

# Using Color in Data Visualization

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@rettungstweet

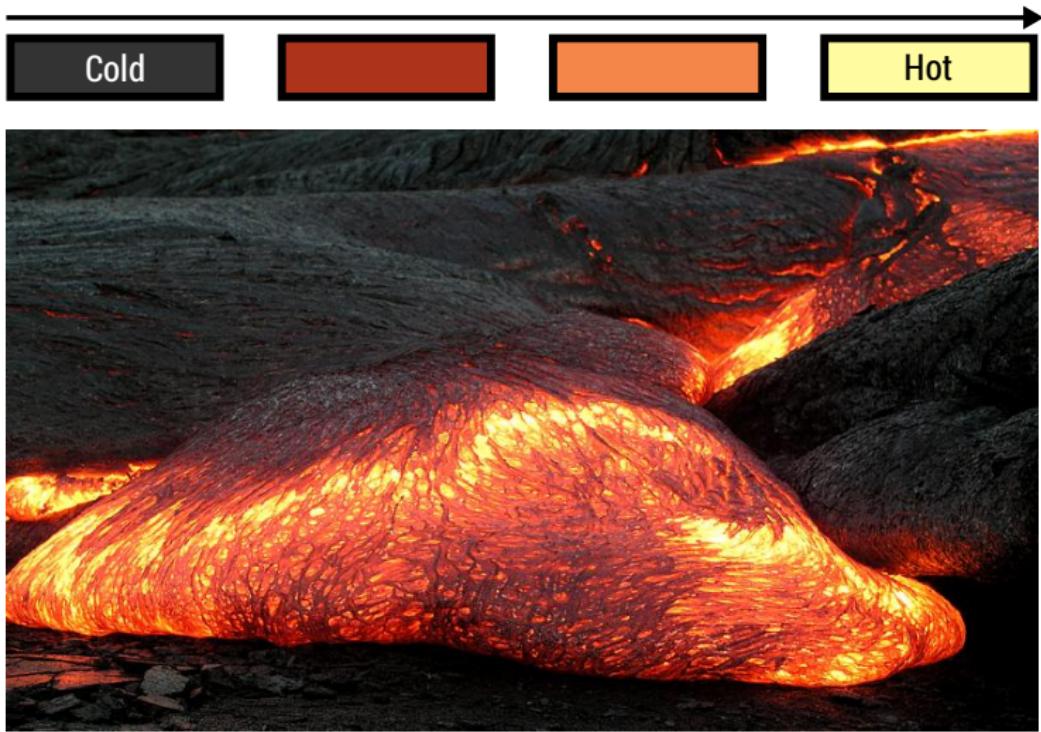


Department of Public Health  
University of Southern Denmark

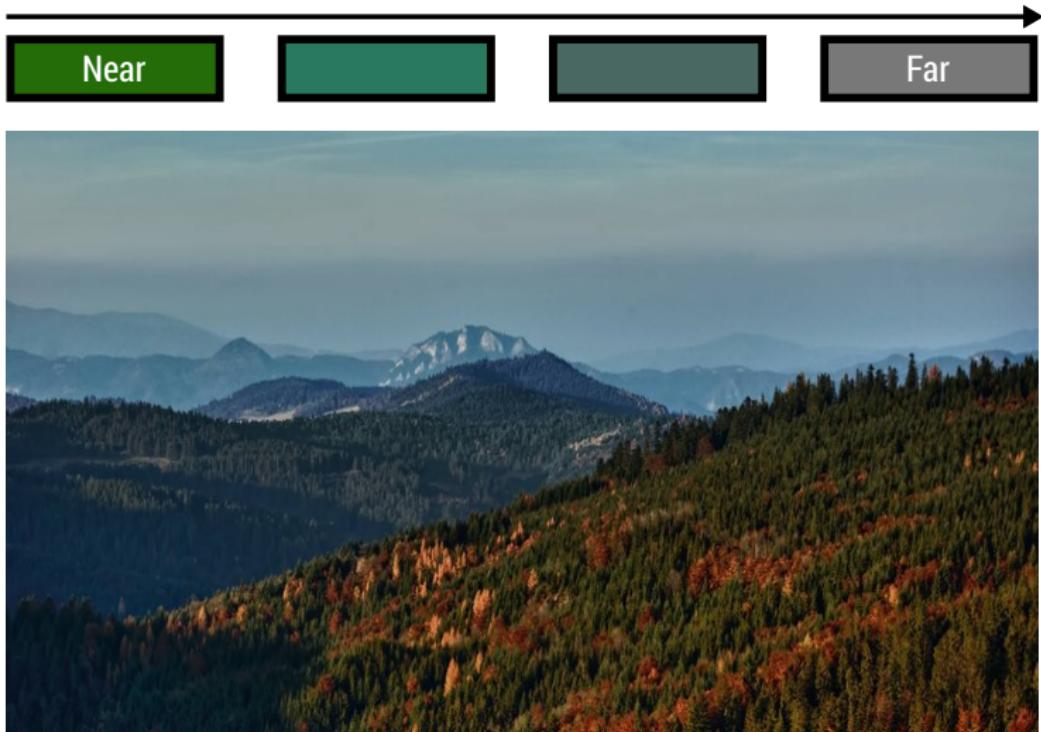


Max-Planck Odense Center  
on the Biodemography of Aging

# Color-coding Magnitudes



# Color-coding Magnitudes



# Color-coding Categories

Operations

Captain

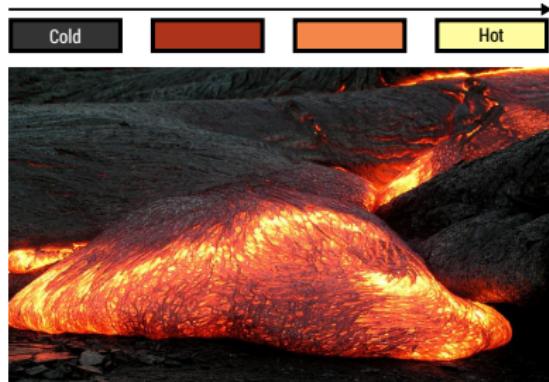
Sciences

Command



# Color-coding Data

Magnitudes (ordered)



Near



Far



Categories (unordered)



Luminance

dark



bright

Saturation

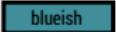
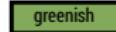
pale



saturated

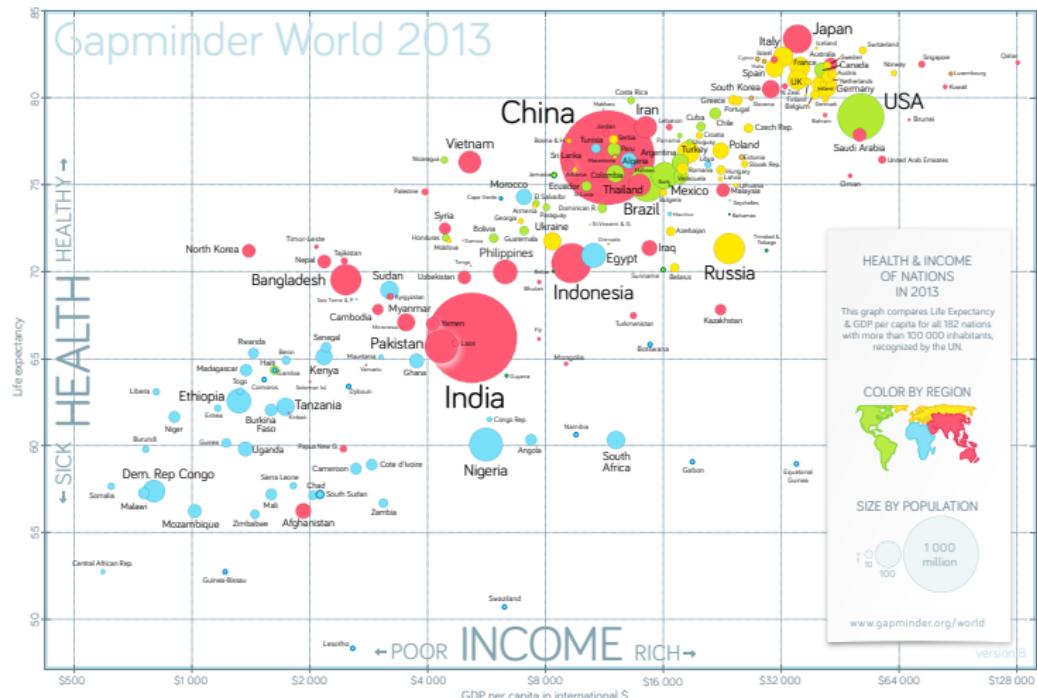
Hue

reddish



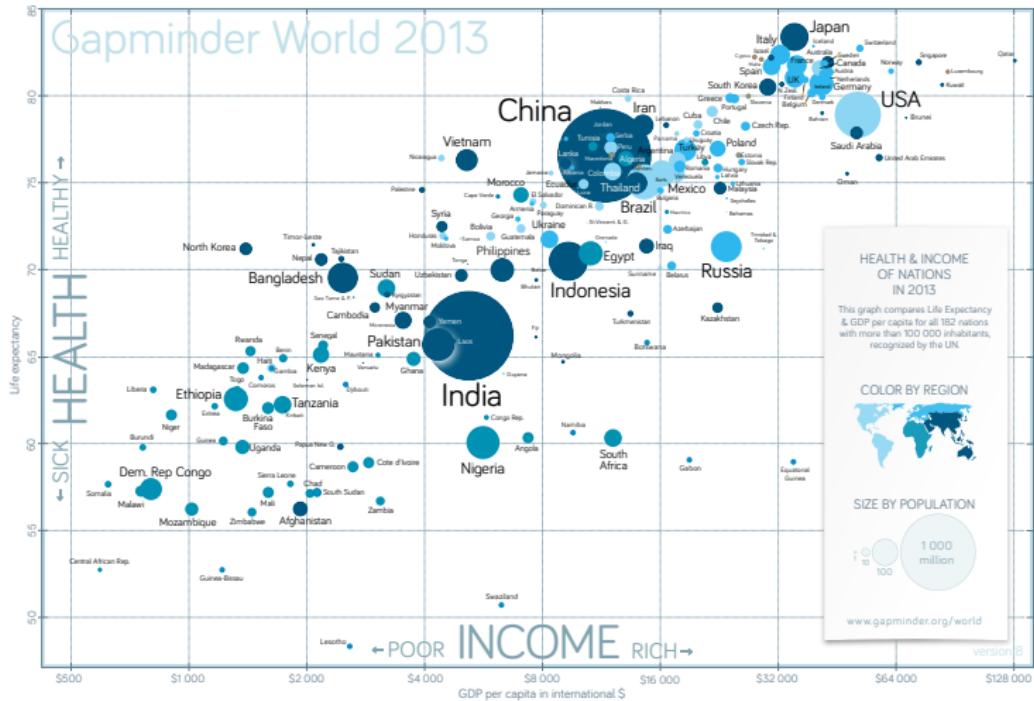
yellowish

# Color for Categorical Data



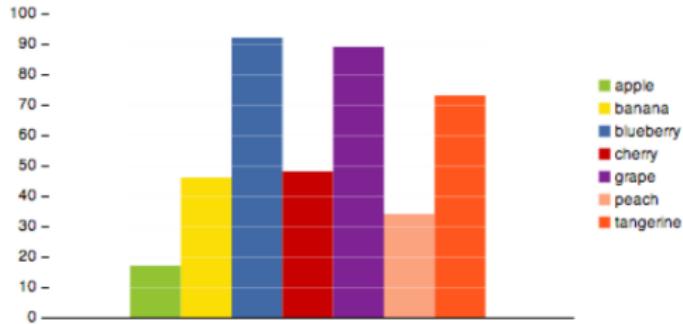
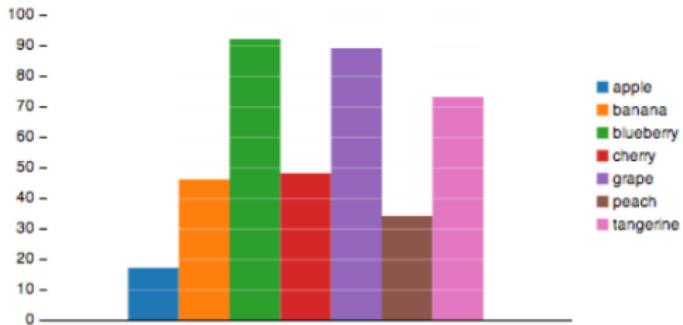
DATA SOURCES — INCOME: World Bank's GDP per capita, FPP (constant 2010 International \$) as of Jan 14 2013, with a few additions by Gapminder. Wealth axis uses log-scale to show doubling of incomes as same distance on all levels. — LIFE EXPECTANCY: HM& 2014 Available from <http://vizhub.healthdata.org/> (Accessed Jan 14 2015). — POPULATION: UN World Population Prospects: The 2012 Revision. — FREE TEACHING MATERIALS: [www.gapminder.org/world](http://www.gapminder.org/world) LICENSE: Creative Commons Attribution License 3.0, which means please share! Based on a free chart from [www.gapminder.org/](http://www.gapminder.org/).

# Ineffective Color-coding



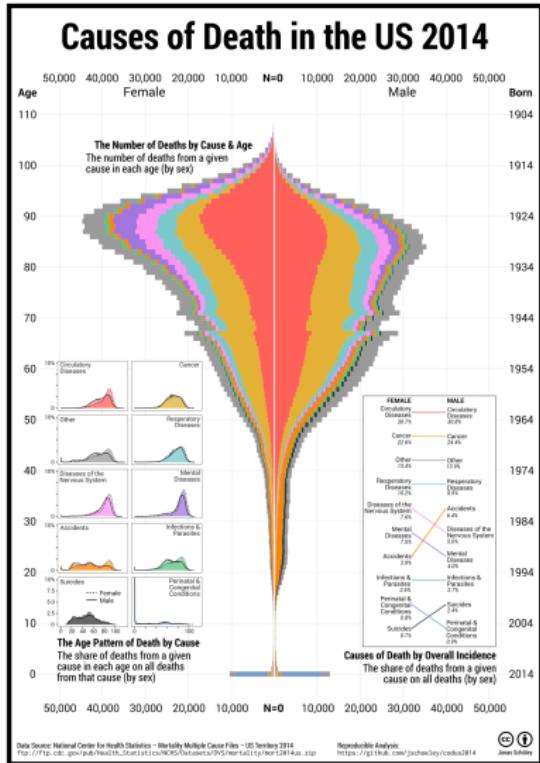
Redrawn from Gapminder World (2014).

# Pick Meaningful Colors

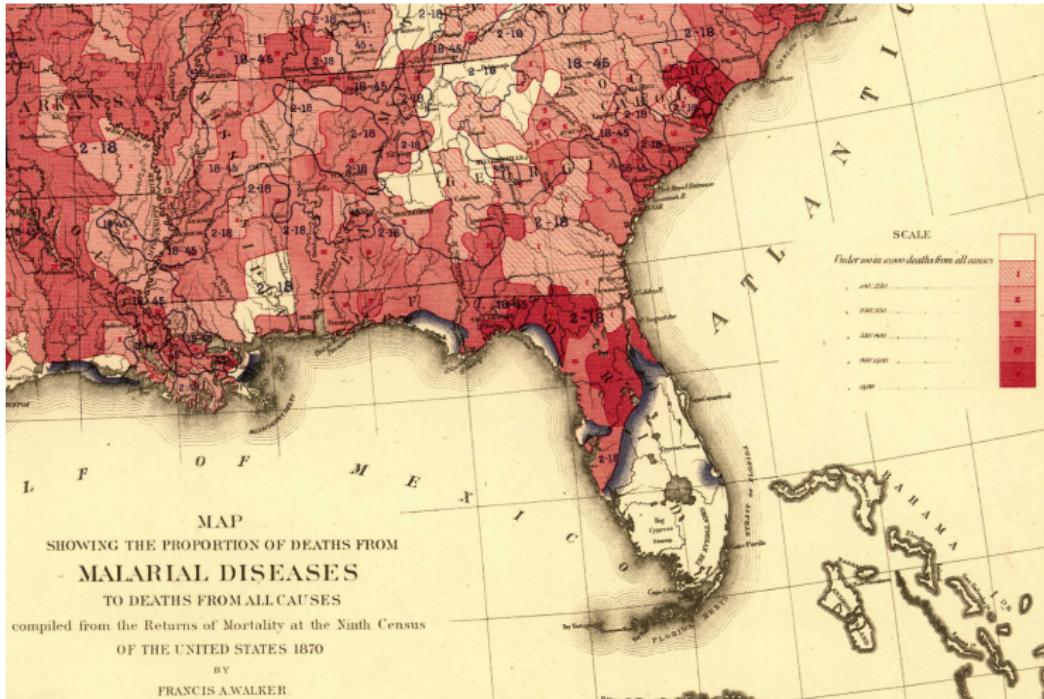


Sharon Lin et al. (2013). "Selecting Semantically-Resonant Colors for Data Visualization". In: *Computer Graphics Forum* 32.3, pp. 401–410.

# How Would You Color Death?

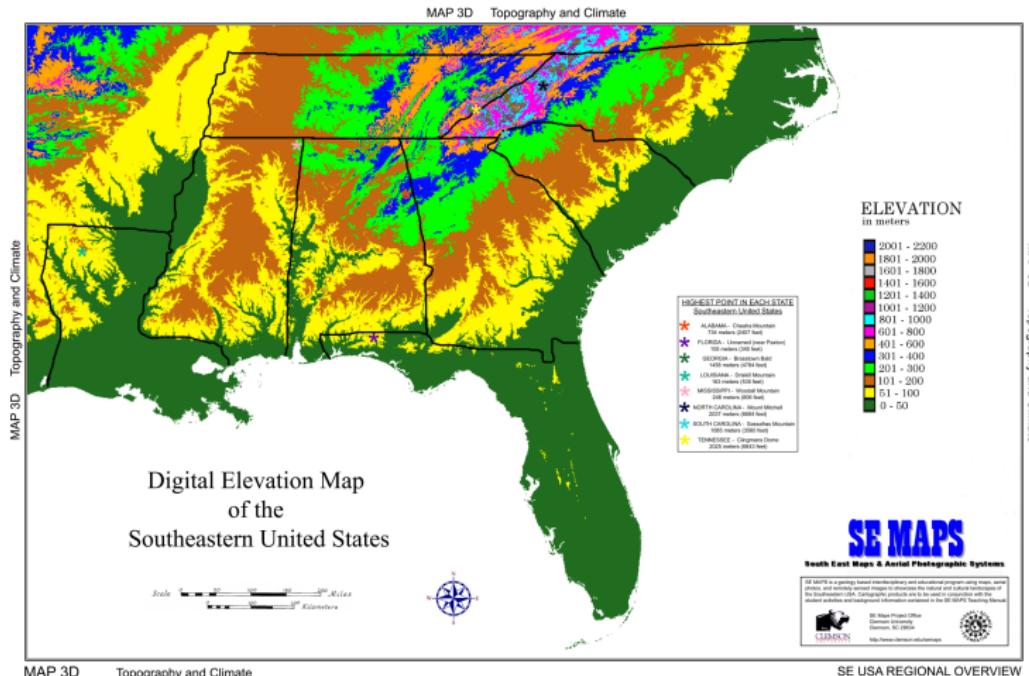


# Color for Metric Data



Cutout from Francis Walker (1874). "Statistical Atlas of the United States". <https://www.loc.gov/item/05019329/>

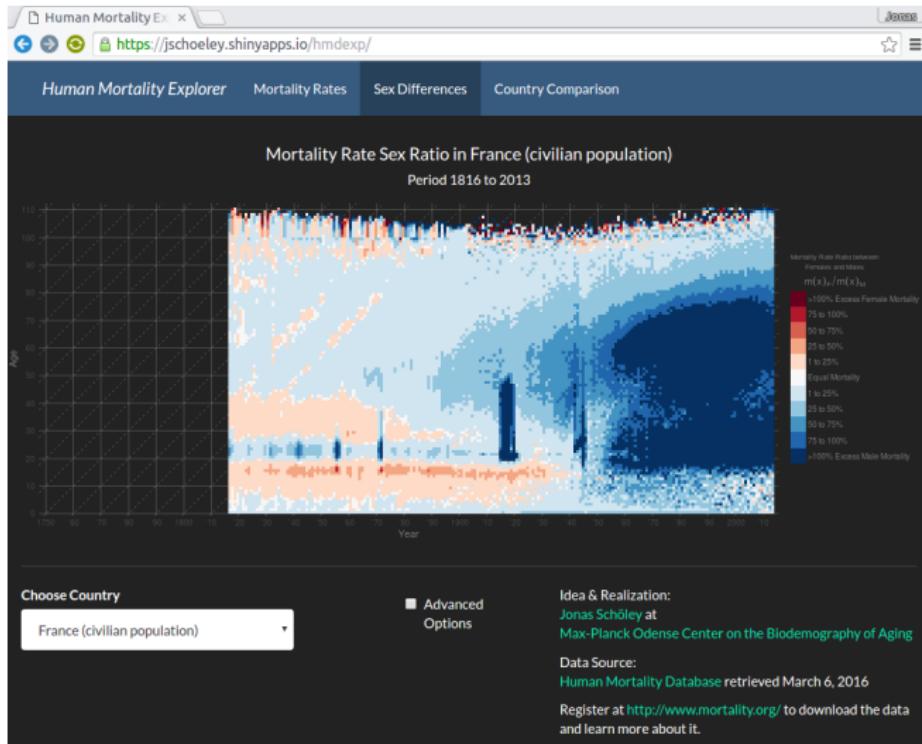
# Ineffective Color-coding



# Discrete vs. Continuous Color Scales



# Color for Divergent Data

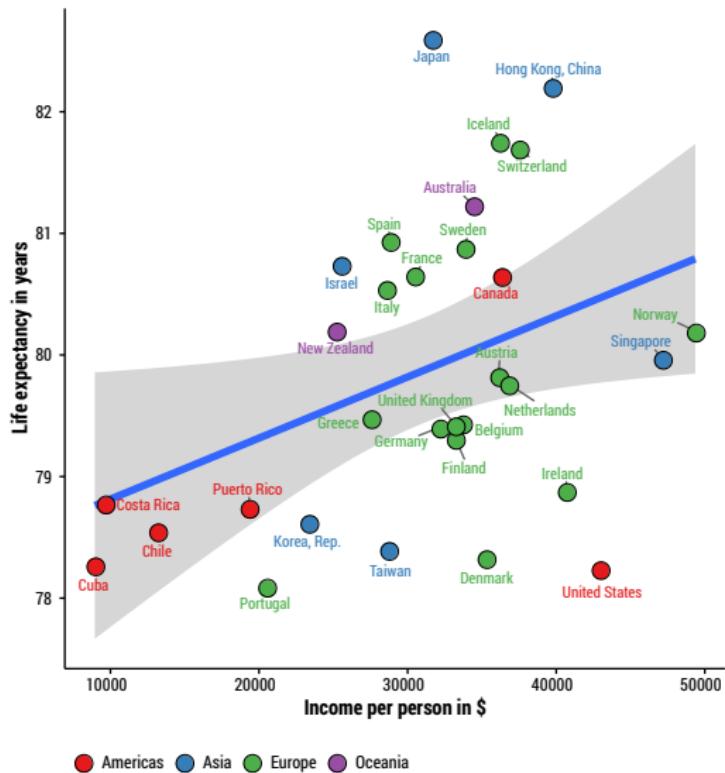


# Separating Foreground & Background



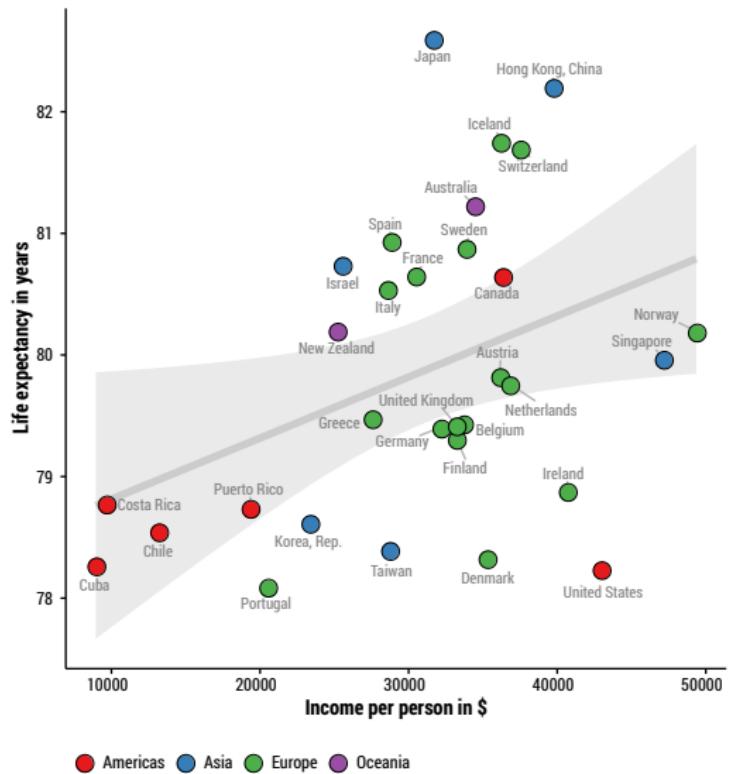
Pablo Picasso (1905). "Au Lapin Agile".

# Separating Foreground & Background

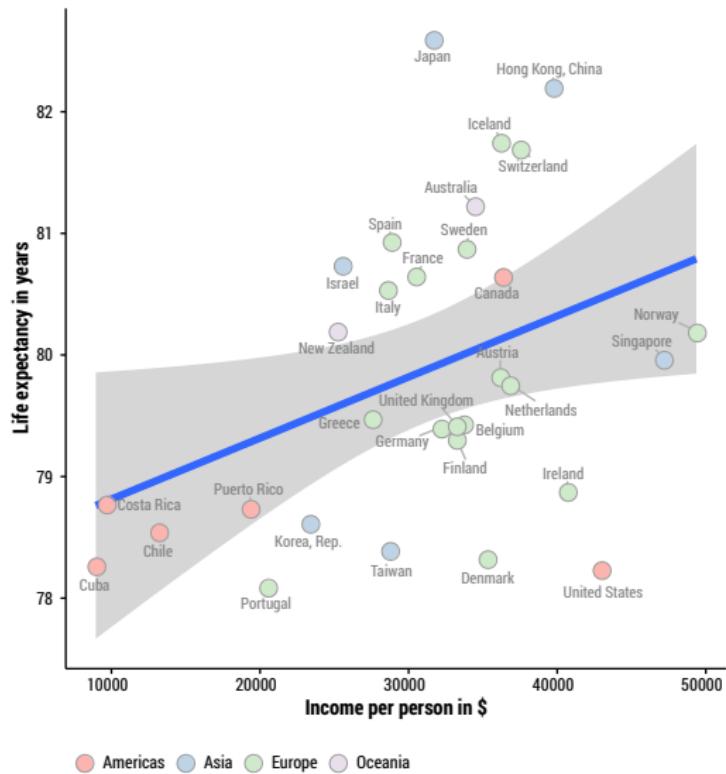


Data: gapminder.org – displayed are data for the year 2007.

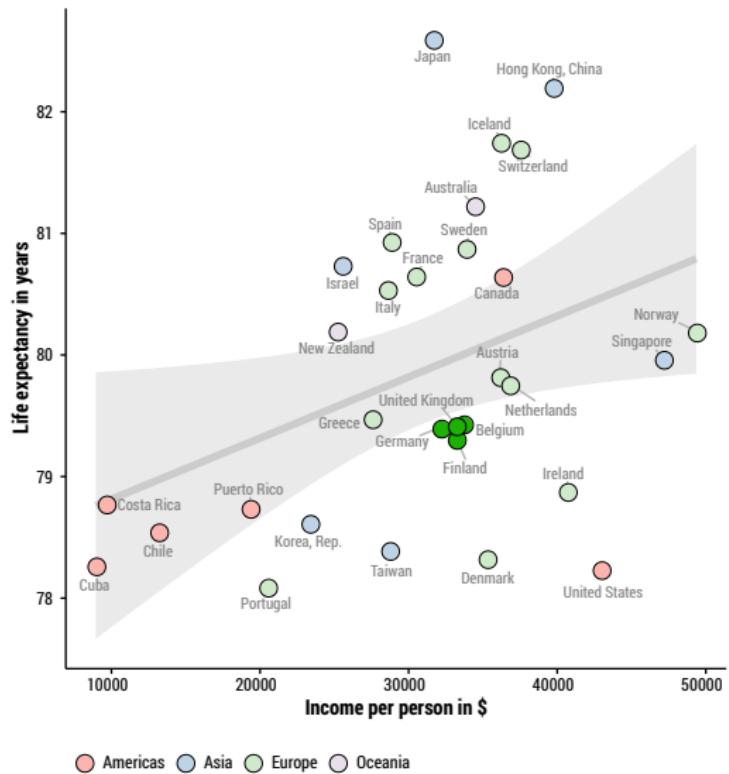
# Separating Foreground & Background



# Separating Foreground & Background



# Separating Foreground & Background



# You Take Control!

