

Legislative Network Visualization with R

F. Briatte^{a,b}

^aUMR CNRS Pacte

Institut d'Études Politiques de Grenoble

^bEuropean School of Political Sciences (ESPOL)

Institut Catholique de Lille

83 boulevard Vauban, 59000 Lille

f.briatte@ed.ac.uk

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This lightning talk is a case study in online data collection and network visualization with R. Its aim is to illustrate how computational methods can assist the study of political institutions, using legislative cosponsorship networks as an example application [1,2].

The talk explains

- how to collect amendment and bills data from the French Parliament,
- how to build legislative networks from cosponsorship among Members of Parliament, and
- how to visualize these networks with R and interactive libraries.

Its four main slides show

1. how to use XPath syntax to parse HTML data with the XML package,
2. how to use the `igraph` and `tnet` packages to produce weighted network measures,
3. how to use the `sna` and `ggplot2` packages to build and plot network data in R, and
4. how to export GEXF networks for visualization with the `sigma.js` Javascript library.

Demo material is available at

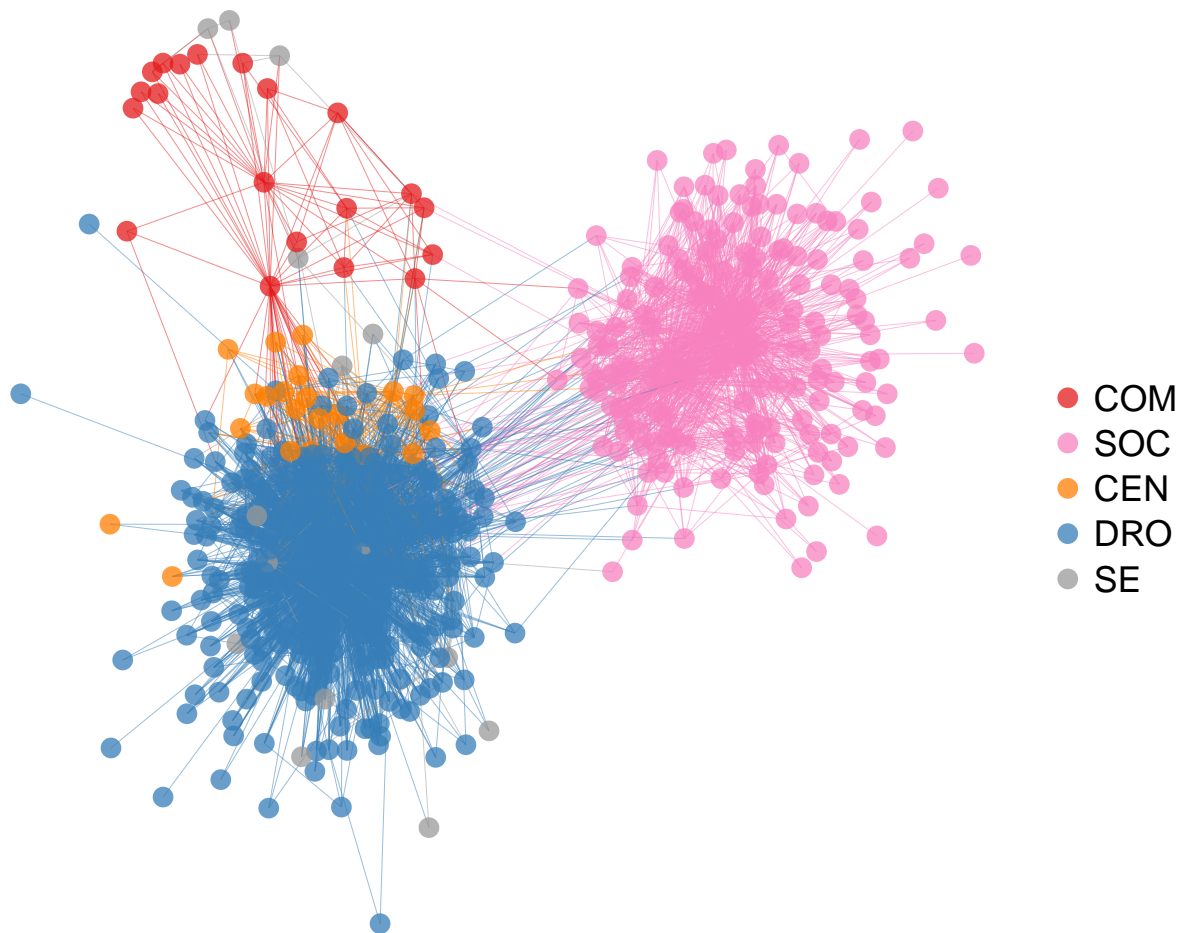
- <http://briatte.org/sigma> (interactive visualization)
- <https://github.com/briatte/flegscrap> (replication code)
- <https://github.com/briatte/neta> (training data)

References

- [1] Fowler, J. H. (2006) 'Connecting the Congress: A Study of Cosponsorship Networks', *Political Analysis*, **14**(4), 456–487.
- [2] Kirkland, J. H. (2013) 'Hypothesis Testing for Group Structure in Legislative Networks', *State Politics & Policy Quarterly*, **13**(2), 225–243.

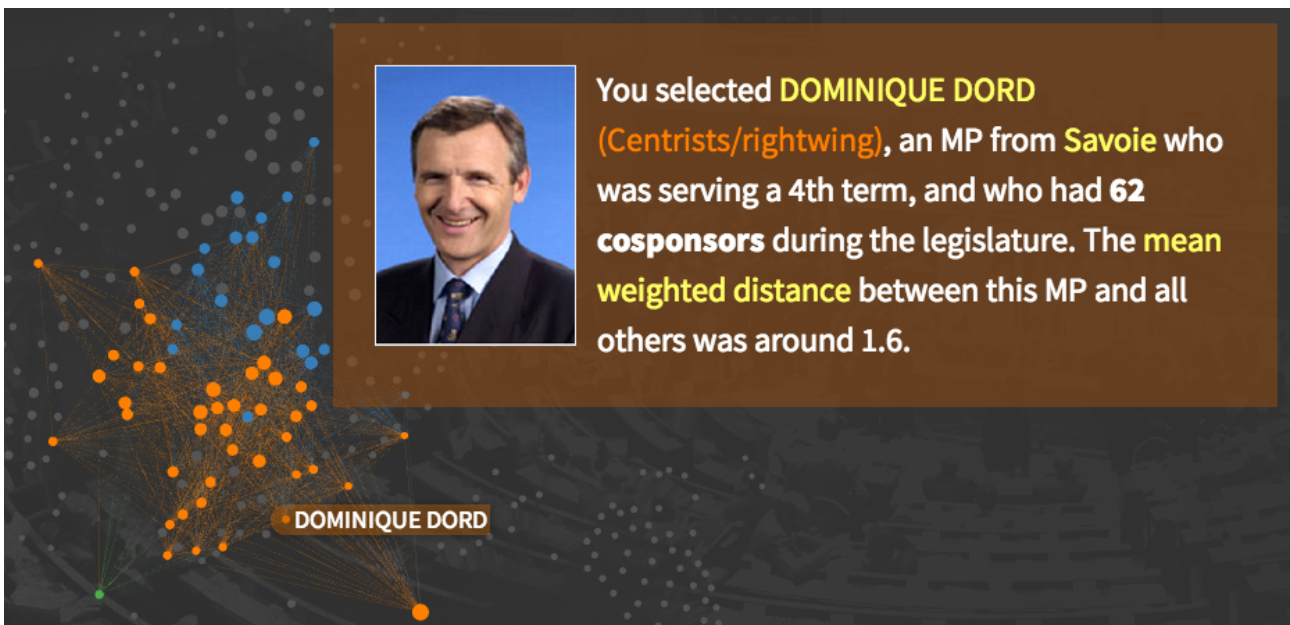
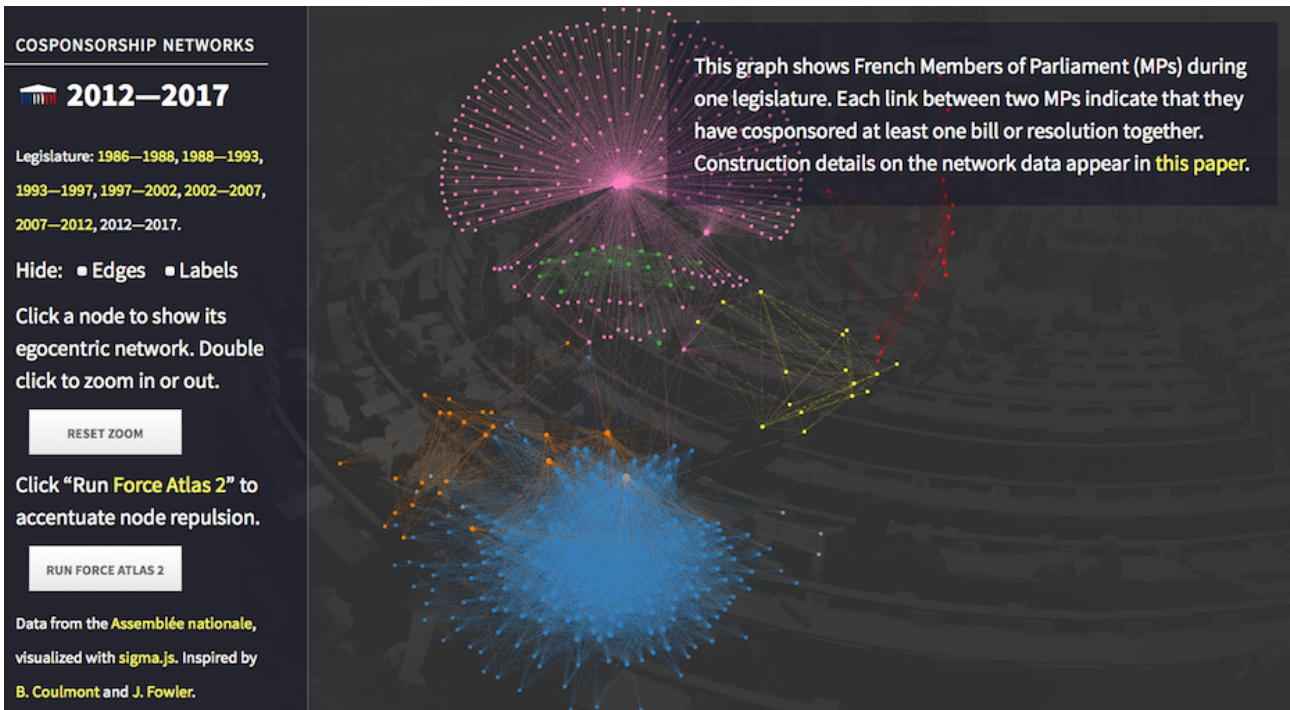
Appendix 1 to “Legislative Network Visualization with R”

Network visualization with R and ggplot2 using the `ggnetwork` function of the `GGally` package, showing bill and resolution cosponsorship between French *députés* from 2007 to 2012.



Appendix 2 to “Legislative Network Visualization with R”

Screenshots from the interactive visualization at <http://briatte.org/sigma> (requires Javascript). The network data were exported from R to GEXF with the `rgexf` package.



Additional references

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