

Université Cergy Paris



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Data visualization techniques

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Part 1

Aesthetic dimension of the production of a graph

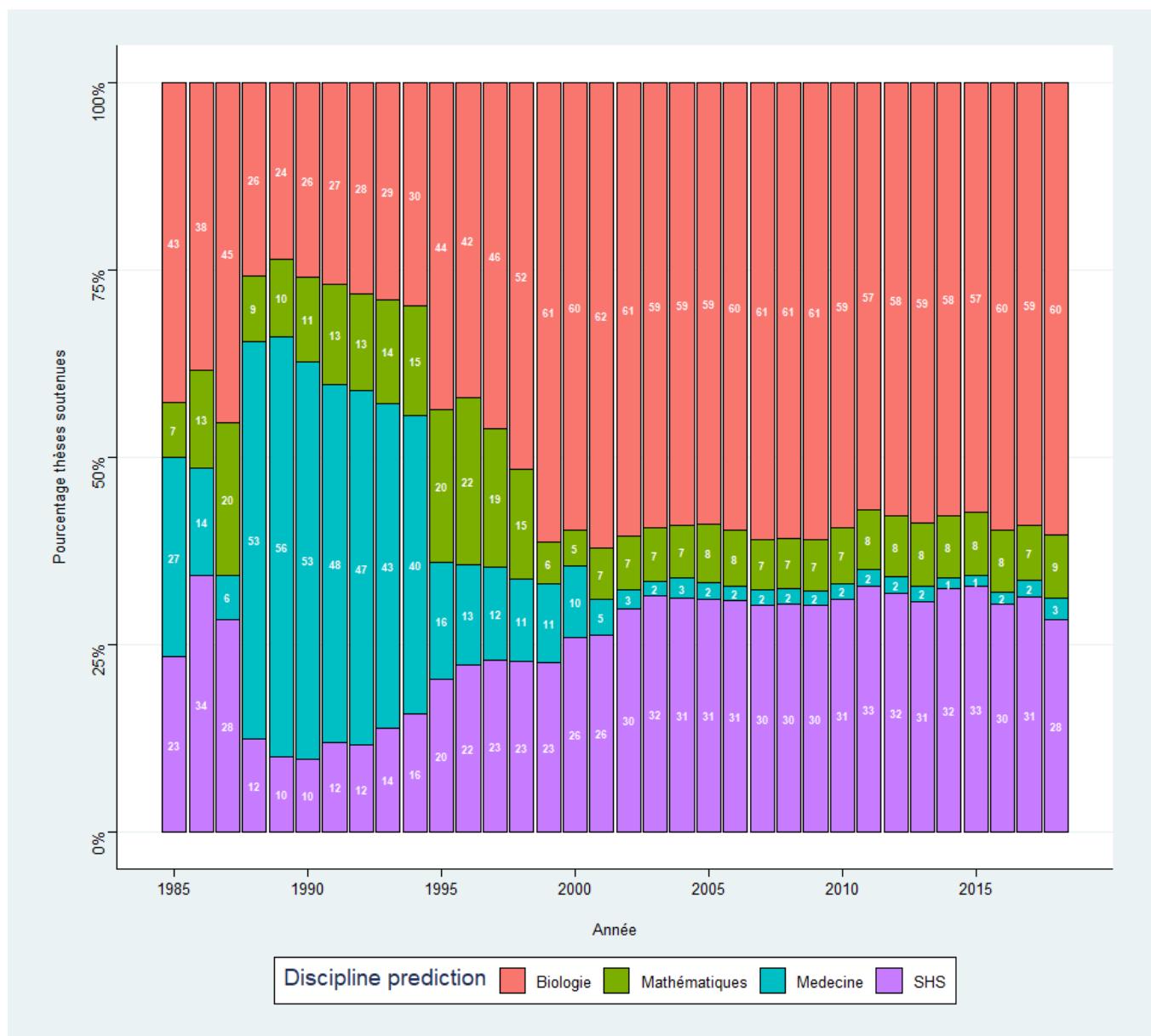


Figure 1: Percentage of thesis defended by discipline for the period from 1985 to 2018

Figure 1 represents the percentage of theses defended for each discipline over the years. We can see 3 periods. The period from 1985 to 1987 shows a dominance of theses defended in biology and SHS with an average of 42% and 28% respectively. Mathematics represents an average of 11% and medicine an average of 16%. The period from 1988 to 1994 shows a decline in theses defended in medicine from 53% to 40% and an increase in theses defended in biology, mathematics and SHS from 26% to 30%, 9% to 15% and 12% to 16% respectively. From 1995 until 2018, the number of theses defended in biology increased from 44% to 60%. Similarly, theses defended in SHS increase from 20% to 30%. For the same period, mathematics represents 20% to decrease to 9%. Medicine represents 16% to decrease to 3%.

Part 2

Production of animated and interactive graphs

Figure 2: Evolution of thesis defended in English by discipline over the years

Figure 2 represents an animation of the evolution of theses defended in English by discipline over the years. We can cut this evolution into 3 parts: 1985-1992, 1993-2000 and 2001-2018. The period from 1985 to 1992 is made up of biology, engineering science, media materials and chemistry and mathematics representing their respective ranks with about 20 theses for each discipline. The period from 1993 to 2000 is for biology, media materials and chemistry, mathematics in their respective ranks. About 75 theses are defended for biology, 60 theses are defended for media materials and chemistry, about 50 for mathematics. A group made up of earth science, management economics, engineering science and computer science appears with about 20 theses defended for each of the disciplines. The period from 2001 to 2018 sees the increase of English as the language of defense. Especially for media materials and chemistry with about 950 theses, biology with 750 theses, engineering science with 600 theses and computer science with 400 theses.

Part 3

Visualization of spatial data

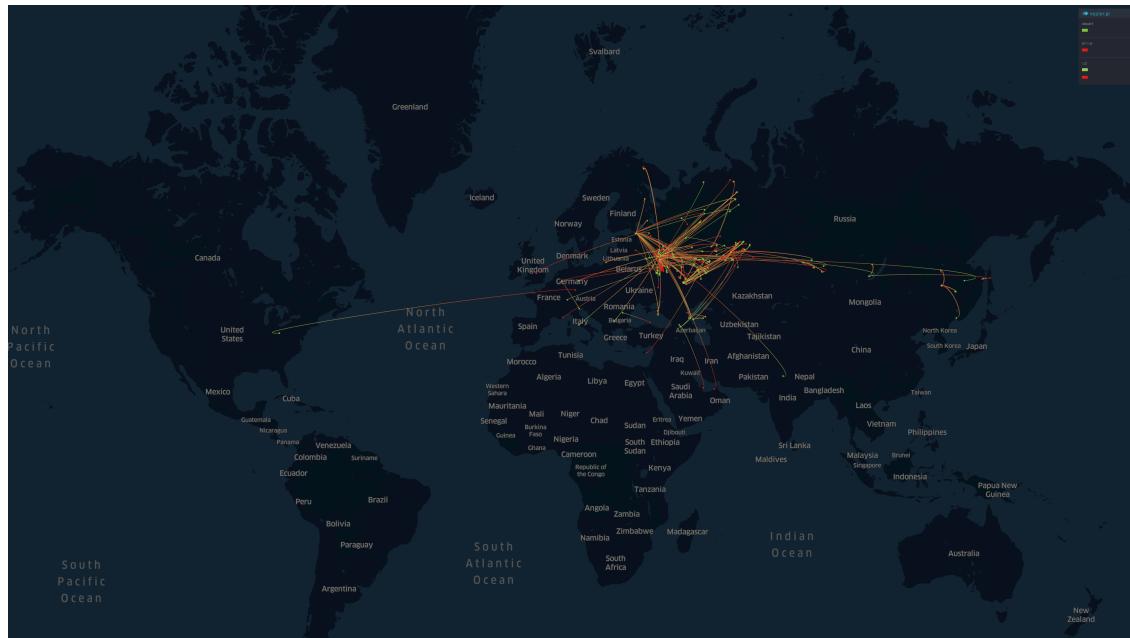


Figure 3: Flight to and from Russia for February 21, 2022

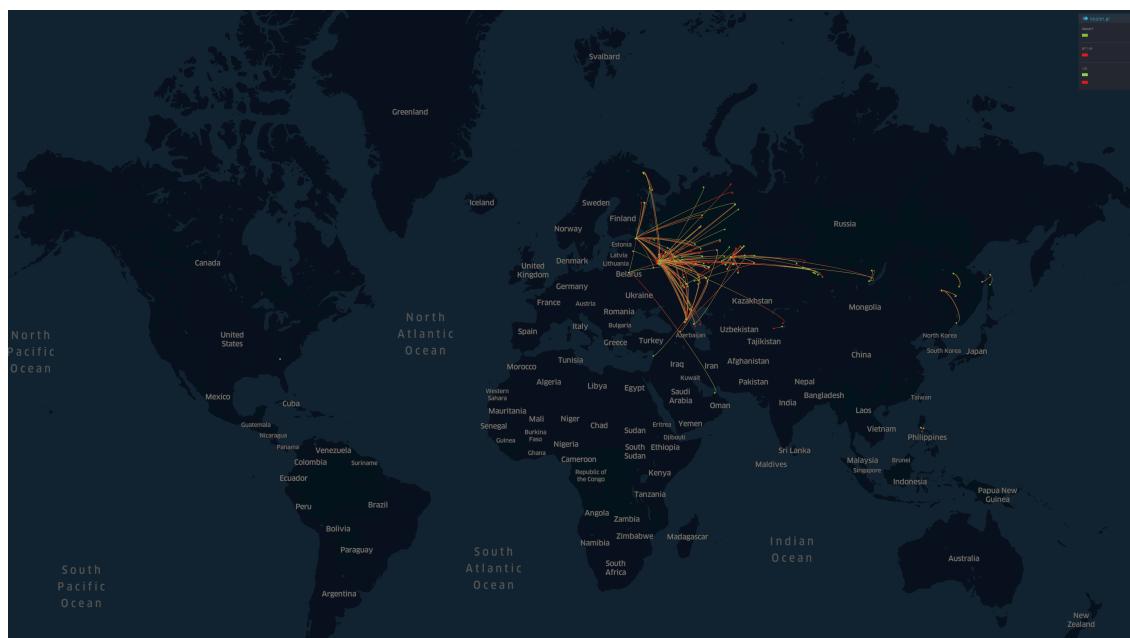


Figure 4: Flight to and from Russia for February 28, 2022

Figures 2 et 3 show flights to and from Russia for February 21, 2022 and February 28, 2022 respectively. There are 250 flights represented for February 21 and 209 for February 28. This difference is explained by the fact that on February 24, 2022 Russia invaded Ukraine, leading to a response from Western countries, one of the forms of which is the banning of flights from or to Russia from February 27, 2022. This was done using kepler.gl website.

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