

## [Course] Claire Lemerrier, Quantitative methodology & Network analysis

Personal page: [http://www.cso.edu/cv\\_equipe.asp?langue=en&per\\_id=168](http://www.cso.edu/cv_equipe.asp?langue=en&per_id=168)

[download her presentation slides here: <http://tinyurl.com/oxk8kdr> ]

hello everybody \o/ Salut tout le monde !

she has an old phone = a proof she's serious ;) [ this text is totally unrelated and should be deleted]

Network analysis seen as a toolbox : she's gonna discuss the "fashion of network analysis"

In fact, what is a network perspective ? what can it help you to see ?

Less is more : pour rendre visible qqch, + c'est complexe, - c'est utile.

En analyse de réseau, les outils ne sont pas complètement distincts des questions de recherche = Most important are research questions, not the tools \o/ Yes, what she said is that the choice of the tool will depend on the perspective/research question. A tool is not neutral.

[sources : website <http://www.quanti.ihmc.ens.fr/>

her book : [http://www.amazon.fr/M%C3%A9thodes-quantitatives-pour-lhistorien-Claire/dp/2707153400/ref=sr\\_1\\_1?ie=UTF8&qid=1372403372&sr=8-1&keywords=claire+lemerrier](http://www.amazon.fr/M%C3%A9thodes-quantitatives-pour-lhistorien-Claire/dp/2707153400/ref=sr_1_1?ie=UTF8&qid=1372403372&sr=8-1&keywords=claire+lemerrier)

the book has been translated into English, but she's still looking for a publisher

she also cites the "SAGE handbook" : personally I think it's not a good book, especially when beginning with network science]

Terminology: "Formal Methods" rather than "Quantitative methods"

Not necessarily big data, but deep/dense data, even if the dataset is small. The method is about dealing with complex, multidimensional data set.

Counting, but mostly correlating and finding patterns. (Correlation with music) Not necessarily "macro", but changing scales. <--> Data Mining

Linked - and not opposed to - with qualitative methods : no dichotomy, frontiers blurred

Changing scaling is important, from middle level to individual levels, and macroscopic level (zoom in/zoom out)

Zoo of methods, we need a map to navigate into this space

Source: Tilly, 2004 <= did you find the complete reference ?

She shows a typology of network in social science and which approach you can use depending on the use of network as a descriptive or explicative variable.

Distant and close reading: Lemerrier and Mata, 2011

<http://hope.econ.duke.edu/sites/default/files/Mata%20and%20Lemerrier%20-%20Economics%20at%20Newsweek-formatted.pdf> ??

[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1753164](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1753164)

Other ways to look for patterns and navigate scales

1) sequence analysis: technique to explore trajectories (in time, something happening to a long text, recurring patterns, etc). Eg context of narrative sociologie.

TraMineR package for sequence analysis

<http://mephisto.unige.ch/traminer/download.shtml>

<http://cran.r-project.org/web/packages/TraMineR/>

- can zoom in and out on trajectory patterns as a whole, but also can explore exceptions
- need to find the methods that suit your needs: network analysis -- the peculiarities of it suits humanities

<http://www.sciencedirect.com/science/journal/02613794/31/2>

## **Network Analysis**

- Social Network Analysis (SNA)
- Has become a research tradition
- Shared vocabulary (despite potential of extremely different theoretical paradigms)
- Network analysis is not a software, not a theory  
not married to life to any theory/school of thought (Bourdieu, Latour), just a way to look at things
- A tool is never neutral!
- The novelty with network analysis is the focus on relational data ("ties", "relationships") instead of only using attributes of actors.  
Focus on relationships  
What has been developed for a use in social science can be ??
- "Anything can be considered as a network" : not specially how people tweet/like/etc. each other = Ties and non ties between anything (people, images, texts)
- Some networks do not require too much analysis, some are just lists (if all related to the same point, and no connection between them) = No added value of presenting a list of contacts...  
Doesn't add analytical value
- Network not a group but a set of ties.
- Ties are interesting because there are not ties everywhere (if there are everywhere, it become less interesting)
- General idea is to find structures/patterns and to this at different scales: the great strength of this method
- Don't stick to the macro view, do zoom in = navigate scales !
- NetDraw (<http://www.analytictech.com/downloadnd.htm>) = this software is the anti-gif..!  
She advises us to begin with this software, even if you use Gephi after [funny : I would advise never to use it]  
[one thing for sure : netdraw outputs are ugly] (but we can decide not to bother on the aesthetics of the stuff) [if you don't plan to publish or present it ok]
- Sometimes (picture anybody ?), there is no structure but a lot of connectivity, because of lots of hierarchial (?) links
- "Structure is created by absent ties" (read Burt's structural holes articles on this subject, for example [http://books.google.ch/books?id=E6v0cVy8hVIC&redir\\_esc=y](http://books.google.ch/books?id=E6v0cVy8hVIC&redir_esc=y))

## **Motivations for using this:**

- a fresh look to look at your data

- increased ability to recognize patterns (structure in a mess or borders... created by absent ties)
- Get a feeling of what happens to my data, first approach, when you are alone with your data.
- Teach/show things. You can also hide things and look what happens.

Floor is opened for questions on this first part:

1) Is it possible to have visualization in 3 dimensions with NetDraw? --> ha ha nice. I've been trying to figure out the name she was saying (being a total digital pleb)

A - requires other software, not with NetDraw

Interesting: to think at different ways to look at the interactions between data

- you have to have a matrix and figure out in each case what you're trying to achieve: the idea of being systematic helps you to get out of a tautological rut

### Thinking about ties

-Not "is there a network there ?" : there is always a network !

- Look at the ties : two hypothesis :

- - what ties do ?
- - where the ties come from ?
- - How to think about defining ties?
- - don't put all the ties in a big bag, you'll get only trivial things

### Networks from Humanistic Sources : some examples

- it's not only for sociologists, historians can also use them

- lots out there (no dearth of sources)

Examples from history

1. Records of interaction : who is recommending who (cooptation)

2. Account books => Pierre Gervais, 2012 from Gradis accounts (transatlantic trade)

3. Citation and co-citation : for history of science/knowledge => already done in the 19th century (chemistry) , citation in letters, citation of places

Example from Literature

Mental maps of contemporary poets (Dubois & François, 2013) : poets mapping their colleagues in anthologies and by labels

Example from political sciences (?)

Tilly, 1997, Structure of petitions to the Queen (1758-1801 & 1832-1834), with the words used "attack",

Example from anthropology (?)

Folk songs of/about miners, studied by Marion Henry (Iramuteq was used

<http://www.iramuteq.org/> )

Stolen from David Berry's tweet: Digital humanities? for old profs don't understand tech, & young ones don't understand hermeneutics? #dhch <http://lareviewofbooks.org/article.php?type=&id=1801&fulltext=1&media=#article-text-cutpoint> ...

Ref/example: Sigrist and Widmer 2011 - Network of relations between botanists in 17th-19th century - Nodes are placed on the graph according to their date of birth. Full text: [http://revista-redes.rediris.es/pdf-vol21/vol21\\_7e.pdf](http://revista-redes.rediris.es/pdf-vol21/vol21_7e.pdf)