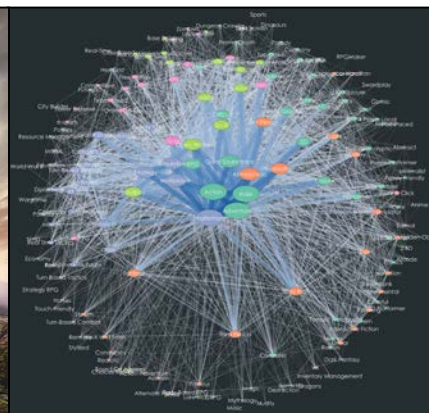# Digital Approaches to Historical Inquiries
## 7th Class

Assignment 5

- 5a: Designing Time
  - Design a visual element that shows time (a logo, a time series, a data point, a whole infographic)

- 5b: Critiquing the design of time
  - Find a historical infographic/time series that you think has really "good" design
  - Find a historical infographic/time series that you think has really "bad" design
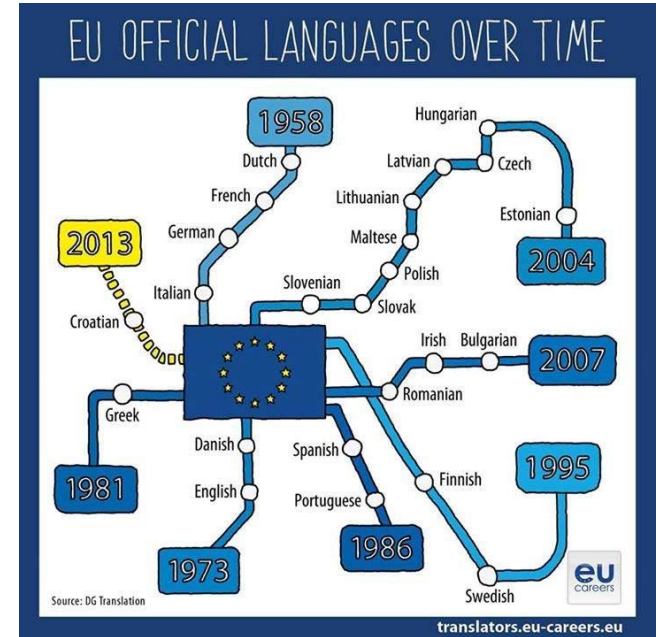 - Write a review of them both in which you compare the two.
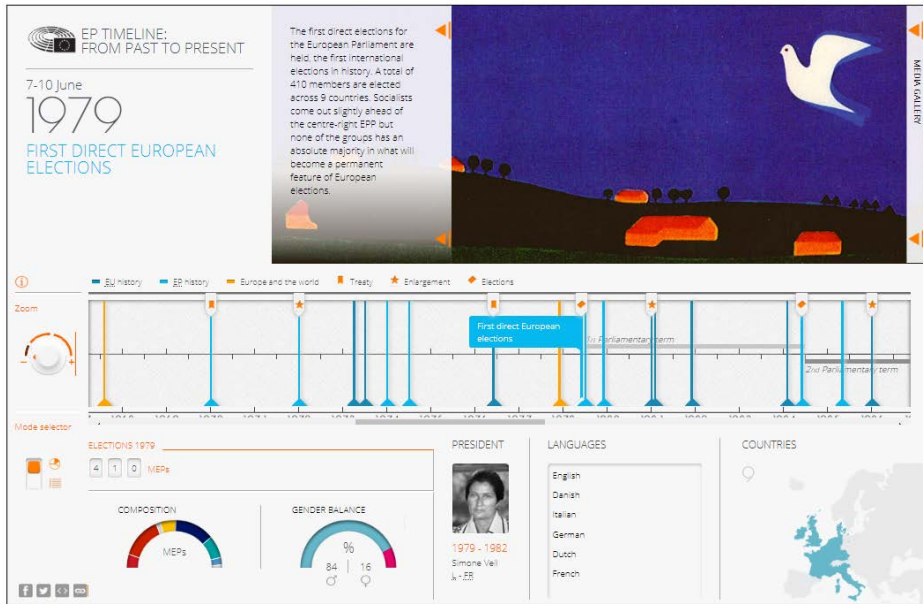
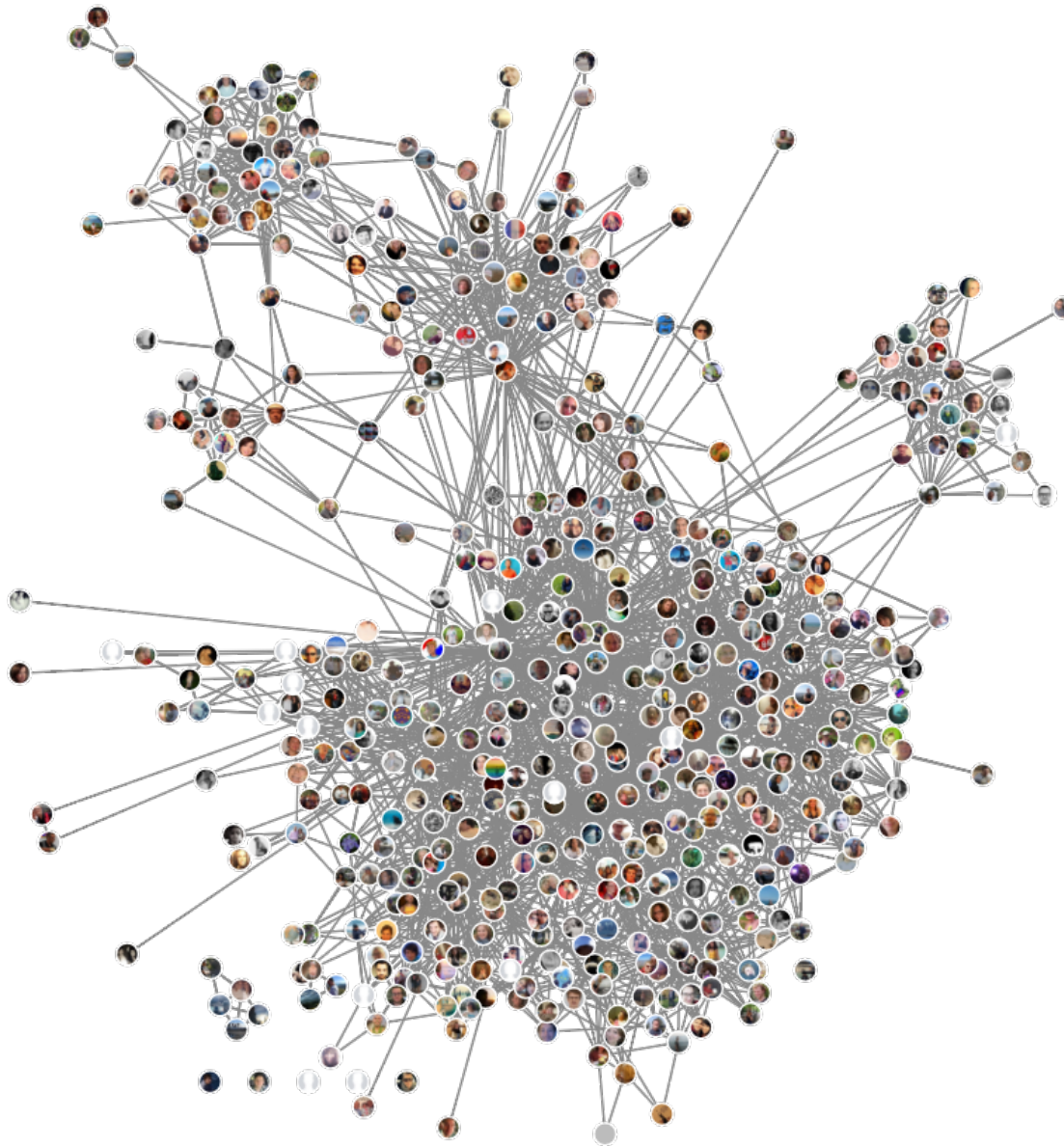Ugo: "The fall of transience, results in acknowledging the existence of infinity."
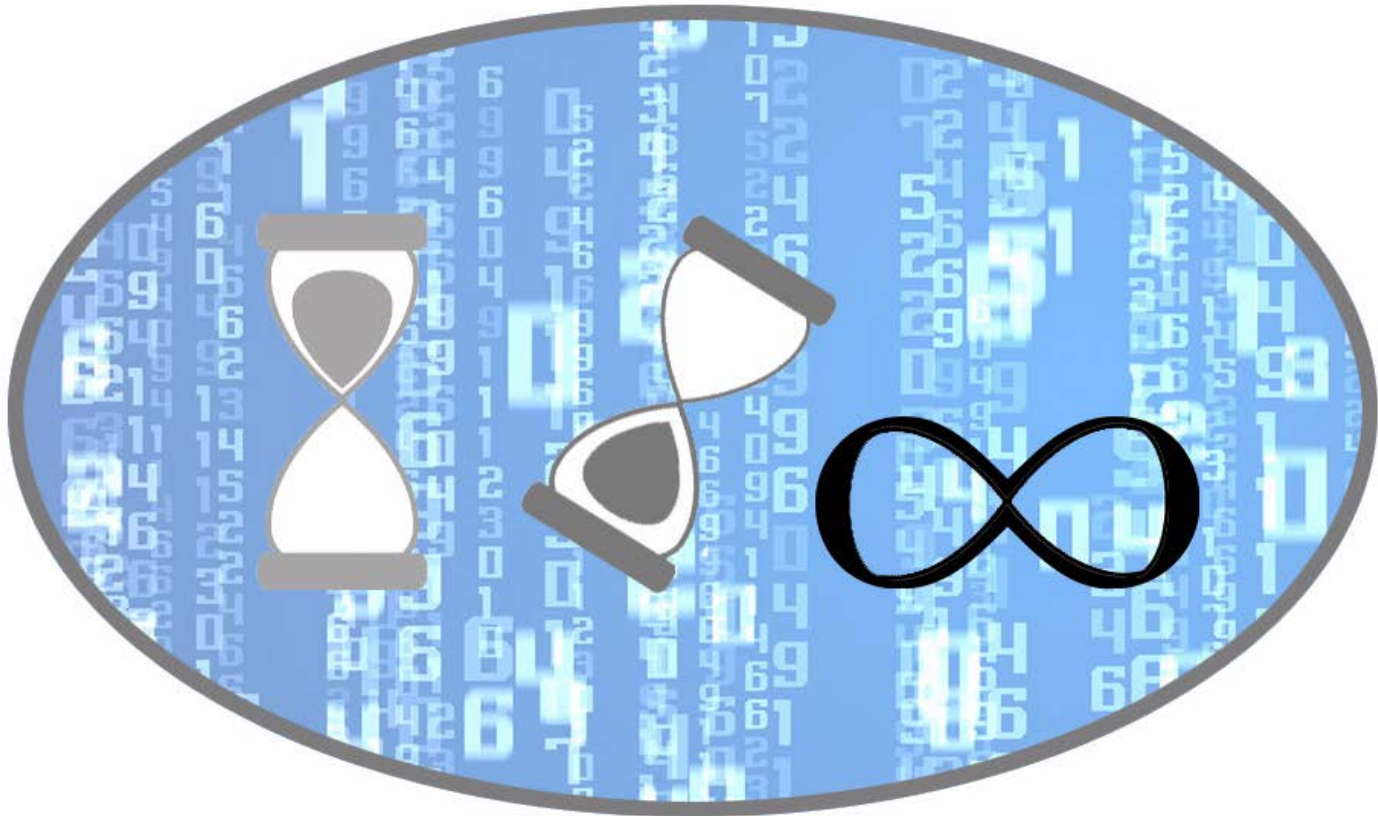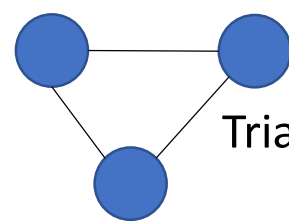
Lucia
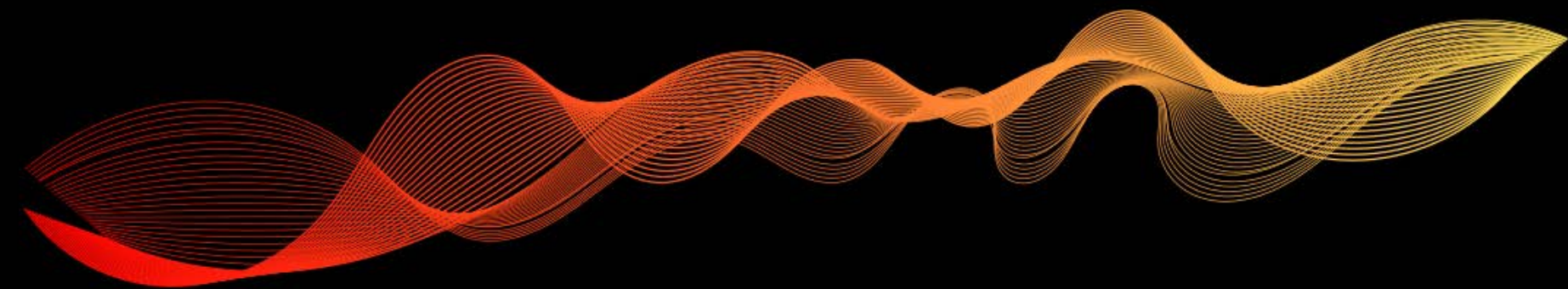
Rosa: History of the European Union
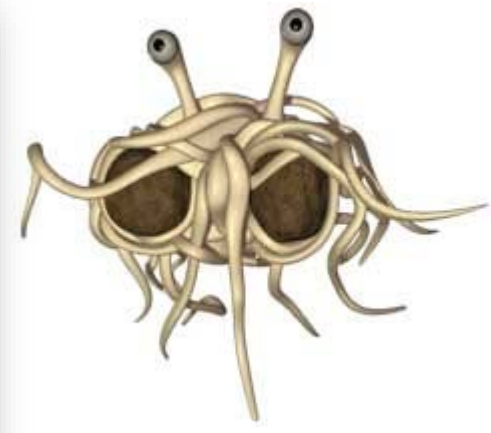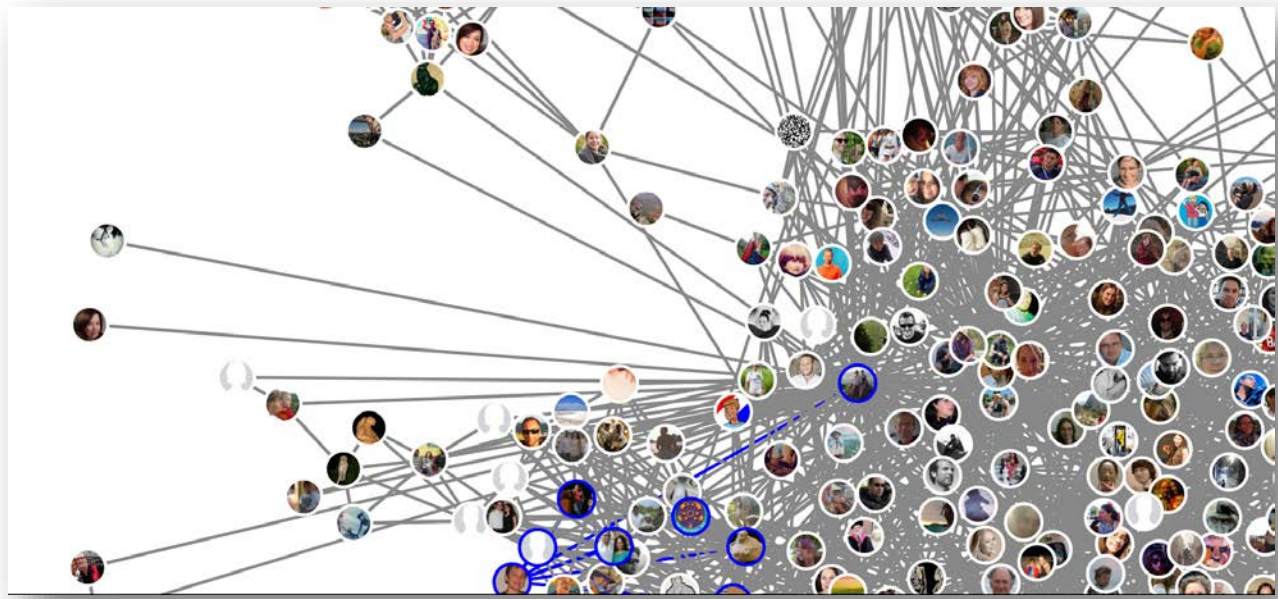
Let's talk about my Ego(-network)!

Node (vertex, site, actor)

Tie (link, bond, relations), dyad

Triad, a type of clique, which is a subgraph
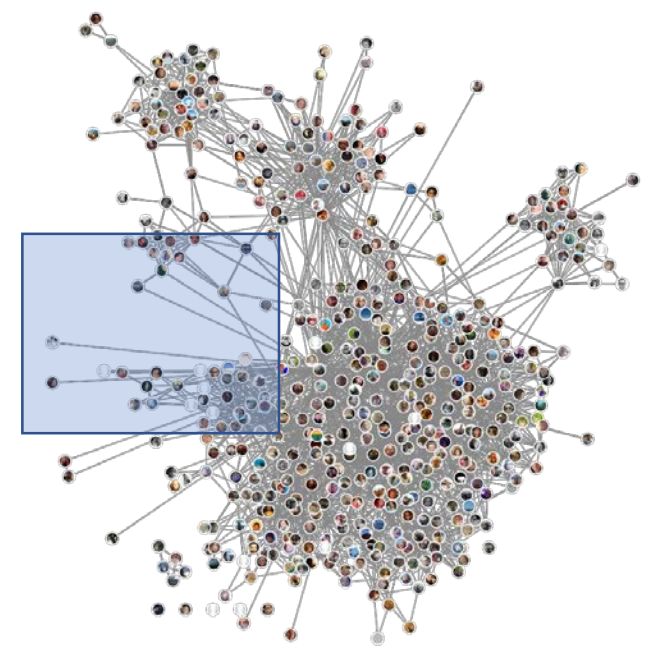
What is Network Science?
(Brandes et al. 2012)
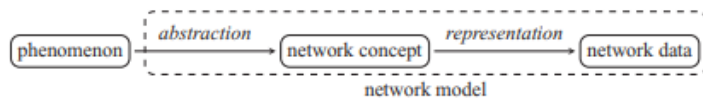
Fig. 1. The elements of network models.

- Claim 1 Network science is the study of network models.

- Claim 2 There are theories about network representation and network theories about phenomena: both constitute network theory.

- Claim 3 Network science should be empirical — not exclusively so, but consistently — and its value assessed against alternative representations.

- Claim 4 What sets network data apart is the incidence structure of its domain.

- Claim 5 At the heart of network science is dependence, both between and within variables.

- Claim 6 Network science is evolving into a mathematical science in its own right.

- Claim 7 Network science is itself more of an evolving network than a paradigm expanding from a big bang.

Dependencies (Claim 5)

- Political power may be dependent on wealth (Claim 5: Income vs Age)
- Power may be dependent on who you are connected with (Claim 5: Income may be dependent on who you are friends with)
- Network "incidences" (Claim 4) can often trump non-network effects in the real world, e.g. the rise of Trump and the Clinton "dynasty"

De' Medici: an exercise in dependency

- Landholders
- Bankers
  - Florins
- Patron
  - Architecture
  - Visual Arts
  - Libraries
- High Nobility (Grand Duchy of Tuscany) & Royalty
- Popes
- Network Brokers (in networks, but also "between networks")

Giovanni di Bicci de' Medici
(c. 1360-1429)

Gold Florins (1347)

Brunelleschi's Dome of
the Santa Maria del Fiore
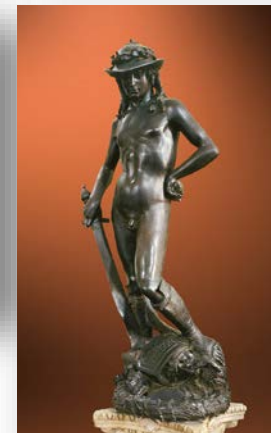
Donatello's *David*

Cosimo de' Medici
(1389-1464) by Bronzino

Gian Gastone de'Medici
(1575-1642)
Last member of the Dynasty

Marie de' Medici (1575-1642),
Queen of France

Power is a matter of personal attributes, but (maybe more so) of network dependencies.

Georg Simmel

- Simmelian Sociology
  - Dyad vs. Triad
- Amount of connections
- Nodal position
- Network topology (Burt's structural hole theory)
- Longitudinal (in)stability: from "happenstance" to dynasty
- This process can happen again!
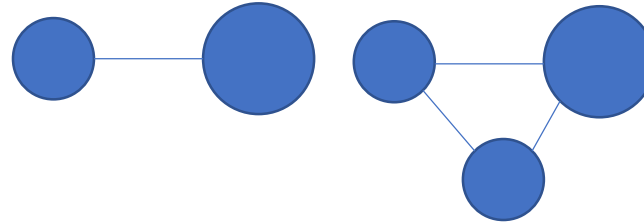
A Trump dynasty?

The Kennedys: a dynasty in a democratic system

Padgett's Popular Case-Study: another exercise in dependencies

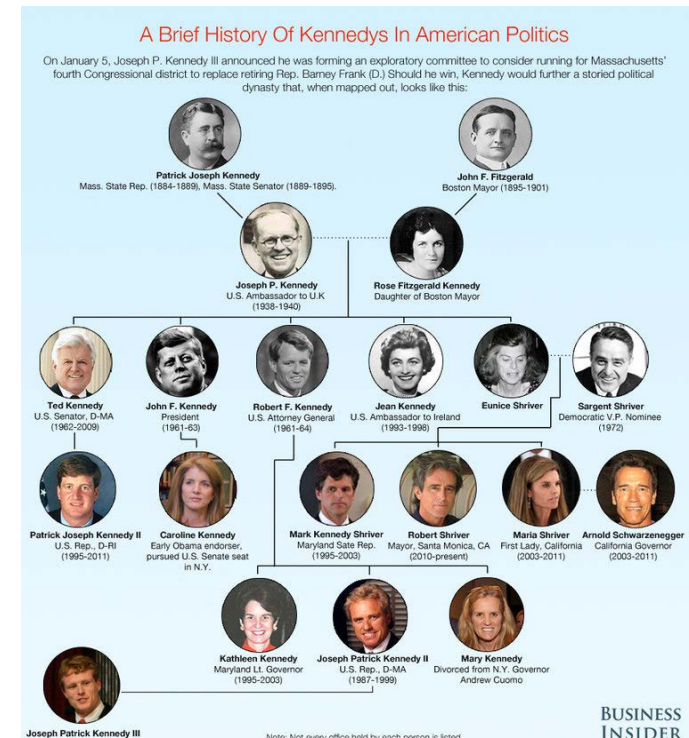- Kent D. (1978). The rise of the Medici: Faction in Florence, 1426-1434. Oxford: Oxford University Press.
  - John Padgett used this to collect the data for an unpublished paper
- Breiger R. and Pattison P. (1986). Cumulated social roles: The duality of persons and their algebras. Social Networks, 8, 215-256
  - Used **subset** of Padgett's data to discuss perspectives of individual actors vs graph perspectives
- Picked up as data-set in Freeman, Everett and Borgatti's UCINET
  - These open data files became widely used in tutorials.
  - Padgett's case-study speaks to a recognizable historical phenomenon.
  - As a historical network study: outmoded
- Two/Three data-sets of 16 nodes (families)
  - PADGETT
    - PADGM (Marriage relations)
    - PADGB (Business relations)
  - PADGW (nodal attributes, including wealth, political offices, and ties)

UCINET 6

www.analytictech.com

What tool to use?

- Visone.info
- Elephant in the room: Gephi (yet another exercise in network dependencies)
- Wikipedia: [Social network analysis software](#)
- Why visone?
  - Powerful visualization and large suite of analyses, plus several added features (maps, RSiena)
  - Relatively simple GUI + data handling
    - Data import
    - Drawing networks
  - I know it well, plus I worked a lot with them because my professor knew someone who knew the people who made it (yes, another network dependency).
  - Not open-source :-/
  - No undo button, sometimes crashes :-S

No how-to slides this week:
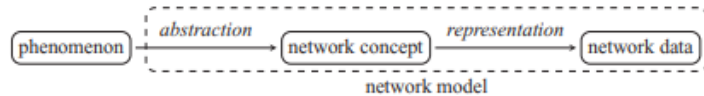but I will (try to) record this practical

- Recording is easy!

- Ingredients:
  - Open Broadcaster Software-Studio
  - One mic
  - One older laptop
  - A script (cue cards)

- Available via the syllabus (unedited)
  - Editing is hard!
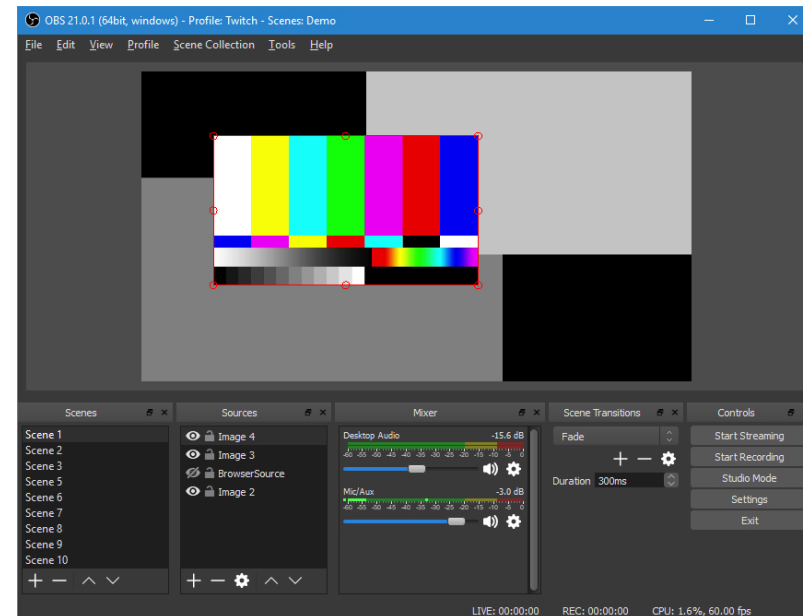
Network analysis is not a "black box"

phenomenon → *abstraction* → network concept → *representation* → network data

network model

- Selection of data should be contingent on the phenomenon to representation "pipeline"
  - If phenomenon is not social, you are not doing social network analysis
  - Position/Centrality is not always "Power"
- Measures are part of a formal/mathematical, but also "explorative and interpretative" process
  - Know what a measure does, if you use it (ideally, you will understand the algorithm)
- Visualization is about patterns, but there is also a rhetorical move

Assignment 6

- <u>Due on April 10</u> (in two weeks)
- Analyze your own (or mine) Facebook network data using <u>Lost Circles</u>
- Import the data-set in visone
- Identify the top 5 most central actors using at least two different centrality measures
    - Visualize and explain the measures
    - If personal network: discuss the results from your perspective (keeping in mind anonymity/personal privacy)
    - If my network: provide a discussion of the position of my 5 most central nodes (and, if you like, provide your own guess as to what social role in my life they fulfill).
- Is time present in this flat network? How?
- Does geographic space factor into your network? How?
- Export the visualization(s) of your network (e.g. .png or PDF) and provide a max 700 word report that discusses the outcome of your centrality measures and temporal/spatial dynamics acting on your network via Slack.
- Bonus points if you can connect your own findings to specific network theories (e.g. small worlds, structural holes, weak ties, "robust action", et cetera).

Happy Easter and see you next week!

Survey is sent out.

Please take the time to fill it out before next class.

Next week:

- No open office (Easter!)
- Guest: Floris Keehnen