

Visualizing composite data on the Lexis surface

What share of a population features attribute i at period t and age x ?

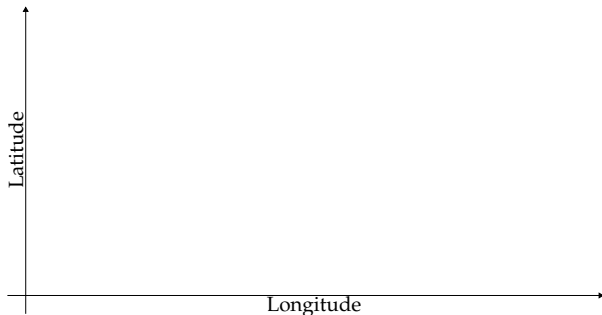
Jonas Schöley

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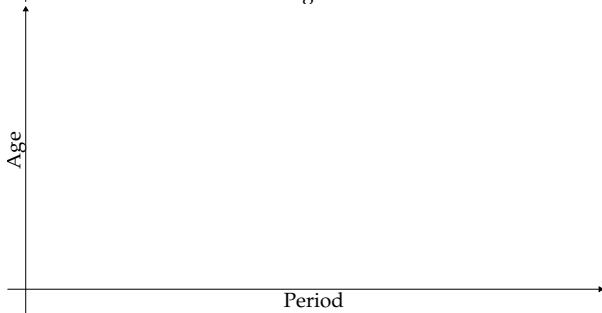


European
Doctoral School
of Demography

Predefined Visual Spaces

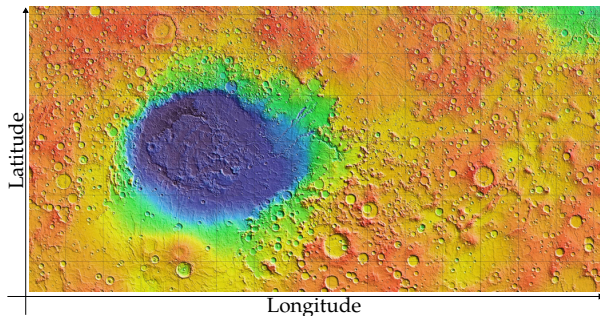


A spatial map.



A temporal map.

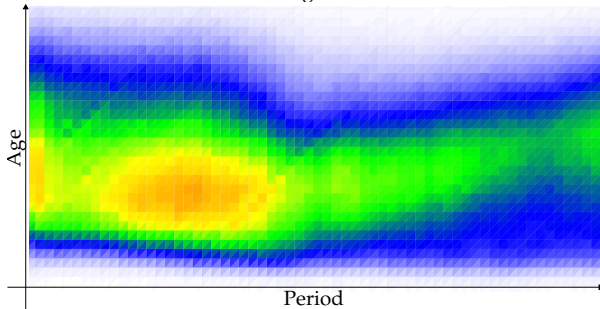
Predefined Visual Spaces



A spatial map

The surface of Mars with elevation encoded by colour.

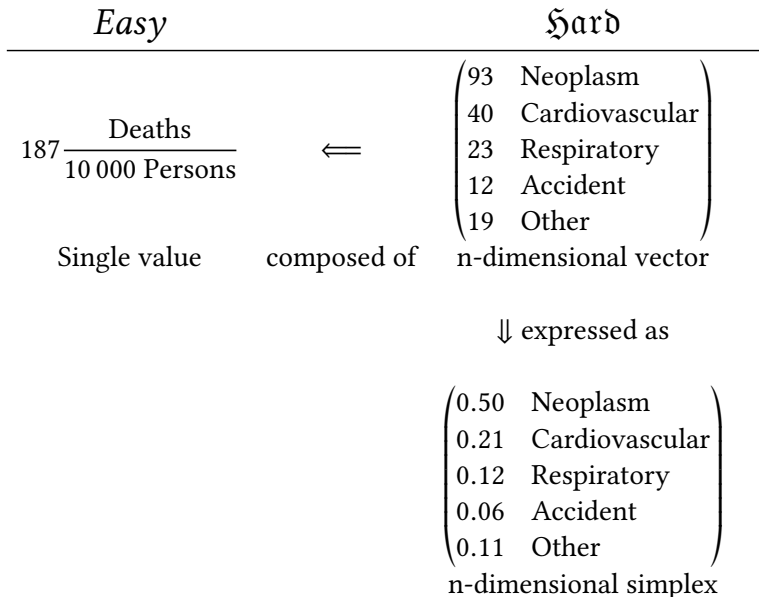
NASA 2000.



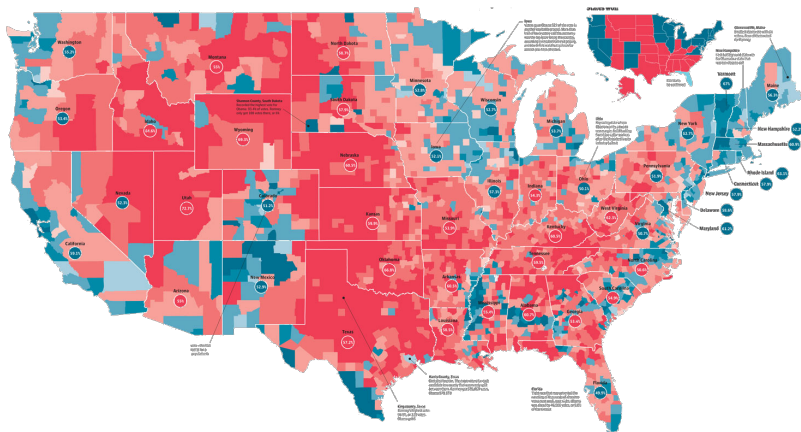
A temporal map

Fertility rates in Scotland since 1945 with rate encoded by colour. *Modified from Riffe 2011.*

Plotting data: Magnitudes vs. Compositions



Binary compositions on a surface



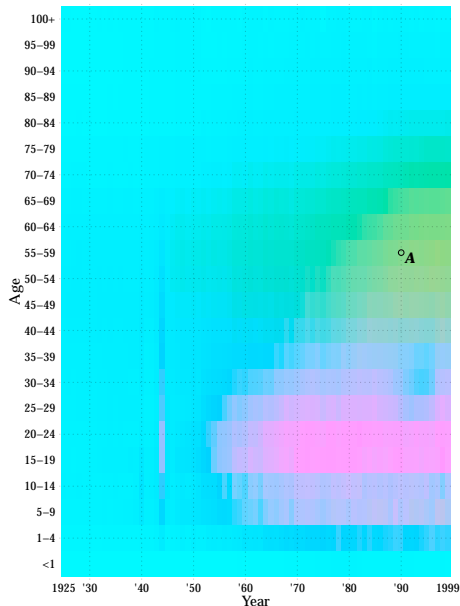
Divergent colour scale

US presidential election 2012.

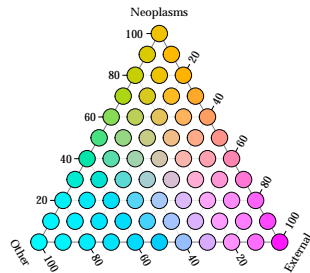
Proportion of people voting for Democrats vs. Republicans.

Guardian Graphics 2012.

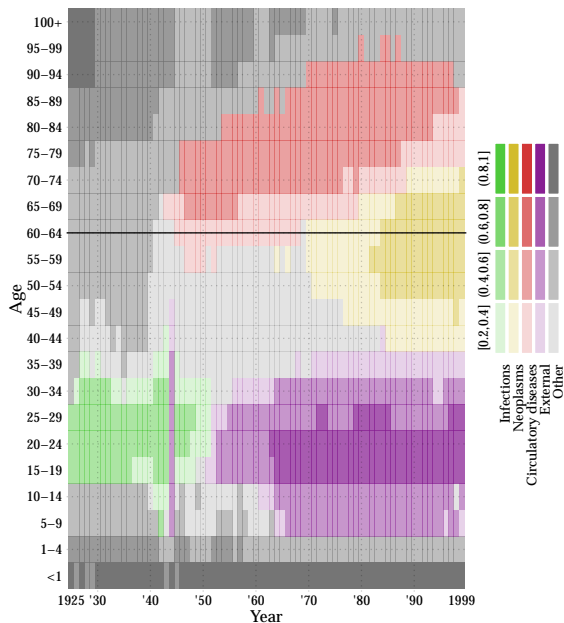
Ternary compositions on a surface



Ternary-balance-scheme
 Proportion of people dying from a given cause by time and age. *France, total population.*



N-dimensional compositions on a surface

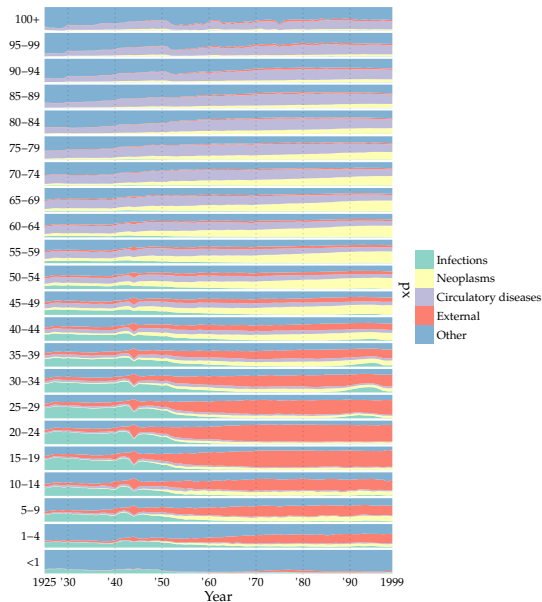


Qualitative sequential scheme

Proportion of people dying from the most prominent cause in a given time and age.

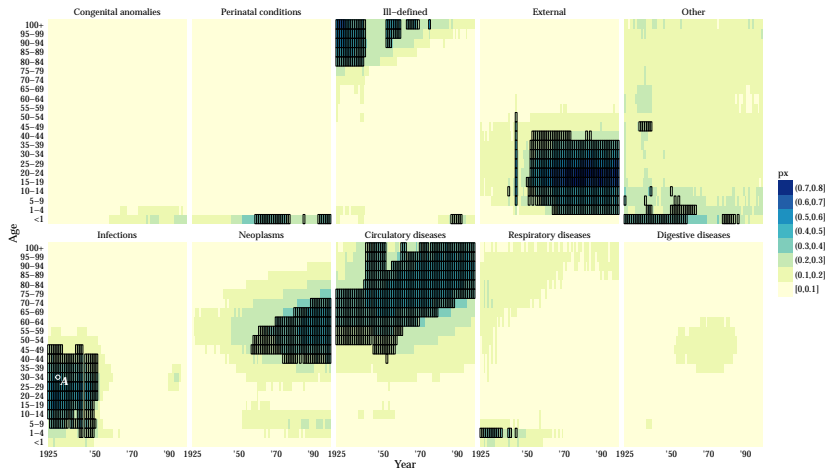
France, total population.

N-dimensional compositions on a surface



Age-wise-area-chart
Proportion of people dying from a given cause by time and age.
France, total population.

N-dimensional compositions on a surface



Small-multiples

Proportion of people dying from a given cause by time and age. *France, total population.*

References

- Brewer, Cynthia A. (1994). “Color Use Guidelines for Mapping and Visualization”. In: ed. by Alan M. MacEachren and D. R. Fraser Taylor. Vol. 2: Visualization in Modern Cartography. Modern Cartography Series. Academic Press. Chap. 7, pp. 123–147.
- Guardian Graphics (2012). *US election 2012 results visualised*. Online 2015–01–15. URL: <http://www.theguardian.com/news/datablog/2012/nov/07/us-elections-2012-results-map>.
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- Riffe, Tim (2011). *Equilateral Lexis Triangles?* Online 2015–01–15. URL: <https://sites.google.com/site/timriffepersonal/DemogBlog/equilaterallexistriangles>.
- Schöley, Jonas and Frans Willekens (2015). “Visualizing compositional data on the Lexis surface”. In: *PAA 2015 conference paper*.