

# Personal Practices in Data Visualization

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# Agenda

## We won't talk about

- How to solve an analytical question
- How to analyze our data
- What graph to fit to our question

## We will talk about

- Chart clutter
- Preattentive attention
- Minimalism

# Data Visualization - Examples



# Data Visualization

Data visualization is the **representation of data** through use of common graphics, such as charts, plots, infographics, and even animations. These **visual displays of information** communicate complex data relationships and data-driven insights in a way that is **easy to understand**.

*~ IBM*

Practical example

## Analytical request

How has Israel's life expectancy changed across the years compared to other countries?

# ~~Present the data~~

entity	year	life_expectancy_oecd
Israel	1971	71.8
Israel	1972	71.5
Israel	1973	71.7
Israel	1974	71.7
Israel	1975	72.1
Israel	1976	73.0
Israel	1977	73.0
Israel	1978	73.3
Israel	1979	73.6
Israel	1980	73.9
Israel	1981	74.3
Israel	1982	74.2
Israel	1983	74.5
Israel	1984	74.9
Israel	1985	75.3
Israel	1986	75.0
Israel	1987	75.3
Israel	1988	75.7
Israel	1989	76.4
Israel	1990	76.7



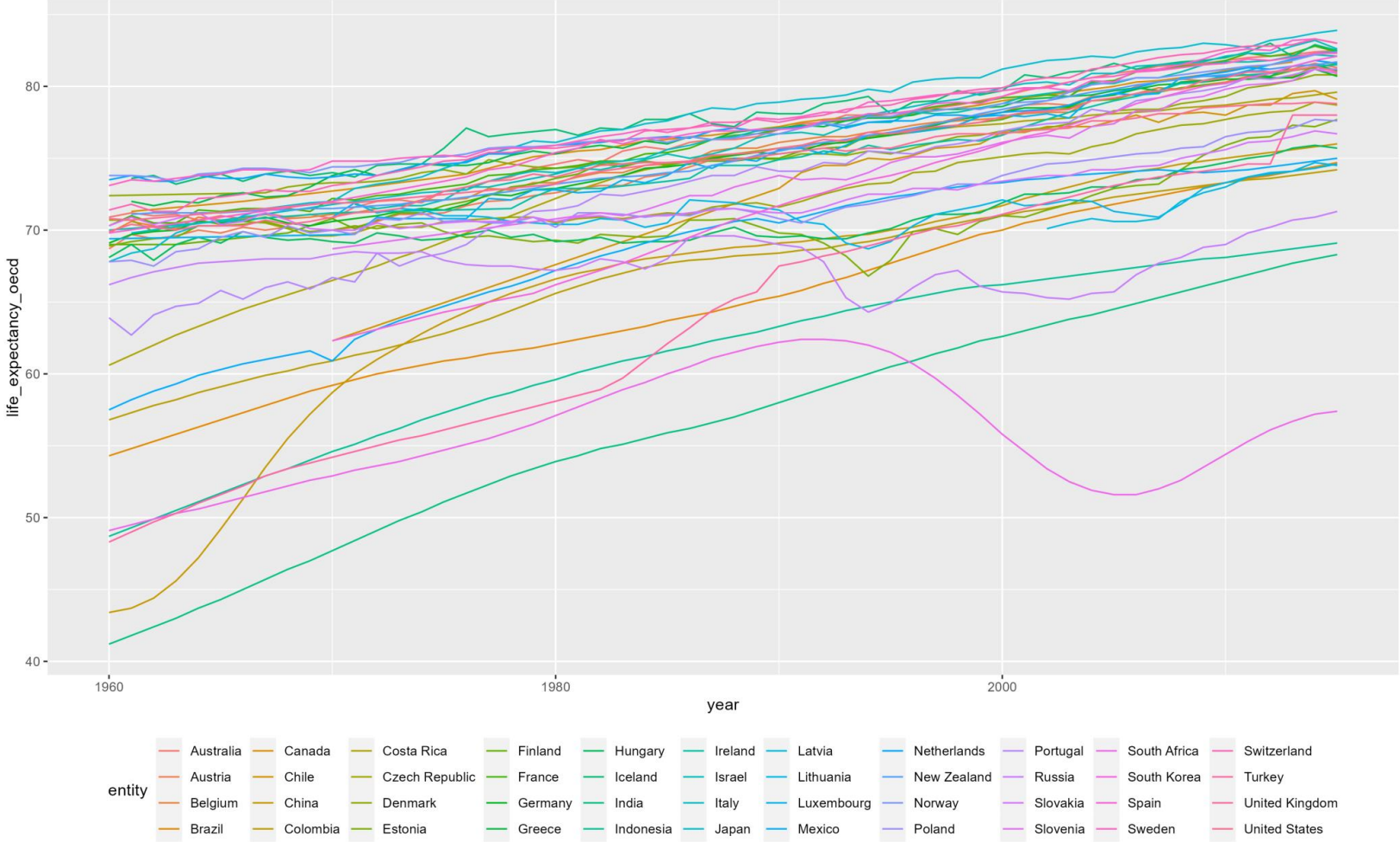
# Visualize the data

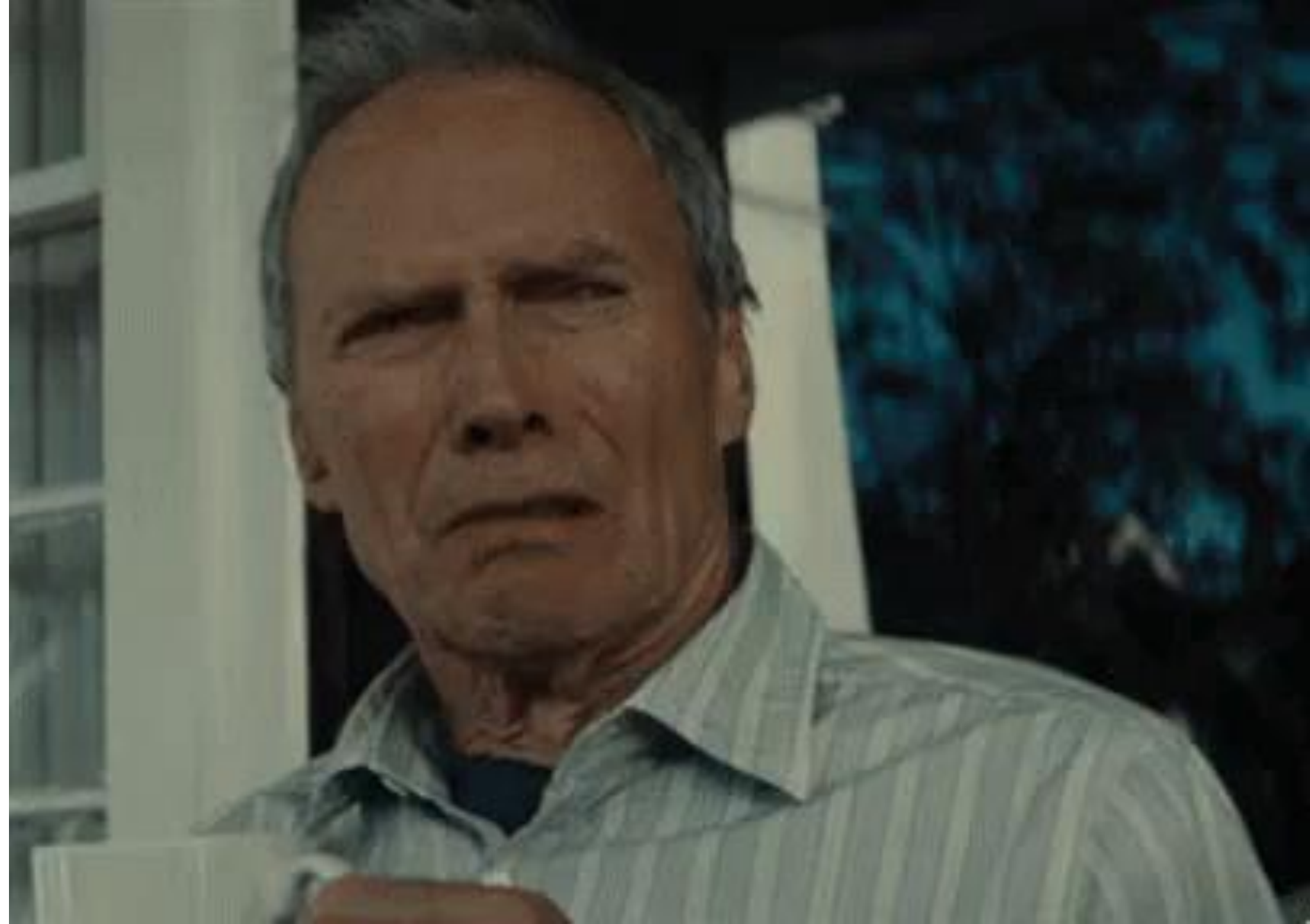
What data do we **need**?

- Years over time (1960, 1961... 2022)
- Life expectancy recorded in every year (71, 73...)
- By Country



# Visualize the data



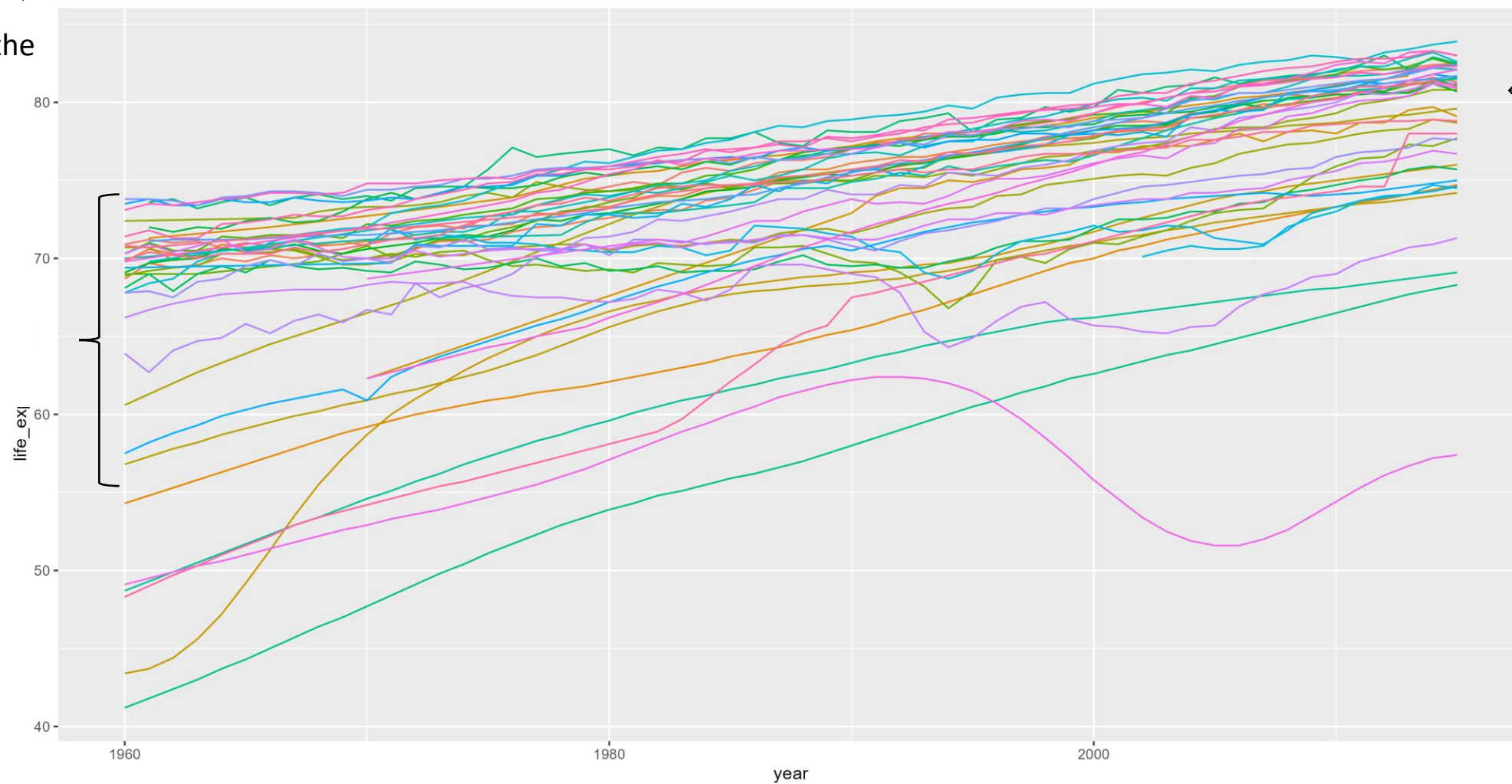


What does the plot show?  
Takeaway?

Why are we coloring the lines?

Does the gray background help us?

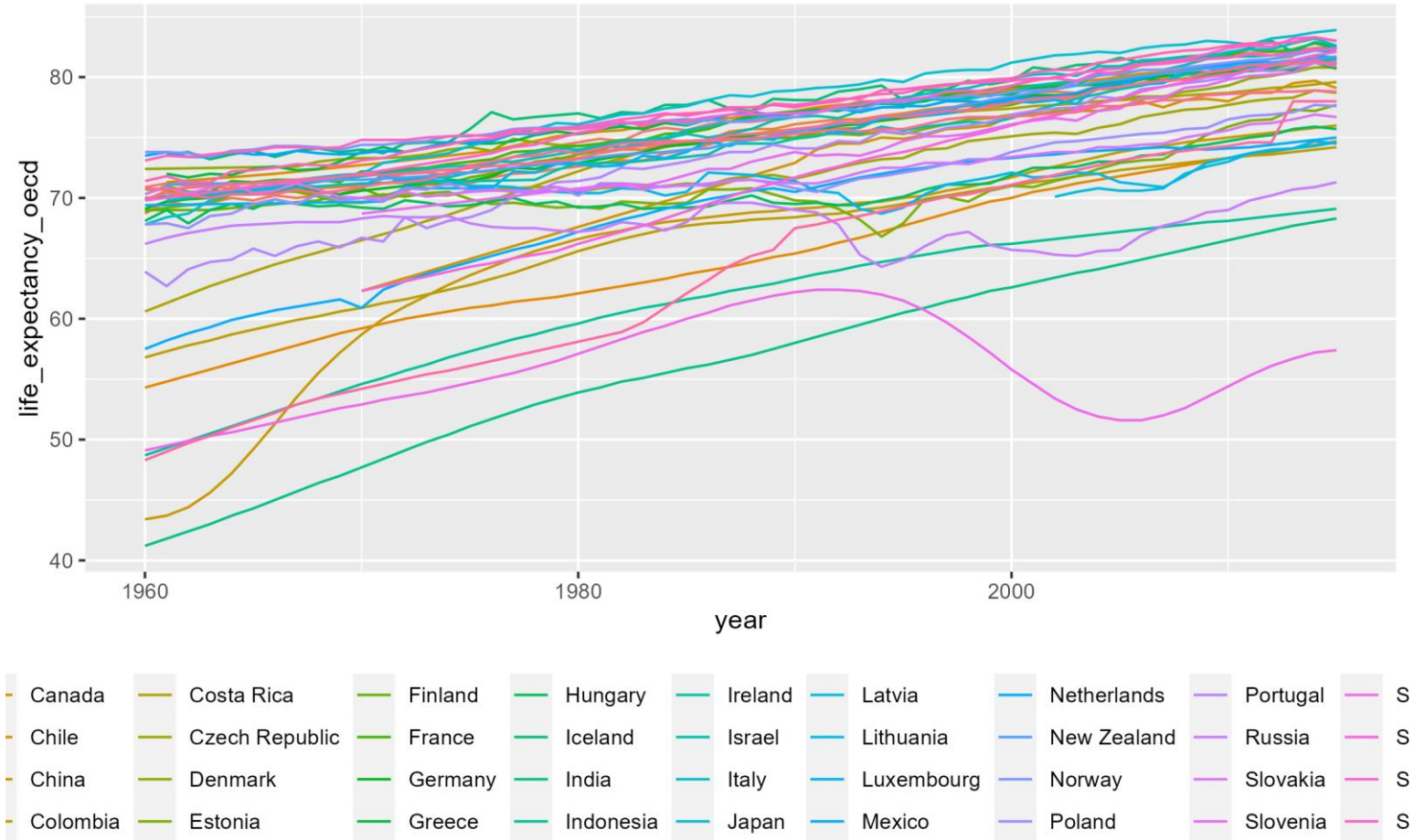
Do we need all these gridlines?



- |           |          |                |         |           |         |            |             |          |              |                |
|-----------|----------|----------------|---------|-----------|---------|------------|-------------|----------|--------------|----------------|
| Australia | Canada   | Costa Rica     | Finland | Hungary   | Ireland | Latvia     | Netherlands | Portugal | South Africa | Switzerland    |
| Austria   | Chile    | Czech Republic | France  | Iceland   | Israel  | Lithuania  | New Zealand | Russia   | South Korea  | Turkey         |
| Belgium   | China    | Denmark        | Germany | India     | Italy   | Luxembourg | Norway      | Slovakia | Spain        | United Kingdom |
| Brazil    | Colombia | Estonia        | Greece  | Indonesia | Japan   | Mexico     | Poland      | Slovenia | Sweden       | United States  |

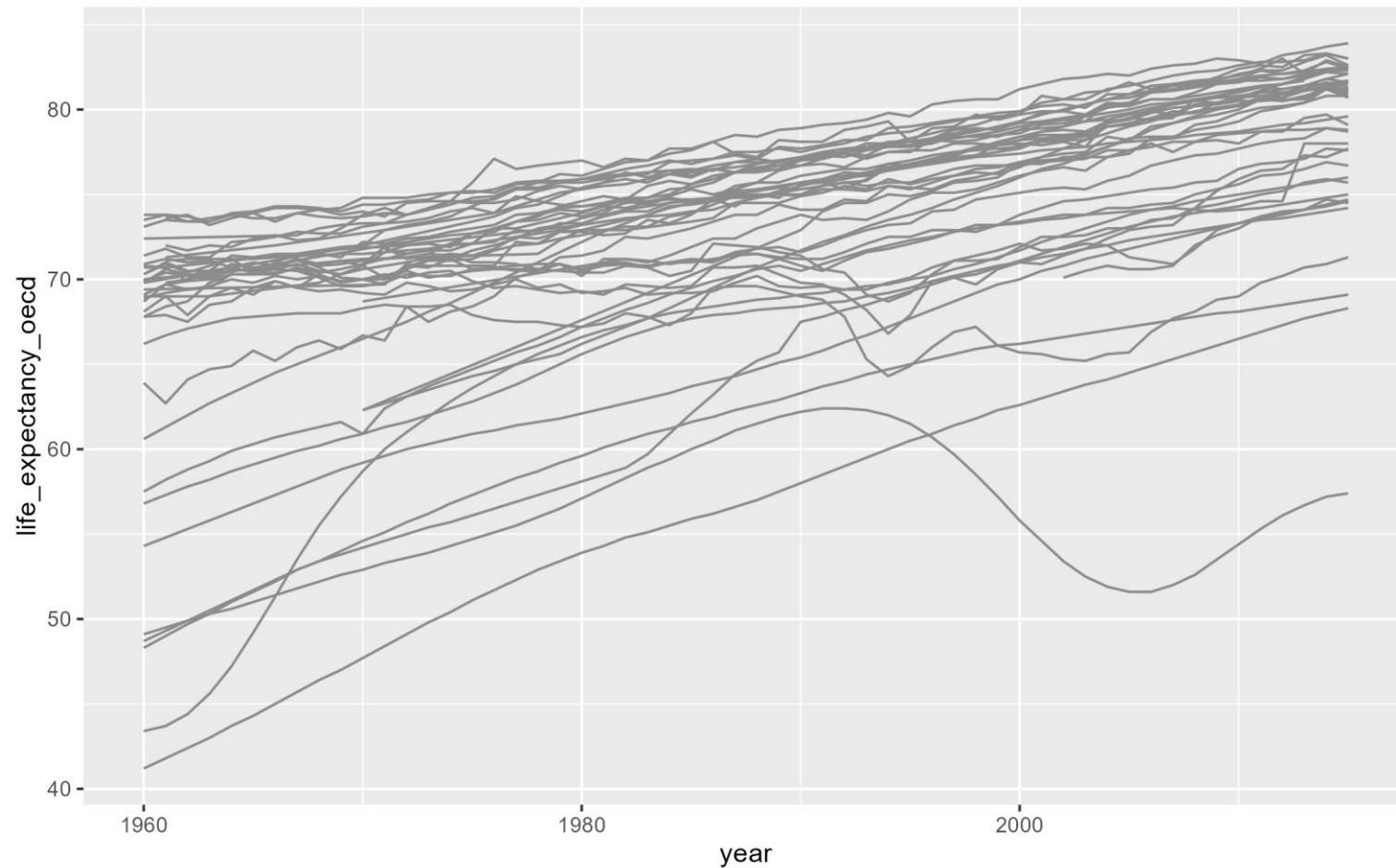
Is all this necessary?

# Starting with what we saw

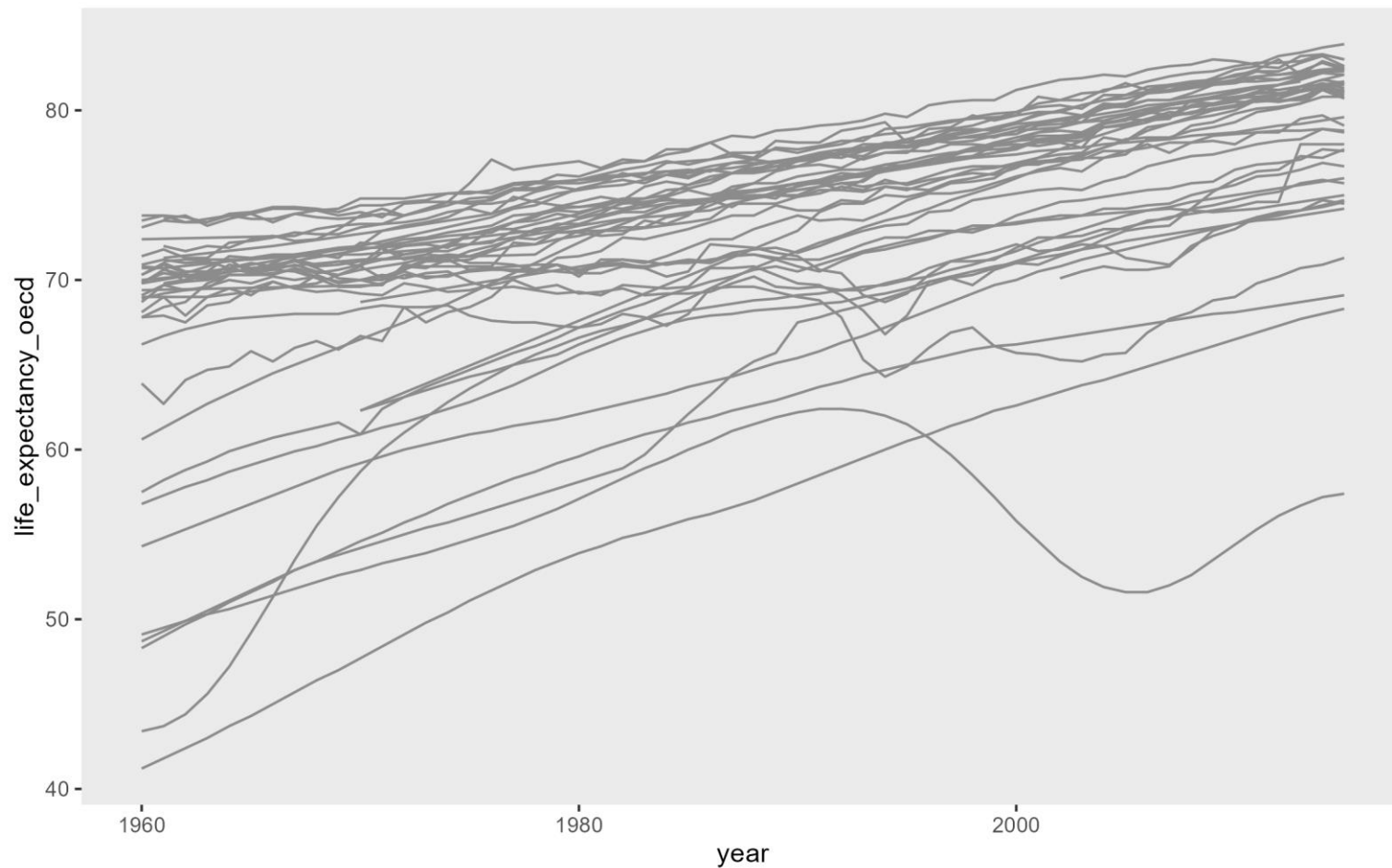




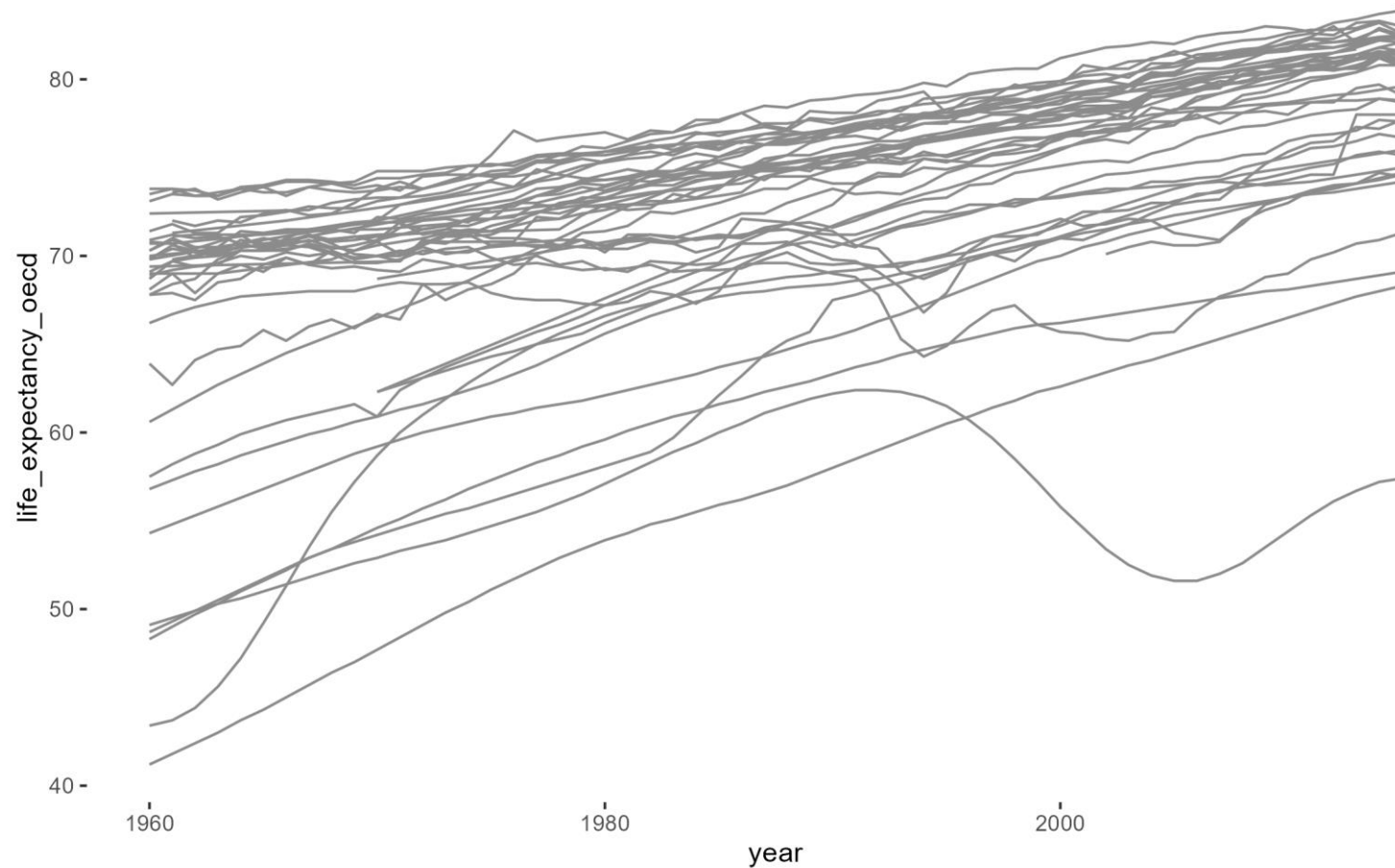
# Use Color Sparingly



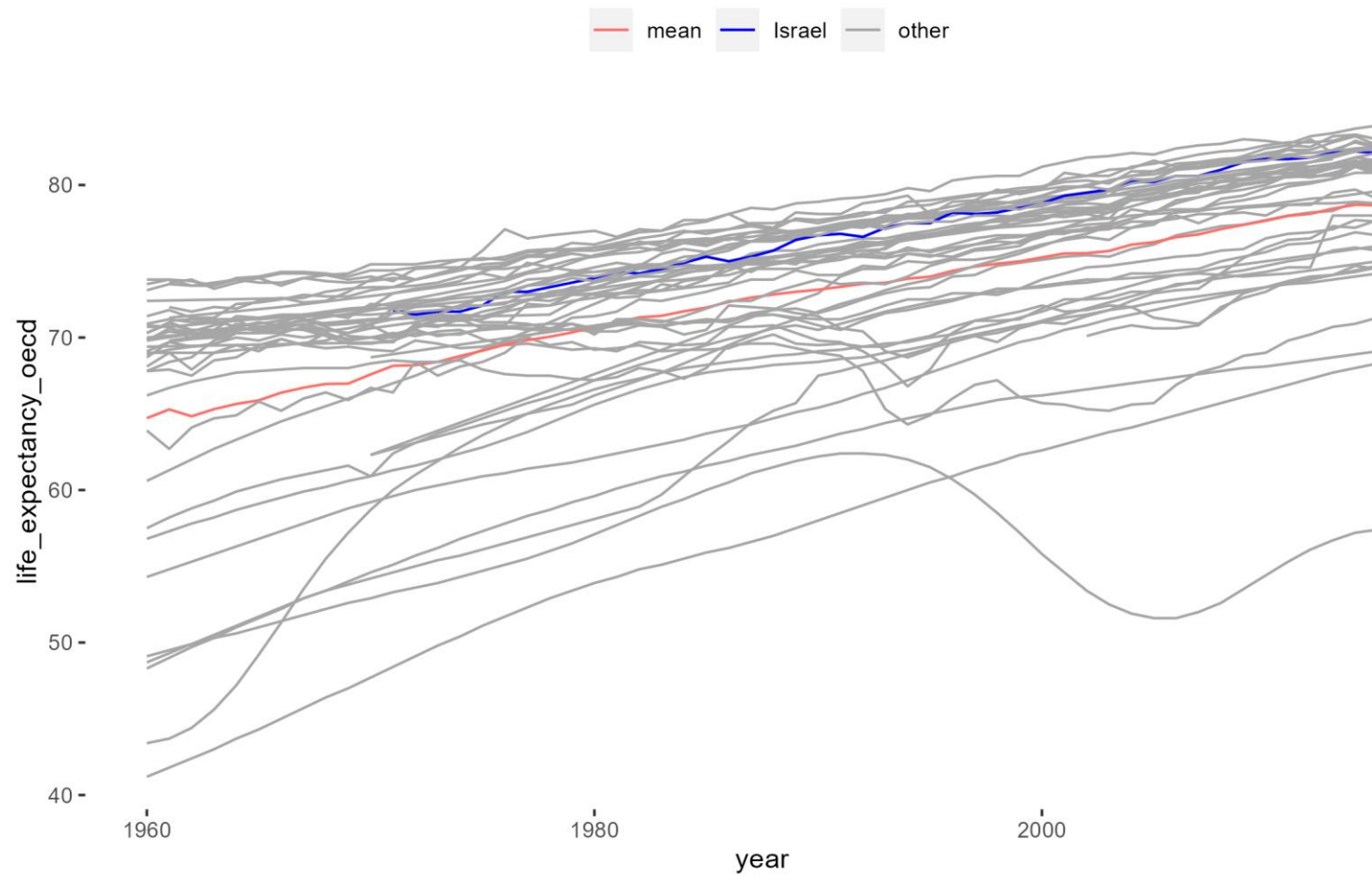
# Remove unnecessary clutter



# Use Color Sparingly (2)

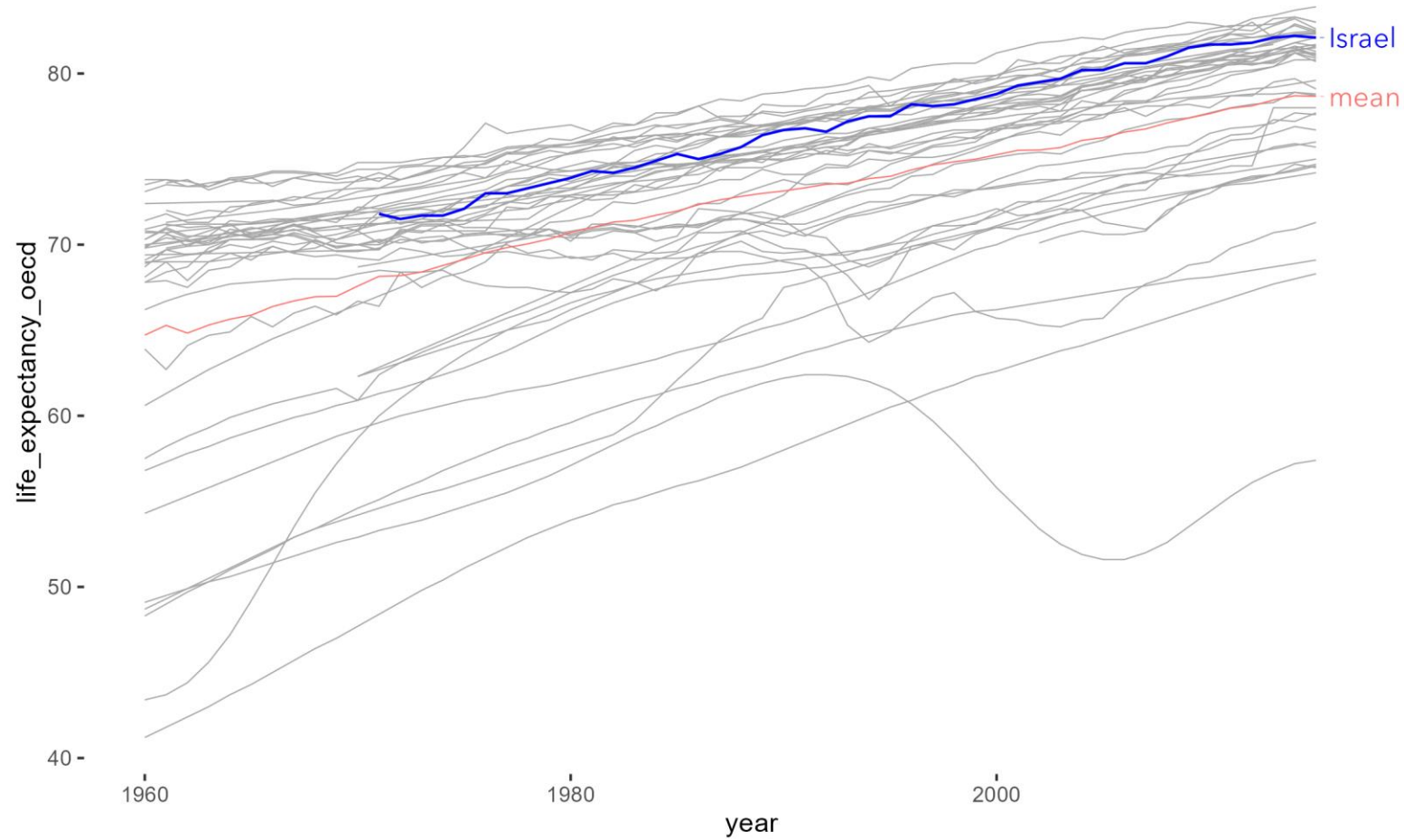


# ~~Highlighting~~





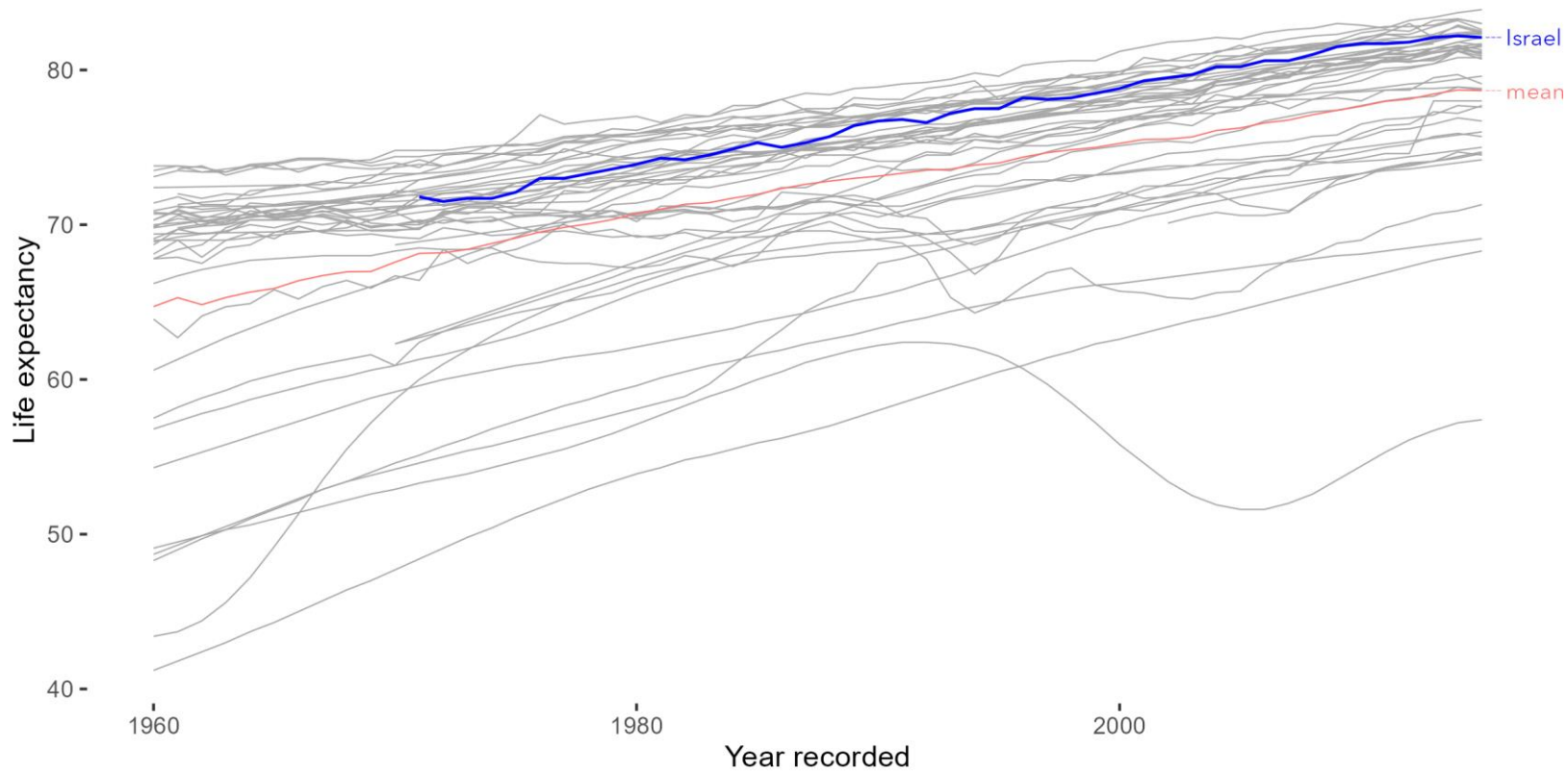
# Highlight what's important



# Add context

Israel's life expectancy has been growing steadily

Within 44 years, **Israel's life expectancy has grown 14%**, from age ~72 in 1971 to 82 in 2015, constantly remaining above the average life expectancy across countries

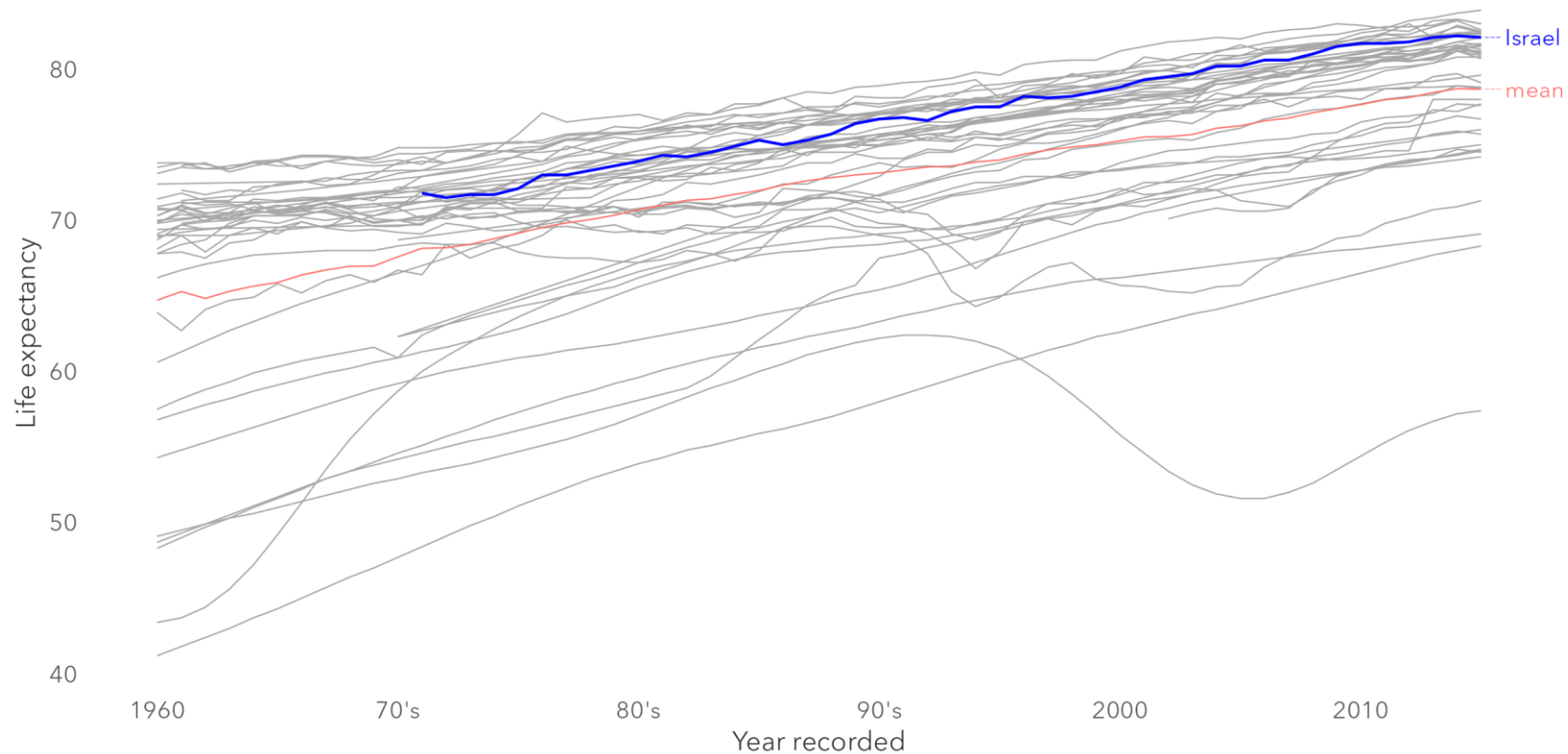


Data: OWID

# Final Touches

## Israel's life expectancy has been growing steadily

Within 44 years, **Israel's life expectancy has grown 14%**, from age ~72 in 1971 to 82 in 2015, constantly remaining above the average life expectancy across countries



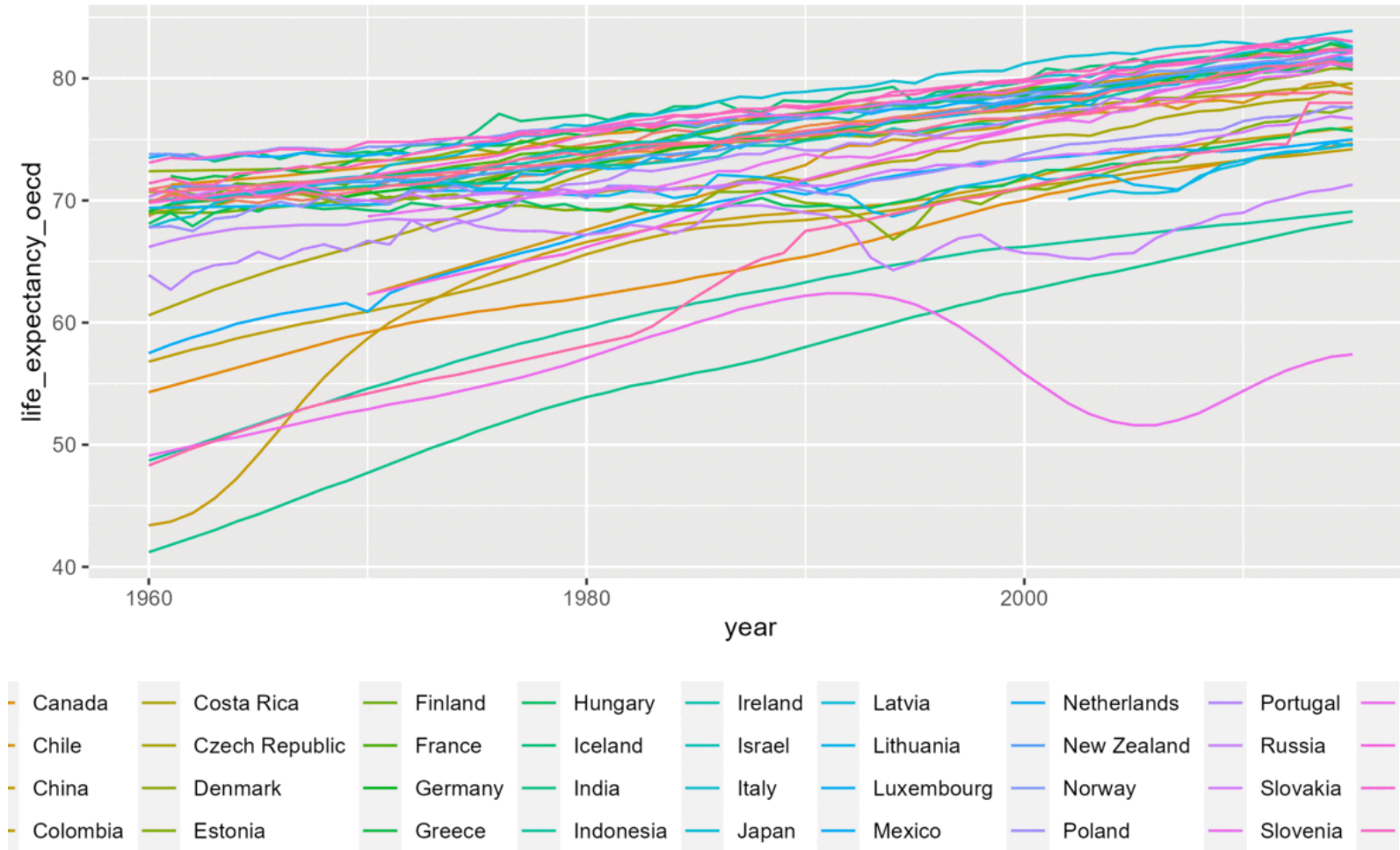
Data: OWID

#AGT

@CalyBev

Recap

# Chart





# Final notes – Preattentive attention

## Find Israel

Fiji, French Polynesia, Samoa, Tunisia, Iceland, Ethiopia, Kazakhstan, Mauritius, Namibia, Guam, Cameroon, Tonga, Kenya, Turkey, Afghanistan, Kiribati, India, Finland, Pakistan, Micronesia, Ukraine, Democratic Republic of Congo, Timor, Ghana, Guatemala, Uganda, Serbia, Mali, South Sudan, Angola, Maldives, Botswana, Algeria, South Africa, Burkina Faso, Gambia, Equatorial Guinea, Djibouti, Central African Republic, Eritrea, Mozambique, Malawi, Gabon, Sierra Leone, Guinea, Senegal, Niger, Benin, Sao Tome and Principe, Kyrgyzstan, Lithuania, Liberia, Cote d'Ivoire, Togo, Sudan, Burundi, Rwanda, Guinea-Bissau, Mauritania, Comoros, Tanzania, Swaziland, Mayotte, Zambia, Congo, Lesotho, Philippines, Madagascar, Reunion, Bangladesh, Cape Verde, Western Sahara, United Kingdom, Belarus, Croatia, Indonesia, Ireland, Turkmenistan, Nigeria, Poland, Somalia, New Caledonia, Russia, Tajikistan, Norway, Saint Vincent and the Grenadines, Vietnam, Zimbabwe, North Korea, South Korea, Guadeloupe, Sweden, Chad, Myanmar, Saint Lucia, Mexico, Bhutan, Uzbekistan, Haiti, Cuba, Cambodia, France, Bosnia and Herzegovina, Yemen, Dominican Republic, Albania, Montenegro, Thailand, Martinique, Malaysia, Macedonia, Slovenia, Mongolia, Portugal, Laos, Barbados, Moldova, Nepal, Iran, Kuwait, United States Virgin Islands, Antigua and Barbuda, Singapore, Azerbaijan, Macao, Nicaragua, Netherlands Antilles, Aruba, Hong Kong, China, Armenia, Bahamas, Latvia, Denmark, Georgia, Greece, Grenada, Vanuatu, Solomon Islands, Lebanon, Puerto Rico, Bahrain, Trinidad and Tobago, Egypt, Libya, Morocco, El Salvador, United Arab Emirates, Sri Lanka, Qatar, Italy, Syria, Iraq, Hungary, Taiwan, Cyprus, Jordan, Jamaica, Romania, Belize, Israel, Palestine, Saudi Arabia, Oman, French Guiana, Brazil, Brunei, Papua New Guinea, Chile, Colombia, Malta, Greenland, Germany, Ecuador, Suriname, Venezuela, Bolivia, Guyana, Panama, Spain, Honduras, Costa Rica, Estonia, Japan, Uruguay, Netherlands, United States, Paraguay, Austria, Peru, Slovakia, Belgium, Argentina, Western Africa, Low-income countries, Bulgaria, Australia, New Zealand, Czech Republic, Least developed countries, Sub-Saharan Africa, Southern Asia, Eastern Africa, South-Central Asia, Middle Africa, Africa, Luxembourg, Seychelles, Switzerland, Lower-middle-income countries, Canada, Melanesia, Less developed regions, excluding China, Less developed regions, Northern Africa, Asia, Less developed regions, excluding least developed countries, Middle-income countries, Western Asia, Eastern Asia, South-Eastern Asia, Upper-middle-income countries, World, Southern Africa, Central America, Polynesia, Latin America and the Caribbean, Caribbean, South America, Micronesia (region), Micronesia (country), Central Asia, Eastern Europe, Serbia (including Kosovo), Curacao, Oceania, Europe, Southern Europe, More developed regions, High-income countries, Western Europe, Northern Europe, Northern America, Channel Islands, and Australia/New Zealand

# Final notes – Preattentive attention

## Find Israel

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Thank you