

Choosing the Right Chart

Two Questions

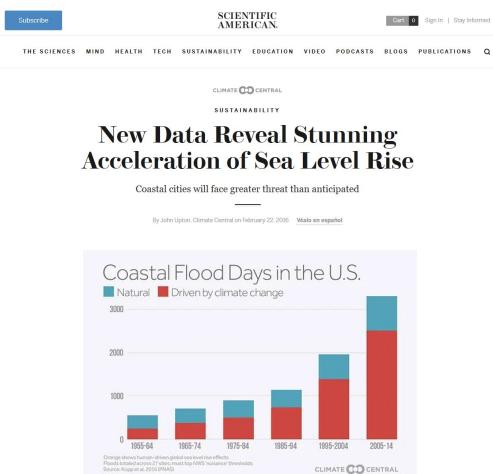
Who is your audience/what do they want?

Consider both the technical and critical thinking skills of your audience.

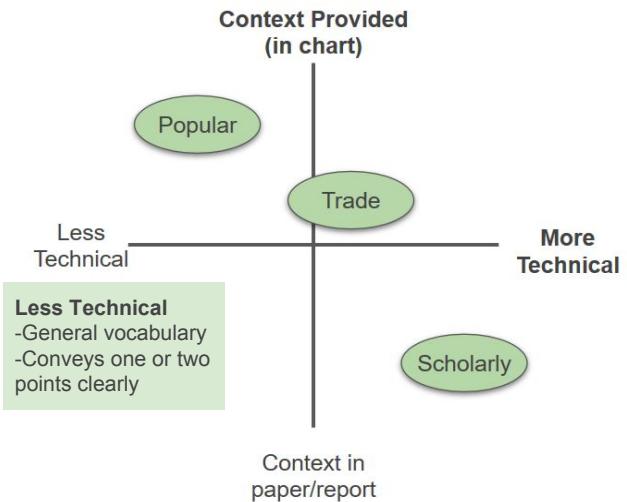
What information do you want convey?

Use data visualization to: inform, compare, show change, organize, and reveal relationships.

Is this Your Audience?



- Context Provided**
- Necessary information can be conveyed in chart.
 - Information is simple and brief, conclusion is clear.



<https://www.scientificamerican.com/article/new-data-reveal-stunning-acceleration-of-sea-level-rise/>

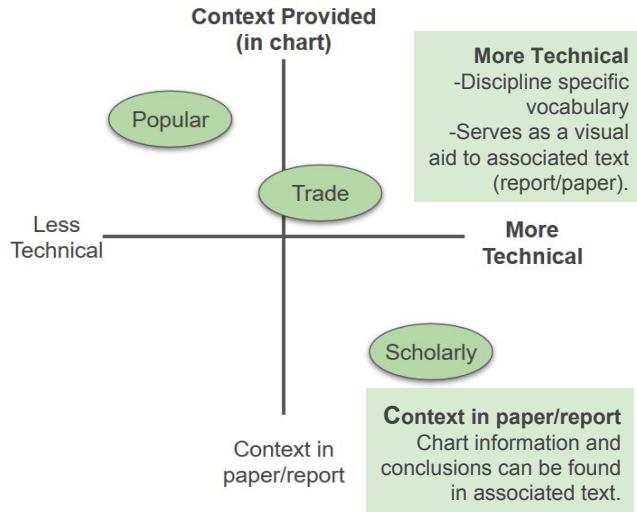
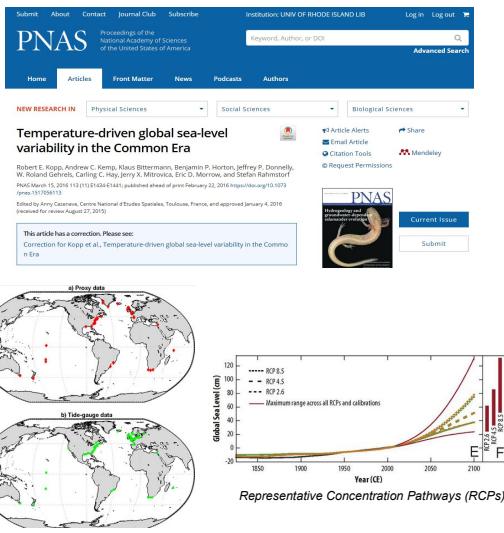
Less Technical

- General vocabulary
- Conveys one or two points clearly

Context Provided

- Necessary information can be conveyed in chart.
- Information is simple and brief, conclusion is clear.

Or is This?



<https://www.pnas.org/content/113/11/E1434/tab-figures-data>

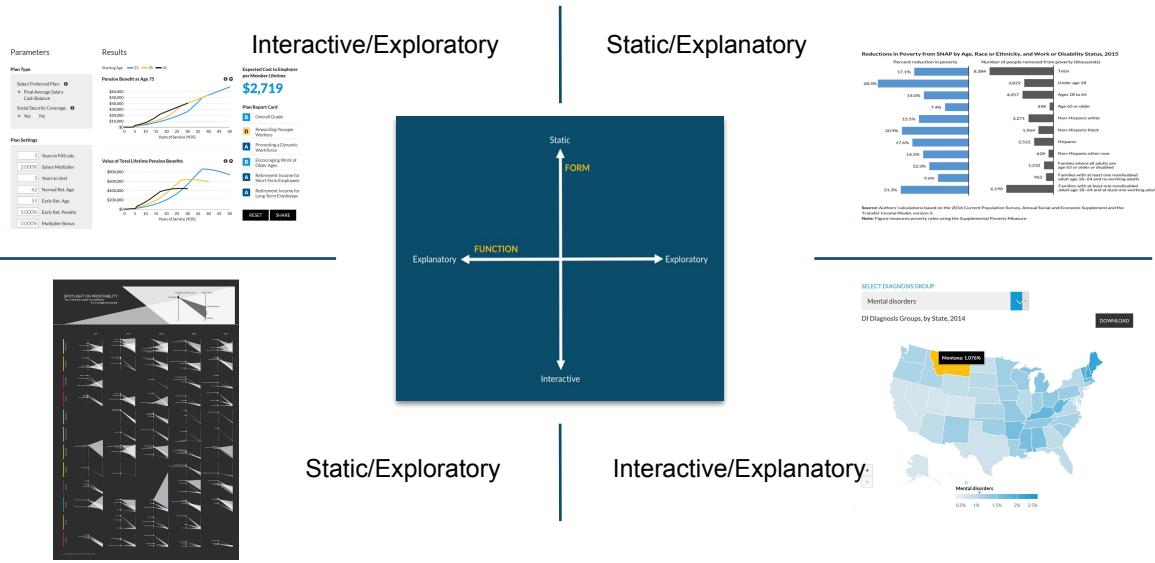
More Technical

- Discipline specific vocabulary
- Serves as a visual aid to associated text (report/paper).

Context in paper/report

- Chart information/conclusions can be found in associated text (report/paper).

What does your audience want?



Explanatory/Exploratory - Are they looking to clarify information provided in the text? Or, is the information new to them.

Static/Interactive - Do they want you to make the connections and do they want to see how the information relates on their own?

Central chart-

https://medium.com/@urban_institute/form-and-function-let-your-audiences-needs-drive-your-data-visualization-choices-3c0603745822

Interactive/Explanatory -

<https://www.urban.org/features/11-charts-about-social-security-disability-insurance-program>

Interactive/Exploratory -

<http://apps.urban.org/features/build-your-own-pension/>

Static/Explanatory -

<https://www.urban.org/urban-wire/what-does-it-mean-snap-remove-people-poverty>

Static/Exploratory - <http://krisztinaszucs.com/>

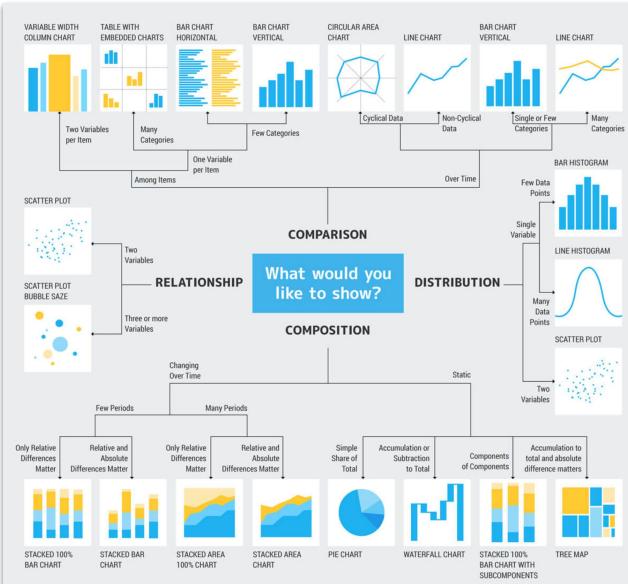
What information do you want to convey?

- **Inform:** convey a single important message or data point that doesn't require much context to understand
- **Compare:** show similarities or differences among values or parts of a whole
- Show **Change:** visualize trends over time or space
- **Organize:** show groups, patterns, rank or order
- **Reveal Relationships:** show correlations among variables or values



<https://venngage.com/blog/how-to-choose-the-best-charts-for-your-infographic/>

<https://venngage.com/blog/how-to-choose-the-best-charts-for-your-infographic/>



All	Pictorial
Bar	Table
Column	Word Cloud
Column & Line	Treemap
Radial	Facts and Figures
Pie	Timer
Line	Pyramid
Area	Funnel
Scatter	Financial
Bubble	

Examples of each of these types of charts can be found at [Infogram.com](https://infogram.com/examples)

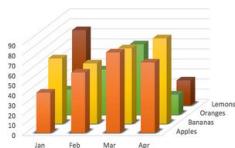
<https://infogram.com/examples>

<https://www.crazyegg.com/blog/wp-content/uploads/2016/12/what-to-show-chart1.jpg>

Not pictured - <https://serialmentor.com/dataviz/directory-of-visualizations.html>

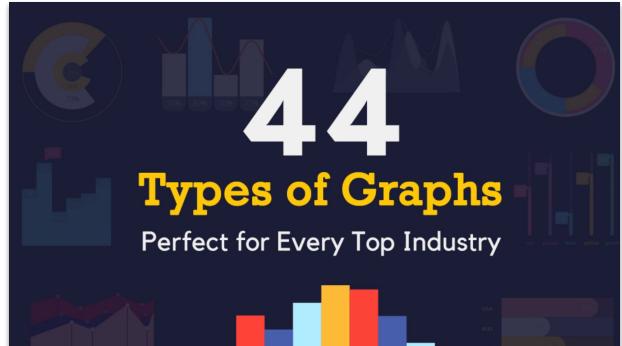
Data Visualization – How to Pick the Right Chart Type?

Making sense of facts, numbers, and measurements is a form of art – the art of **data visualization**. There is a load of data in the sea of noise. To turn your numbers into knowledge, your job is not only to separate noise from the data, but also to present it the right way.



Many of us come from the "PowerPoint generation" – this is where the roots of our understanding of data visualization and presentation lie. Unfortunately, it is far from anything related to good, and I stand before you as guilty myself.

And if you think I'm too cynical about this, don't take only my word for it.



https://eazybi.com/blog/data_visualization_and_chart_types/

<https://visme.co/blog/types-of-graphs/>



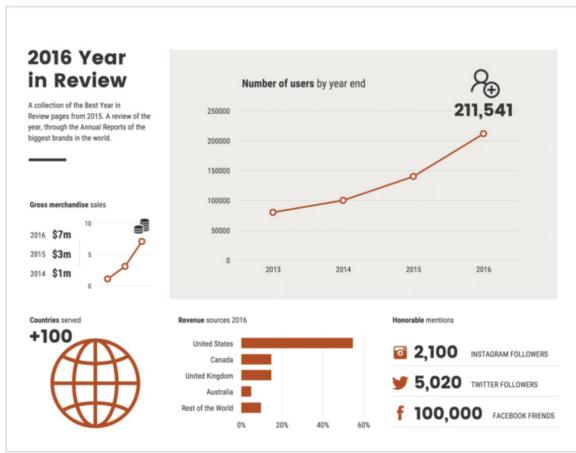
Design

Color

Use color for function, not decoration

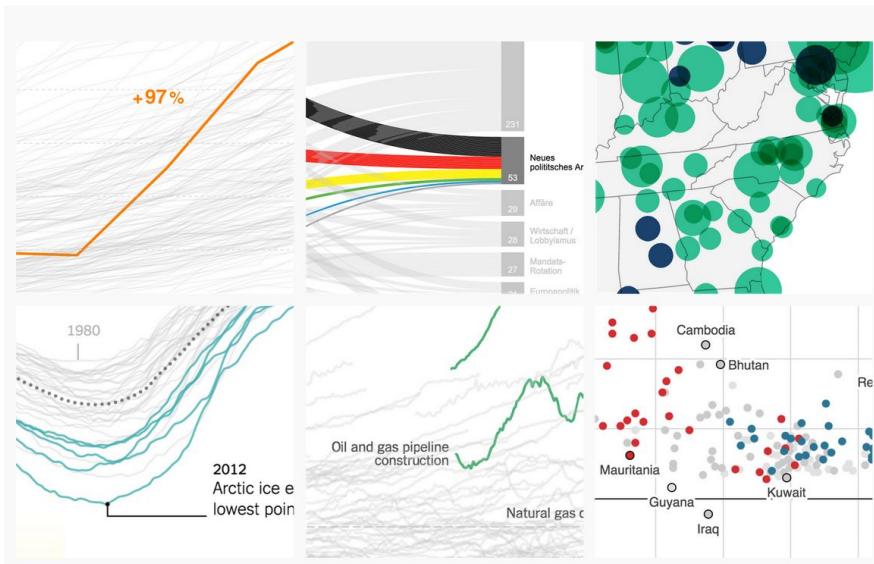
Color use plays a significant role in how “busy” your infographic will appear.

To make sure things don’t get too messy, don’t use more than six colors in any given chart. When you’ve got more than one chart in an infographic, use those colors consistently across all of your charts.



<https://venngage.com/blog/how-to-choose-the-best-charts-for-your-infographic/>

Use color to highlight and differentiate information



<https://blog.datawrapper.de/better-charts/>

Color and Interactivity

Color is used to convey information.

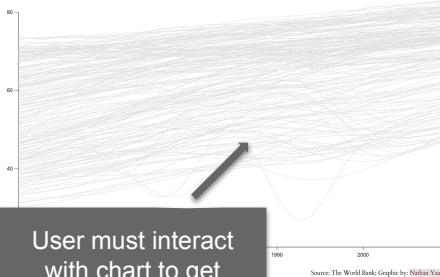
Life Expectancy

People are living longer around the world, some more so than others. Select a region (as defined by World Bank) below to compare, or roll over to the graph to highlight countries. [Read more...](#)

[East Asia and Pacific](#) [South Asia](#) [Europe and Central Asia](#) [Middle East and North Africa](#) [Sub-Saharan Africa](#) [Latin America and Caribbean](#) [North America](#)

WORLD

The average life expectancy in the world in 2009 was 69 years.



Life Expectancy

People are living longer around the world, some more so than others. Select a region (as defined by World Bank) below to compare, or roll over to the graph to highlight countries. [Read more...](#)

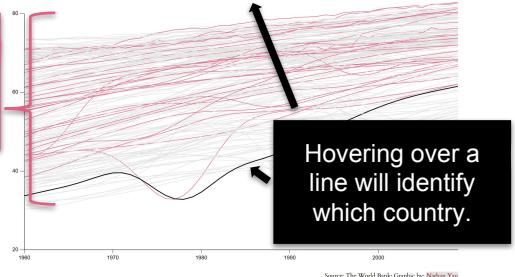
[East Asia and Pacific](#) [South Asia](#) [Europe and Central Asia](#) [Middle East and North Africa](#) [Sub-Saharan Africa](#) [Latin America and Caribbean](#) [North America](#)

Life Expectancy

On average, a life expectancy of 34 years in 1960 and 62 years in 2009, an increase of 82 percent.

TIMOR-LESTE

On average, a life expectancy of 34 years in 1960 and 62 years in 2009, an increase of 82 percent.



<http://projects.flowingdata.com/life-expectancy/>

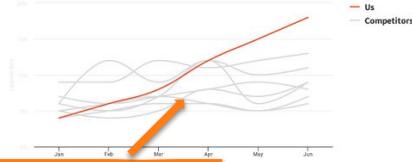
Color to Draw Attention

*Color is used to **highlight** information.*

Understanding Our Competitors

Q1 & Q2 Review

Our upgrade rates are growing faster than our competitors

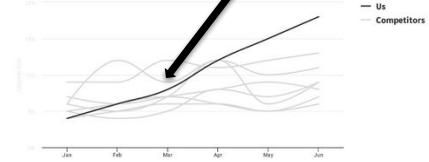


Color draws attention
to important
information.

Understanding Our Competitors

Q1 & Q2 Review

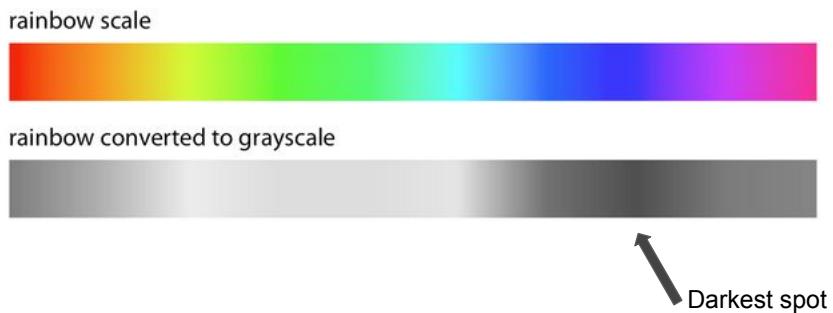
Our upgrade rates are growing faster than any of our competitors



When reproduced/printed
in Black and White
important information is still
clear.

<https://venngage.com/blog/how-to-choose-the-best-charts-for-your-infographic/>

This is how color is reproduced in black and white.



<https://serialmentor.com/dataviz/color-pitfalls.html>

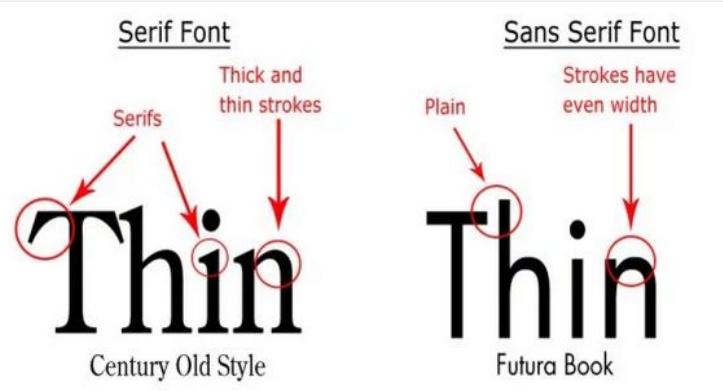
Design
Text

*Titles, Axes, Legends
and Annotations*

Font

Use a **Serif** font for:

- main text



Use a **Sans Serif** font for:

- titles
- headings
- tables, and
- figures

<http://hyphypops.com/fonts-wisdom-text-can-make-break-graph/>

19 Top Fonts in 19 Top Combinations

Douglas Bonneville | bonfx.com



Don't use more than two fonts in a document, make sure they match.

Use different weights and *italics* for emphasis, don't underline.

<https://bonfx.com/19-top-font-in-19-top-combinations/>

https://macademic.org/2013/11/25/typography_essentials/

Title

Tell the viewer what the chart is about, don't over explain.

Example 1

Here's the Composition of the User Acquisition Pattern Between the Months of January 2016 and December 2016 with a Focus on the Share of Display Ads

vs

Example 2

User Acquisition by Channel (2016)

Include units of representation, measurement and time periods.

Profits in 2016 (Jan. – Dec.)
In millions (USD)

Avoid using a, an, (or) the.

Example 1

The Average Revenue per Each of the Days in September 2015

vs

Example 2

Daily Revenue (September 2015)

Avoid adjectives.

Example 1

The Massive Daily Revenue We Pulled in September 2015 – Our Most Amazing Month

vs

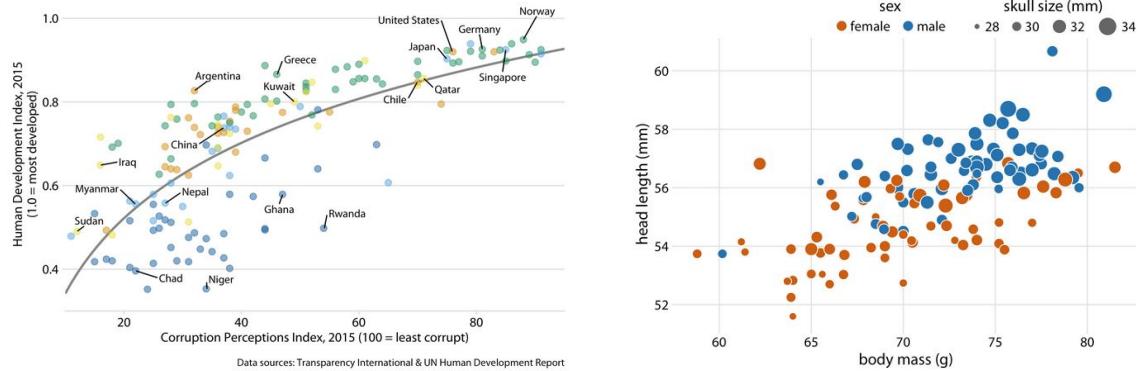
Example 2

Daily Revenue (September 2015)

<https://www.fusioncharts.com/resources/charting-best-practices/5-tips-for-writing-chart-captions>

<https://www.anychart.com/blog/2017/04/05/chart-captions-title-graph-tips/>

Axes



Indicates what the axes represents and the unit of measurement.

Corruption and Skull size tables -

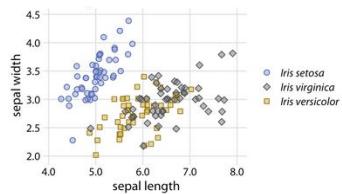
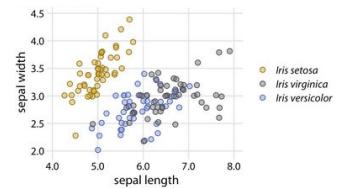
<https://serialmentor.com/dataviz/figure-titles-captions.html#figure-titles-and-captions>

Legends

Keep visual order of the chart (if the chart has a visual order).



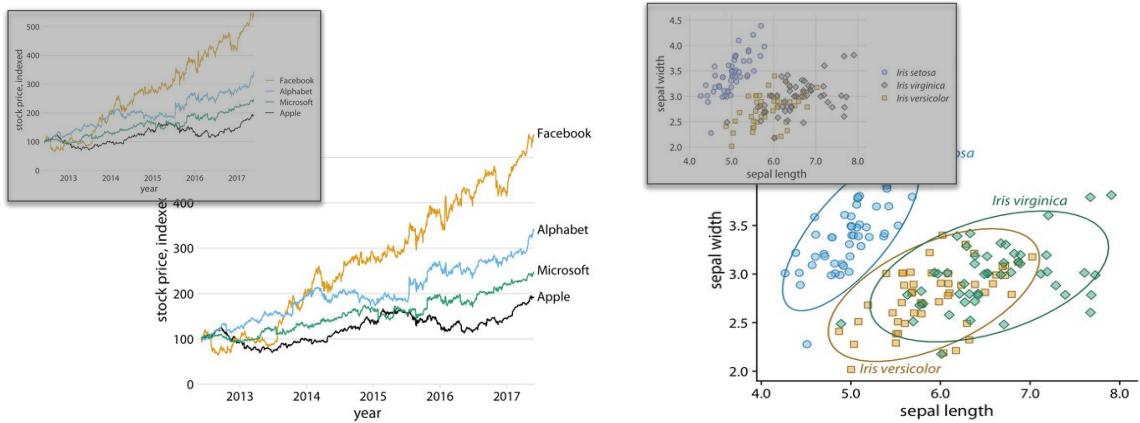
Assign symbols as well as color.



<https://serialmentor.com/dataviz/redundant-coding.html#designing-legends-with-redundant-coding>

No Legends

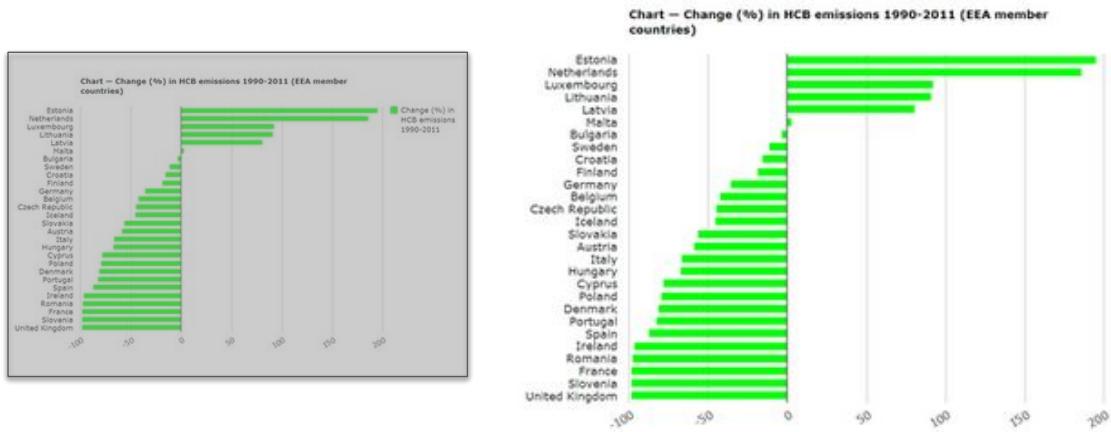
Fundamentals of Data Visualization and multiple other sources recommend labeling data directly and avoiding legends when possible.



<https://serialmentor.com/dataviz/redundant-coding.html#designing-legends-with-redundant-coding>

No Legends

If there is only one category a legend isn't needed.



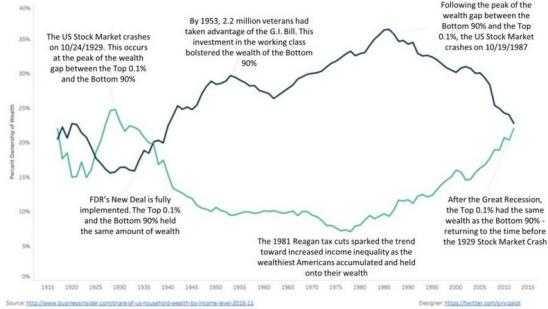
<https://www.eea.europa.eu/data-and-maps/daviz/learn-more/chart-dos-and-donts>

Annotations

Original Before Makeover

The Wealth Gap

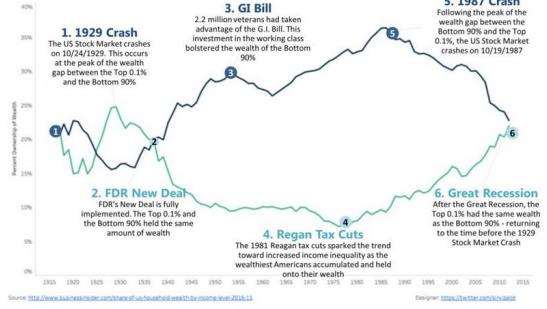
A historical view of wealth ownership within the **Top 0.1%** and the **Bottom 90%** of US households



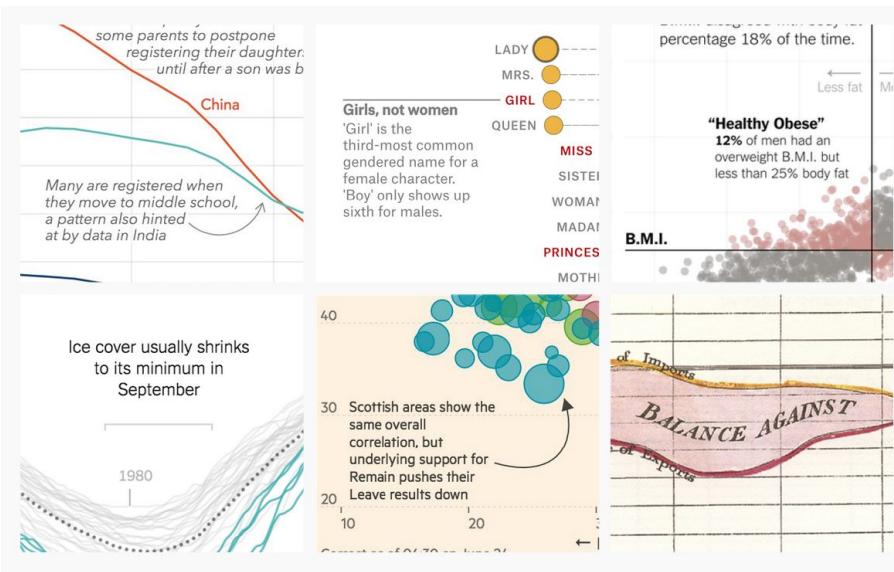
Added 1) Signposts 2) Color Matching 3) Numbers (optional)

The Wealth Gap

A historical view of wealth ownership within the **Top 0.1%** and the **Bottom 90%** of US households



<http://speakingppt.com/10-rules-for-graph-annotations/>



Some other annotation examples

Design
Layout

*Order, labels, and
presentation*

Table format

Rank	Title	Amount
1	Star Wars	\$71,565,498
2	Jumanji	\$36,169,328
3	Pitch Perfect 3	\$19,928,525
4	Greatest Showman	\$8,805,843
5	Ferdinand	\$7,316,746

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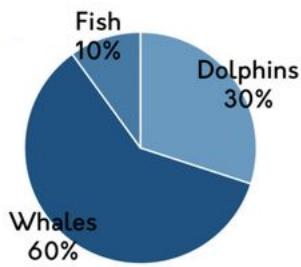
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3	Pitch Perfect 3	\$19,928,525
4	Greatest Showman	\$8,805,843
5	Ferdinand	\$7,316,746

Figure 22.7: Examples of poorly and appropriately formatted tables, using the data from Table 6.1 in Chapter 6. (a) This table violates numerous conventions of proper table formatting, including using vertical lines, using horizontal lines between data rows, and using centered data columns. (b) This table suffers from all problems of Table (a), and in addition it creates additional visual noise by alternating between very dark and very light rows. Also, the table header is not strongly visually separated from the table body. (c) This is an appropriately formatted table with a minimal design. (d) Colors can be used effectively to group data into rows, but the color differences should be subtle. The table header can be set off by using a stronger color. Data source: Box Office Mojo (<http://www.boxofficemojo.com/>). Used with permission

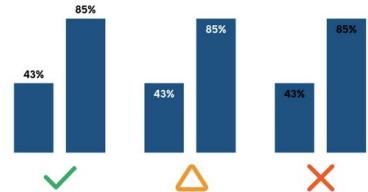
<https://serialmentor.com/dataviz/figure-titles-captions.html#axis-and-legend-titles>

Labels

Don't overlap



Use contrasting colors



Keep long labels horizontal if possible



<http://hyphypops.com/fonts-wisdom-text-can-make-break-graph/>

Rotate bar chart -

<https://www.eea.europa.eu/data-and-maps/daviz/learn-more/chart-dos-and-donts>

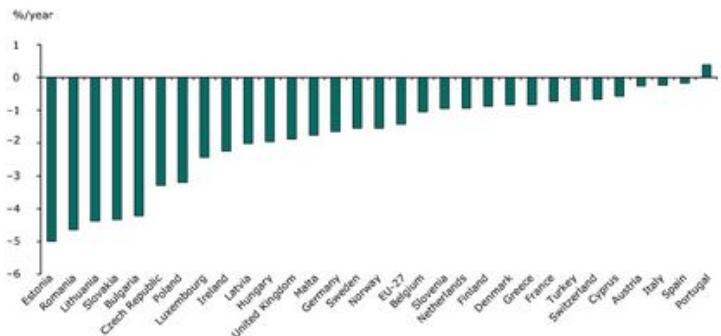
Order

Use logical order

Big to small

Time left to right

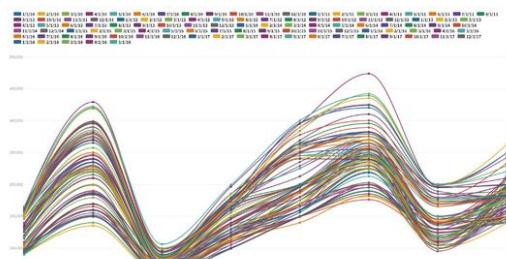
Oldest newest



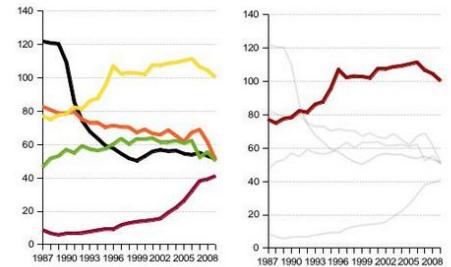
<https://www.eea.europa.eu/data-and-maps/daviz/learn-more/chart-dos-and-donts>

Presentation

Don't overload



Draw the focus to what is important

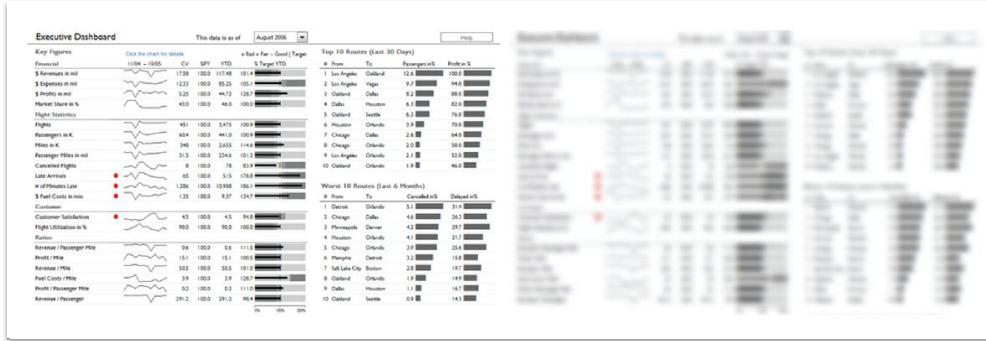


<https://www.learningsolutionsmag.com/articles/misleading-data-visualizations-can-confuse-deceive-learners>

<https://www.eea.europa.eu/data-and-maps/daviz/learn-more/chart-dos-and-donts>

Squint Test

Test your layout and organization with a squint test.



You squint your eyes and make an assessment on the overall layout, of elements that stand out, the visual balance and other characteristics of an effective user interface.

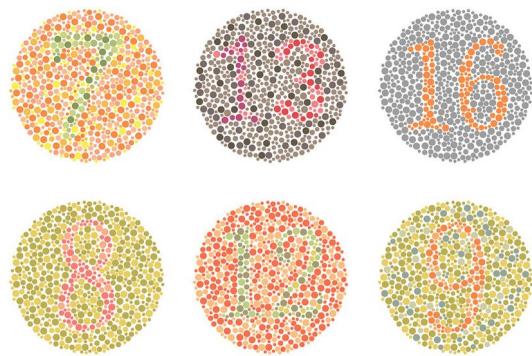
<https://usabilla.com/blog/the-squint-test-how-quick-exposure-to-design-can-reveal-its-laws/>

<https://blog.xlcubed.com/2008/08/the-dashbord-squint-test/>

Accessibility

*Color Blindness and
Visual Impairment*

Color Blindness



<https://www.tableau.com/about/blog/2016/4/examining-data-viz-rules-dont-use-red-green-together-53463>

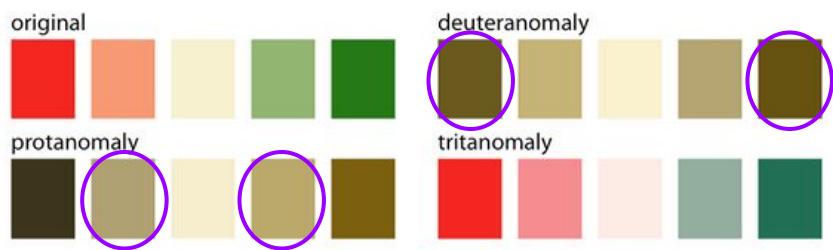


Figure 19.7: A red–green contrast becomes indistinguishable under red–green cvd (deuteranomaly or protanomaly).

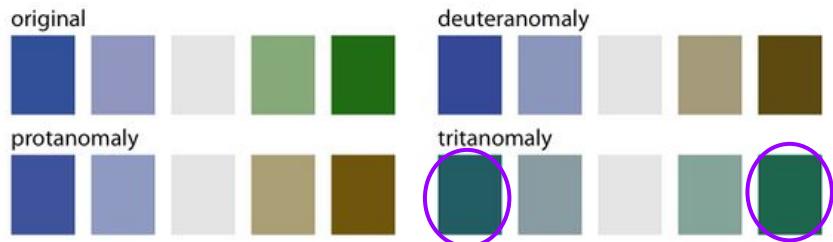
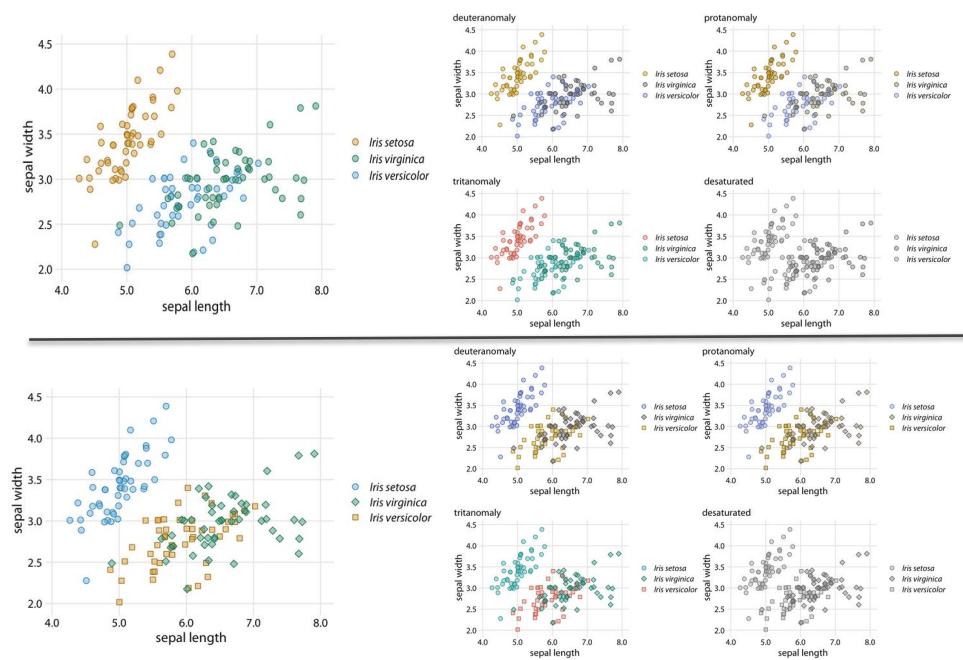


Figure 19.8: A blue–green contrast becomes indistinguishable under blue–yellow cvd (tritanomaly).

<https://serialmentor.com/dataviz/color-pitfalls.html#not-designing-for-color-vision-deficiency>

Use
shapes
AND
colors to
distinguish
categories



<https://serialmentor.com/dataviz/redundant-coding.html#designing-legends-with-redundant-coding>



Color
Blindness
Simulator

Original Colors



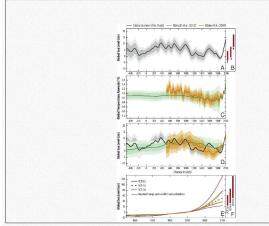
Zoom, move and lens functionality only with your own image available.

Drag and drop or paste your file in the area below or ... browse... to file selected.

Trichromatic view Anomalous Trichromacy Deuteranopic view Monochromatic view
 Normal Red-Weak Trichromacy Red-Blue Trichromacy Blue-Cone Monochromacy
 Blue-Weak Trichromacy Blue-Blue Trichromacy Blue-Cone Dichromacy
 Blue-Weak-Dichromacy Blue-Cone Monochromacy

Use lens to compare with normal view: No Lens Normal Lens Inverse Lens

Download [Save image as new file](#)



Red-Weak (Protanomaly)



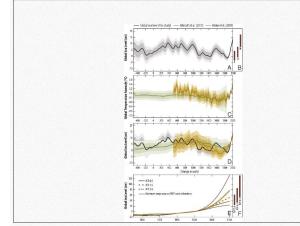
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Trichromatic view Anomalous Trichromacy Deuteranopic view Monochromatic view
 Normal Red-Weak Trichromacy Red-Blue Trichromacy Blue-Cone Monochromacy
 Blue-Weak Trichromacy Blue-Blue Trichromacy Blue-Cone Dichromacy
 Blue-Weak-Dichromacy Blue-Cone Monochromacy

Use lens to compare with normal view: No Lens Normal Lens Inverse Lens

Download [Save image as new file](#)



Blue-Blind (Tritanopia)



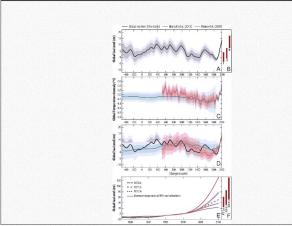
Zoom, move and lens functionality only with your own image available.

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Trichromatic view Anomalous Trichromacy Deuteranopic view Monochromatic view
 Normal Red-Weak Trichromacy Red-Blue Trichromacy Blue-Cone Monochromacy
 Blue-Weak Trichromacy Blue-Blue Trichromacy Blue-Cone Dichromacy
 Blue-Weak-Dichromacy Blue-Cone Monochromacy

Use lens to compare with normal view: No Lens Normal Lens Inverse Lens

Download [Save image as new file](#)



Charts from: *Temperature-driven global sea-level variability in the Common Era*.

<https://www.color-blindness.com/coblis-color-blindness-simulator/>

<https://www.pnas.org/content/113/11/E1434/tab-figures-data>

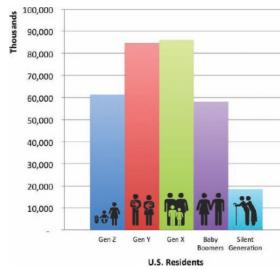
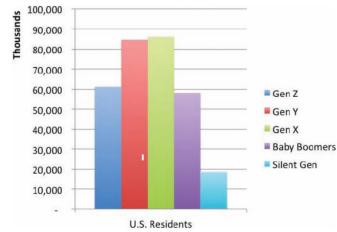
Visual Impairment

Use a simple, large font
when possible.

Avoid similar colors

Don't overcrowd with
gridlines or textboxes.

Be attentive to backgrounds
colors/contrasts.



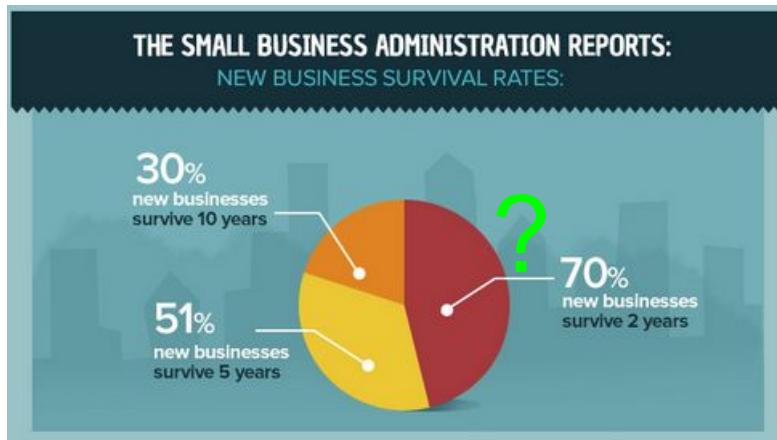
How to write alt text -

<http://www.perkinselearning.org/technology/blog/how-write-alt-text-and-image-descriptions-visually-impaired>

Dealing with Data

*Proportionality and
Messy/Missing Data*

Proportionality

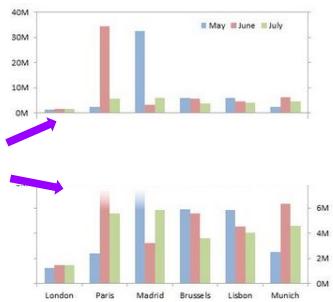


Visualization should represent data

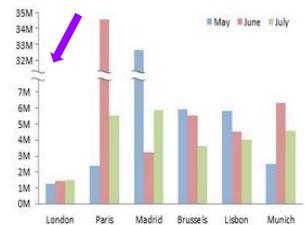
<https://www.shinobicontrols.com/blog/6-common-mistakes-with-data-visualization/>

Representing Amount

If this happens



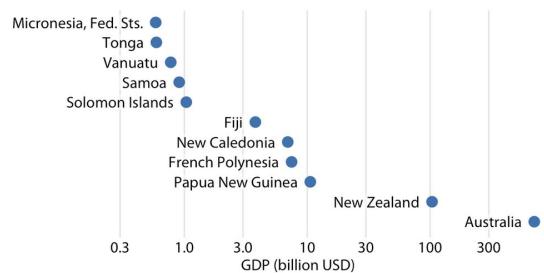
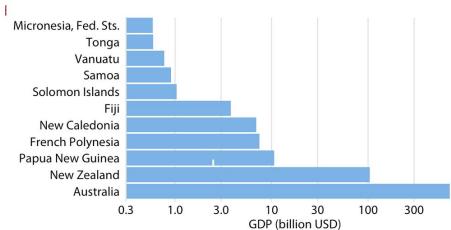
'Break' the axis



<https://peltiertech.com/broken-y-axis-in-excel-chart/>

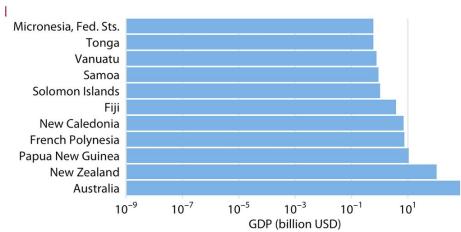
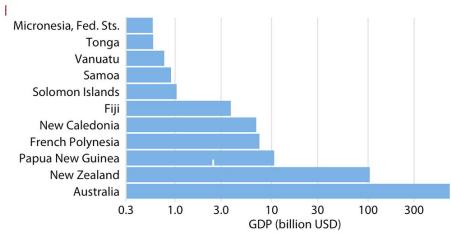
Representing Amount

If the chart clear, consider a different format.



<https://serialmentor.com/dataviz/proportional-ink.html#visualizations-along-logarithmic-axes>

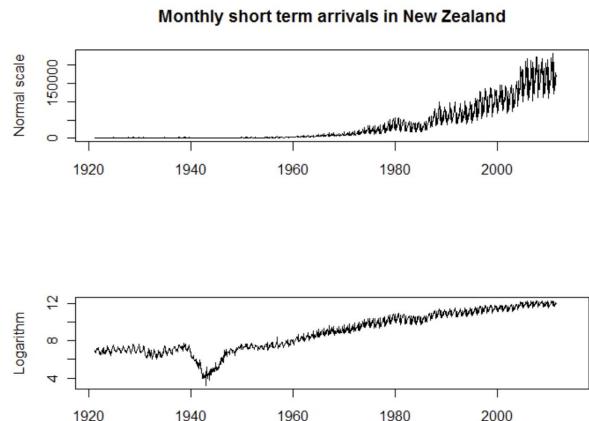
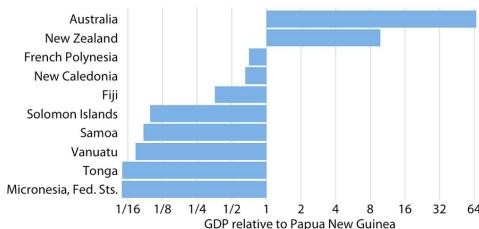
Logarithmic scale might not represent amounts well



<https://serialmentor.com/dataviz/proportional-ink.html#visualizations-along-logarithmic-axes>

Representing Ratio

Use a logarithmic scale to visualize ratios



<https://serialmentor.com/dataviz/proportional-ink.html#visualizations-along-logarithmic-axes>

<http://archive.stats.govt.nz/infoshare/>

Messy/Missing Data



11. Dealing with Messy Data

- Analysis with missing data
- Visualizing missing data
- Types of missing data
 - So which one is it?
- Unsophisticated methods for dealing with missing data
 - Complete case analysis
 - Pairwise deletion
 - Mean substitution
 - Hot deck imputation
 - Regression imputation
 - Stochastic regression imputation

- Multiple imputation
 - So how does mice come up with the imputed values?
 - Methods of imputation
 - Multiple imputation in practice
- Analysis with unsanitized data
 - Checking for out-of-bounds data
 - Checking the data type of a column
 - Checking for unexpected categories
 - Checking for outliers, entry errors, or unlikely data points
 - Chaining assertions
- Other messiness
 - OpenRefine
 - Regular expressions
 - tidyverse

Book available through URI 'Safari' database
(instructions for access in resources).

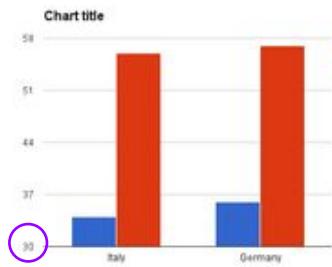
http://uri-primo.hosted.exlibrisgroup.com/01URI:Books_More:01URI_ALMA51175282870002396

Transparency

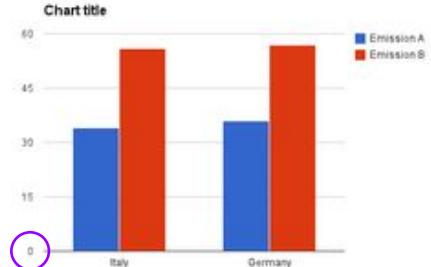
*Clear Communication,
Sources, and Credits*

Clear Communication

Wrong

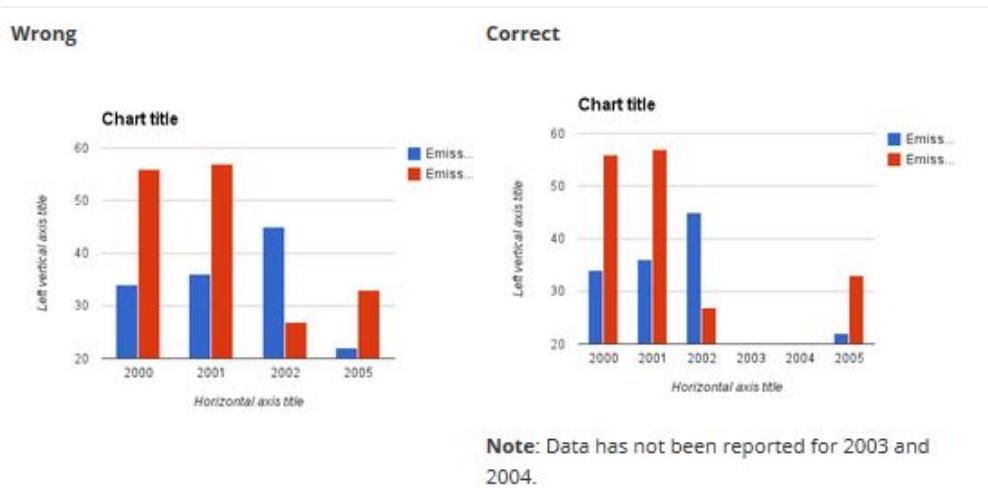


Correct



Cover the full set of data.

<https://www.eea.europa.eu/data-and-maps/daviz/learn-more/chart-dos-and-donts>



Represent and identify gaps in data.

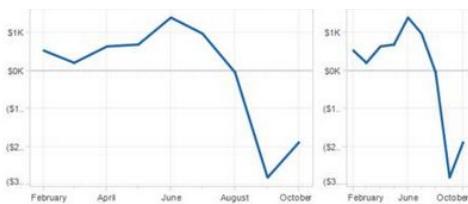
<https://www.eea.europa.eu/data-and-maps/daviz/learn-more/chart-dos-and-donts>

Adjust for inflation

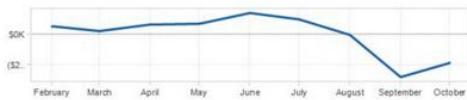


<https://www.eea.europa.eu/data-and-maps/daviz/learn-more/chart-dos-and-donts>

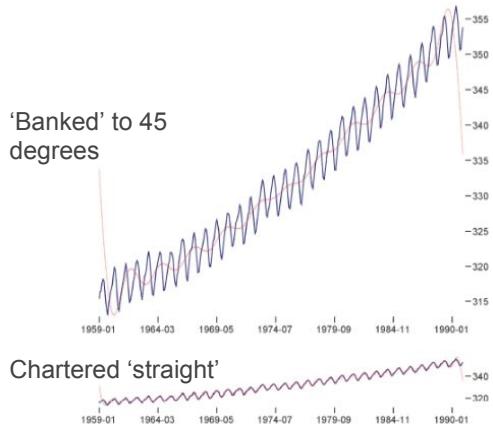
Use correct aspect ratios



'Banking' to 45 degrees is accepted practice



Unless 'Banking' obscures overall trends



Two plots of monthly atmospheric carbon dioxide measurements, taken from 1959 to 1990. The first plot, with an aspect ratio of 1.17, reveals an accelerating increase in CO₂ levels. The second plot, with an aspect ratio of 7.87, facilitates closer inspection of seasonal fluctuations, revealing a gradual attack followed by a steeper decay. Source: Computer Science Division, University of California, Berkeley (<http://vis.berkeley.edu/papers/banking/>)

<https://www.eea.europa.eu/data-and-maps/daviz/learn-more/chart-dos-and-donts>

Sources and Credits

BEST PRACTICES

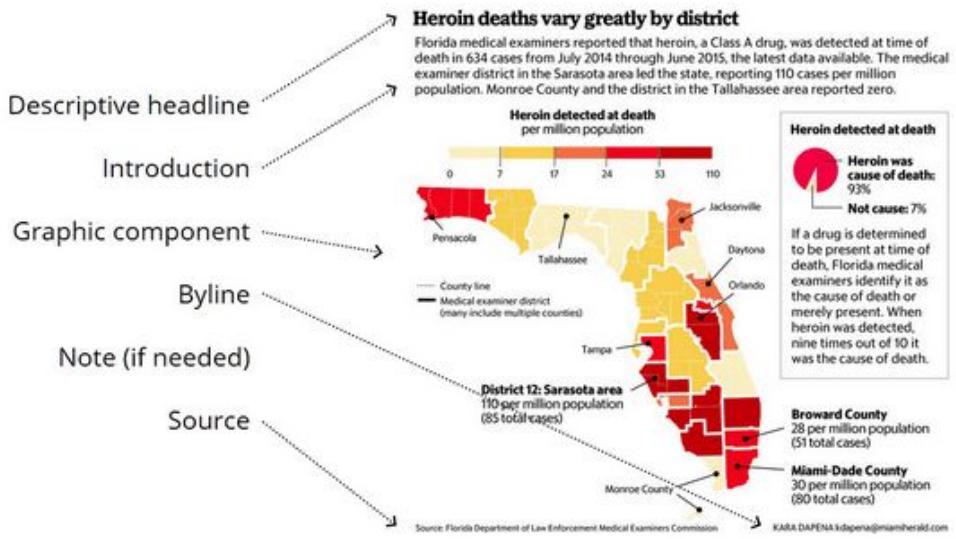
An infographic design that is upfront about its data sources is instantly perceived to be more credible. There are a few best practices that are common to good infographics.

- Track down and cite the original source of the data, not the news article that quoted the data.
- List the data source references either inline with the data or in the footer at the bottom of the infographic.
- List the URL to the specific report or data set, not just the host site.
- Include the relevant date or year the data was published to establish relevancy.

In addition, one of the best practices is for an infographic author to make the source data available to readers online for download as a spreadsheet. This is often accomplished with Google Docs spreadsheets^[4] that are accessible to the public. The infographic would include the URL directly to the data spreadsheet, which lists the data and shows any relevant sources or calculations made as part of the design. Readers can access the data directly and even use the data on their own.

https://learning.oreilly.com/library/view/cool-infographics-effective/9781118582305/14_chapter-06.html

Parts that make the whole



<http://www.snpa.org/stories/using-data-visualization-to-tell-a-story,2704509>

Learning Resources

*Shiny.rstudio, Safari
(O'Reilly) database,
and web*

Shiny.rstudio

Getting Started

The screenshot shows the Shiny.rstudio gallery page. At the top, there's a navigation bar with links for Get Started, Gallery (which is highlighted in blue), Articles, Reference, Deploy, Help, Contribute, and a user icon. Below the navigation, a section titled "Start simple" displays five examples of Shiny applications:

- Kmeans example**: A scatter plot titled "Iris k-means clustering" showing data points colored by cluster (green, red, blue) and overlaid with cluster centroids.
- Telephones by region**: A bar chart showing the number of telephones by region.
- Faithful**: A histogram of waiting times between eruptions for the Old Faithful geyser.
- Word cloud**: A word cloud visualization.
- Single-file shiny app**: A bar chart titled "Population in countries" showing population counts for various countries.

<https://shiny.rstudio.com/gallery/>

Widgets

Buttons 	Single checkbox 	Checkbox group 	Date input 
<code>actionButton()</code> <code>submitButton()</code>	<code>checkboxInput()</code>	<code>checkboxGroupInput()</code> <code>dateInput()</code>	
Date range 	File input 	Numeric input 	Password Input 
<code>dateRangeInput()</code>	<code>fileInput()</code>	<code>numericInput()</code>	<code>passwordInput()</code>
Radio buttons 	Select box 	Sliders 	Text input 
<code>radioButtons()</code>	<code>selectInput()</code>	<code>sliderInput()</code>	<code>textInput()</code>

© CC 2015 RStudio, Inc.

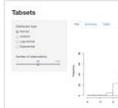
<https://shiny.rstudio.com/gallery/>

Layout

Application layout

Each example in this category demonstrates one or more of the functions you can use to organize app UI.

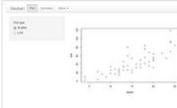
Tables



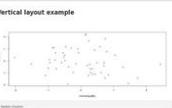
Tables



Plot plus three columns

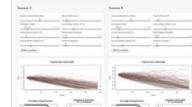


Navbar Example



Vertical Layout

Retirement simulation

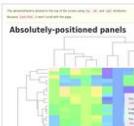


Retirement simulation

navlistPanel example



navlistPanel example



Absolutely-positioned panels



Including HTML, text, and Markdown files

Inline Output



Inline Output

Shiny theme selector



Shiny theme selector

<https://shiny.rstudio.com/gallery/>

Safari (O'Reilly) database

The screenshot shows the main interface of the Safari (O'Reilly) database. At the top left is the O'REILLY logo. A search bar with the placeholder "Find a solution" is at the top right, along with a "Search" button. On the left, a sidebar menu includes: "Browse", "Recommended", "Playlists", "History", "Topics", "Learning Paths", "Highlights", "Settings", and "Sign Out". The main content area features a "ON OUR RADAR" section with a video thumbnail titled "Managing Risk in Machine Learning" by Ben Lorica. Below this is a "Learning Paths" section with several cards: "Cloud Native Architecture Patterns Fundamentals", "Complete Web Development in TypeScript - Beginner to Expert!", "Deep Learning with Python - Novice to Pro!", "End-to-End Serverless Development using AWS Lambda", "Data Structures, Algorithms & Design Patterns in C# and .NET Core", "Build REST APIs with PHP 7 and Laravel 5", "A Quick Guide to Angular 7 in 4 Hours", and "Programming Effectively In Python". To the right is a "YOUR HISTORY" section showing a single entry: "Cool Infographics: Effective Communication with Data" by Randy Krum. A "See All" link is at the bottom right of the history section.

To log into Safari (O'Reilly) e-books, videos and learning paths, go to:

<https://uri.libguides.com/az.php>

Find 'Safari' in list of databases. Use your URI.edu email to login/setup account.

Getting Started

Shiny R



4+ Hours of Video Instruction

Create visual, interactive, data-based web applications without having to be a web developer

Lesson 1: Getting Started with Markdown

Markdown is an excellent tool for writing documents. It enables you to focus on content and not be distracted by design. Highly flexible, it can render elegant HTML files, professional PDFs, editable Word documents, web slideshows, and more. You learn the basic structure of Markdown documents and how easy it is to write page after page.

Lesson 2: Integrating Code into Markdown

Weaving together R code with prose has been a hallmark of scientific writing in R for many years thanks to S-Weave and knitr. Now with RMarkdown it is easier than ever before. We go over the necessary steps to integrate R code into Markdown documents for easy blending of results and explanations.

Lesson 3: Shiny in RMarkdown

Getting started with Shiny can seem daunting at first, having to deal with server-side and UI-side code. This endeavour does not have to be intimidating, however, because Shiny can be integrated into RMarkdown with ease. We learn the basic concepts of Shiny, such as user inputs and rendering outputs, all within a single-file RMarkdown document.

Lesson 4: Reactive Expressions

The underpinning of Shiny is reactivity. This is how objects are updated based on changes in other objects. We cover the basics of what is needed to know in order to avoid trouble while building Shiny apps.

Lesson 5: flexdashboard

The flexdashboard package enables the creation of stunning web layouts, powered by R, written entirely in RMarkdown. We create a document that looks and feels like a full website and add Shiny components for interactivity.

Lesson 6: shinydashboard

Traditional Shiny apps depend upon UI and server files which separate form from function. With shinydashboard we can quickly build professional web apps that are highly customizable. We go through layout considerations and how to incorporate input and output objects. We then integrate HTML widgets, use shinyjs to incorporate JavaScript functionality and enable the creation of user-generated reports.

<https://learning.oreilly.com/videos/shiny-r/9780134863320>

Widgets



Hands-On Dashboard Development with Shiny

★★★★★ 0 REVIEWS

by Chris Beeley

Publisher: Packt Publishing

Release Date: August 2018

ISBN: 9781789611557

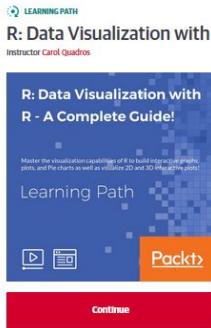
Topic: Shiny



Dashboards

- Building your first dashboard
- Laying out a dashboard
- Adding icons to your dashboards
- Adding notifications, messages, and tasks
- Info boxes and value boxes
- Adding Google Charts to your dashboard
- Summary

<https://learning.oreilly.com/library/view/web-application-development/9781782174349/ch02s03.html>



R: Data Visualization with R - A Complete Guide!

Instructor Carol Quatoz

TIME TO COMPLETE:

7h 28m

TOPICS:

R

PUBLISHED BY:

Packt Publishing

CREATED:

October 2018

Continue

What will you learn

- Deepen your knowledge by adding bar-charts, scatterplots, and time series plots using `ggplot2`.
- Create a fully-featured website using `Shiny` with real-time features such as adding and controlling functionalities.
- Create simple and quick visualizations using the basic graphics tools in `R`.
- Introduce users to basic `R` functions and data manipulation techniques while creating meaningful visualizations.
- Add elements, text, animation, and colors to your plot to make sense of data. Perform predictive modeling and create animated applications.

Resources: Code downloads and errata:

- [Learning R for Data Visualization](#)
- [R Data Visualization - Basic Plots, Maps, and Pie Charts](#)
- [R Data Visualization - Word Clouds and 3D Plots](#)

PATH PRODUCTS

This path navigates across the following products (in sequential order):

- [Learning R for Data Visualization](#) (1h 59m)
- [R Data Visualization - Basic Plots, Maps, and Pie Charts](#) (3h)
- [R Data Visualization - Word Clouds and 3D Plots](#) (2h 29m)

<https://learning.oreilly.com/learning-paths/learning-path-r/9781789950717/>



Learning Shiny

★★★★★ 0 REVIEWS

by Hernán O. Resnizky

Publisher: Packt Publishing

Release Date: October 2015

ISBN: 9781785280900

Topic: Shiny



What You Will Learn

- Comprehend many useful functions, such as lapply and apply, to process data in R
- Write and structure different files to create a basic dashboard
- Develop graphics in R using popular graphical libraries such as ggplot2 and GoogleVis
- Mount a dashboard on a Linux Server
- Integrate Shiny with non-R-native visualization, such as D3.js
- Design and build a web application

<https://learning.oreilly.com/library/view/learning-shiny/9781785280900/>

Web

Packages for widgets

The screenshot shows the shinyWidgets package documentation. On the left is a sidebar with a dark background containing a list of components: Overview, switchinput, Pretty Checkboxes & Radios, Awesome Checkboxes & Radios, checkboxGroup Buttons, radio Buttons, materialSwitch, pickerinput, sliderText, progressbar, btn, dropdowns & sweetalert. The main area is titled "shinyWidgets Overview" and displays several examples of different UI components:

- Awesome checkbox Group**: Shows checkboxes labeled A, B, and C. Value: NULL. Buttons: Show code, More examples.
- Awesome checkbox**: Shows a checked checkbox labeled "A single checkbox". Value: [1] TRUE. Buttons: Show code, More examples.
- Material Design Switch**: Shows a primary switch labeled "Primary switch". Value: FALSE. Buttons: Show code, More examples.
- Bootstrap Switch**: Shows a switch labeled "ON". Value: TRUE. Buttons: Show code, More examples.
- Select Picker**: Shows a select input with a dropdown menu. Value: [1] "edge danger". Buttons: Show code, More examples.
- Search field**: Shows a search input with placeholder "A placeholder". Value: [1] " ". Buttons: Show code, More examples.
- Multij.js**: Shows a dropdown menu titled "Countries" with options France, United Kingdom, and Germany. Buttons: Show code, More examples.

<https://github.com/dreamRs/shinyWidgets>

Charting packages

Leaflet



GeoJSON map (RStudio)

Like highcharter, Leaflet for R is another charting package based on a hugely-popular JavaScript library of the same name.

Leaflet offers a lightweight but powerful way to build interactive maps, which you've probably seen in action (in their JS form) on sites ranging from The New York Times and The Washington Post to GitHub and GIS specialists like Mapbox and CartoDB.

The R interface for Leaflet was developed using the htmlwidgets framework, which makes it easy to control and integrate Leaflet maps right in R Markdown documents (v2), RStudio, or Shiny apps.

Created by: Joe Cheng, Bhaskar Karambelkar, Yihui Xie

Where to learn more: [Leaflet for R](#)

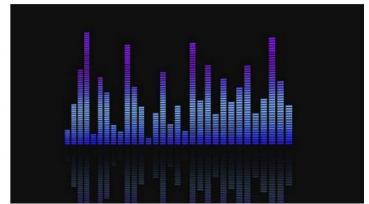
<https://mode.com/blog/r-data-visualization-packages>

General resources

M Towards Data Science Follow

HOME DATA SCIENCE MACHINE LEARNING PROGRAMMING VISUALIZATION AI JOURNALISM PICKS | CONTRIBUTE

Data Visualization



A Comprehensive Guide to Data Visualisation in R for Beginners

An overview of the R visualisation capabilities.

 Parul Pandey
Feb 4

Unmaking Graphs

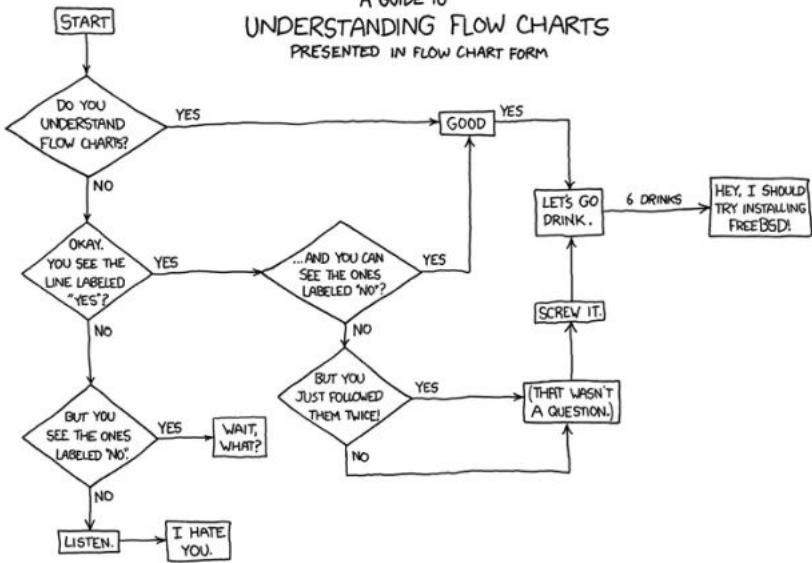
Can less be more when it comes to graphs? Yes.

 Chris Crawford
Jan 30

<https://towardsdatascience.com/data-visualization/home>

Fun

A GUIDE TO
UNDERSTANDING FLOW CHARTS
PRESENTED IN FLOW CHART FORM

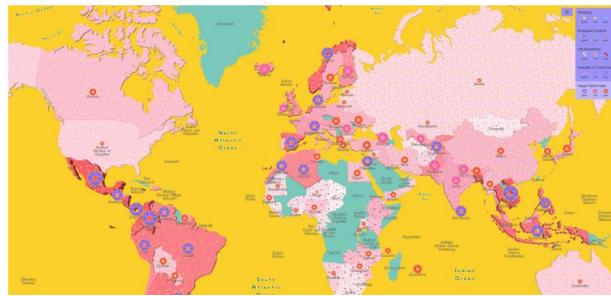




Doh! Making a Simpsons-inspired map with expressions

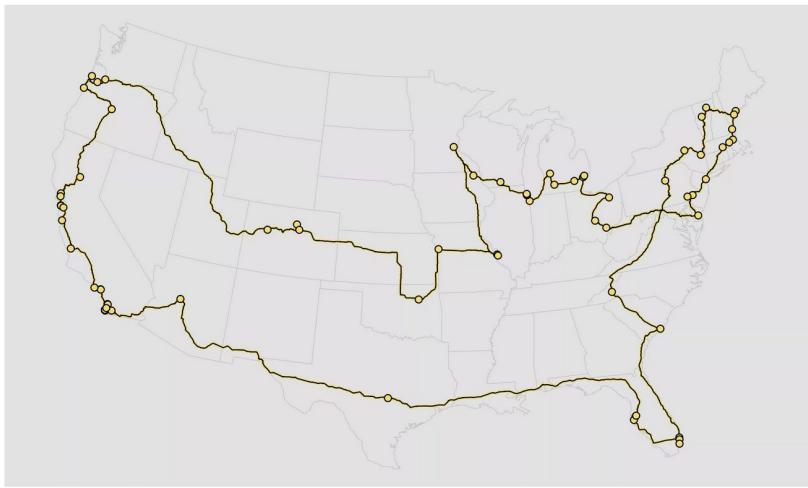
Mapbox [Follow](#) Sep 12, 2018 · 4 min read

By: [Taya Lavrinenko](#)



<https://blog.mapbox.com/doh-making-a-simspons-inspired-map-with-expressions-86e633b61ede>

Optimized Brewery Road Trip, With Genetic Algorithm



Visit the best American breweries of 2018, based on RateBeer rankings, while minimizing travel time and distance.

Where place names contain the word...



<https://medium.com/@tjukanov/places-and-their-names-observations-from-11-million-place-names-8ea34cf61da4>