

A quantitative sociology of academic work in an era of hypercompetition and rankings

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Outline of presentation

- ▶ Introducing myself, GECS, my coauthors
- ▶ Introduction of previous studies
- ▶ My plans during visiting UCD

Outline of PhD thesis

- ▶ Introduction to a hyper-competitive academic landscape
(Chapter 1)
 - ▶ Quantity versus quality (Quantitative research evaluation)
 - ▶ Funding, promotion and reputation circulation in 21st century
 - ▶ Responsible metrics and credit allocation
 - ▶ Sociological theories
 - ▶ Matteo effect, winner takes all?
 - ▶ Attaching preferably to a few star scientists/leaders?
 - ▶ Fragmentation of ideas, sociological small world of disconnected islands?
 - ▶ Embeddedness and organizational ambiguity at work?
 - ▶ Core of leaders and periphery of followers?
 - ▶ Summing up and introduction to individual, societal, meso, macro, and multi level analyses

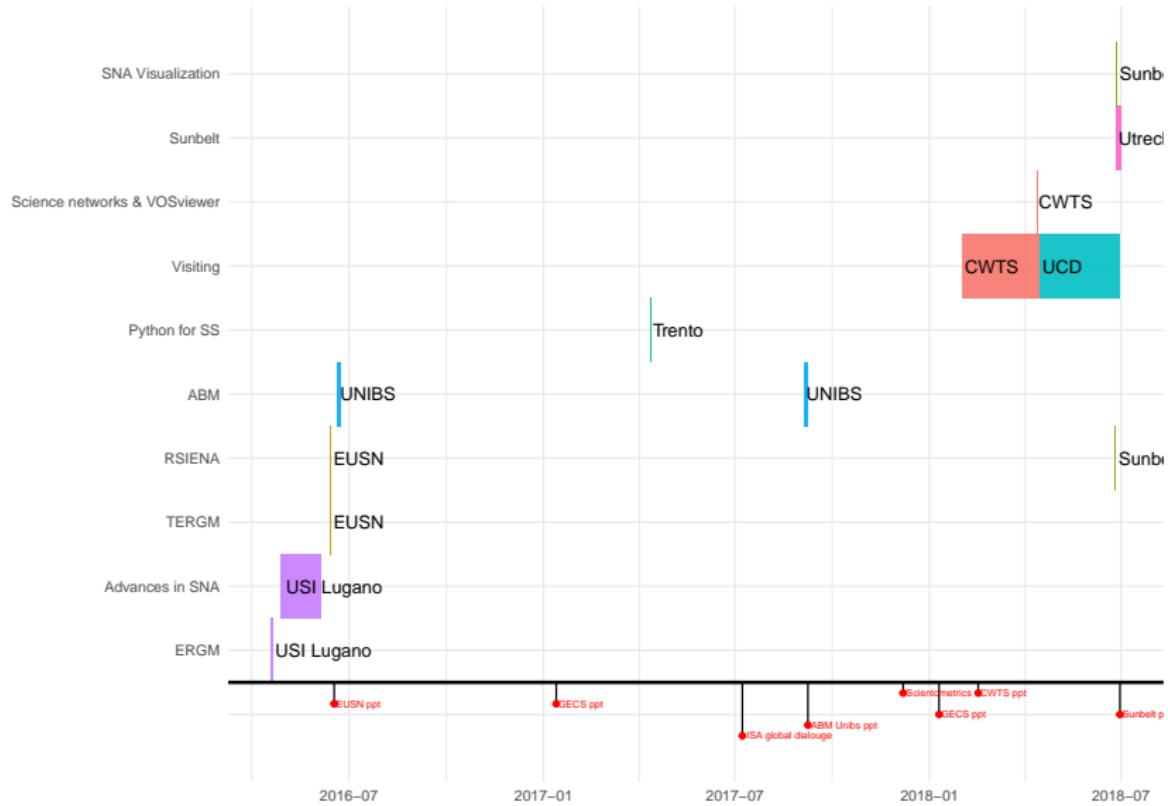
Outline of PhD thesis

- ▶ Individual level research productivity ([Chapter 2](#))
 - ▶ Internationalization
 - ▶ Co-authors similarity
 - ▶ Individuals embedded in organizational settings
- ▶ Structural & Societal effects (Diversity in research productivity) ([Chapter 3](#))
 - ▶ Gender & Ethnic diversity in research productivity
 - ▶ Ivy-League effect in research productivity
- ▶ Meso level (Networks effect in research productivity) ([Chapter 4](#))
 - ▶ Groups collaboration behavior; subjective similarity and research communities?
 - ▶ Community membership effect
 - ▶ Community evolution

Outline of PhD thesis

- ▶ Macro level (Top-down process of inspiring research productivity) ([Chapter 5](#))
 - ▶ Policy effect evaluation
 - ▶ ANVUR effect in national scale
- ▶ Multi-level approach ([Chapter 6](#))
 - ▶ Individuals embedded simultaneously in communities and organizations
 - ▶ Multi-level ERGM of research productivity
- ▶ Summary, conclusions and discussion ([Chapter 7](#))

Activities 2016-2018

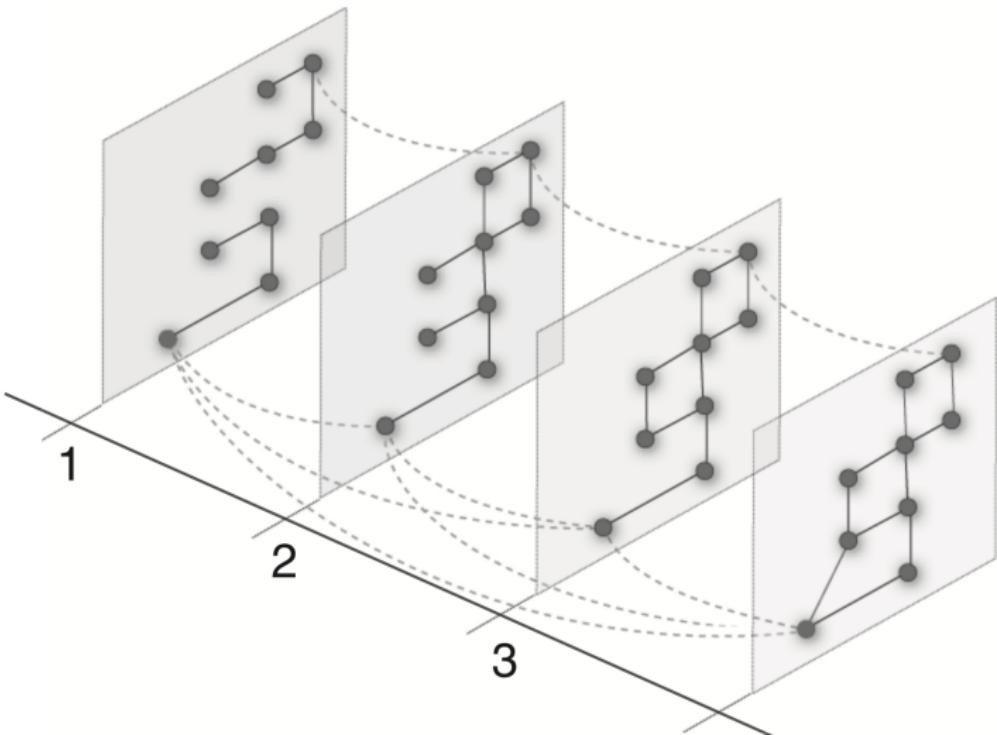


Detecting invisible colleges

- ▶ One of the long standing dreams of sociologists have been to find a way to *detect, explore, explain* and *track schools of thoughts* or in other words **cohesive sub-groups of scientific community** which are more tied **within themselves** than **between** their group and others.
- ▶ To see:
 - ▶ Why and How are they formed?
 - ▶ How are these cohesive groups collaborating together?
 - ▶ How do they evolve through the time?
 - ▶ What can be the **glue** which attaches them together in terms of **social solidarity and cohesion** which detaches them from other parts of the community (or simply makes them more connected to each other and preserve weak ties with other parts of community).

- ▶ Present Research communities (invisible colleges) detected!
 - ▶ External files (zoom possibility)
- ▶ How temporal community detection works?

- Photo credit: Mucha, et.al (2010). Community structure in time-dependent, multiscale, and multiplex networks. *science*, 328(5980), 876-878.

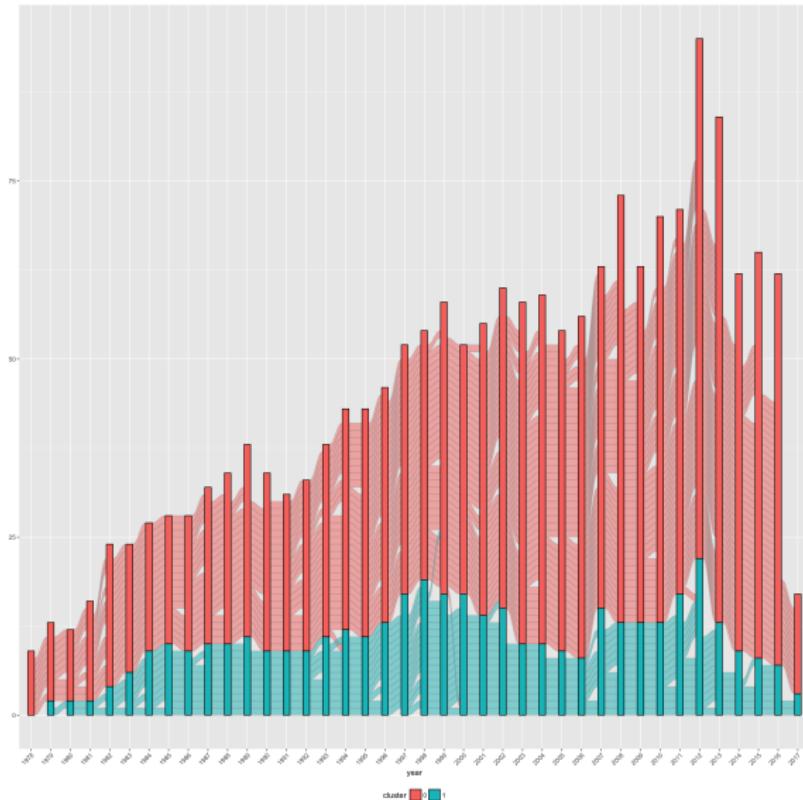


Temporal Community Detection

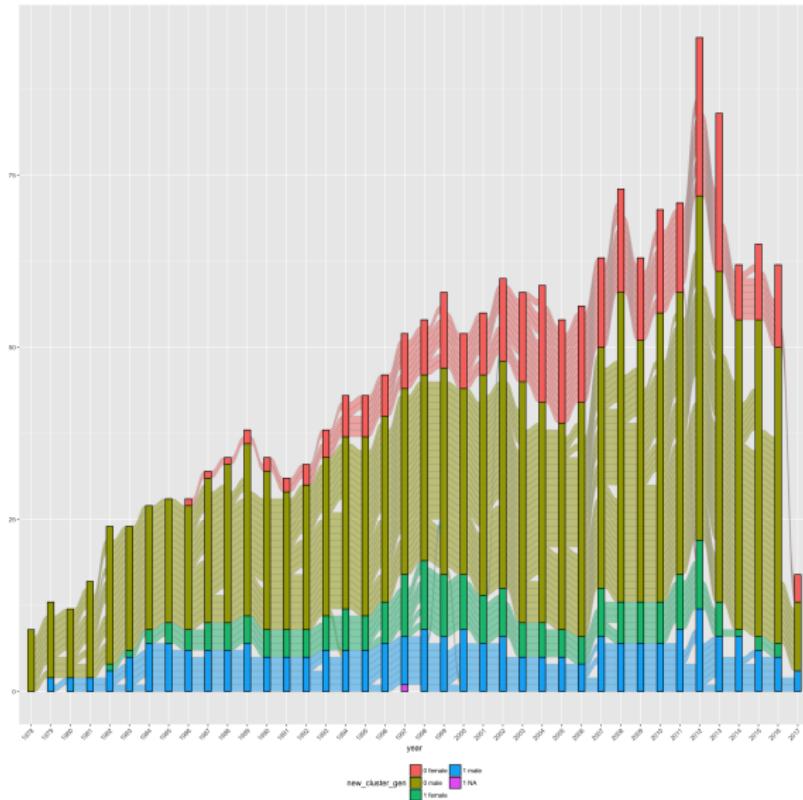
- ▶ Sliced the whole network to years over the 59 years period
- ▶ Authors enter with their first publication year
- ▶ They stay in the network until their last publication
- ▶ To keep the pull of authors limited to actively publishing ones

Interslice Weight		
Resolution Parameter	high	low
	Small Communities - More stable Bigger Communities - More stable	Small Communities - Less stable Bigger Communities - Less stable

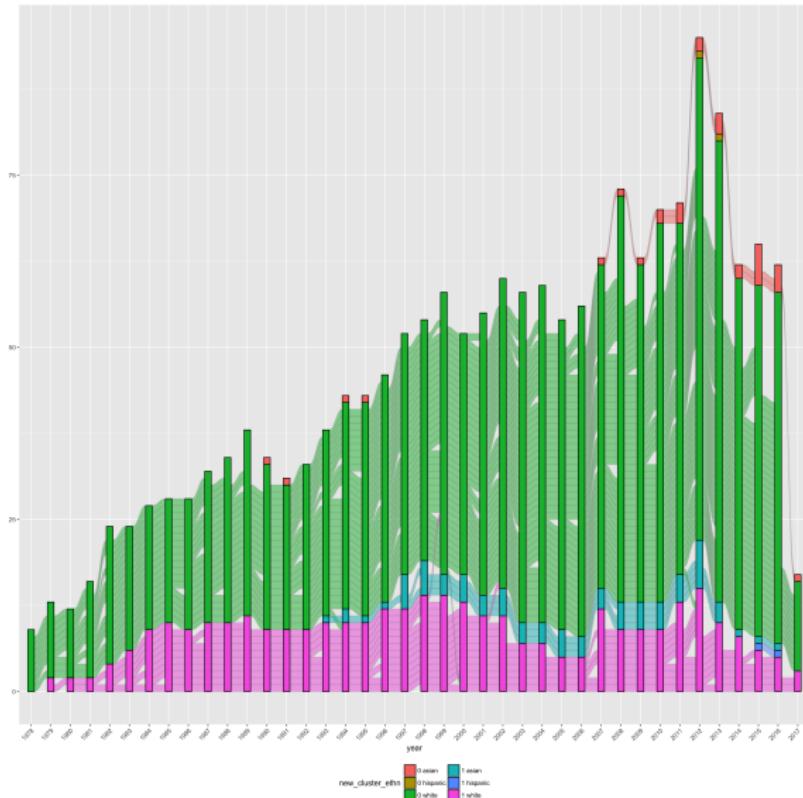
TCD Results (SN papers)



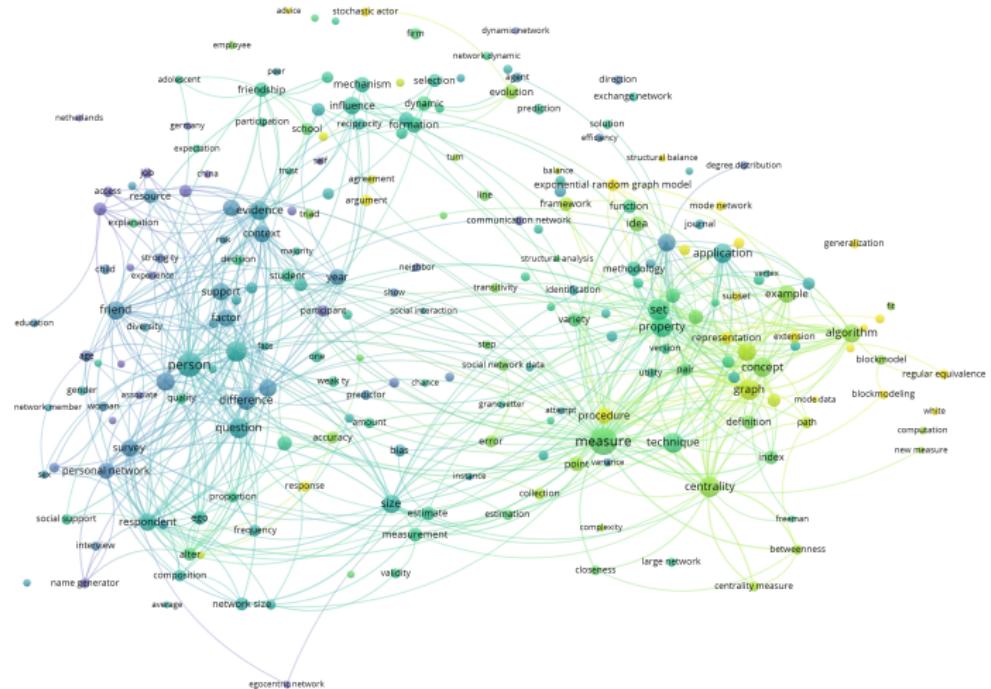
TCD Results (SN papers vs gender)



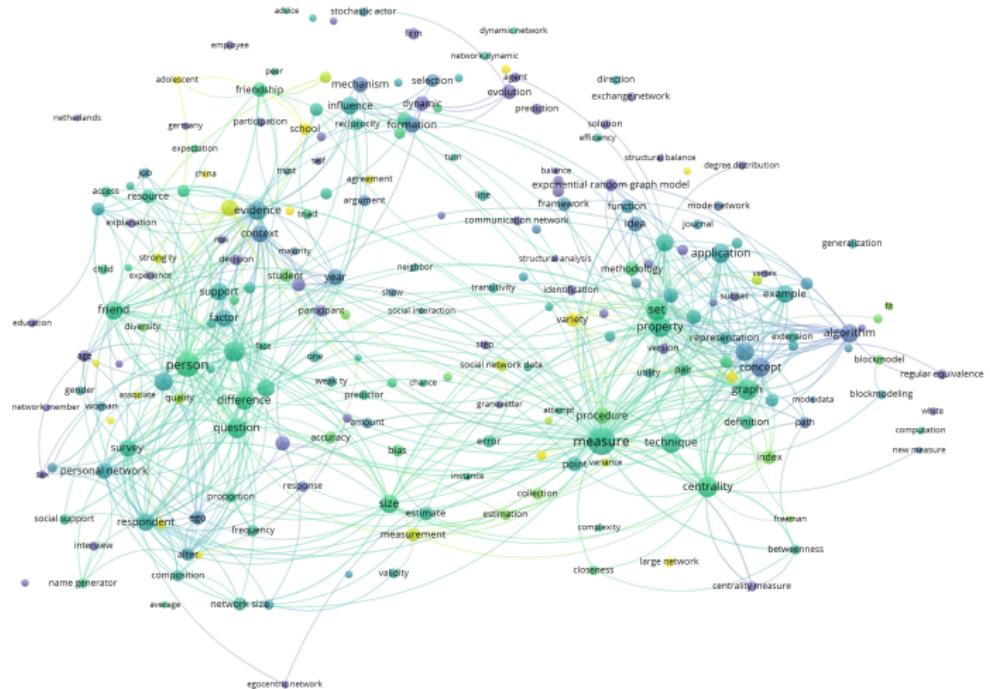
TCD Results (SN papers vs ethnicity)



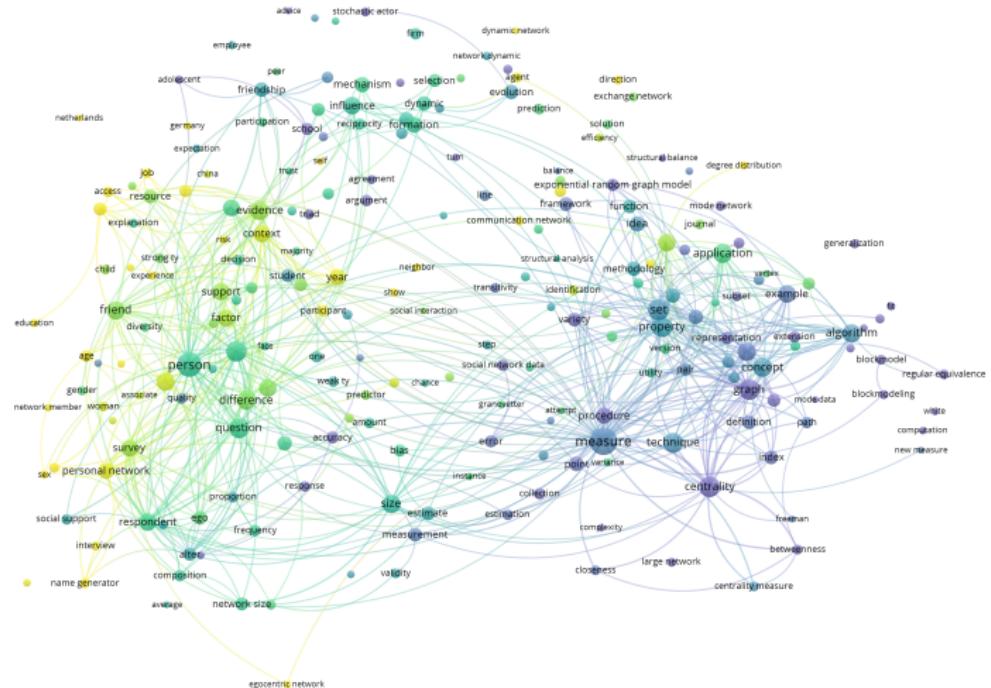
Term map overlays (SN papers cluster 0)



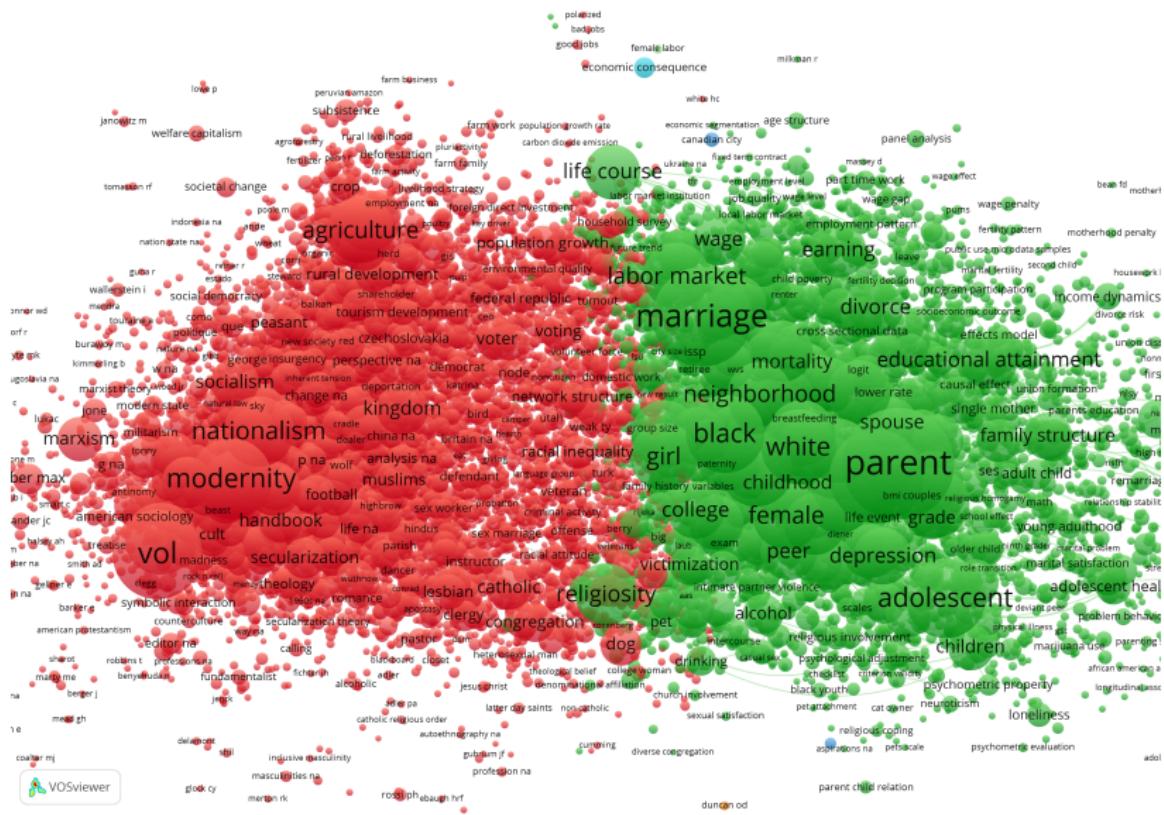
Term map overlays (SN papers cluster 1)



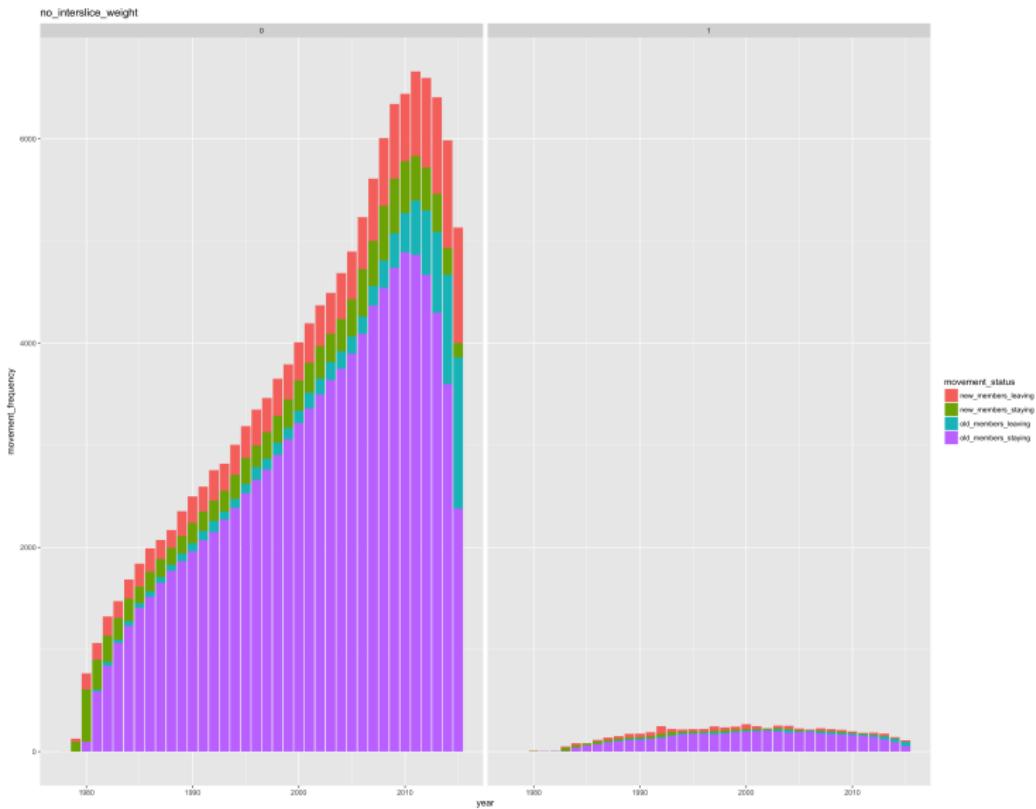
Term map overlays (SN papers cluster NA)



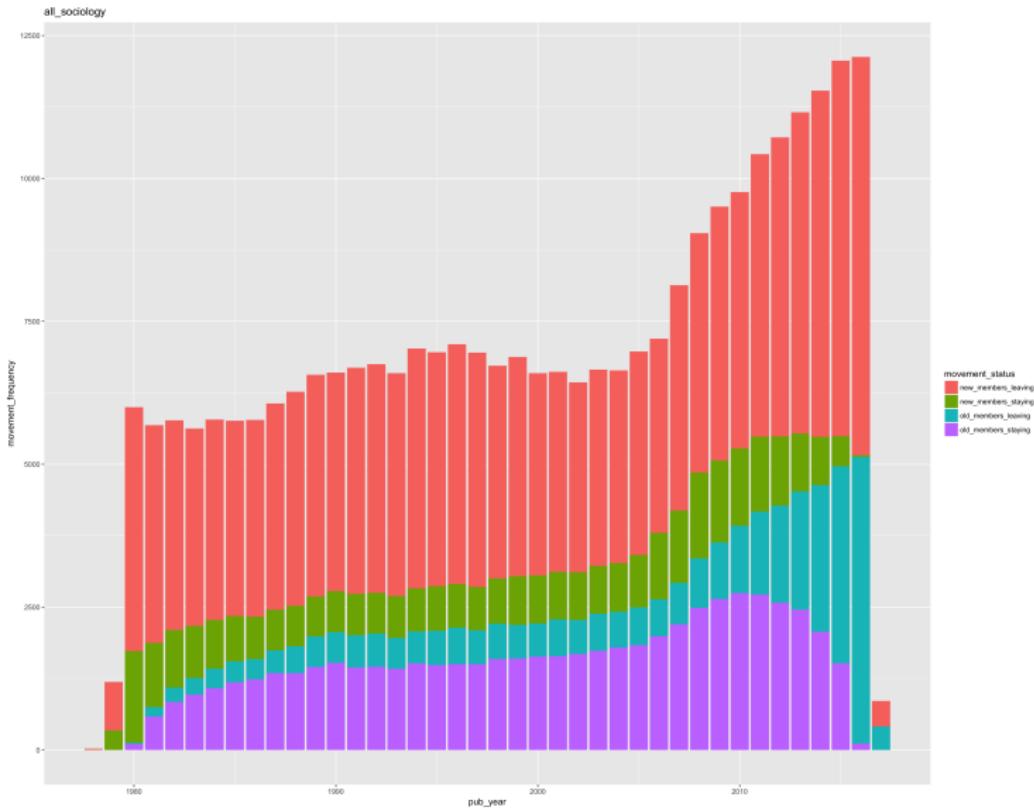
All Sociology term clusters



Giant Component Evolution



All Sociology Evolution



What I would like to do in UCD

- ▶ Complete the article on co-authorship networks evolution
(which will be a chapter of my thesis)

**Thanks a lot for your attention
I will be happy to hear your comments/suggestions**
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