Geofaceting

align small-multiples for regions in a spatially meaningful way

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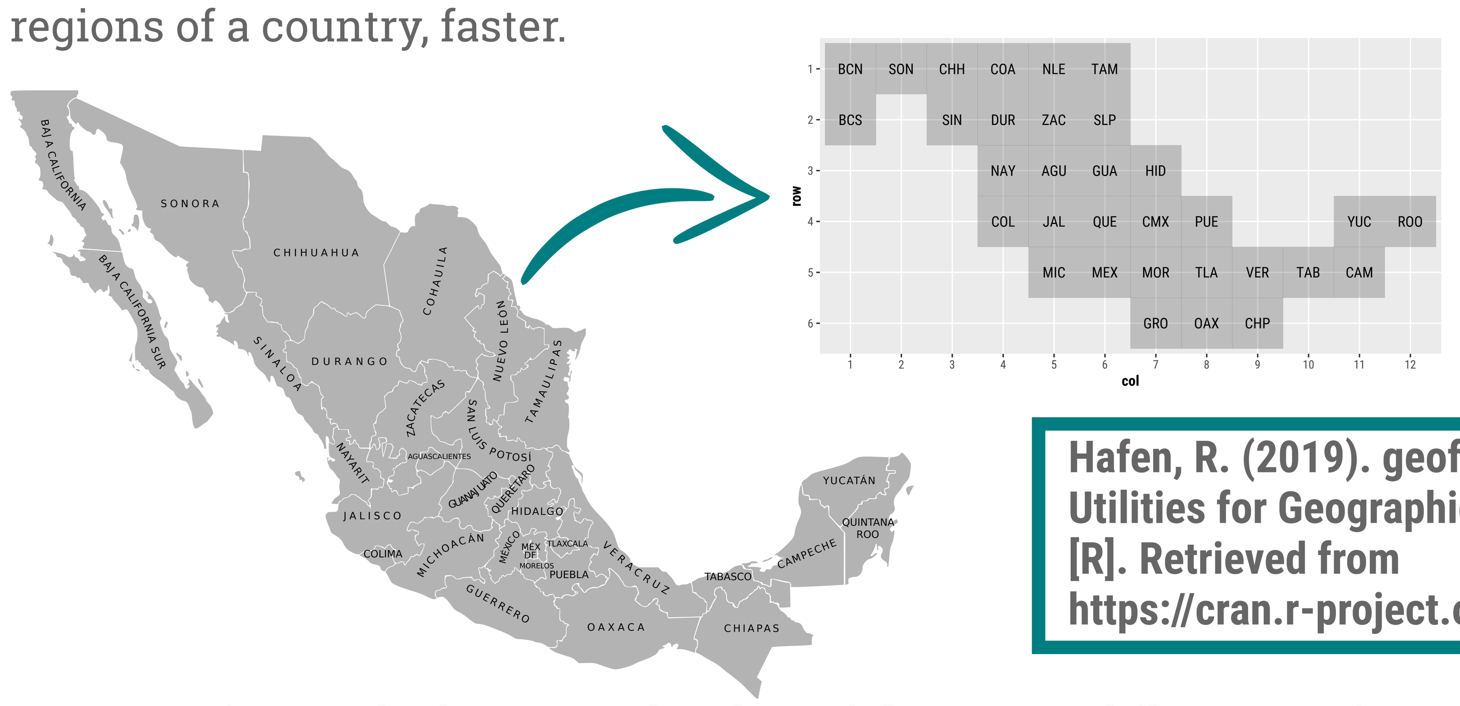
The idea of **geofaceting** is brilliantly simple: a "normal" plot is produced for each of the regions, and then all the small panels are arranged according to their **approximate geographic location** thereby making it easier to identify regions. The spatial logic of small-multiples alignment helps to identify the units of analysis, usually regions of a country, faster.



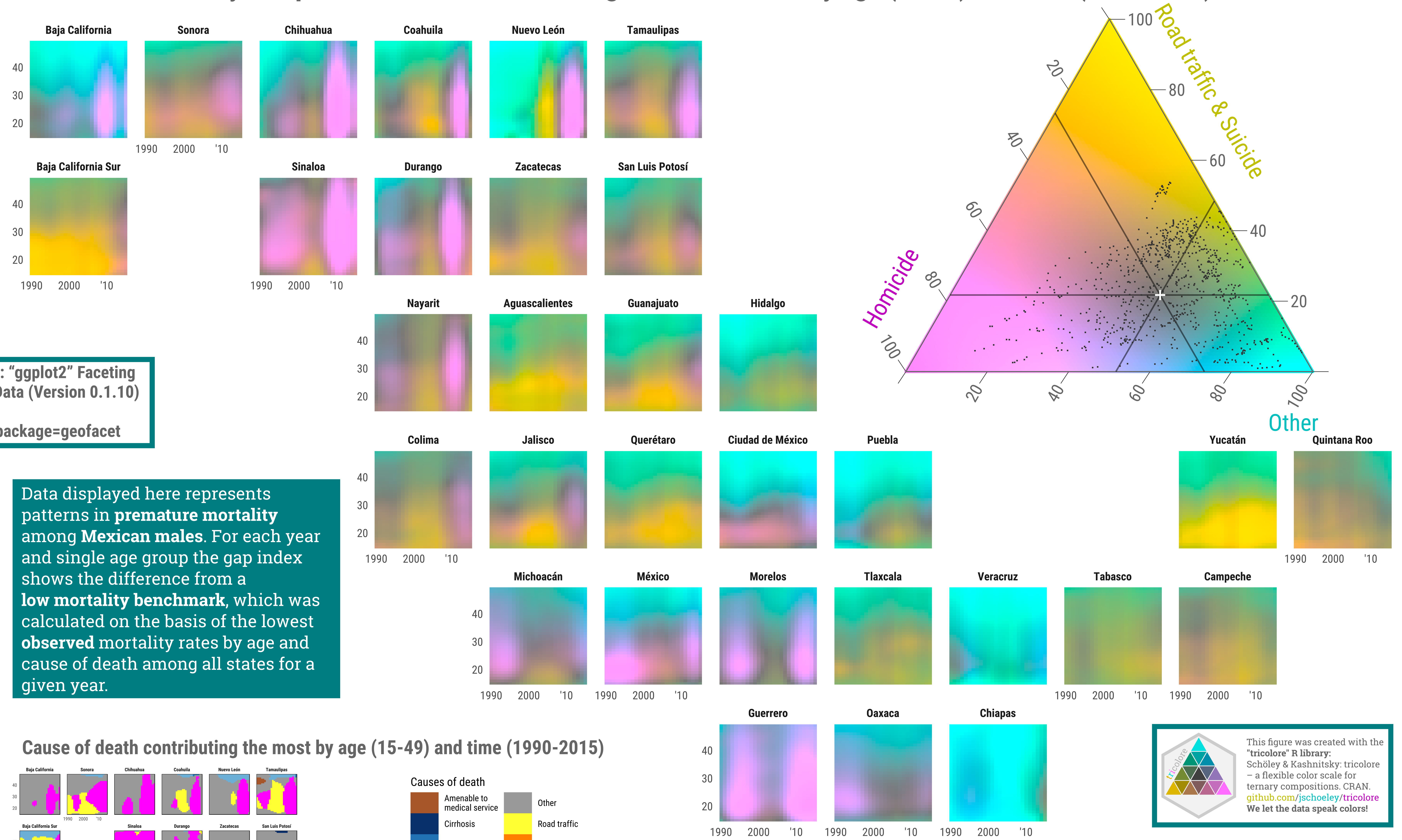
Hafen, R. (2019). geofacet: "ggplot2" Faceting Utilities for Geographical Data (Version 0.1.10) [R]. Retrieved from https://cran.r-project.org/package=geofacet

Moreover, it reveals the **macro-level spatial pattern** while preserving the flexibility of visualization technique choice for the small-multiples themselves. As a result, creating geofaceted visualizations give all the advantages of standard plots in which one can easily display at least three dimensions of a dataset.

There are some **limitations** of the approach. For example, if a territory is divided in a large, or very small, number of regions the geofaceting might not be the ideal approach to show complex phenomena. Moreover, if a territory is oddly shaped, or unevenly distributed, getting the proper regional representation might be impossible.

Gap between observed and best-practice temporary life expectancy for Mexican males (15-49)

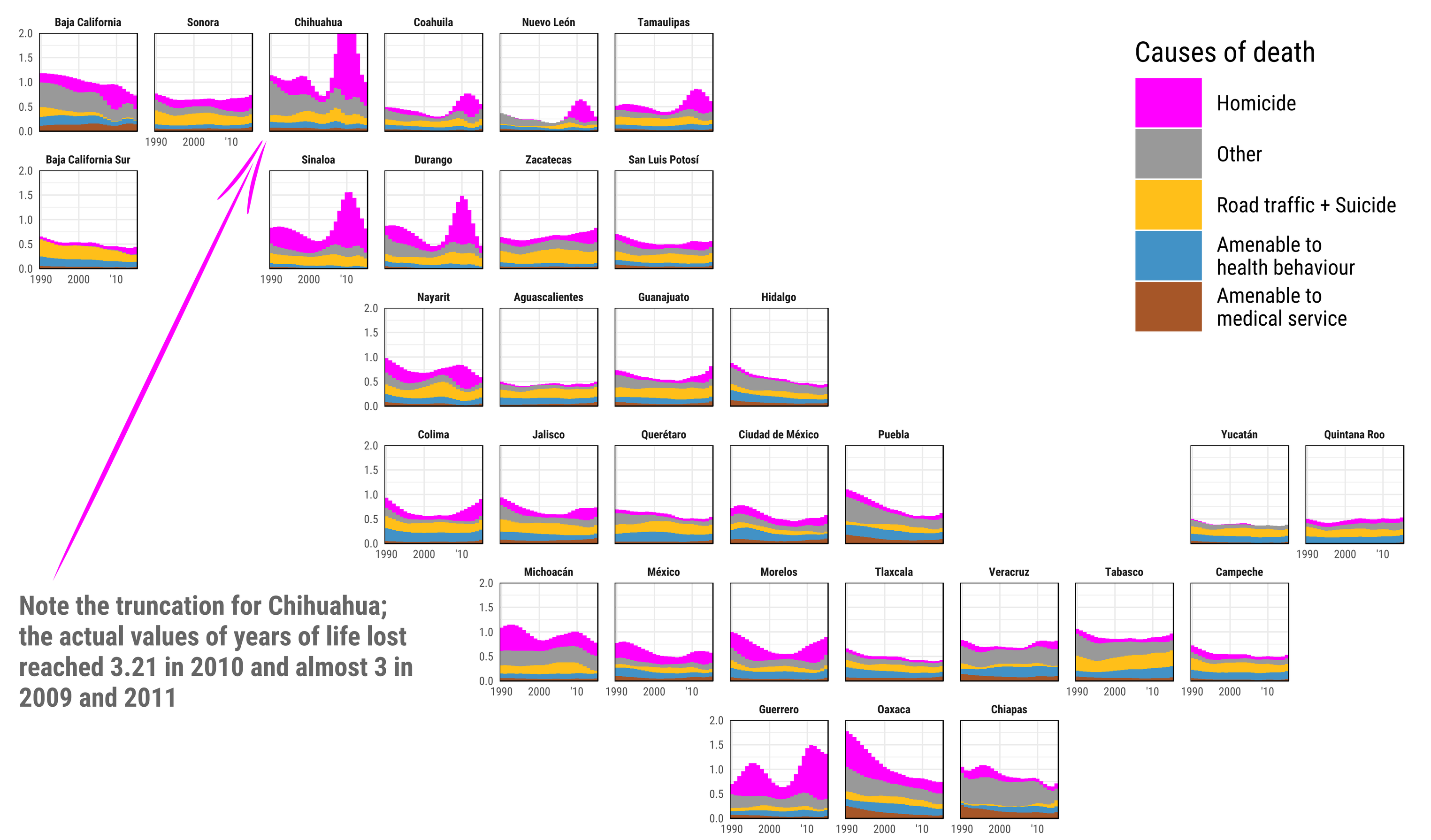
Colorcoded ternary compositions of the three leading causes of death by age (15-49) and time (1990-2015)



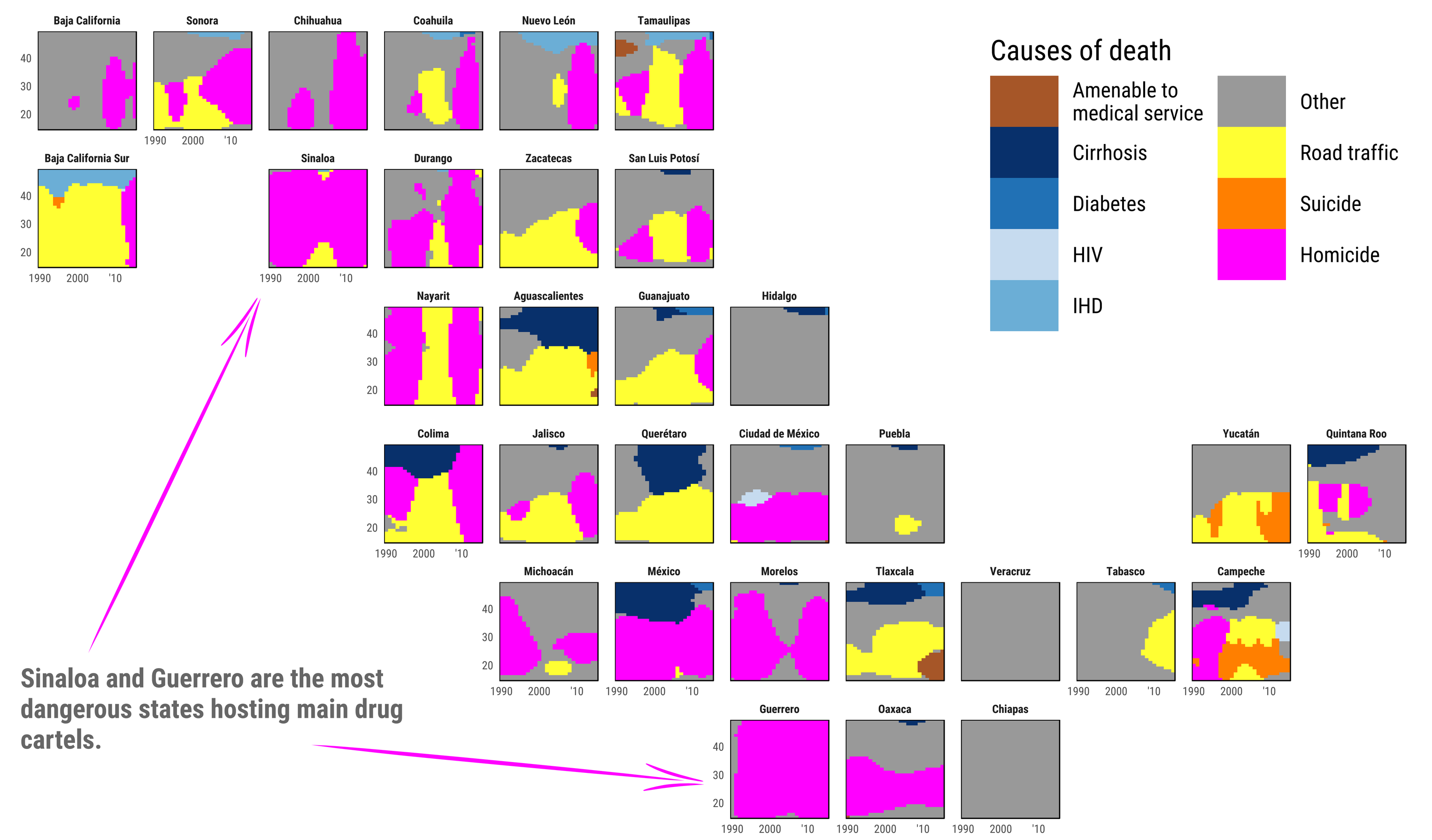
Data displayed here represents patterns in **premature mortality** among **Mexican males**. For each year and single age group the gap index shows the difference from a **low mortality benchmark**, which was calculated on the basis of the lowest **observed** mortality rates by age and cause of death among all states for a given year.

This figure was created with the **"tricolore" R library:** Schöley & Kashnitsky: tricolore – a flexible color scale for ternary compositions. CRAN. github.com/jschoeley/tricolore **We let the data speak colors!**

Years of life lost by cause of death across time (1990-2015)



Cause of death contributing the most by age (15-49) and time (1990-2015)



Ternary colorcoding is a data visualization technique that maximizes the amount of information conveyed by colors; R package {**tricolore**}. Each element of in a three-dimensional array of compositional data is represented with a unique color. Colors show direction and magnitude of deviations from the grey center point, which marks the average composition of cause-specific premature mortality in Mexico. Hue component of a color encodes the **direction** of deviation: towards magenta – more homicides; yellow – more road traffic deaths and suicides; cyan – all other causes. Chroma and lightness components signify the **distance** from the center.

More details in Kashnitsky & Schöley (2018) The Lancet