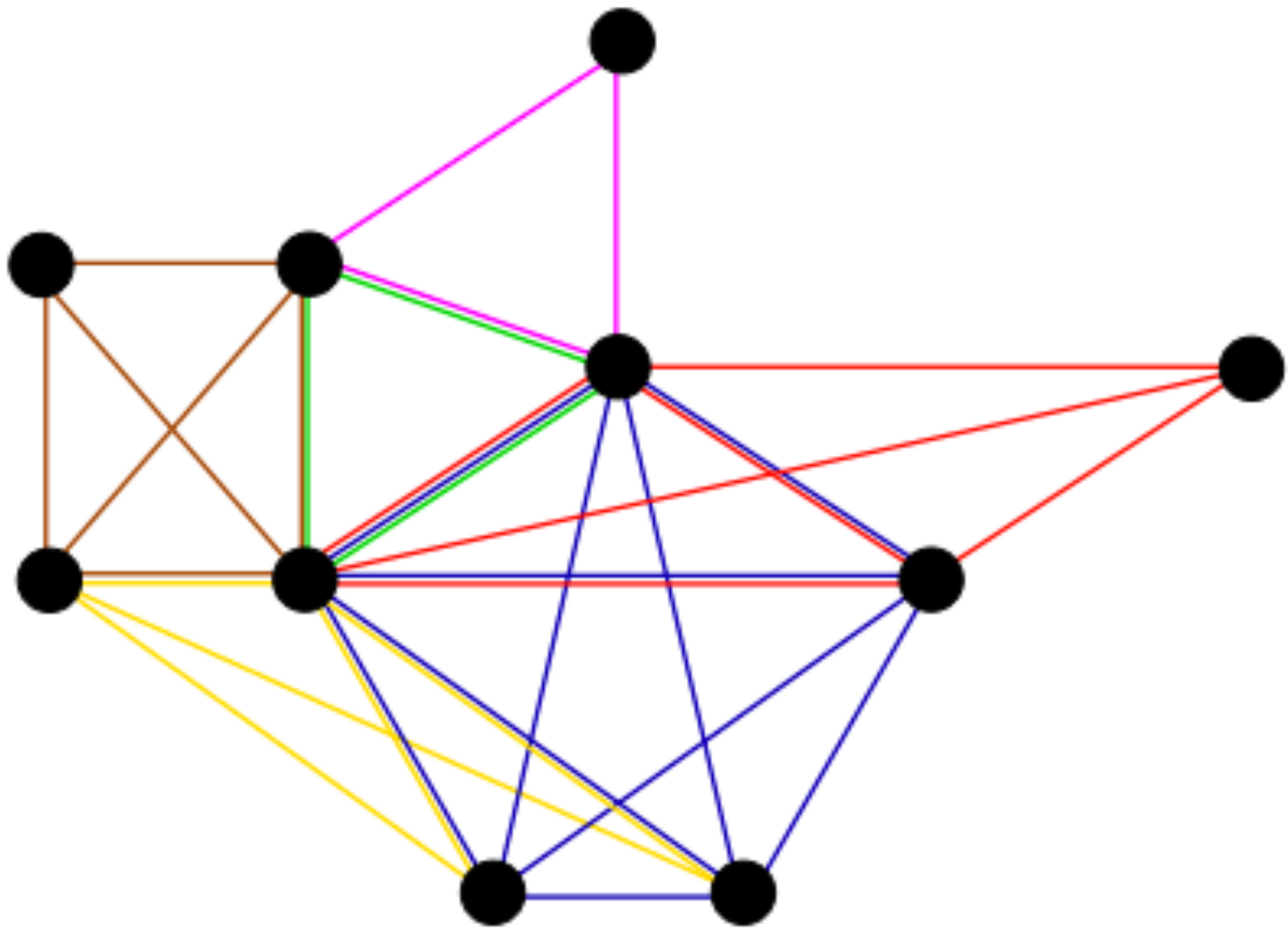
Romantic relations at Jefferson High school



Each circle represents a student and lines connecting students represent romantic relations occurring within the 6 months preceding the interview. Numbers under the figure count the number of times that pattern was observed (i.e. we found 63 pairs unconnected to anyone else).

Community in the word co-occurrence social network

















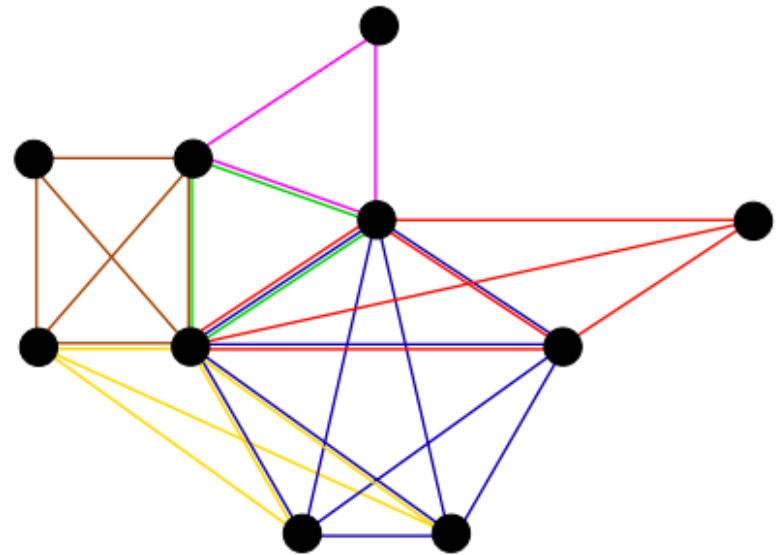
Example k=4

	Blue	Red	Green	Magenta	Yellow	Brown
Blue	5	3	2	1	3	1
Red	3	4	2	1	1	1
Green	2	2	3	2	1	2
Magenta	1	1	2	3	0	1
Yellow	3	1	1	0	4	2
Brown	1	1	2	1	2	4

	Blue	Red	Green	Magenta	Yellow	Brown
Blue	1	1	0	0	1	0
Red	1	1	0	0	0	0
Green	0	0	0	0	0	0
Magenta	0	0	0	0	0	0
Yellow	1	0	0	0	1	0
Brown	0	0	0	0	0	1

Example

						
	1	1	0	0	1	0
	1	1	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0
	1	0	0	0	1	0
	0	0	0	0	0	1



Example

	Blue	Red	Green	Magenta	Yellow	Brown
Blue	1	1	0	0	1	0
Red	1	1	0	0	0	0
Green	0	0	0	0	0	0
Magenta	0	0	0	0	0	0
Yellow	1	0	0	0	1	0
Brown	0	0	0	0	0	1

