Maps can be rubbish for visualising global data: a look at other options.

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Keywords: maps, global data, visualisation, rworldmap, R

Global maps can be beautiful and people (myself included) love to see them and put them in their academic papers. I’ve even developed an R package rworldmap focussed on making global maps (South, 2011). A map, however, is not necessarily the best way of communicating global data. Here I will explore potential disadvantages to using maps to communicate global data and outline solutions and alternatives, showing how to implement these in rworldmap and other R packages.

I will concentrate on global country-referenced data which has become increasingly available over the past ten years as a result of improved remote sensing, better storage and reporting of national statistics and an increasing fondness for the creation of composite indices such as the UN Human Development Index. Hans Rosling has accelerated this process for over 5 years with his beautiful and inspiring gapminder software, which itself demonstrates the power of taking world data away from the map. Unlike gapminder I will focus on static graphics for academic papers and the print media, but I will show briefly how the excellent shiny and googleVis packages can be used to create interactive visualisations of country referenced data.

The great resources in R for accessing such global country referenced data will be demonstrated briefly. For example the packages FAOSTAT and WDI make it easy to access country-referenced data from the FAO and World Bank Development Indicators respectively.

Data visualisation principally uses symbols, size, positioning and colour to communicate quantitative and qualitative information. World maps instantly communicate information about global patterns but aspects of the data can be lost due to differences in the size of countries and perceptual difficulties in comparing the size and/or colour of symbols not placed on a regular xy axes. I will demonstrate how R can be used to address these issues.

This talk will complement the mapping tutorial I am giving at the start of useR 2013. Attendees at both will get different information, however attendance at either is not necessary for the other.

References
