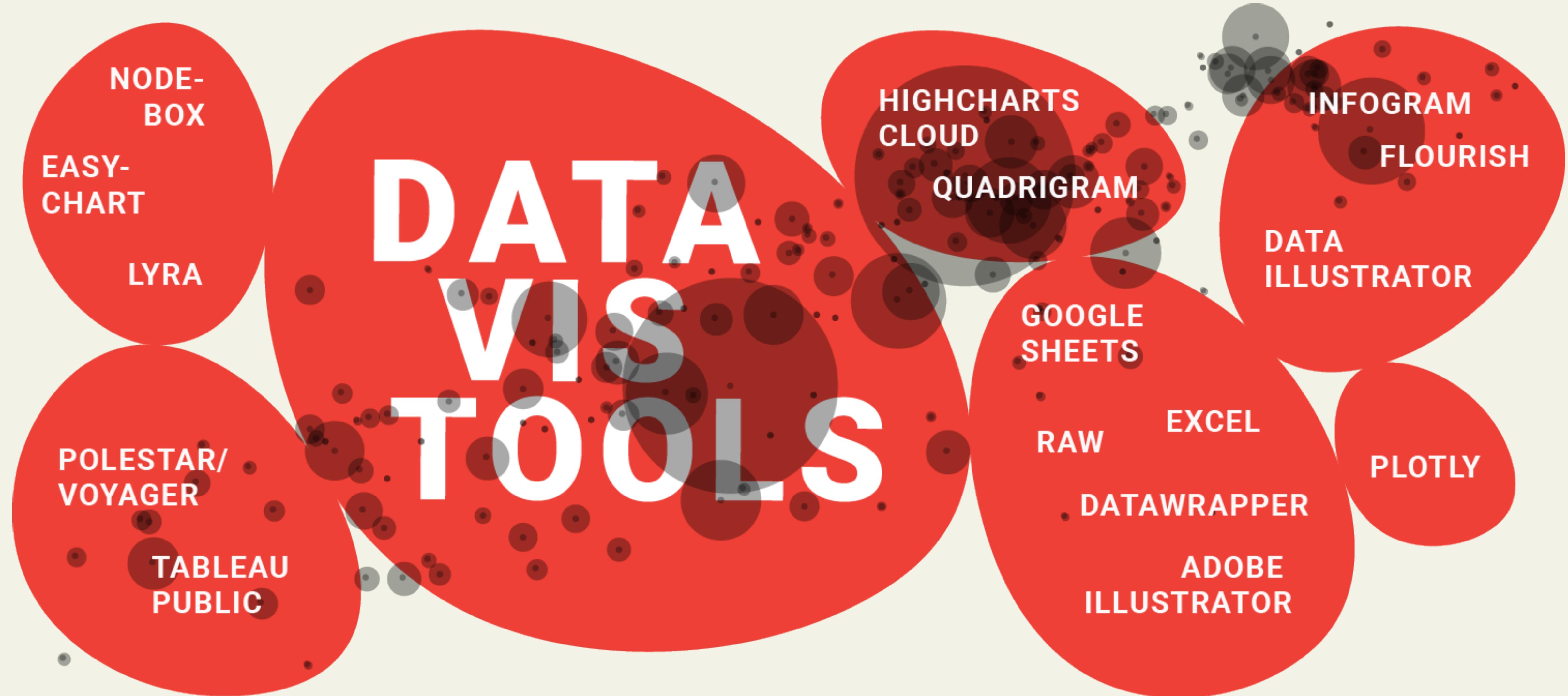
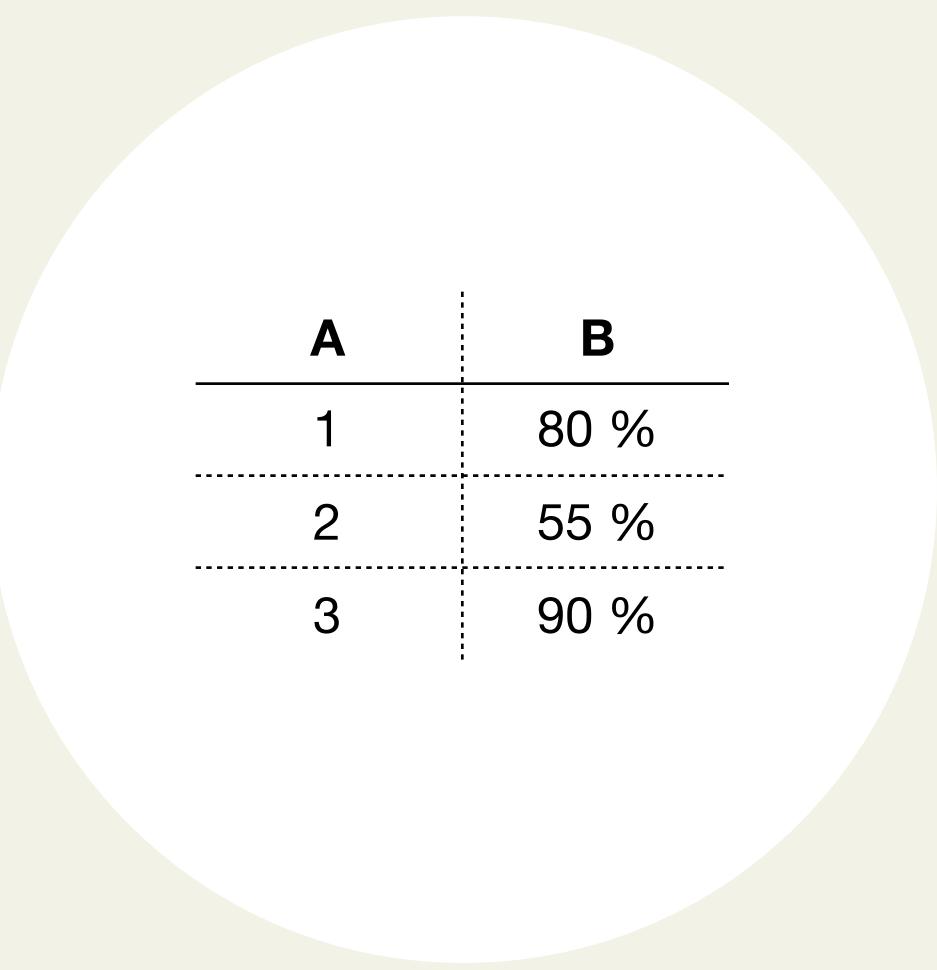
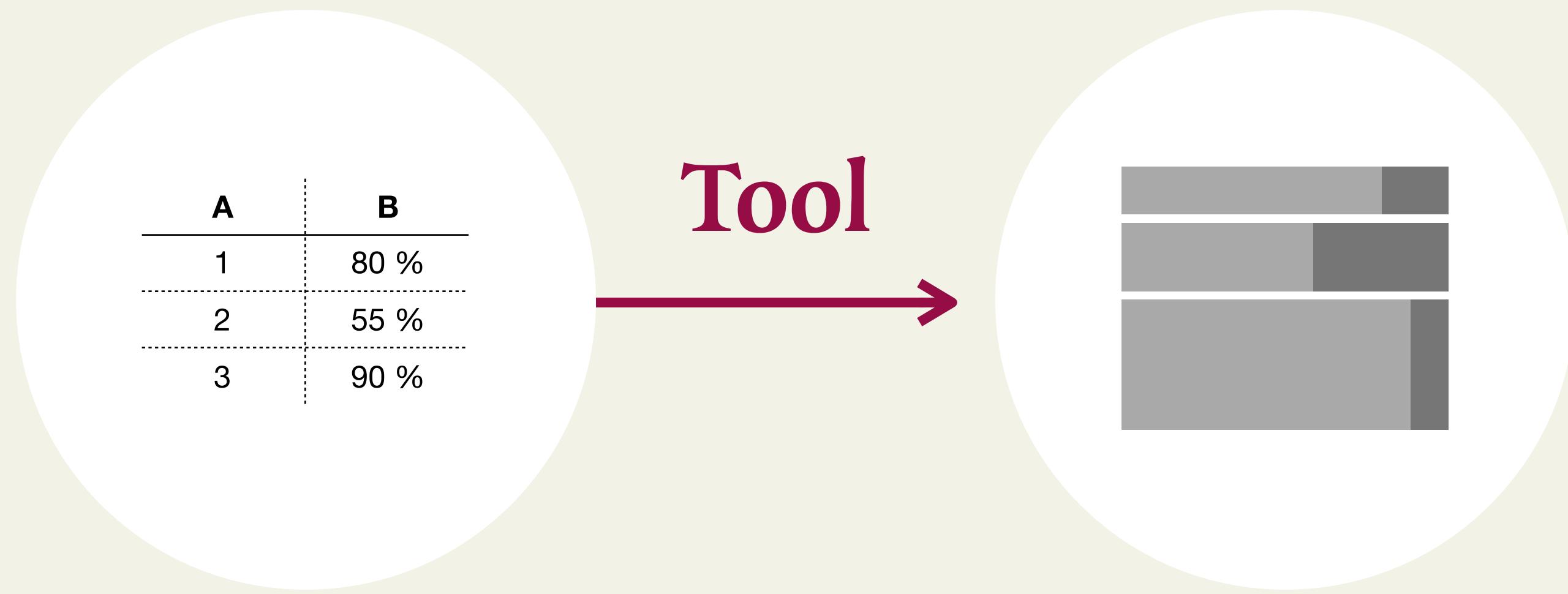


# Lisa Charlotte Rost: Data Vis Tools, Revisited



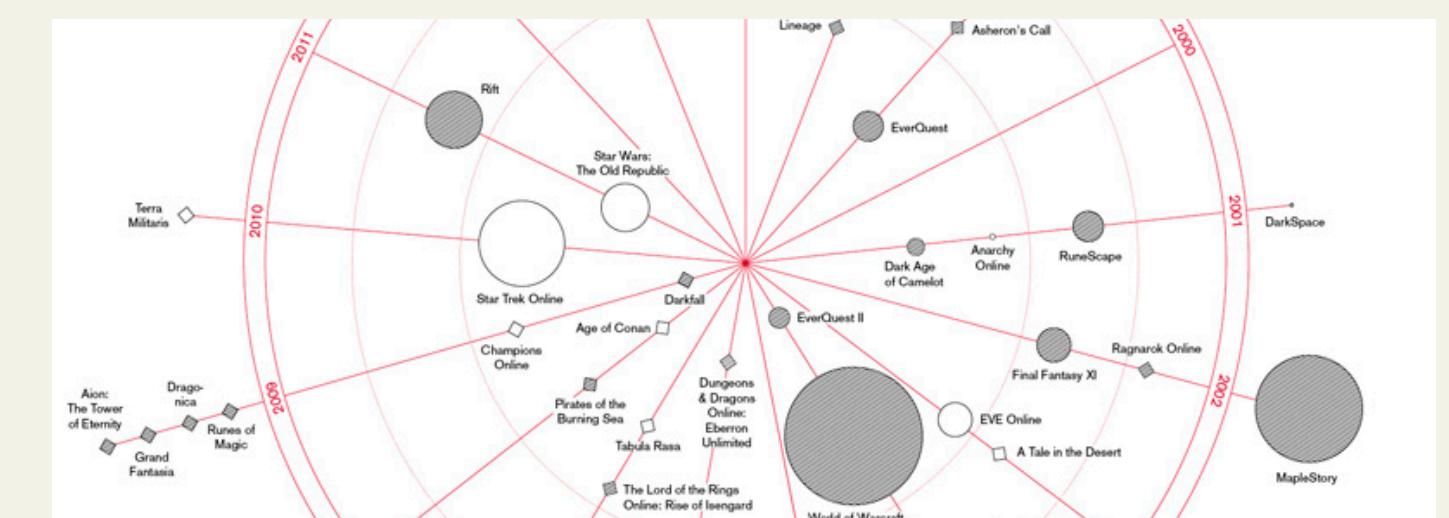
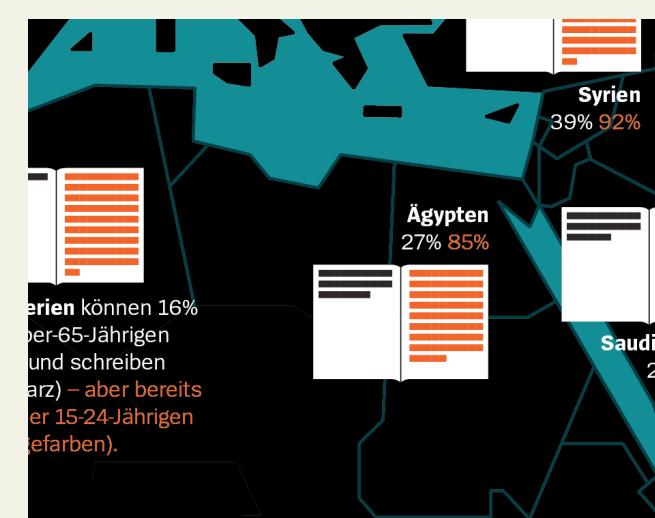
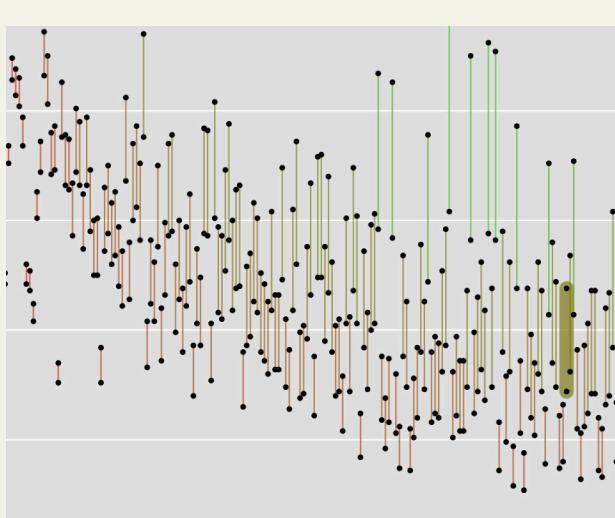
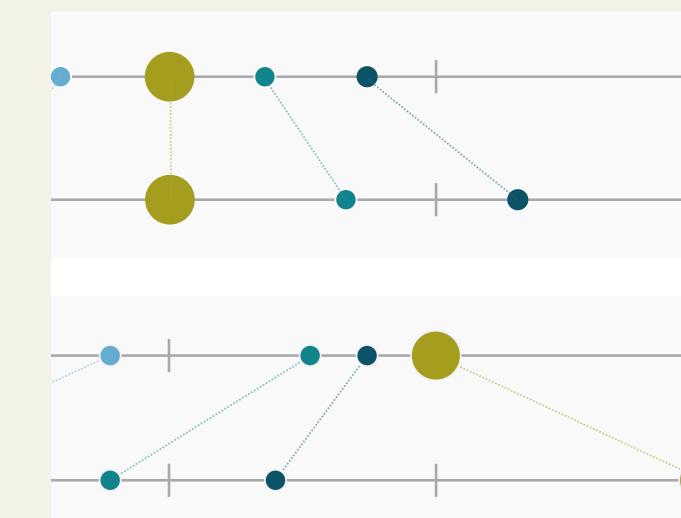
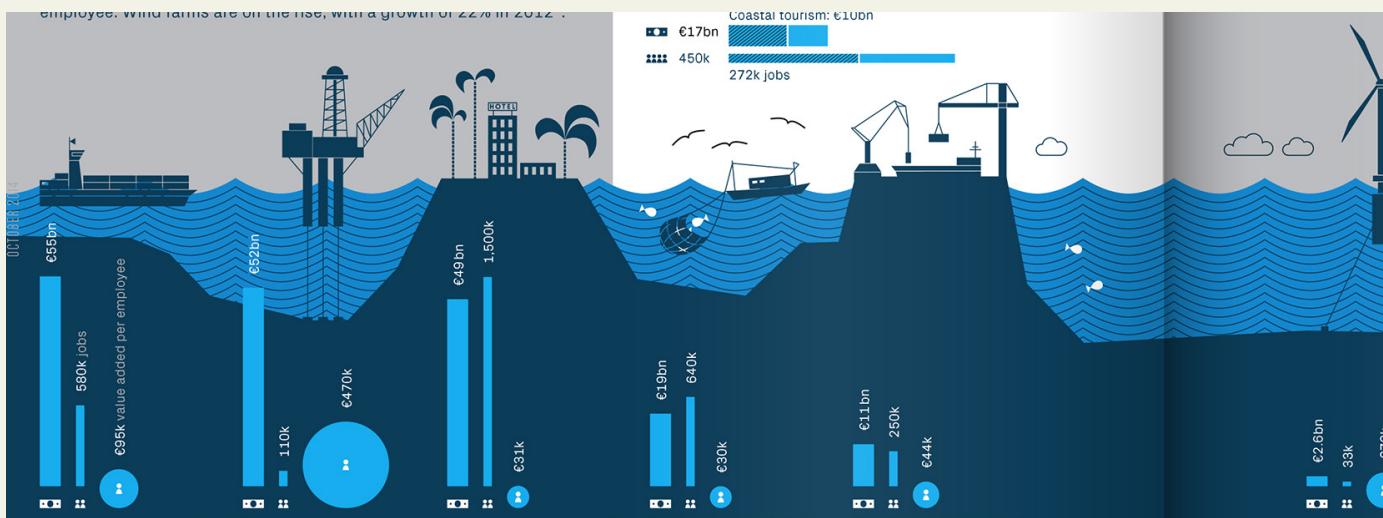
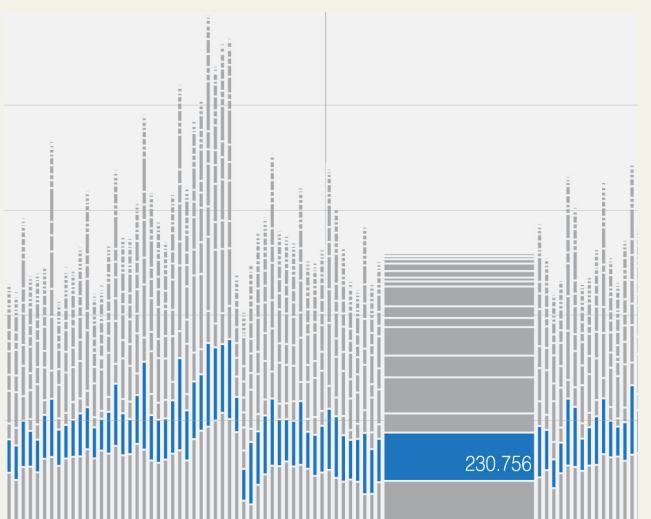
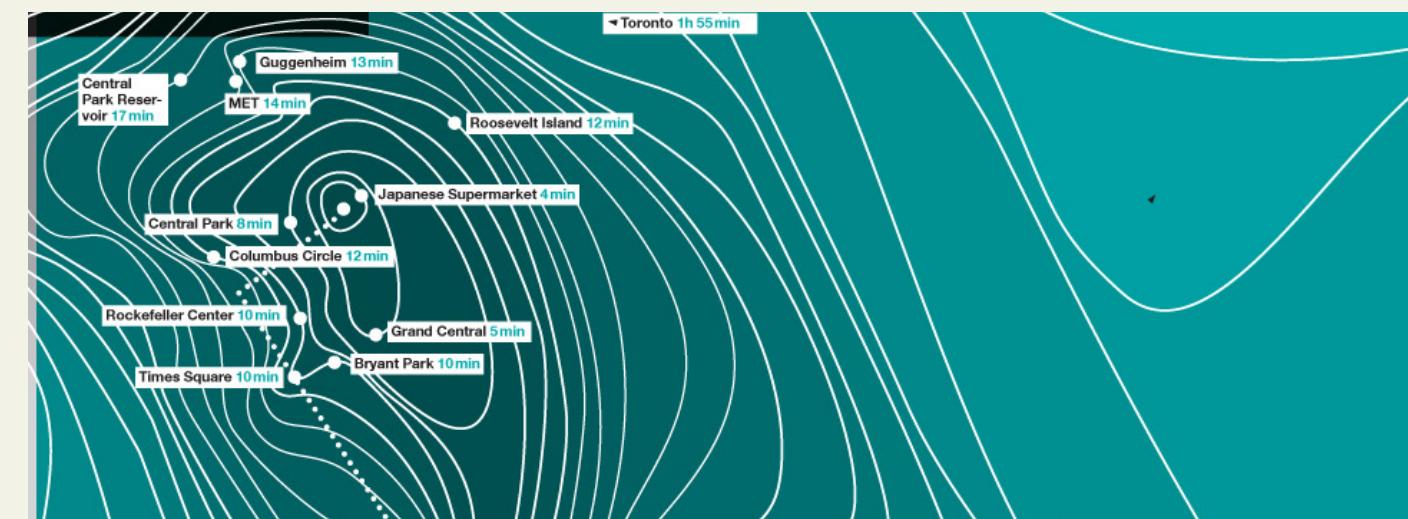
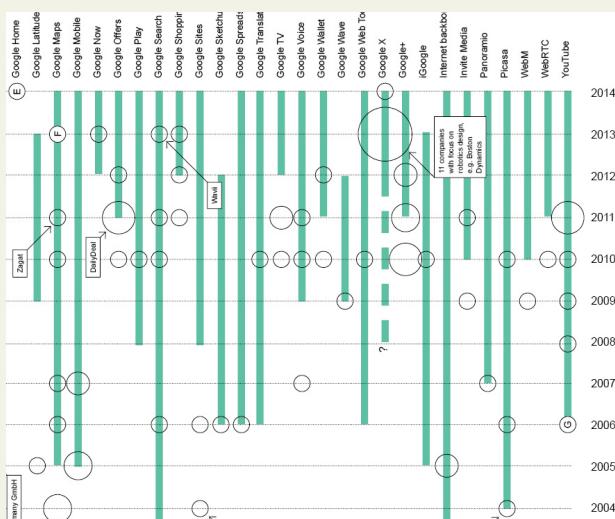
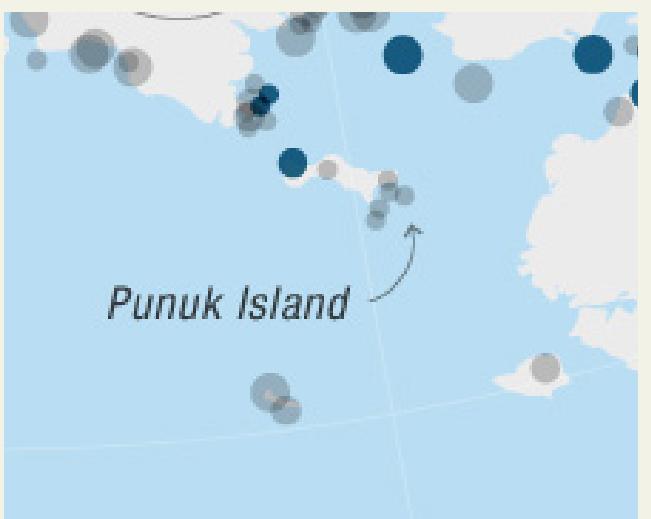
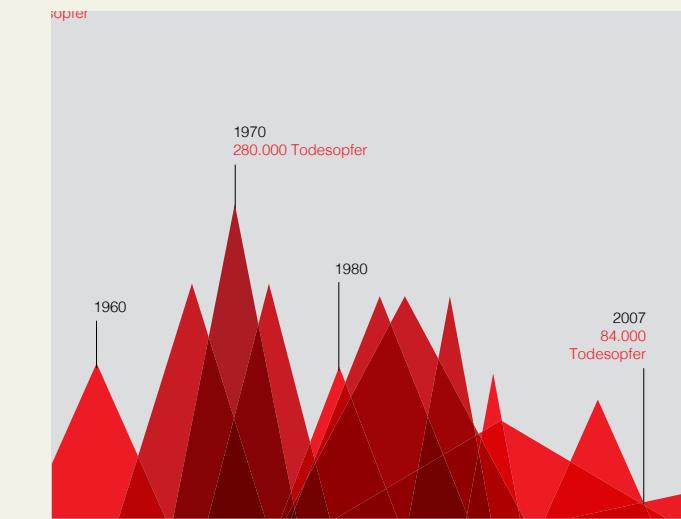
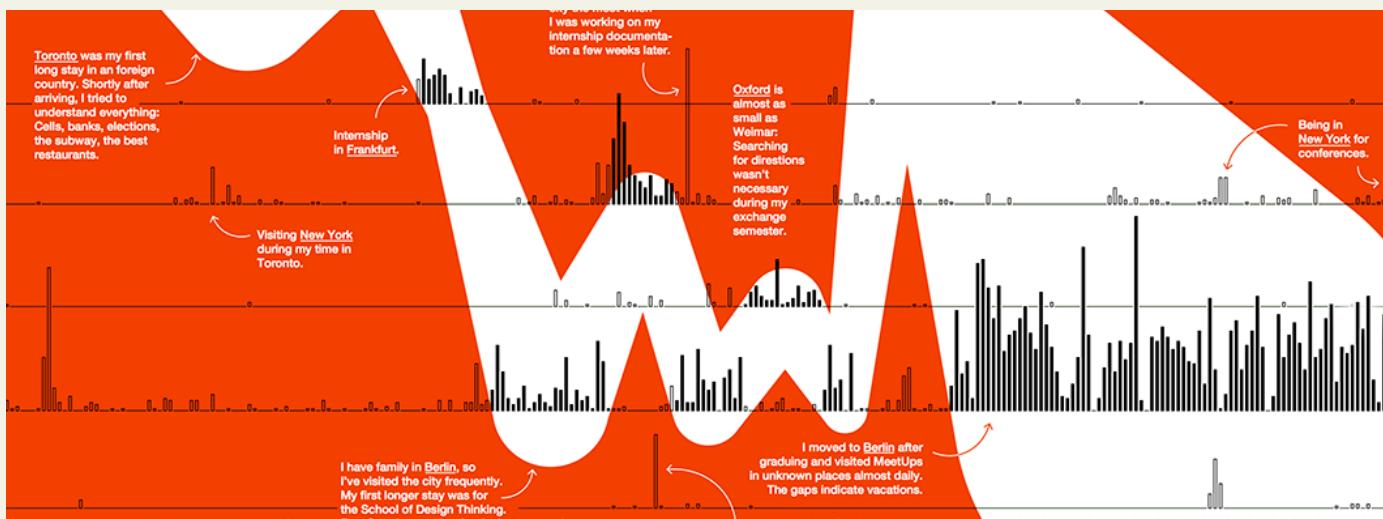




o Who am I and why got  
I asked to talk about tools?

SPIEGEL  
Bloomberg  
Businessweek  
ZEIT Online  
Tagesspiegel  
Technologist  
NPR

# now: Datawrapper <3



@lisacrost



SPIEGEL

Bloomberg

Businessweek

ZEIT Online

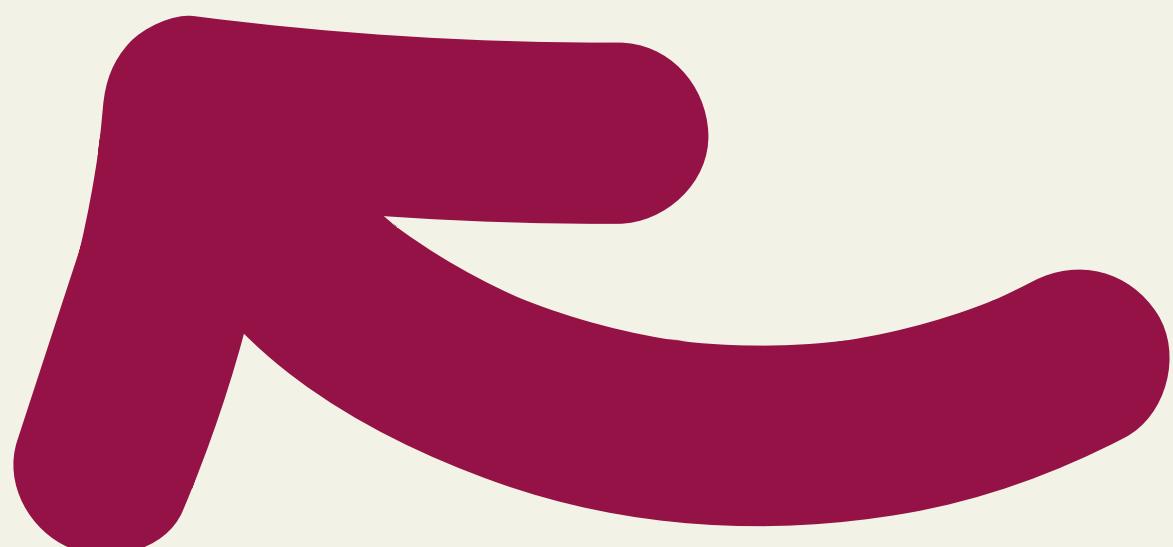
Tagesspiegel

Technology

NPR

now:

Datawrapper <3



@lisacroft

SPIEGEL

B

Businessweek

ZEIT Onlin

Tagesschau

Technik Magazin

NPR

now:

Datawrapper <3

DISCLOSURE

@lisacrost

SPIEGEL

Bloomberg

Businessweek

ZEIT online

Tagesspiegel

Technologist

NPR

now

Datawrapper <3

workshop

charter

ing tool !!

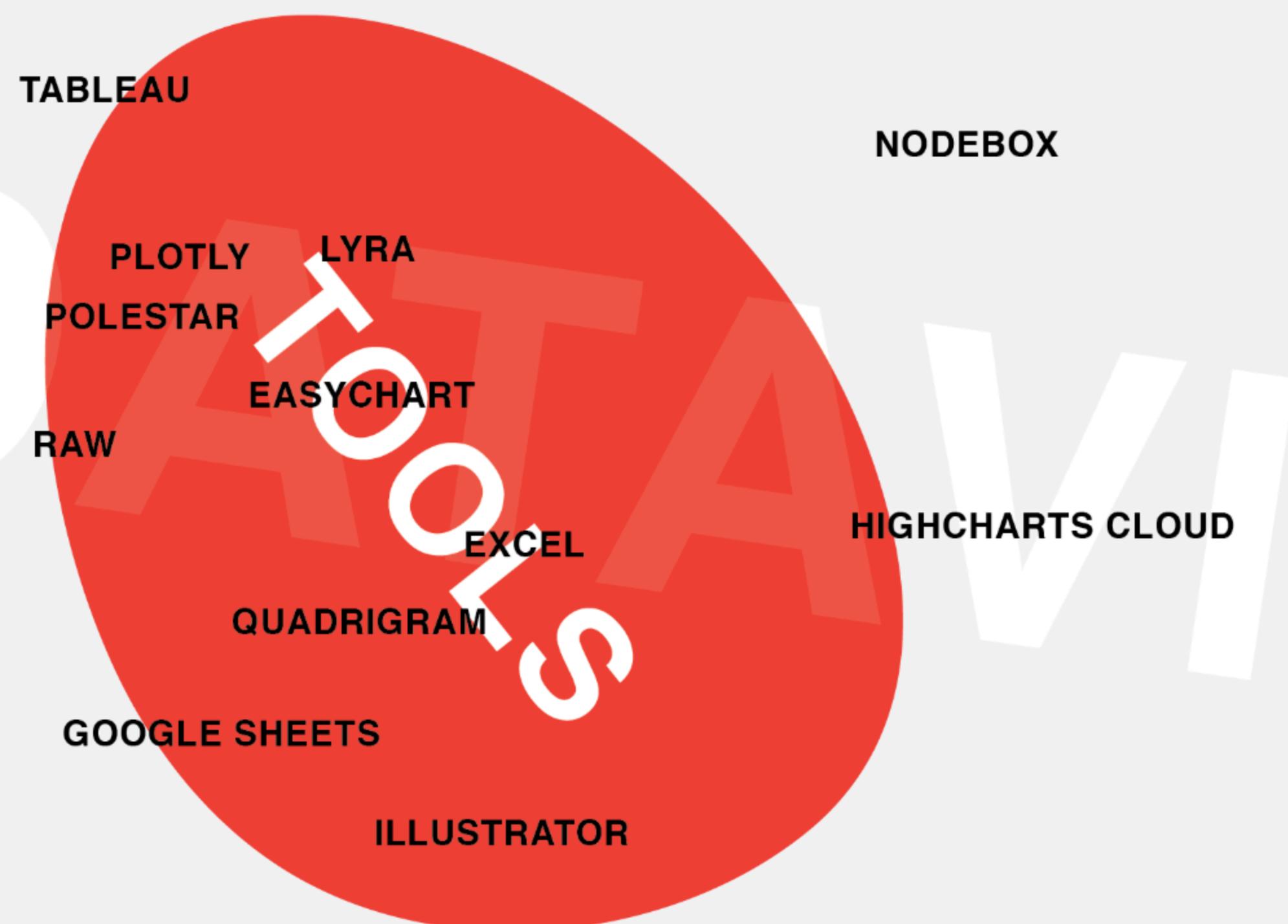
@lisacrost

o Who am I and why got  
I asked to talk about tools?

[← Go back](#)

# One Chart, Twelve Tools

17 May 2016



*Edit May 2016: Corrected false information about Adobe Illustrator and Tableau Public.*

*Edit June 2017: Added the Datawrapper version of the bubble chart.*

Which tool or charting framework do you use to visualize data? Everybody I've met so far

[Portfolio & Twitter](#)

[All Blog Articles](#)

[One Chart, Nine Tools – Revisited](#) 18 Oct 2018

["You want them" vs "They want you"](#) 05 Jan 2018

[That Frustrating Thing About Creating Data Vis in Newsrooms](#) 24 Oct 2017

1 Upload Data ✓

2 Check & Describe ✓

3 Visualize

4 Publish & Embed

Chart type

Refine

Annotate

Design



Bar Chart



Split Bars



Stacked Bars



Bullet Bars



Dot Plot



Range Plot



Arrow Plot



Column Chart



Grouped Column Chart



Stacked Column Chart



Area Chart



Lines



Scatter Plot



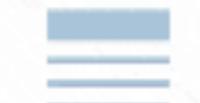
Pie chart



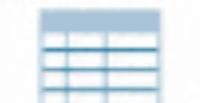
Donut chart



Election Donut

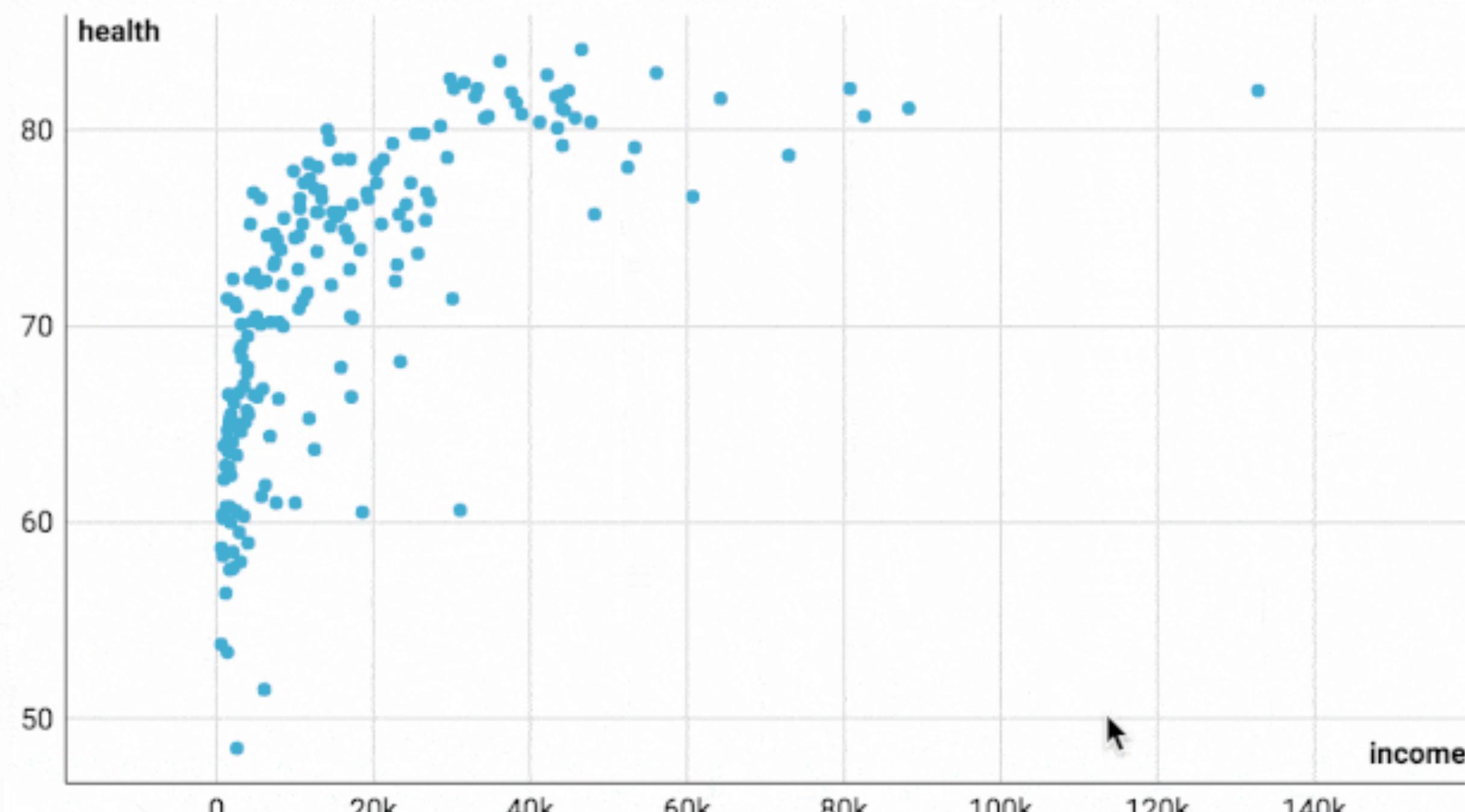


Short Table



Long Table

[ Insert title here ]



[Get the data](#) • Created with Datawrapper

CHART SIZE

600 x 400



Norm

Deut

Prot

Trit

COLORBLIND CHECK

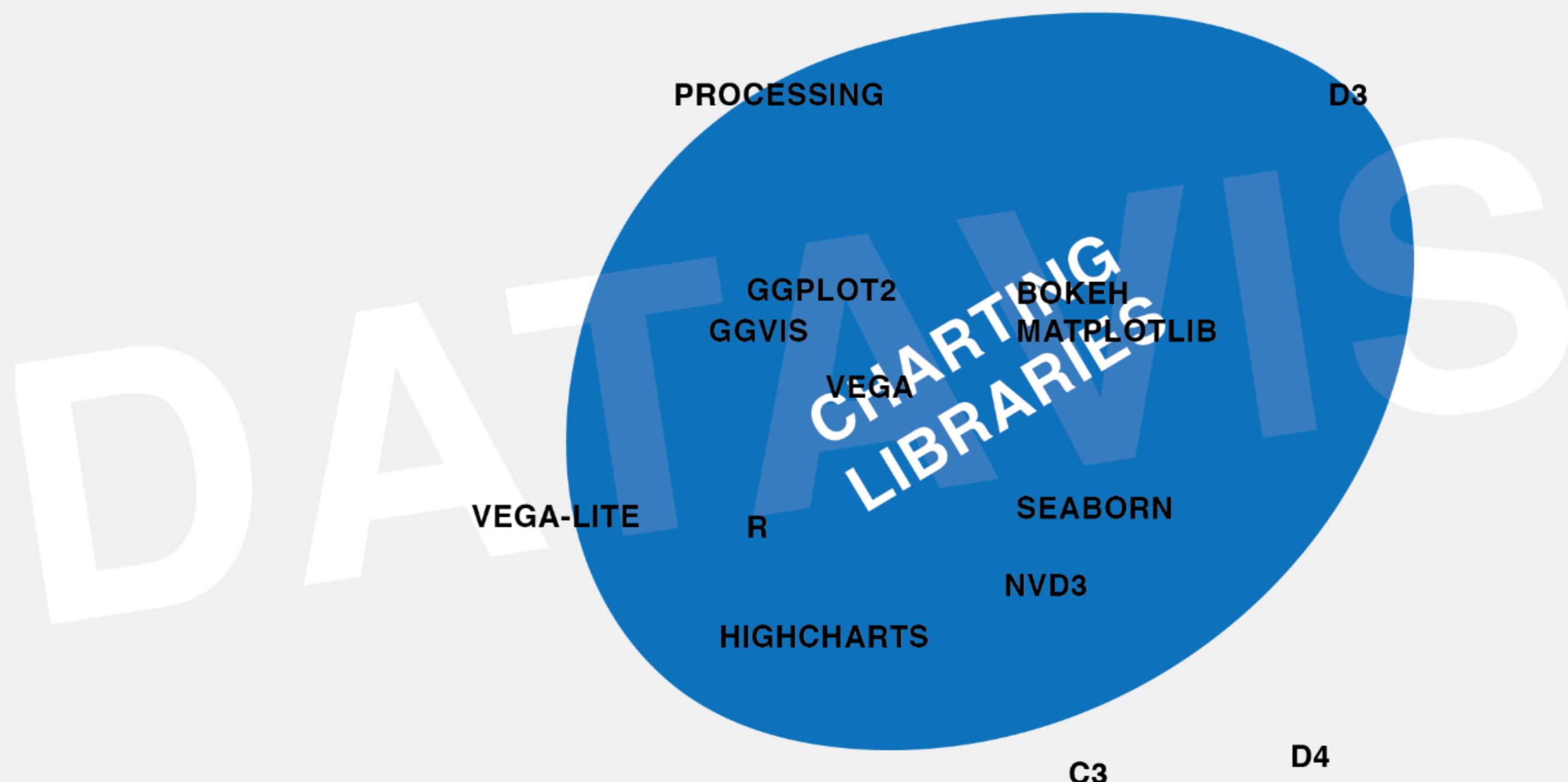


Archived chart types:

[← Go back](#)

# One Chart, Twelve Charting Libraries

17 May 2016



Charting Libraries. Gosh, there are so many out there. On [Wikipedia](#) and other websites, one can find a comparison of ca. 50 libraries – and these are only JavaScript libraries; not mentioning languages like Processing and libraries for Python and R. In the following blog post, I will try to get to know a few ones out of the great sea of possibilities. I want to

[Portfolio & Twitter](#)

[All Blog Articles](#)

[One Chart, Nine Tools – Revisited](#) 18 Oct 2018

["You want them" vs "They want you"](#) 05 Jan 2018

[That Frustrating Thing About Creating Data Vis in Newsrooms](#) 24 Oct 2017

## FEATURES

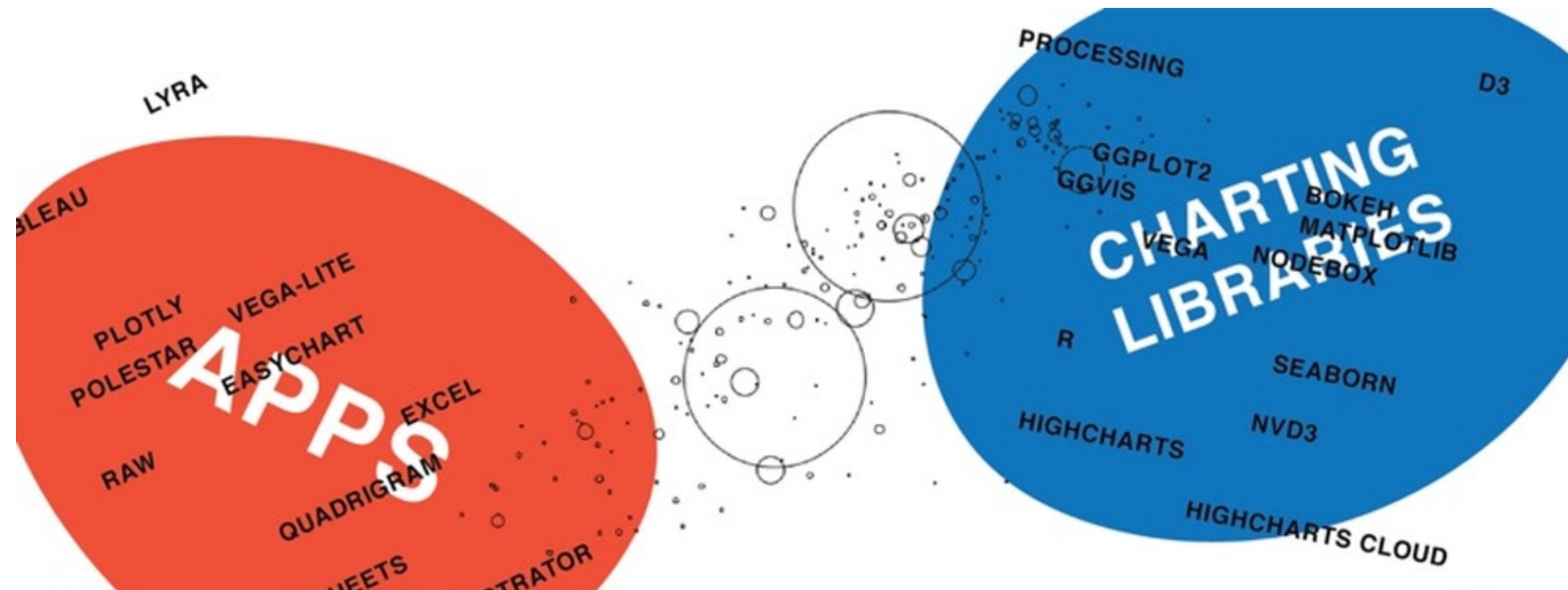
# What I Learned Recreating One Chart Using 24 Tools

Finding the best tool means thinking hard about your goals and needs.

#PYTHON  
#DATA  
#R  
#CHARTS  
#D3  
#LYRA  
#PROCESSING  
#TABLEAU  
#SO MANY CHARTS

By [Lisa Charlotte Rost](#)

Posted on: December 8, 2016



- o Who am I and why got I asked to talk about tools?
- I-4** My lessons learned, revisited
- 5 Why building charting tools is so hard
  - 6 What I want for the future

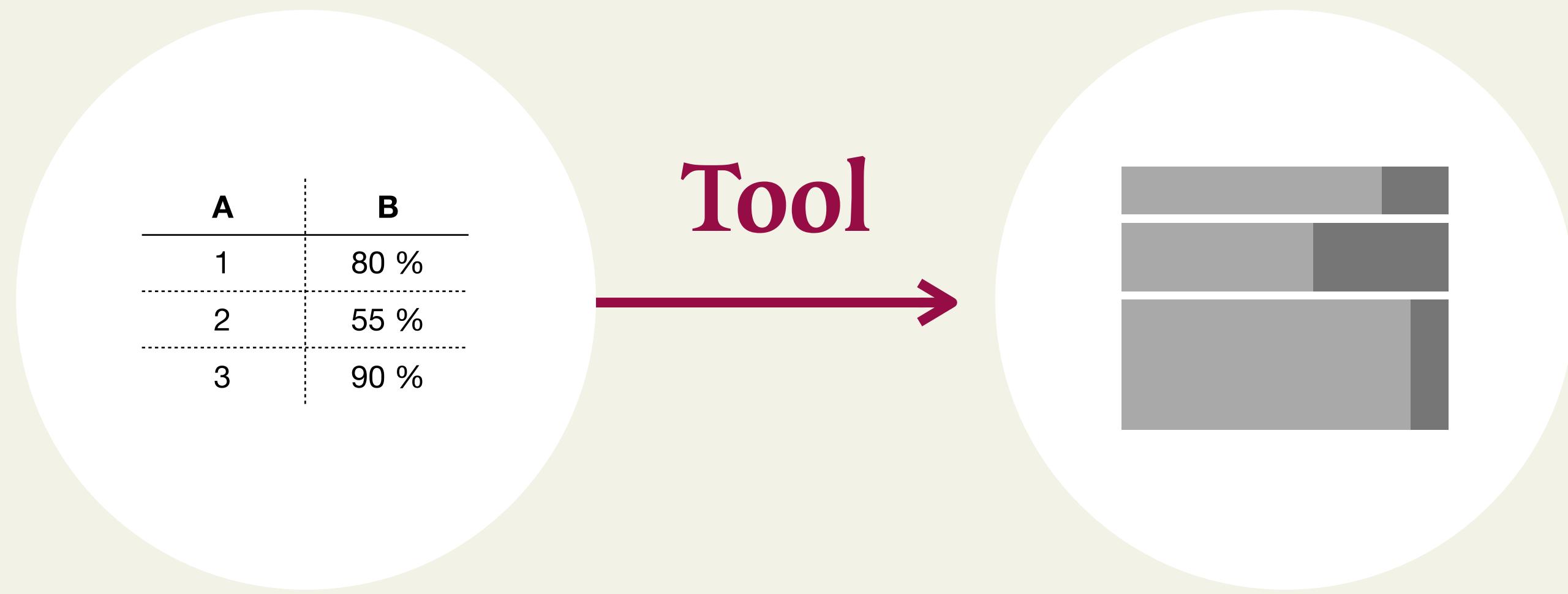
- o Who am I and why got I asked to talk about tools?

## I-4 My lessons learned, revisited

- 5 Why building charting tools is so hard
- 6 What I want for the future

I “There are no perfect tools,  
just good tools for people with  
certain goals.”

**I** “There are no perfect tools,  
just good tools for people with  
certain **goals.**”



Your  
Goal

The diagram illustrates a process flow. On the left, a white circle contains a table with three rows and two columns. The columns are labeled 'A' and 'B'. The first row has '1' in column A and '80 %' in column B. The second row has '2' in column A and '55 %' in column B. The third row has '3' in column A and '90 %' in column B. A red arrow points from this circle to a larger white circle on the right. Inside the larger circle is a dark gray rectangle divided into four horizontal sections of increasing height from top to bottom. The word 'Tool' is written in red above the arrow.

A	B
1	80 %
2	55 %
3	90 %

Tool

I “There are no perfect tools,  
just good tools for people with  
certain goals.”

Where you want to go.

I

→ analyse/present?

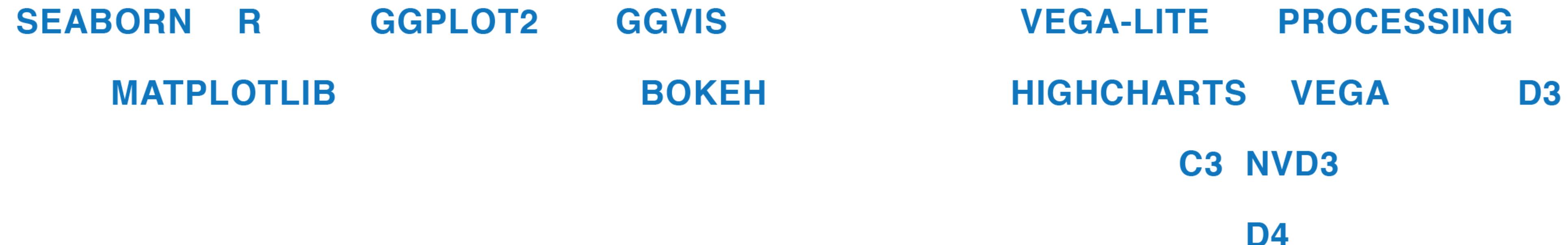
→ static/interactive?

→ will the data change?

→ how flexible?

● APPS  
● CHARTING LIBRARIES

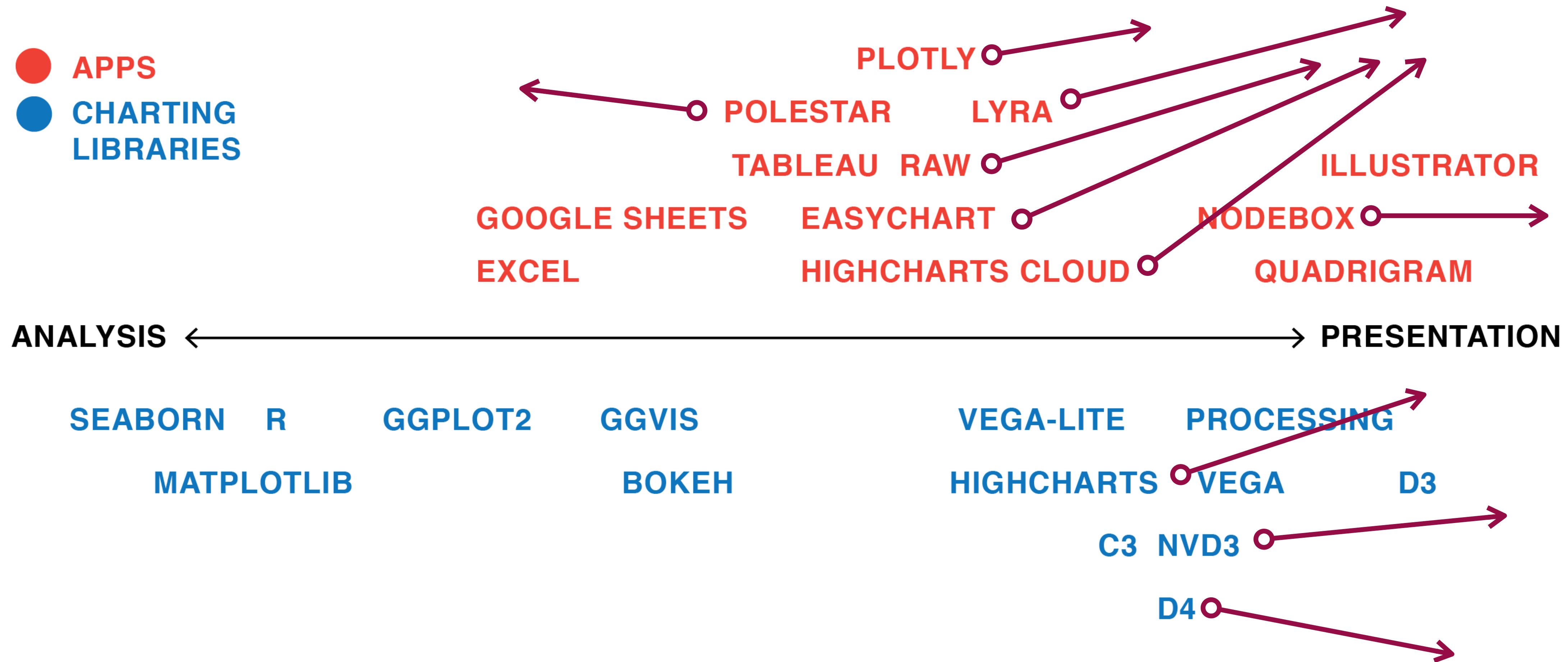
ANALYSIS ← → PRESENTATION

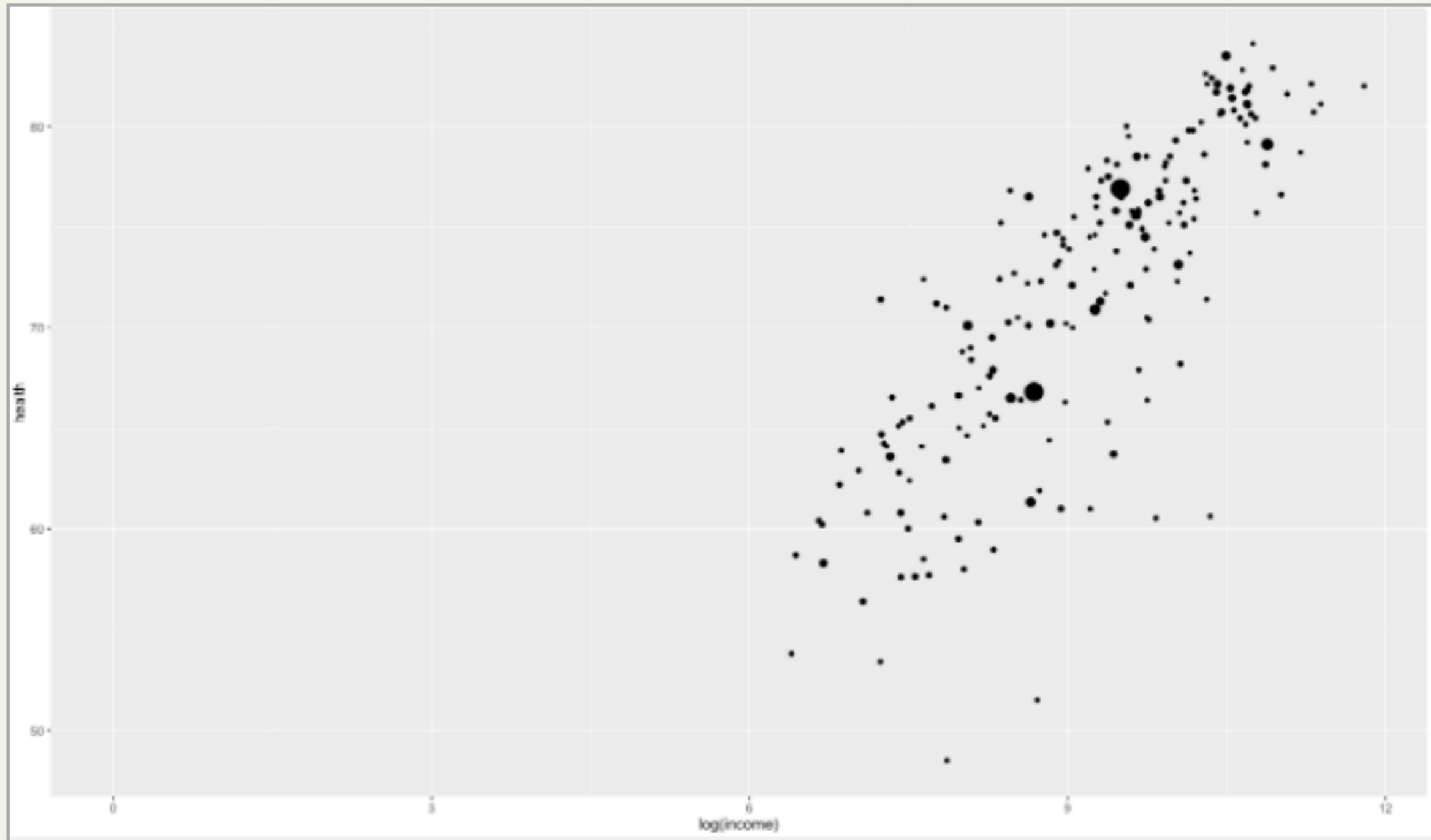


Note: These opinions are 2.5 years old. I think differently now.

@lisacroft

- APPS
- CHARTING LIBRARIES





```
#import library
library(ggplot2)

#set working directory
setwd("Desktop")

#read csv
d = read.csv("data.csv", header=TRUE)

#plot chart
ggplot(d) +
  geom_point(aes(x=log(income),y=health,size=population)) +
  expand_limits(x=0)
```



```
<body>
<script type="text/javascript">

// load data
var data = D3.csv("data.csv", function(error, data) {

  // change string (from CSV) into number format
  data.forEach(function(d) {
    d.health = +d.health;
    d.income = Math.log(+d.income);
    d.population = +d.population;
    console.log(d.population, Math.sqrt(d.population))
  });

  // set scales
  var x = D3.scale.linear()
    .domain([0, D3.max(data, function(d) {return d.income;})])
    .range([0, 1000]);

  var y = D3.scale.linear()
    .domain([D3.min(data, function(d) {return d.health;}),
```



```
#import library
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setwd("Desktop")

#read csv
d = read.csv("data.csv", header=TRUE)

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        d.population = +d.population;
        console.log(d.population, Math.sqrt(d.population))
      });

      // set scales
      var x = D3.scale.linear()
        .domain([0, D3.max(data, function(d) {return d.income;})])
        .range([0, 1000]);

      var y = D3.scale.linear()
        .domain([D3.min(data, function(d) {return d.health;}),
          D3.max(data, function(d) {return d.health; })])
        .range([500, 0]);

      var size = D3.scale.linear()
        .domain([D3.min(data, function(d) {return d.population;}),
          D3.max(data, function(d) {return d.population; })])
        .range([2, 40]);

      // append the chart to the website and set height&width
      var chart = D3.select("body")
        .append("svg:svg")
        .attr("width", 1000)
        .attr("height", 500)

      // draw the bubbles
      var g = chart.append("svg:g");
      g.selectAll("scatter-dots")

        .data(data)
        .enter().append("svg:circle")
        .attr("cx", function(d,i) {return x(d.income);})
```

I → analyse/present?

→ static/interactive?

→ will the data change?

→ how flexible?

## STATIC

### APPS

ILLUSTRATOR, NODEBOX,  
EXCEL, POLESTAR, RAW

## WEB - INTERACTIVE

HIGHCHARTS CLOUD, QUADRIGRAM,  
EASYCHRT, DATAWRAPPER, TABLEAU,  
PLOTLY, GOOGLE SHEETS

### CHARTING LIBRARIES

GGPLOT2, MATPLOTLIB,  
R, SEABORN,  
BOKEH, PROCESSING

D3, D4, C3, NVD3, GGVIS,  
HIGHCHARTS,  
SHINY, VEGA, VEGA-LITE

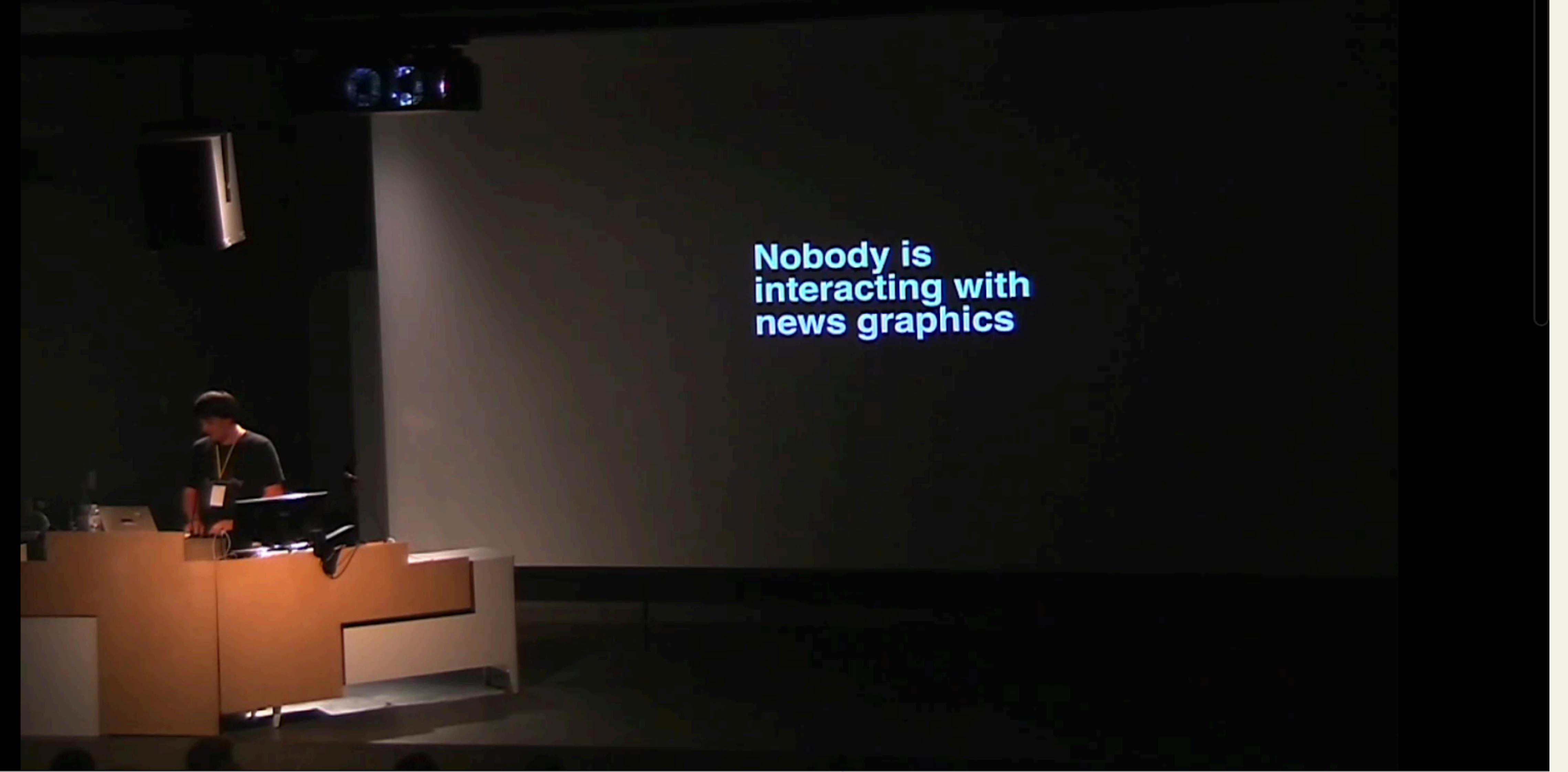
I → analyse/present?

→ static/interactive? 🤔

→ will the data change?

→ how flexible?

2. If you make a tooltip or rollover, assume no one will ever see it. If content is important for readers to see, don't hide it.



Nobody is  
interacting with  
news graphics

# Gregor Aisch

2 years ago | More

More from Information+ Conference

Autoplay next video



Dominikus Baur [Follow](#)

data visualization and interaction designer and developer. background in germanisms.

<https://do.minik.us>

Mar 13, 2017 · 15 min read

# The death of interactive infographics?

# How has this changed us?

> Most visuals are static.

I → analyse/present?

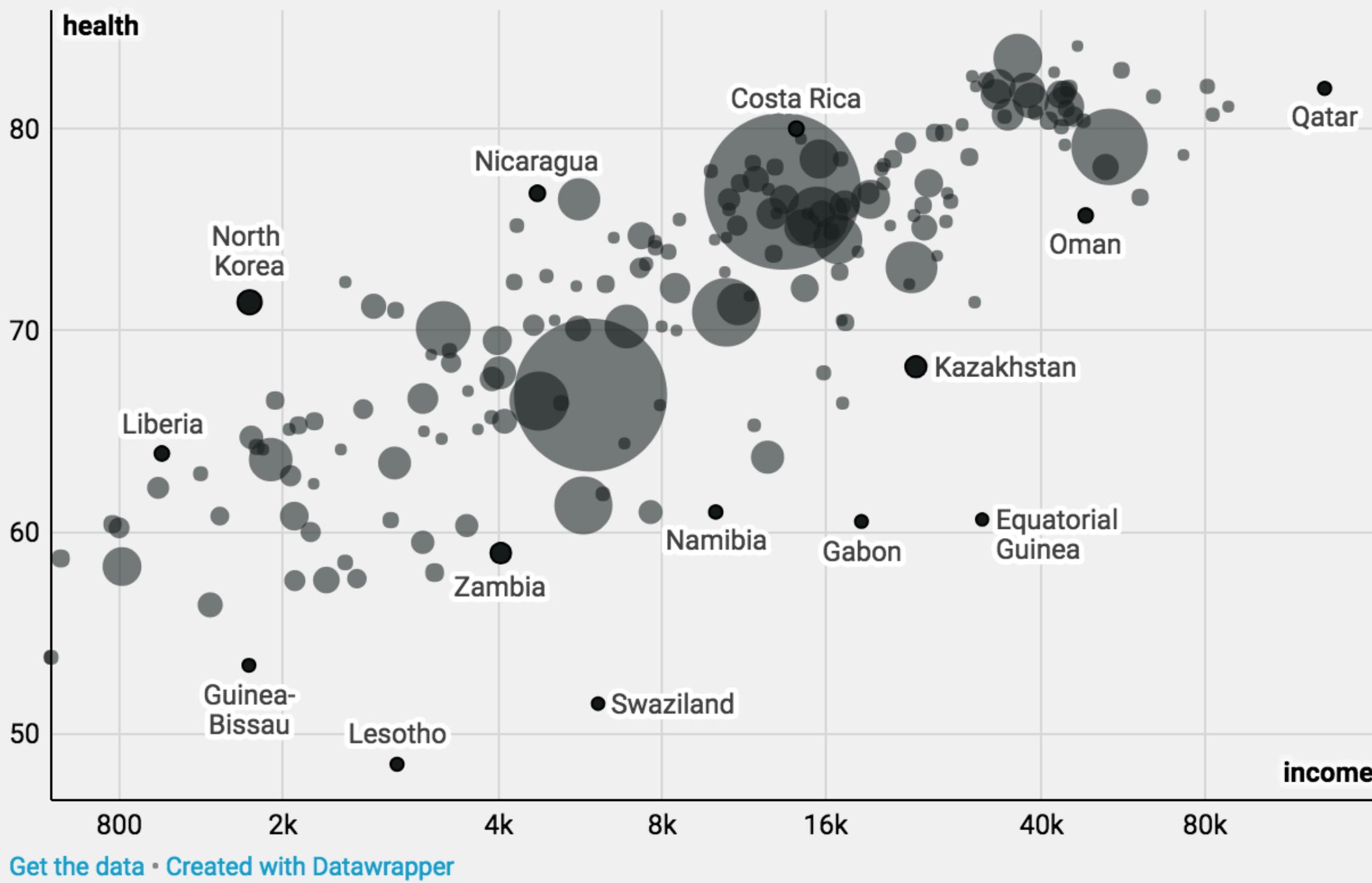
→ static/interactive?

→ will the data change?

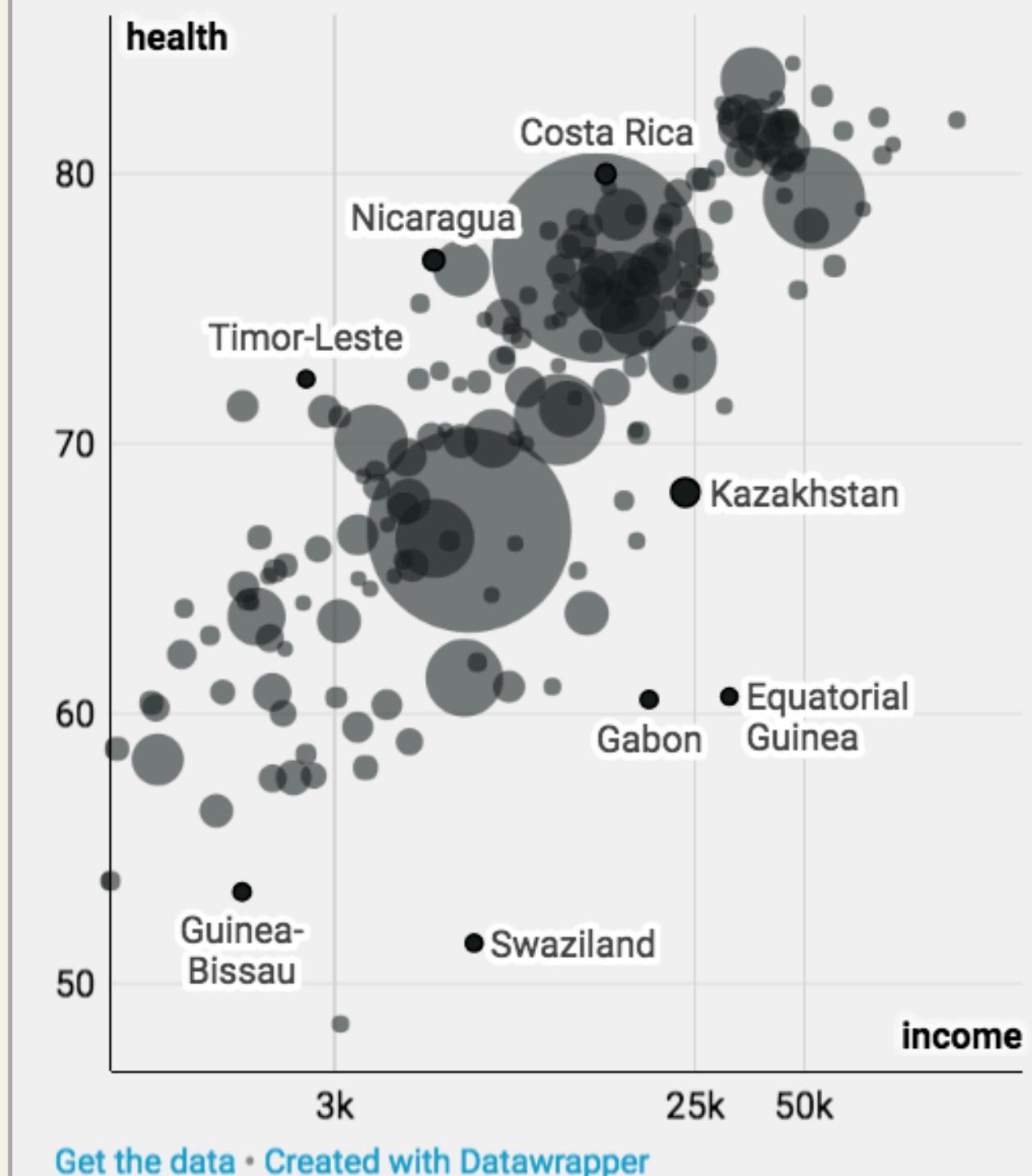
→ how flexible?

- I → analyse/present?
- ~~static/interactive?~~ responsive?
- will the data change?
- how flexible?

money. With that out of the way, here's what (personally, privately) I like better in Flourish and Infogram than in Datawrapper: I get to see a chart immediately and don't need to go through 2 (!) steps of looking at my data in a boring table. And both tools so far give me good automatic tooltips, without needing to create them yourself. However, the data point labeling & the data-to-axis-assignment is better solved in Datawrapper. Plus, the axis ticks are neither tilted nor too small.



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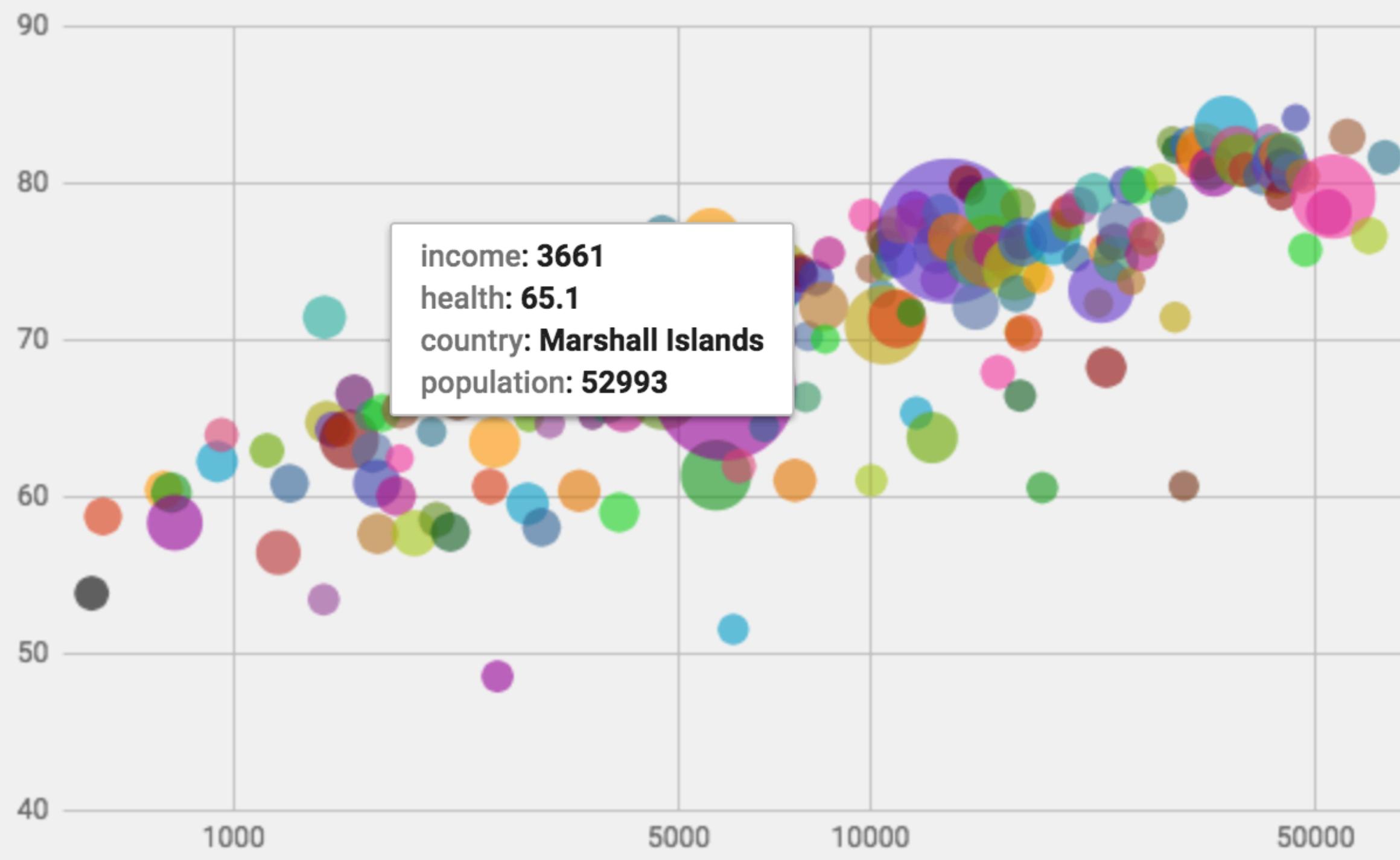


## Data-wrapper

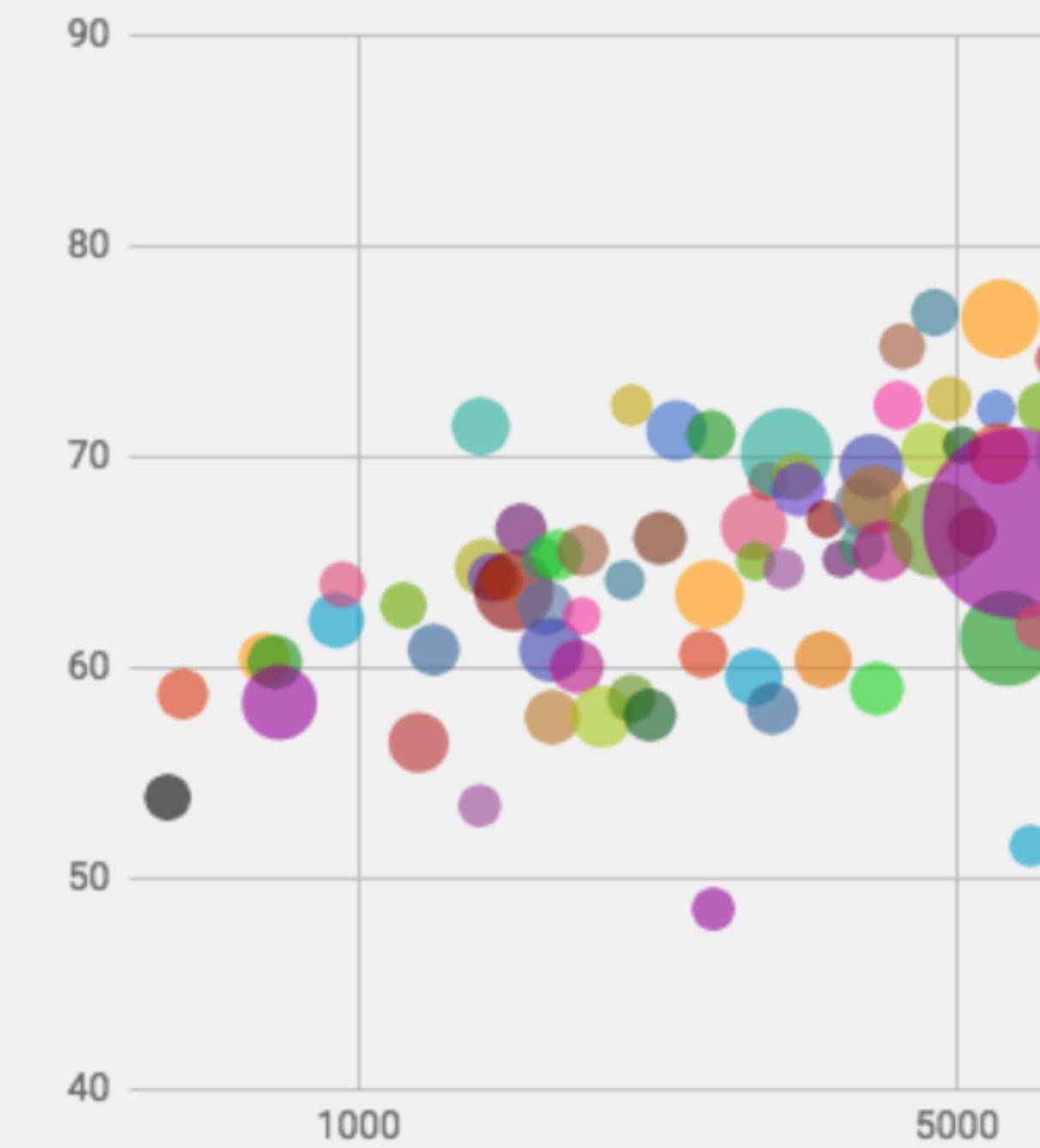
@lisacrost

# Google Sheets

**Google Sheets** Let me quote from what I wrote about Google Sheets in my blog post back then: "Google Sheets CAN do bubble charts, but only with a little hack - I would have needed to change my data for it." Well, they changed the editor – and now we can! We can't change the color of our bubbles to one color (black), but hey, who cares about color. At least the bubbles are differently sized now:



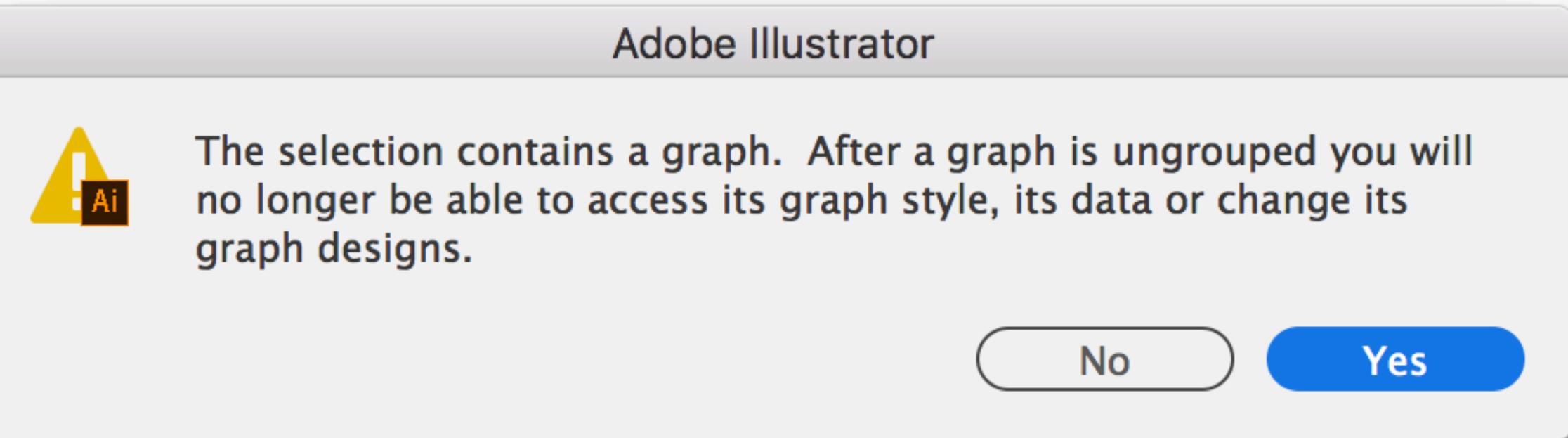
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- I → analyse/present?
- static/interactive? responsive?
- **will the data change?**
- how flexible?



New data?  
Build chart  
freshly.



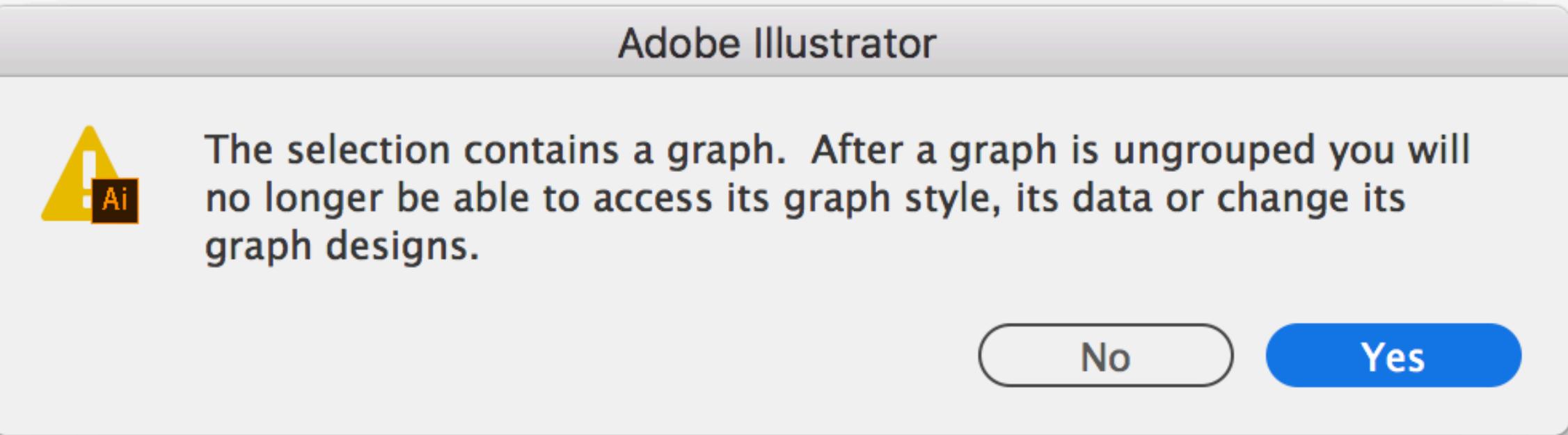


New data?  
Build chart  
freshly.

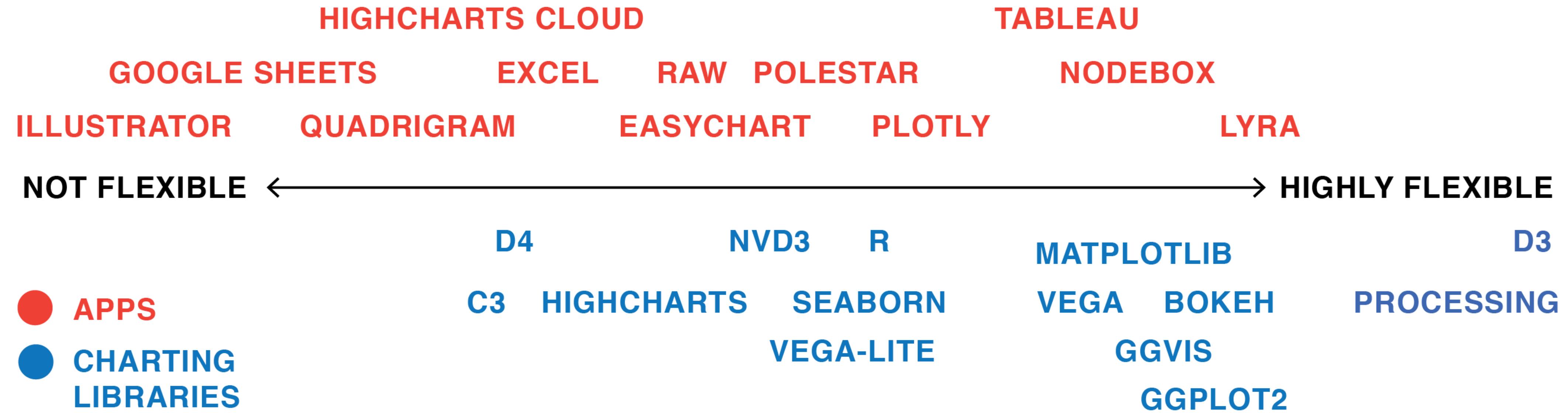


New data?  
Convert or upload  
data freshly.

New data?  
Automatic  
update.

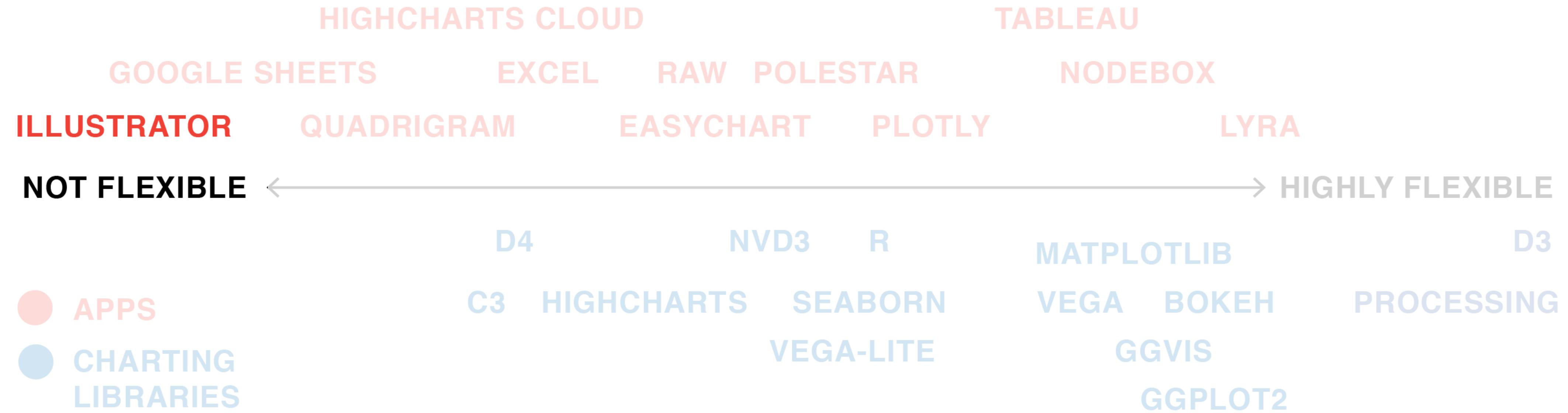


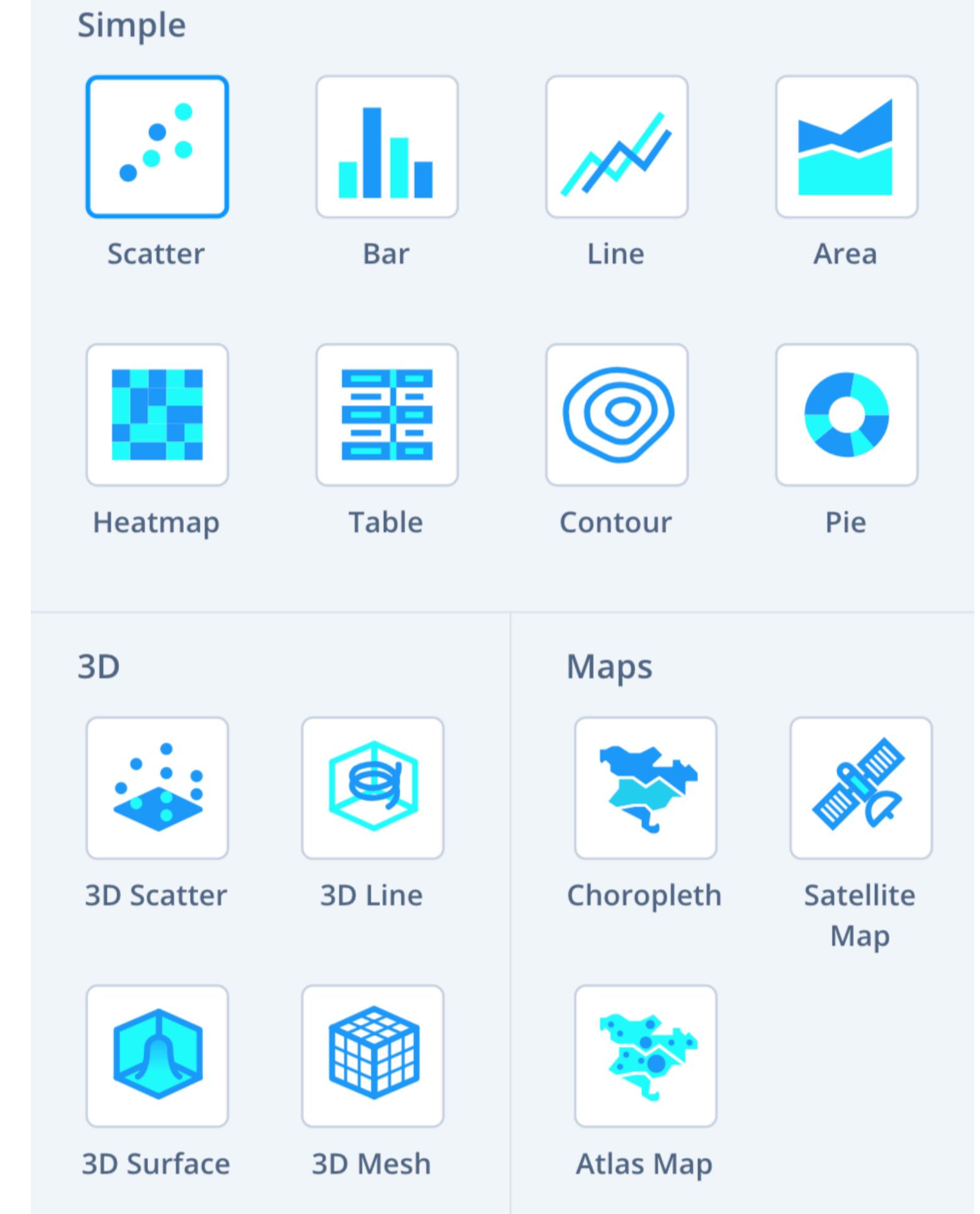
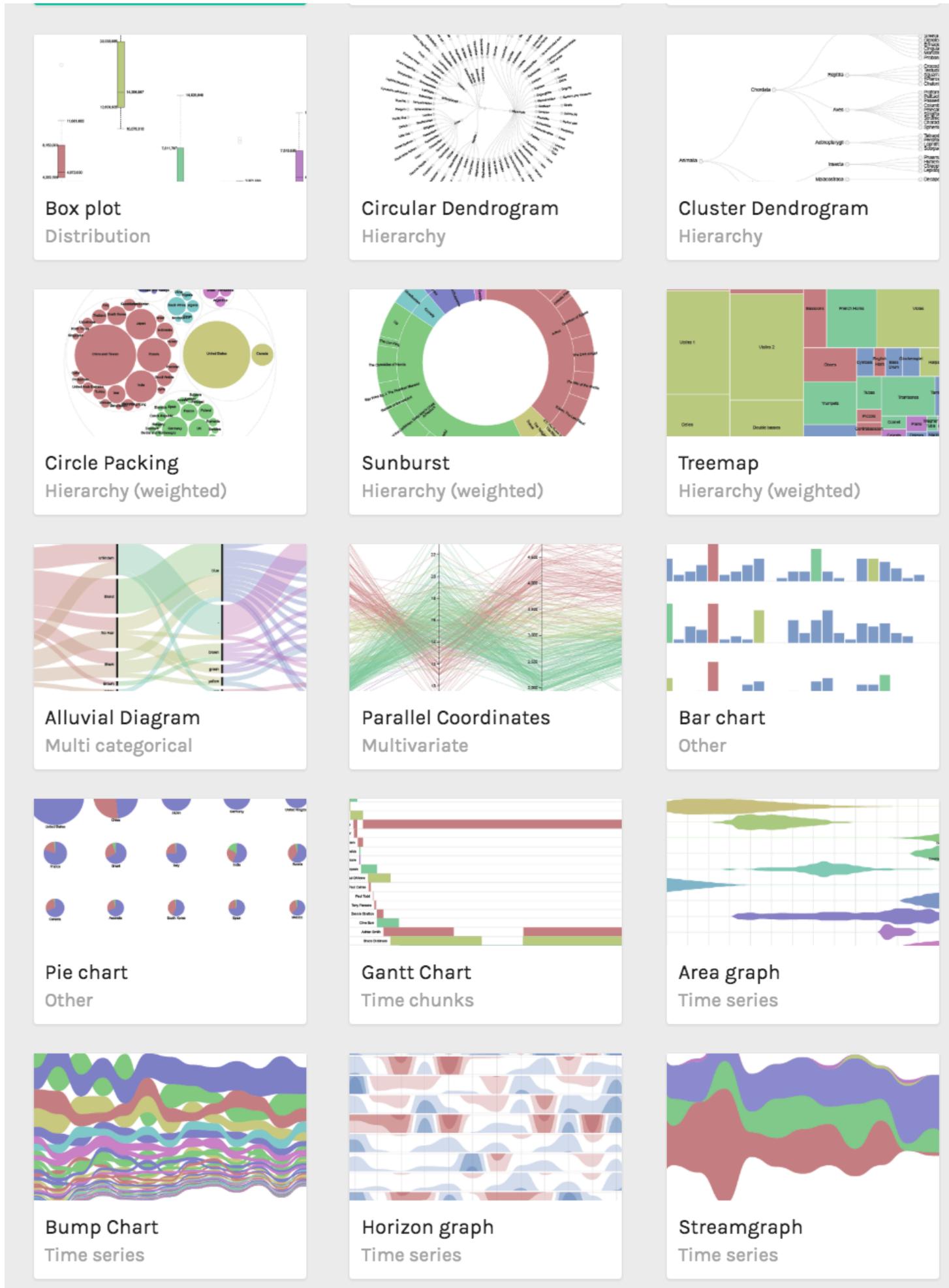
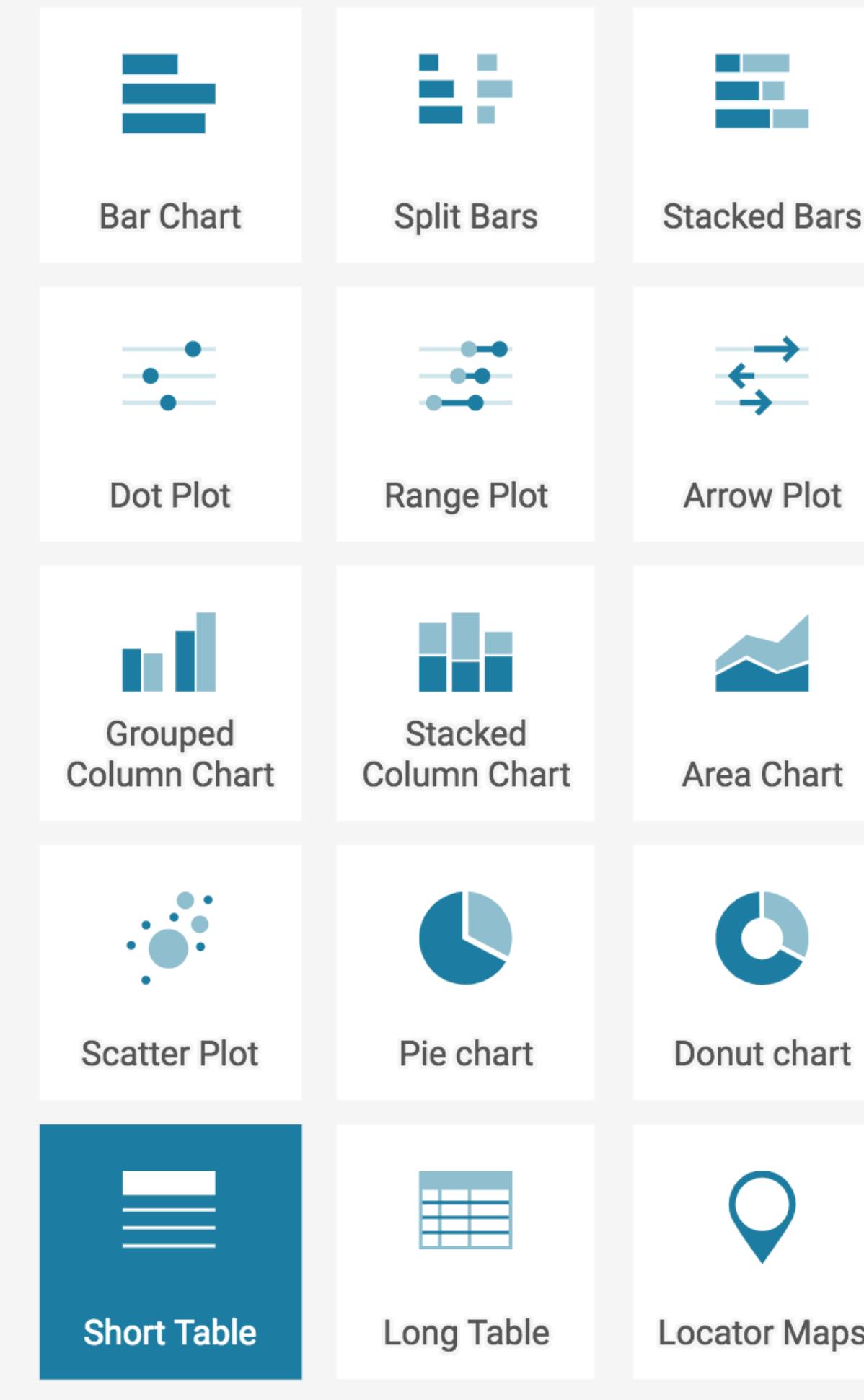
- I → analyse/present?
- static/interactive? responsive?
- will the data change?
- **how flexible?**



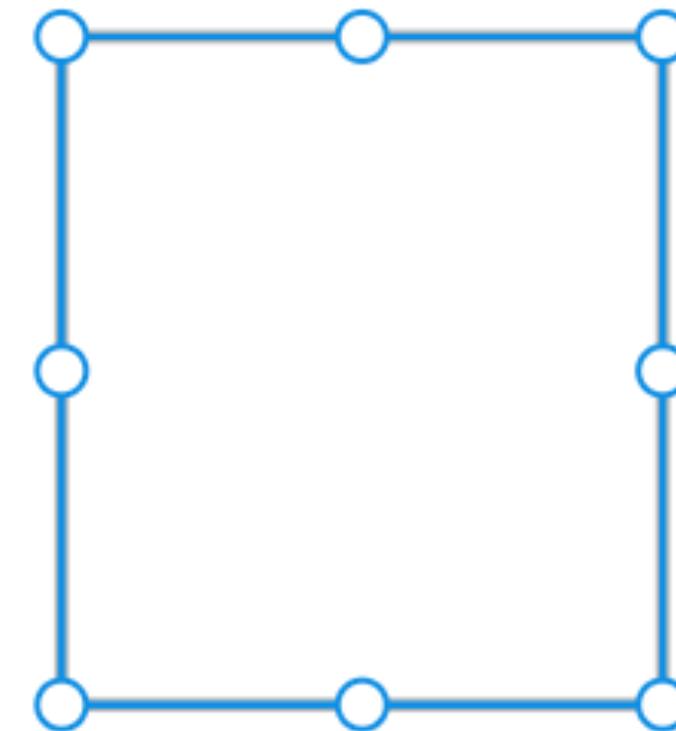
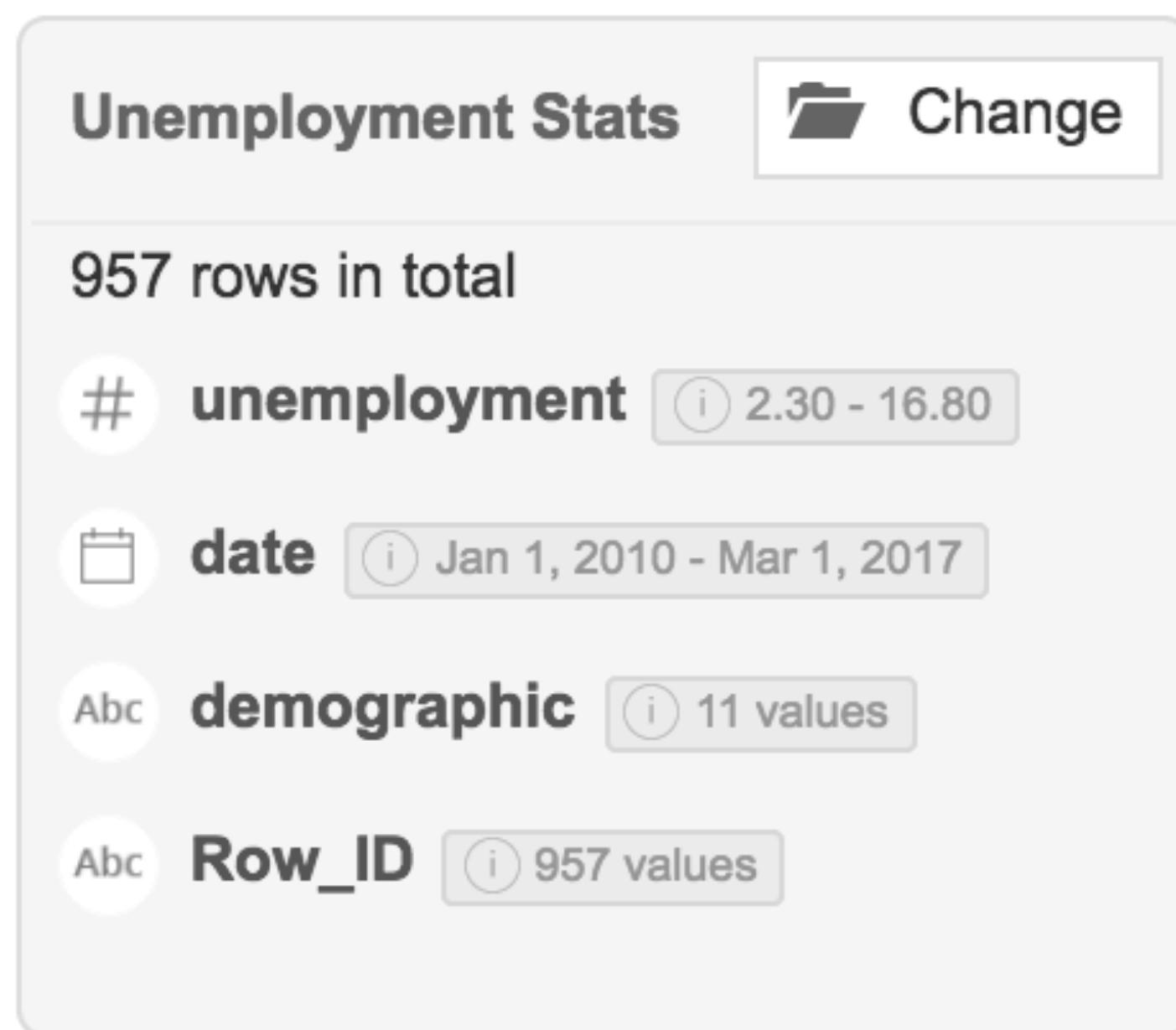
Note: These opinions are 2.5 years old. I think differently now.

@lisacroft





@lisacrost



### SHAPE POSITION

X 719.5

Y 298.0

### SIZE

Width 63.0

Height 70.0

Area 4410.0

### STYLE

Fill Color #ffffff

data.csv

Change

187 rows in total

Abc **country** 187 values# **income** 599 - 132877# **health** 48.50 - 84.10# **population** 52993 - 1376048943Abc **Row\_ID** 187 values**LAYERS**

Repeat

Partition

Break

Group

No data imported

Abc <b>Row_ID</b>	Abc <b>country</b>	# <b>income</b>	# <b>health</b>	# <b>population</b>
1	Central African Republic	599	53.8	4900274
2	Somalia	624	58.7	10787104
3	Burundi	777	60.4	11178921
4	Malawi	799	60.22	17215232
5	Congo, Dem. Rep.	809	58.3	77266814
6	Niger	943	62.2	19899120
7	Liberia	958	63.9	4503438
8	Eritrea	1129	62.9	5227791

**DATA PIPELINES**

**Pipeline 1**

From Source: undefined

**Data**

country	Afghanistan	Albania	Algeria	...
income	1925	10620	13434	...
health	57.63	76	76.5	...
population	32526562	2896679	39666519	...
index	0	1	2	...

1-20 of 187 →

+ NEW TRANSFORM

**Scales** +

+ NEW PIPELINE

**VISUALIZATION**

**Arc**

**Layer 1**

**X POSITION**

Start: 0, Width: 566

**Y POSITION**

Start: 0, Height: 379

**FILL**

Clip: contents to dimensions, Color: #ffffff, Opacity: 100%

**STROKE**

Color: #000000, Width: 1px

**AXES**

**MARKS**

+ NEW LAYER





The screenshot shows the Tableau Data Prep interface. At the top, there is a toolbar with icons for back, forward, search, and other standard operations. To the right of the toolbar is a "Standard" dropdown menu and a "Show Me" button.

The left side of the screen features several sidebar panels:

- Data**: Shows a "Analytics" tab and a "data" icon.
- Dimensions**: Shows a "Country" dimension and a "Measure Names" measure.
- Measures**: Shows measures: Health, Income, Population, Latitude (generated), Longitude (generated), Number of Records, and Measure Values.

The main workspace is titled "Sheet 1". It contains a grid with two columns and two rows. The top-left cell of the grid has the placeholder text "Drop field here". The bottom-left cell also has the placeholder text "Drop field here". The top-right cell has the placeholder text "Drop field here".

At the bottom of the screen, there is a navigation bar with icons for "Data Source", "Sheet 1" (which is highlighted with a black arrow), and other sheet options. The bottom right corner contains small navigation icons.

Console ~/Desktop/ ↻

R version 3.5.1 (2018-07-02) -- "Feather Spray"  
Copyright (C) 2018 The R Foundation for Statistical Computing  
Platform: x86\_64-apple-darwin15.6.0 (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.  
You are welcome to redistribute it under certain conditions.  
Type 'license()' or 'licence()' for distribution details.

Natural language support but running in an English locale

R is a collaborative project with many contributors.  
Type 'contributors()' for more information and  
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or  
'help.start()' for an HTML browser interface to help.  
Type 'q()' to quit R.

```
> setwd("~/Desktop")
> data = read.csv("data.csv")
> esquisse:::esquisser()
Loading required package: shiny

Listening on http://127.0.0.1:4925

> esquisse:::esquisser()

Listening on http://127.0.0.1:4925
> esquisse:::esquisser()

Listening on http://127.0.0.1:4925
>
```

Environment History Connections

Import Dataset | Global Environment | Data

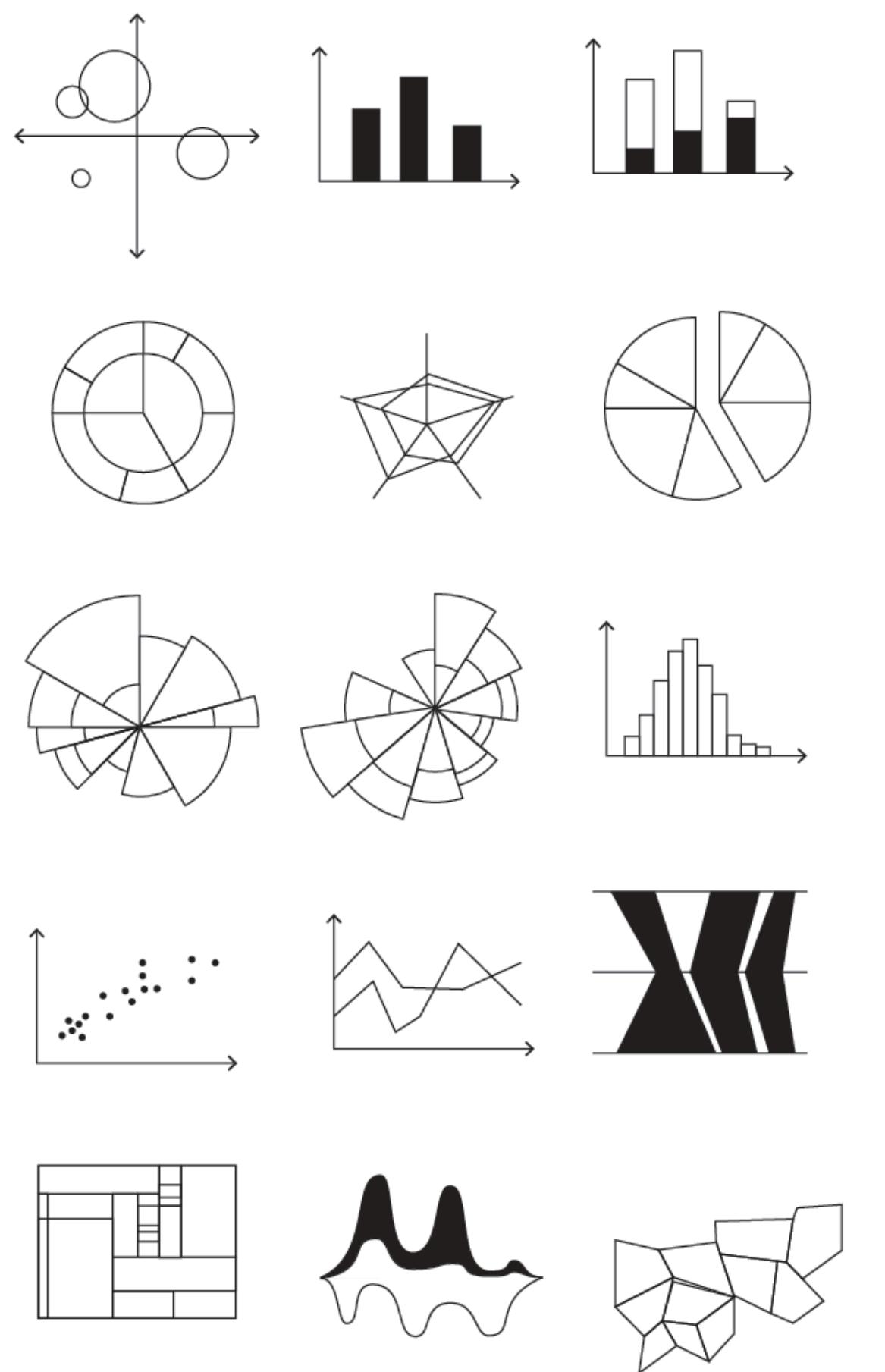
data 187 obs. of 4 variables

Files Plots Packages Help Viewer

New Folder Delete Rename More

Home > Desktop

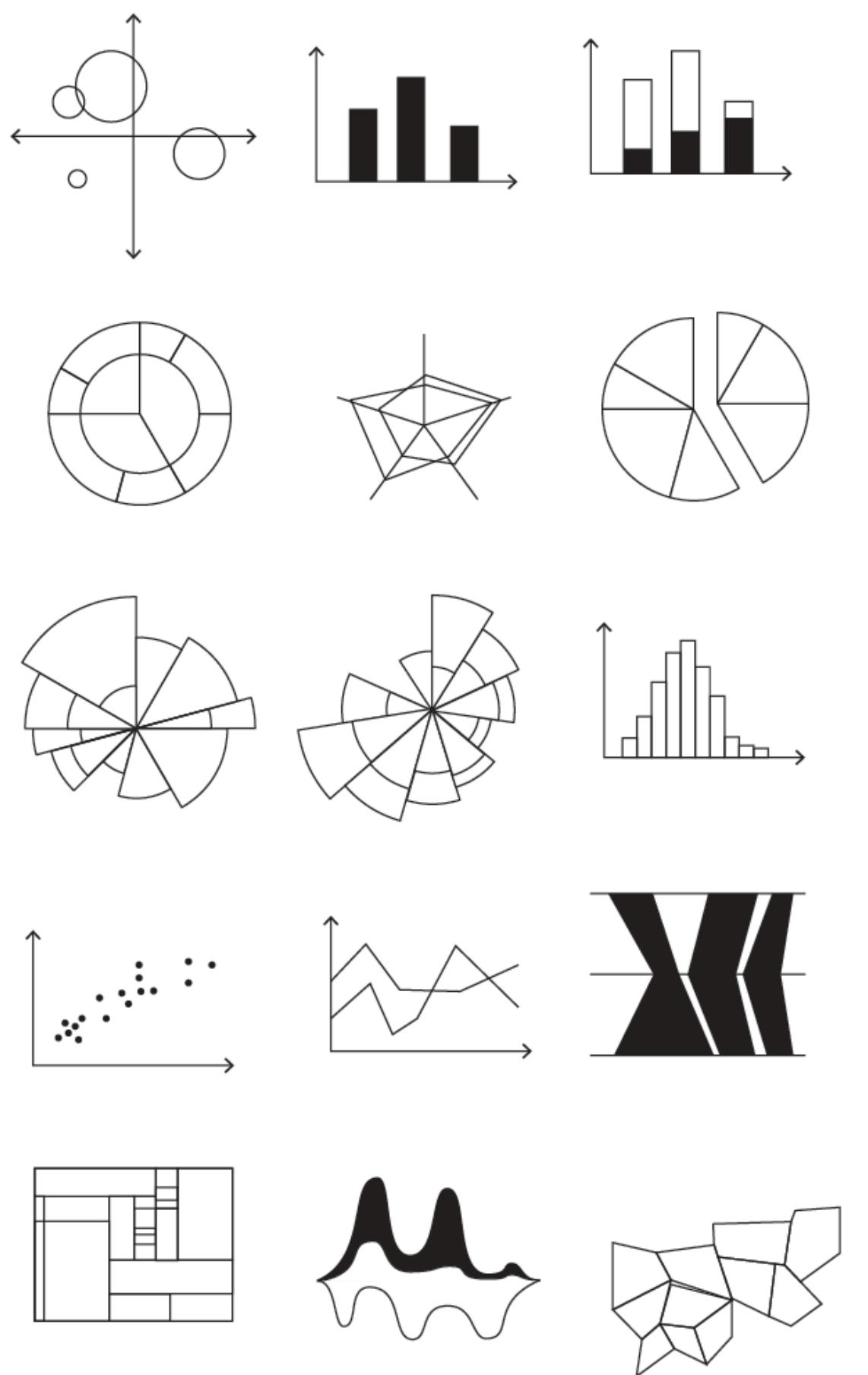
	Name	Size	Modified
	..		
	.RData	6.4 KB	Oct 18, 2018, 11:09 AM
	.Rhistory	19.4 KB	Oct 18, 2018, 4:57 PM
	05esquisse-100775913-large.jpg	71.5 KB	Oct 18, 2018, 10:41 AM
	180822-tamara-munzner.png	4.9 MB	Aug 23, 2018, 11:23 AM
	181019-locatormap.psd	2.2 MB	Oct 18, 2018, 4:46 PM
	181022_VisInPractise_Tools.key	16.3 MB	Oct 18, 2018, 12:15 PM
	2018-10-03 15.20.41.gif	5.7 MB	Oct 3, 2018, 3:20 PM
	2018-10-15 22.09.34.gif	242.8 KB	Oct 15, 2018, 10:09 PM
	2018-10-15 22.09.48.gif	377.6 KB	Oct 15, 2018, 10:10 PM
	38e903b50a3eef761019dcf4348f56...	78.7 KB	Oct 15, 2018, 9:43 PM
	49088303437-814425983-registrat...	81.9 KB	Oct 17, 2018, 11:38 AM
	big_chart.png	74 KB	Oct 15, 2018, 9:44 PM



## TYPOLOGY

## DRAW FREELY





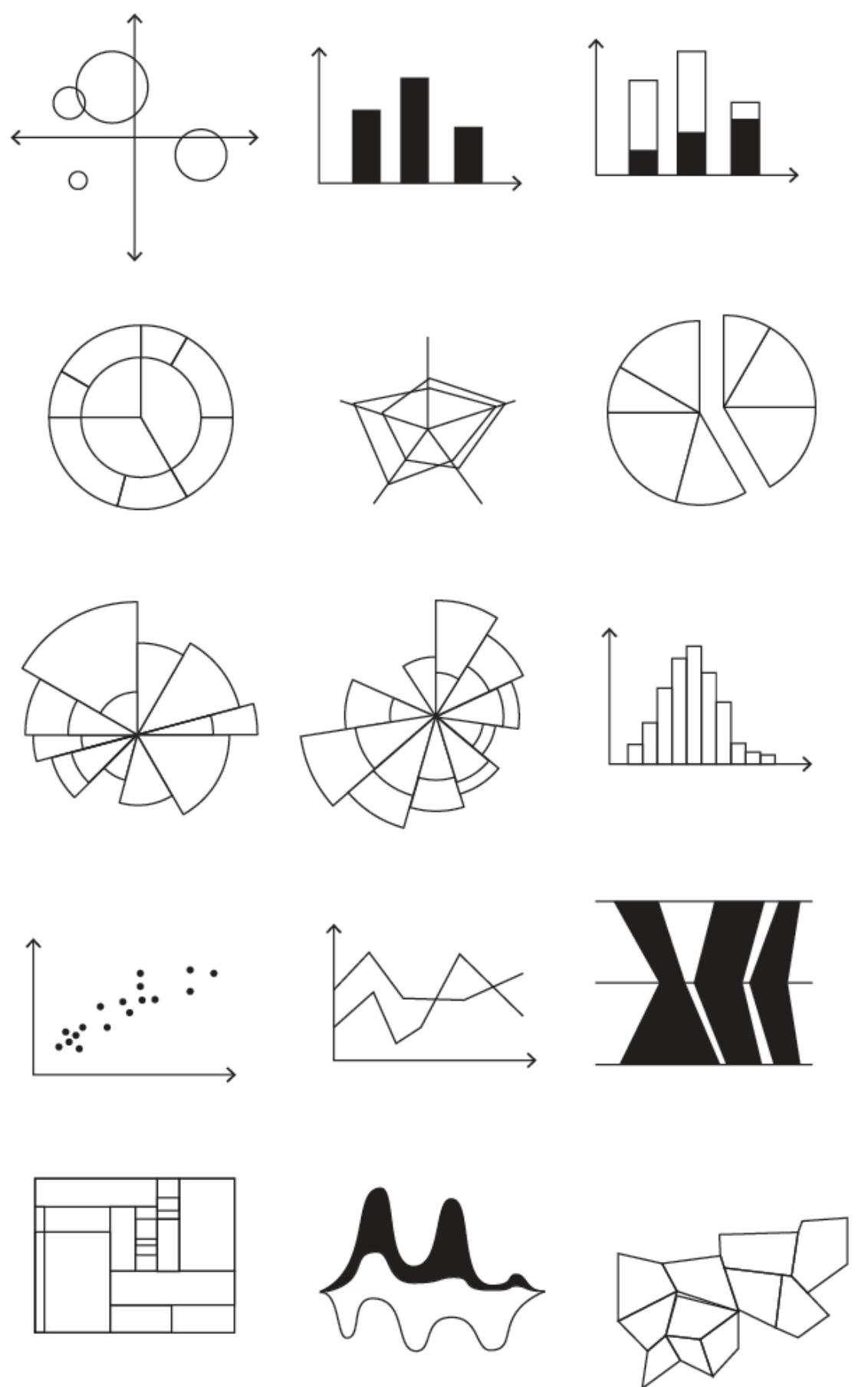
## TYPOLOGY

## VEGA-LITE

## DRAW FREELY

VEGA  
GGPLOT2  
PROCESSING  
D3





TYPOLOGY

VEGA-LITE

ILLUSTRATOR

EXCEL

RAW

QUADRIGRAM

PLOTLY

GOOGLE SHEETS

DATAWRAPPER

FLOURISH

INFOGRAM

DRAW FREELY

VEGA

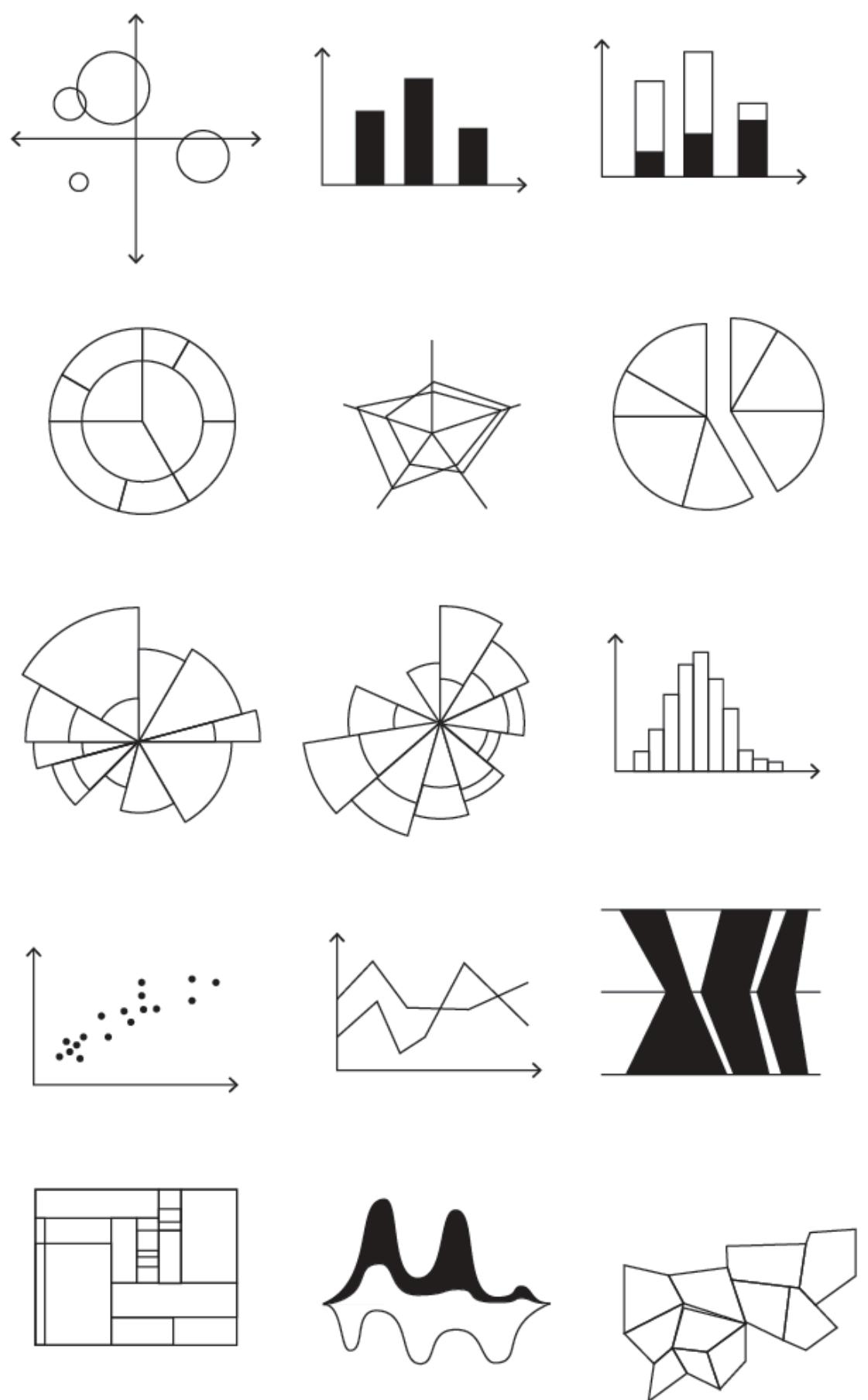
GGPLOT2

PROCESSING

D3

LYRA





## TYPOLOGY

## VEGA-LITE

ILLUSTRATOR  
EXCEL  
RAW  
QUADRIGRAM  
PLOTLY  
GOOGLE SHEETS  
DATAWRAPPER  
FLOURISH  
INFOGRAM

## DRAW FREELY

VEGA  
GGPLOT2  
PROCESSING  
D3

LYRA  
PROJECT LINCOLN  
DATA ILLUSTRATOR  
DATA DRIVEN GUIDES  
CHARTICULATOR



# THE RISE OF THE DATA DRAWING APPS

The background features a grid of various data visualization icons and tools, including:

- Top Left: A scatter plot with two points, a bar chart with three bars, and a histogram.
- Top Center: Text labels: POLYLOGY, MEGA-SITE, DAW FREQUENCIES, D3, LYRA, PROJECT LINCOLN, DATA VISUALISATOR, DATA FLOW, CHARTS LA.
- Top Right: A dot plot with horizontal error bars.
- Middle Left: A pie chart, a network graph, and a bar chart.
- Middle Center: Text labels: ILLUSTRATOR, EXCEL, RAW, QUADRIGRAM, GOOGLE SHEET, DATAWRAPPER, FLOURISH, INFOGRAPHIC.
- Middle Right: A line graph with a dashed trend line, a scatter plot with a regression line, and a bar chart.
- Bottom Left: A density plot, a 3D surface plot, and a crystal lattice model.

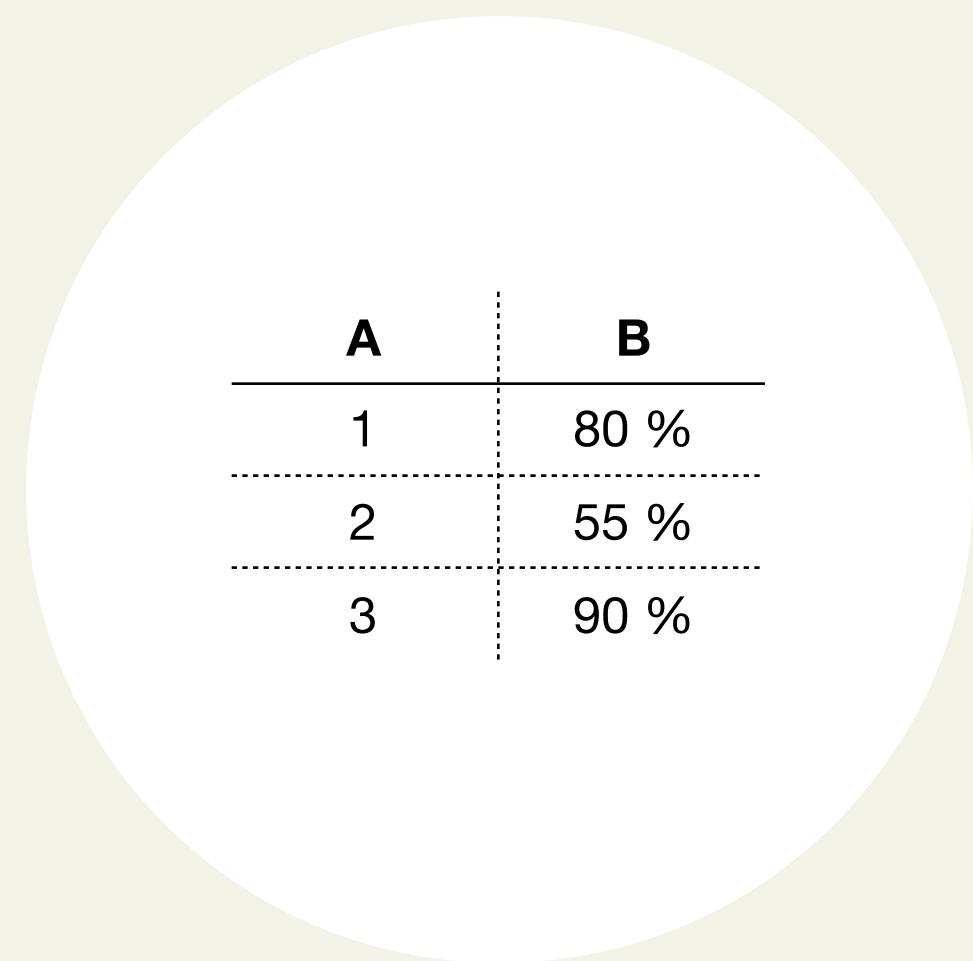
I

- analyse/present?
- static/~~interactive~~? responsive?
- will the data change?
- how flexible?

“Which tool should I learn?”

Tool





Tool →



2 “There are no perfect tools,  
just good tools for people with  
certain mindsets.”

**2** “There are no perfect tools,  
just good tools for people with  
certain mindsets.”

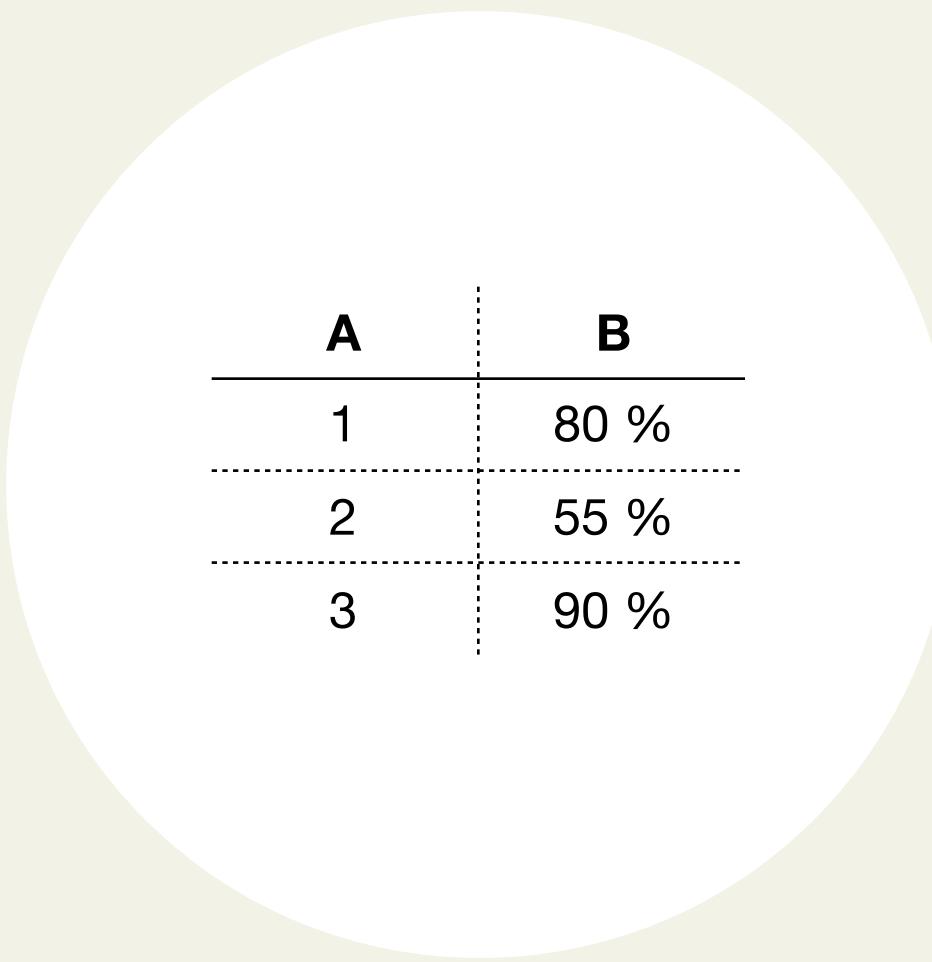
Your  
Goal

The diagram illustrates a process flow. On the left, a white circle contains a table with three rows and two columns. The columns are labeled 'A' and 'B'. The first row has '1' in column A and '80 %' in column B. The second row has '2' in column A and '55 %' in column B. The third row has '3' in column A and '90 %' in column B. A red arrow points from this circle to a larger white circle on the right. Inside the larger circle is a dark gray rectangle divided into four horizontal segments of increasing height from top to bottom. The word 'Tool' is written in red above the arrow.

A	B
1	80 %
2	55 %
3	90 %

Tool

Your  
Back-  
ground



Tool



Your  
Goal

**2** “There are no perfect tools,  
just good tools for people with  
certain mindsets.”

**Where you come from.**



**Alberto Cairo**

@albertocairo

Following



.@lisacrost Yeeron is a GUI for ggplot2. You'll love it. InZight is a lot of fun, too

4:52 PM - 17 May 2016

@lisacrost



**Lisa Charlotte Rost**

@lisacrost



Replying to [@albertocairo](#)

I tried Yeeron a few weeks ago & found it very confusing, unfortunately. Eg. the idea that you need to click to draw the plot.

4:55 PM - 17 May 2016

@lisacrost



**Alberto Cairo**

@albertocairo

Following



Replying to [@lisacrost](#)

guess that everyone finds different things confusing. I learned Yeeron in 10min but had a hard time with Lyra. Should try again

4:58 PM - 17 May 2016

@lisacrost



**Eric Foster-Moore**

@kindlyplease

Follow

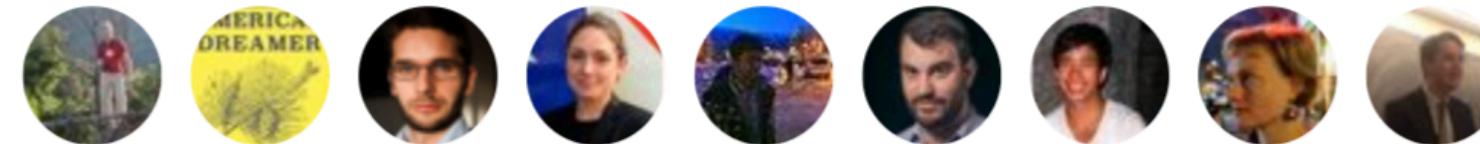


Learning Python was literally easier than learning Tableau. Why do people use this.

12:34 AM - 16 Oct 2018

---

1 Retweet 19 Likes



---

2

1



19

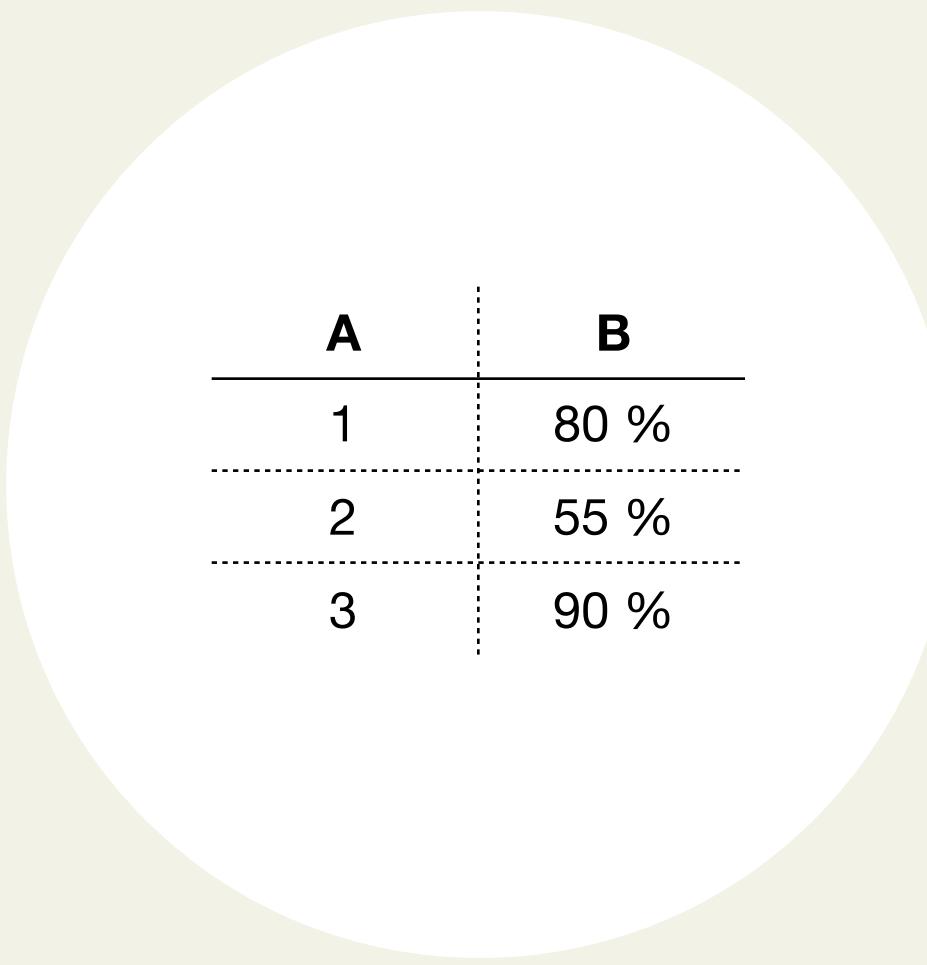


@lisacrost

“My favourite data vis creator  
uses tool x, so I should use it, too.”

“My favourite data vis creator  
uses tool x, so I should use it, too.”

Your  
Back-  
ground

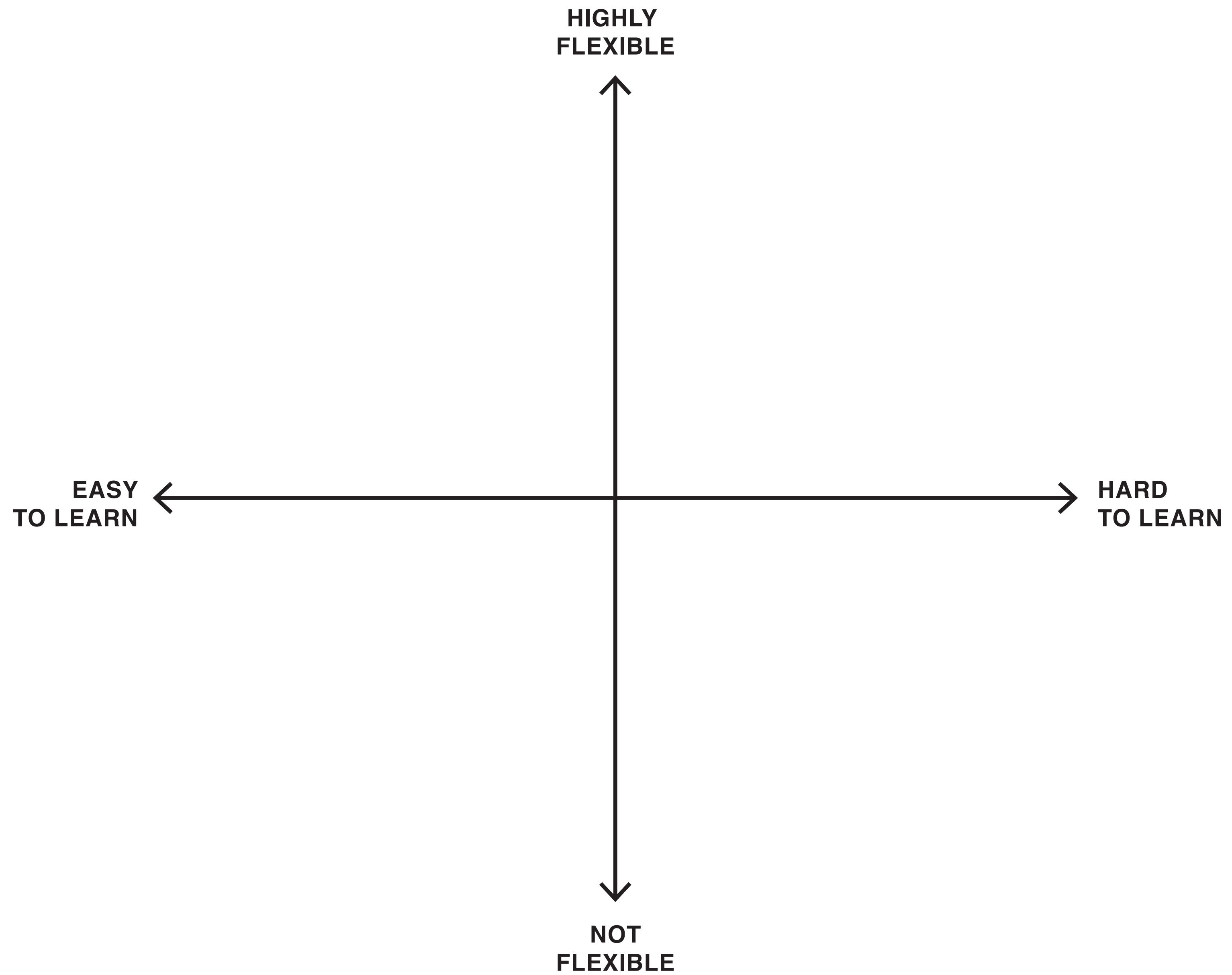


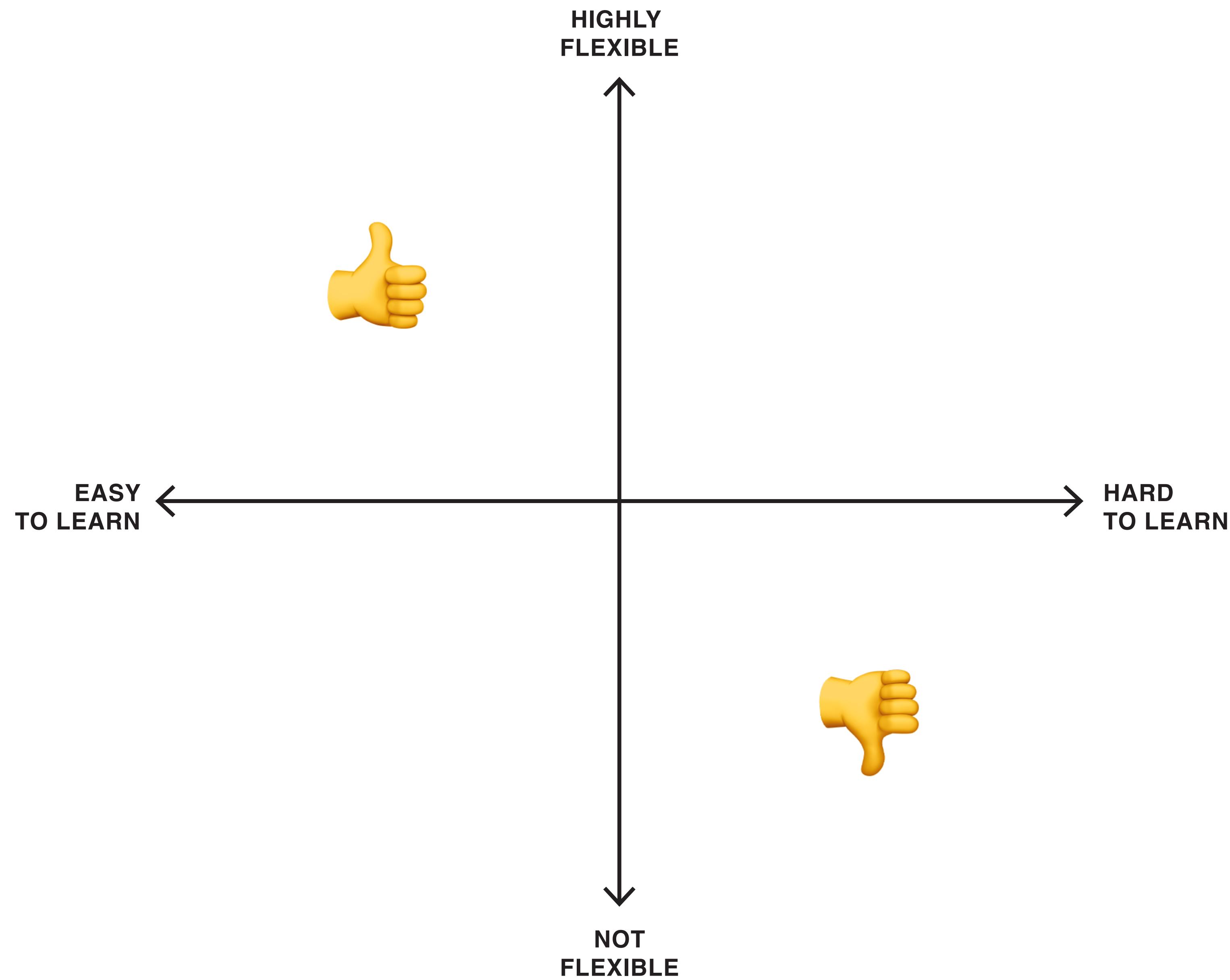
Tool

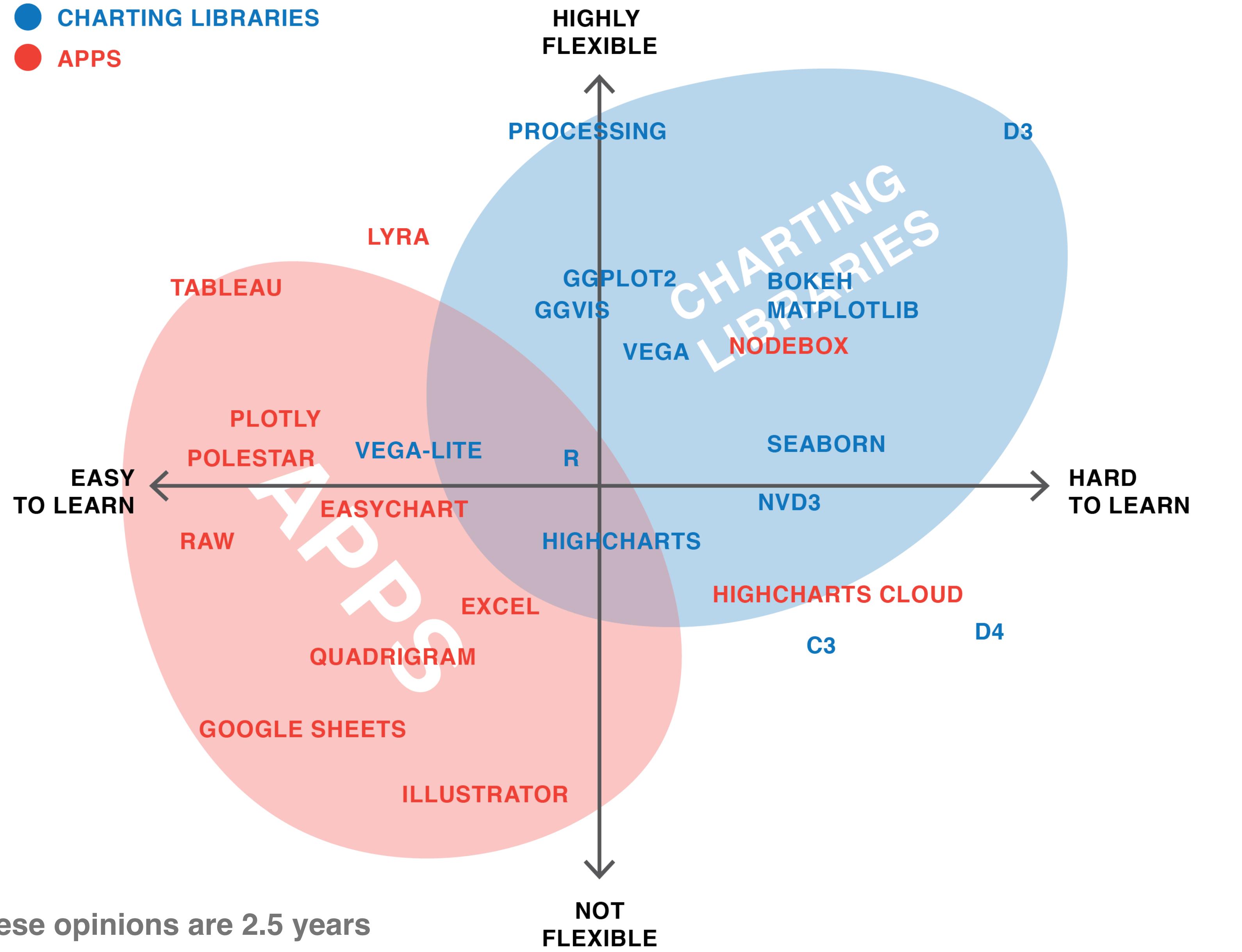


Your  
Goal

3 “We still live in an ‘apps are for the easy stuff, code is for the good stuff’ world.”

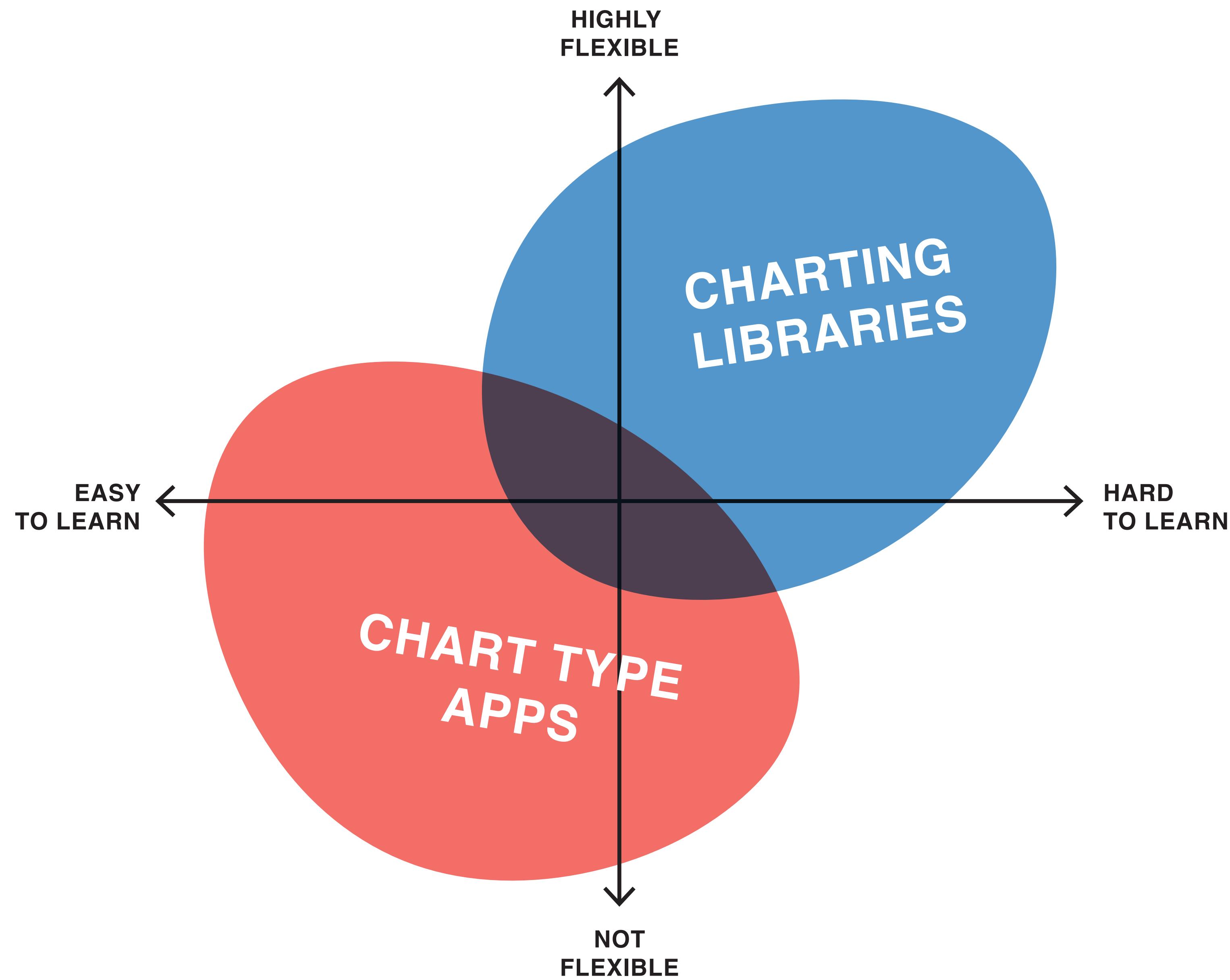


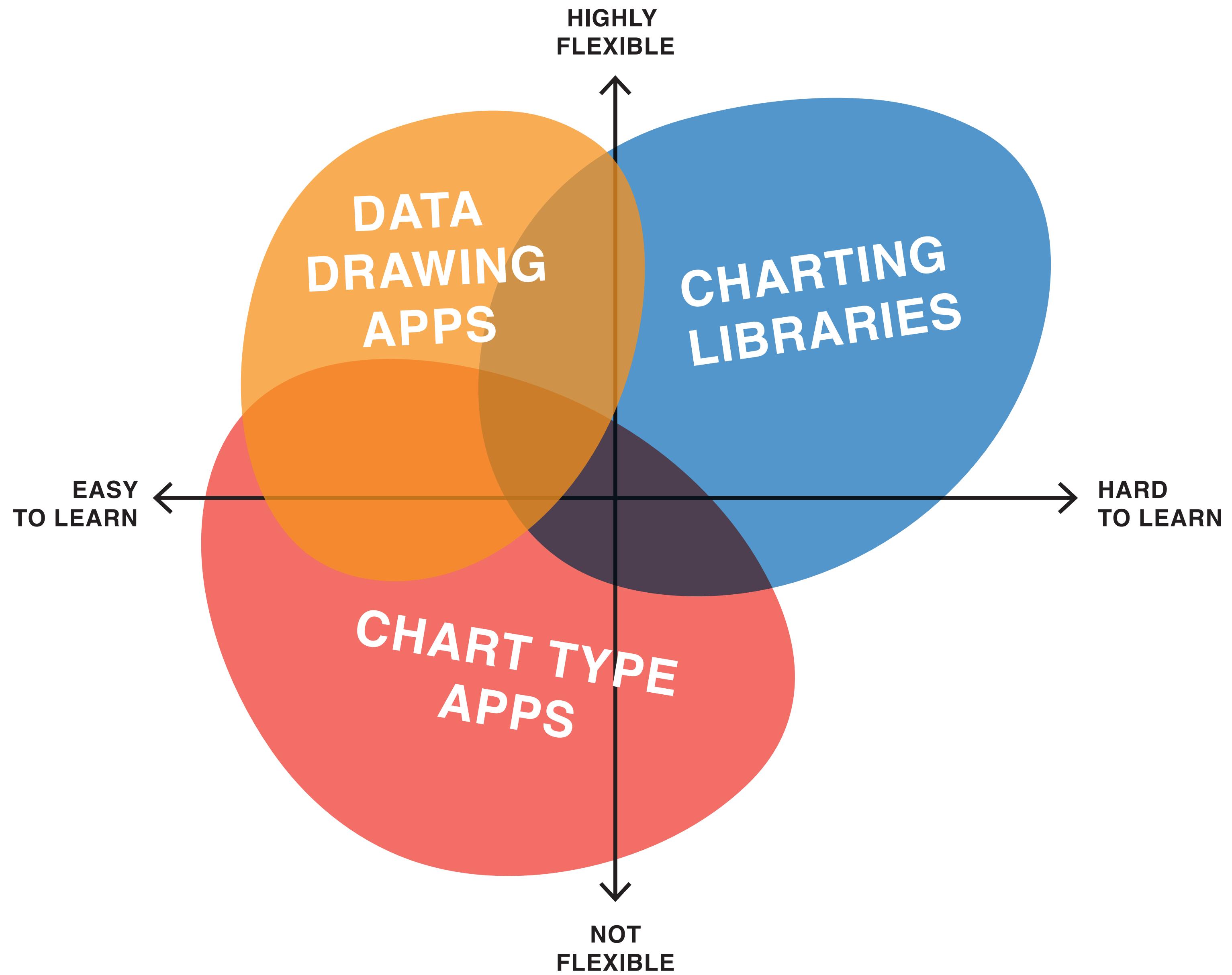


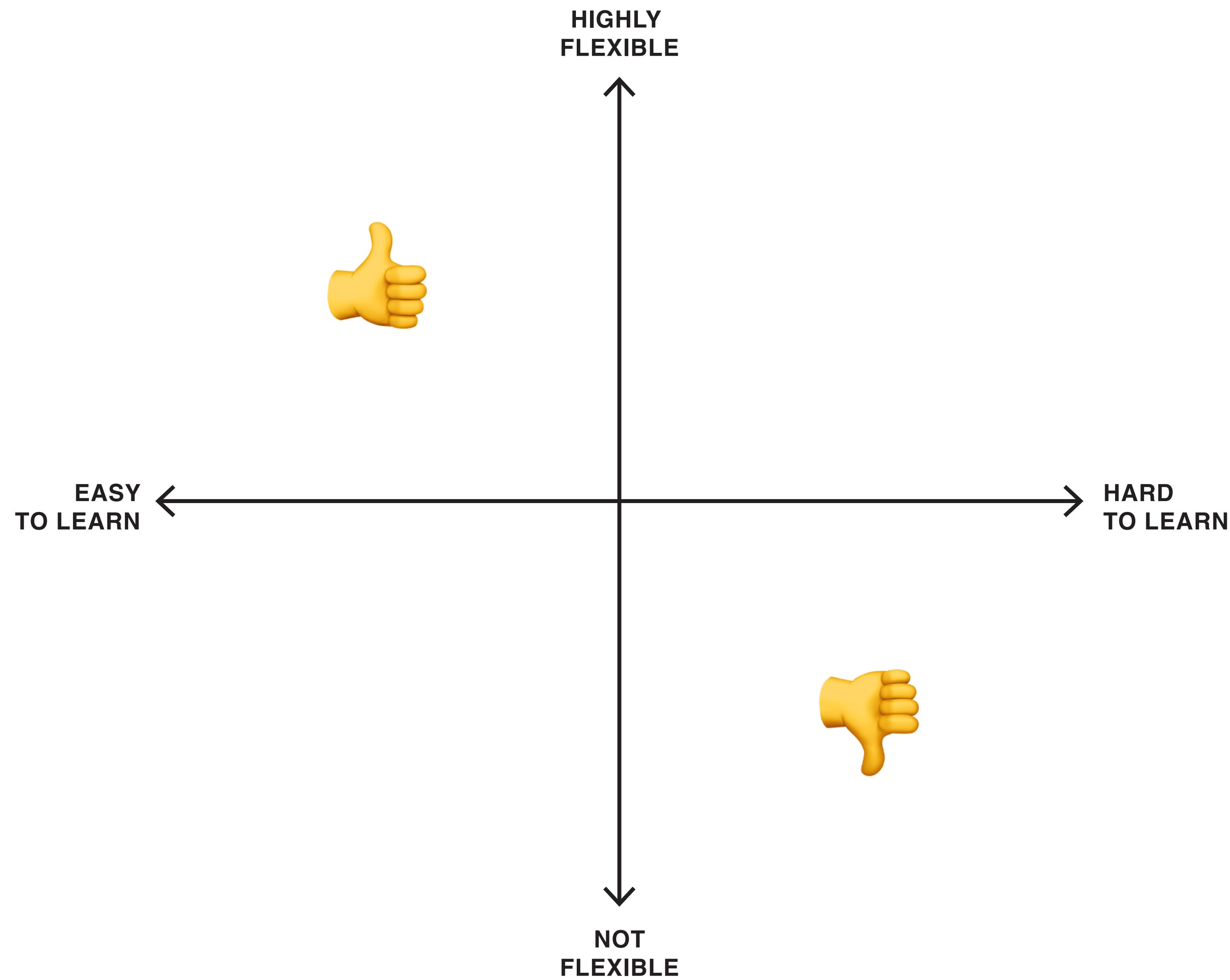


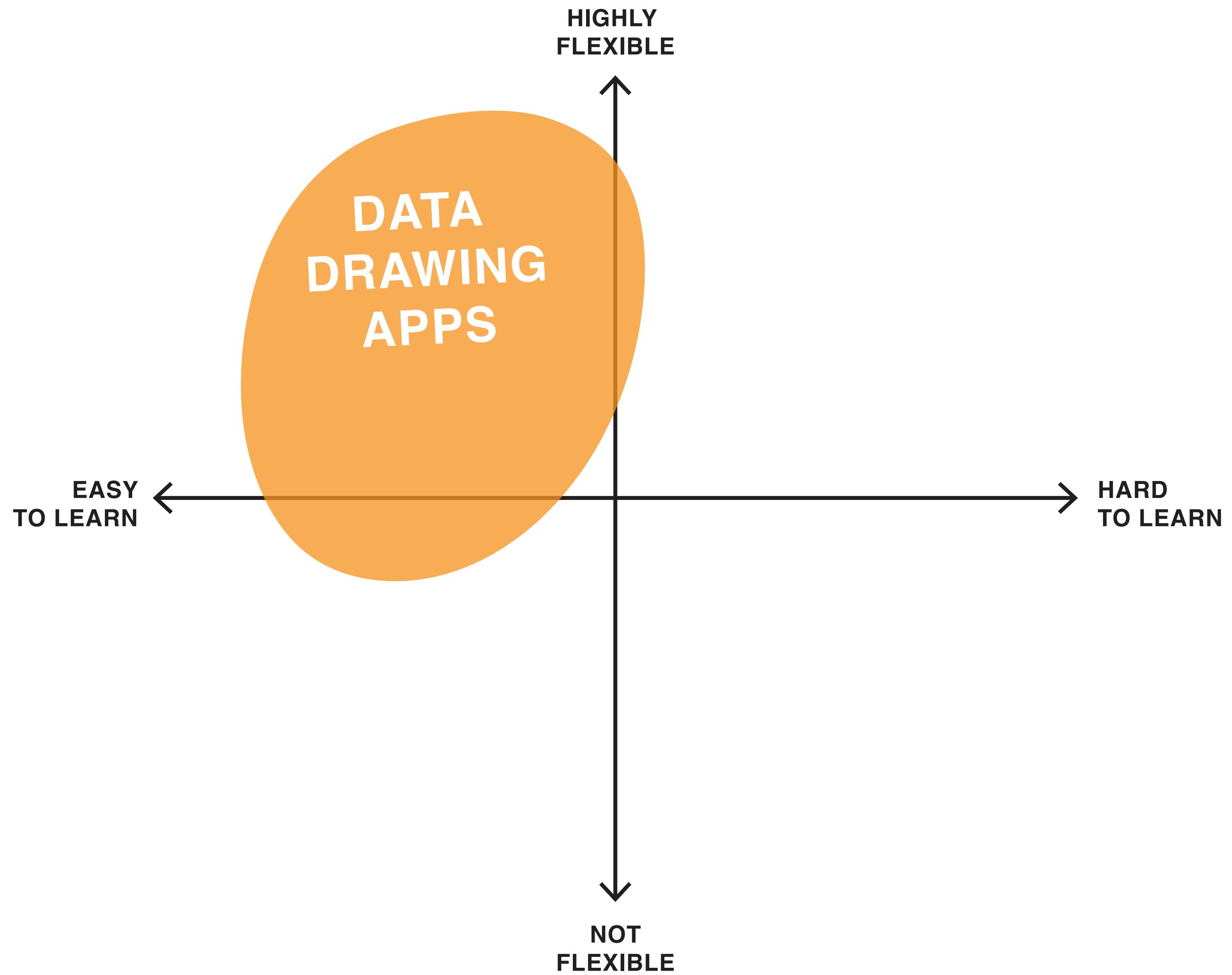
Note: These opinions are 2.5 years old. I think differently now.

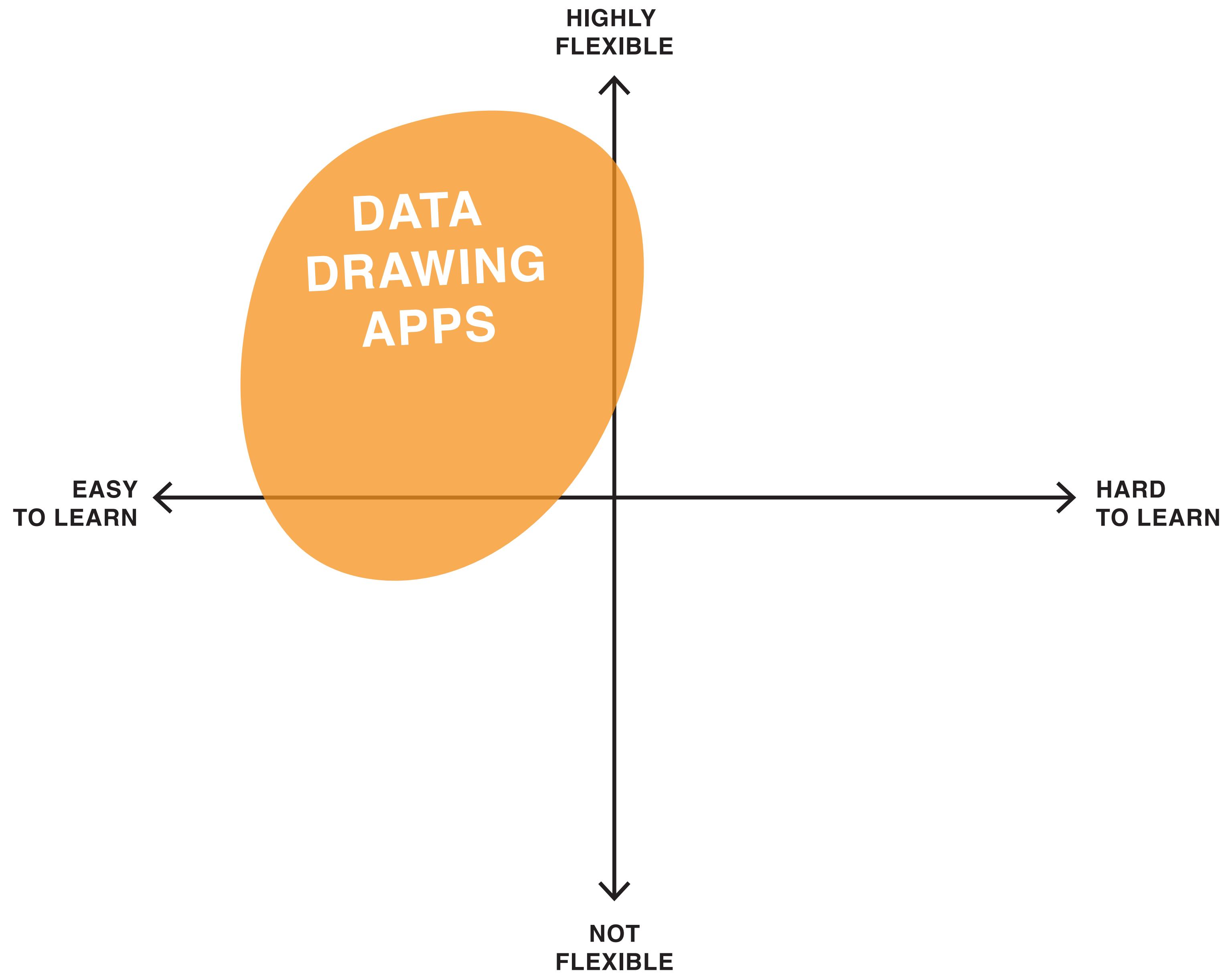
@lisacroft





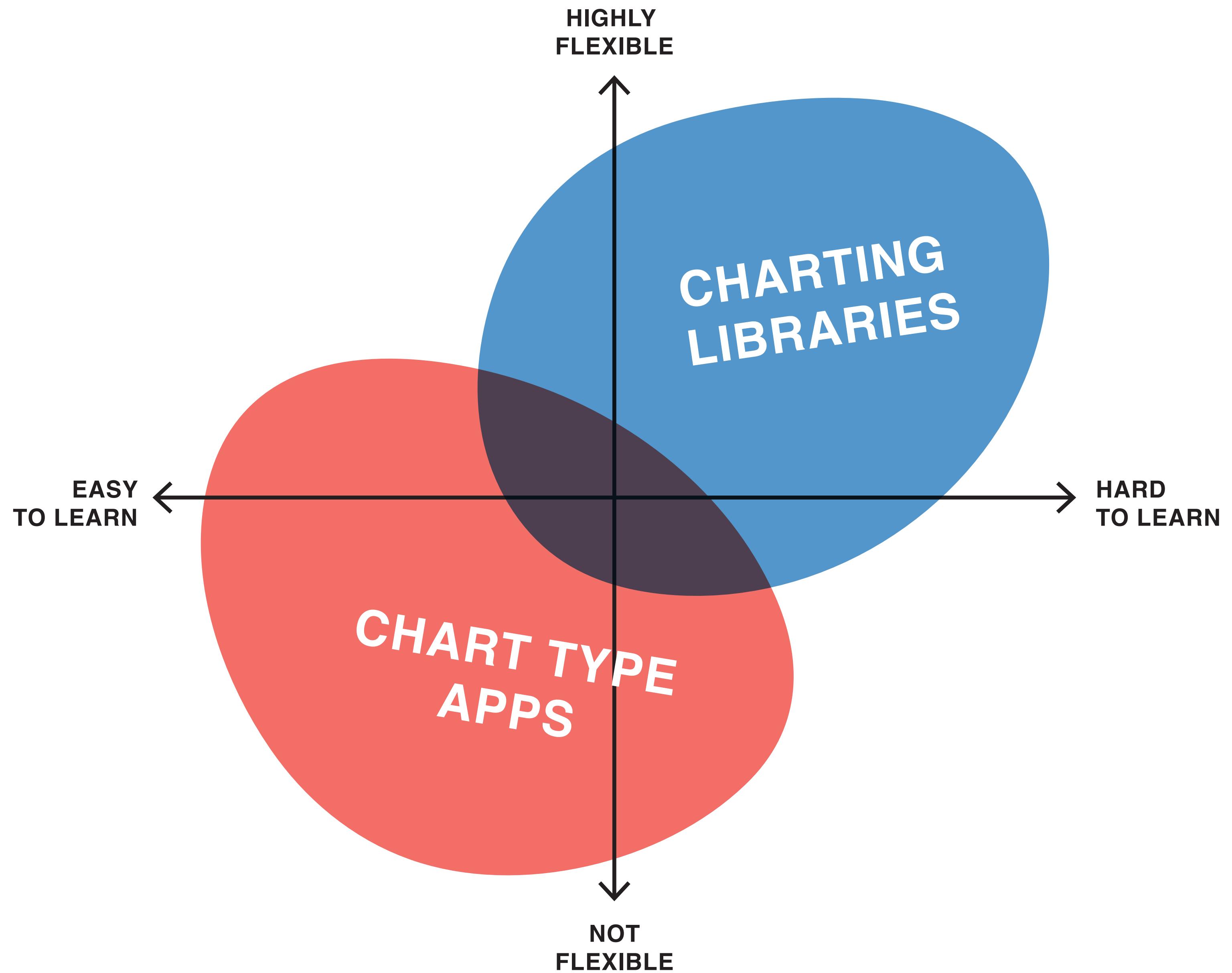






For charts that  
don't need to  
be responsive





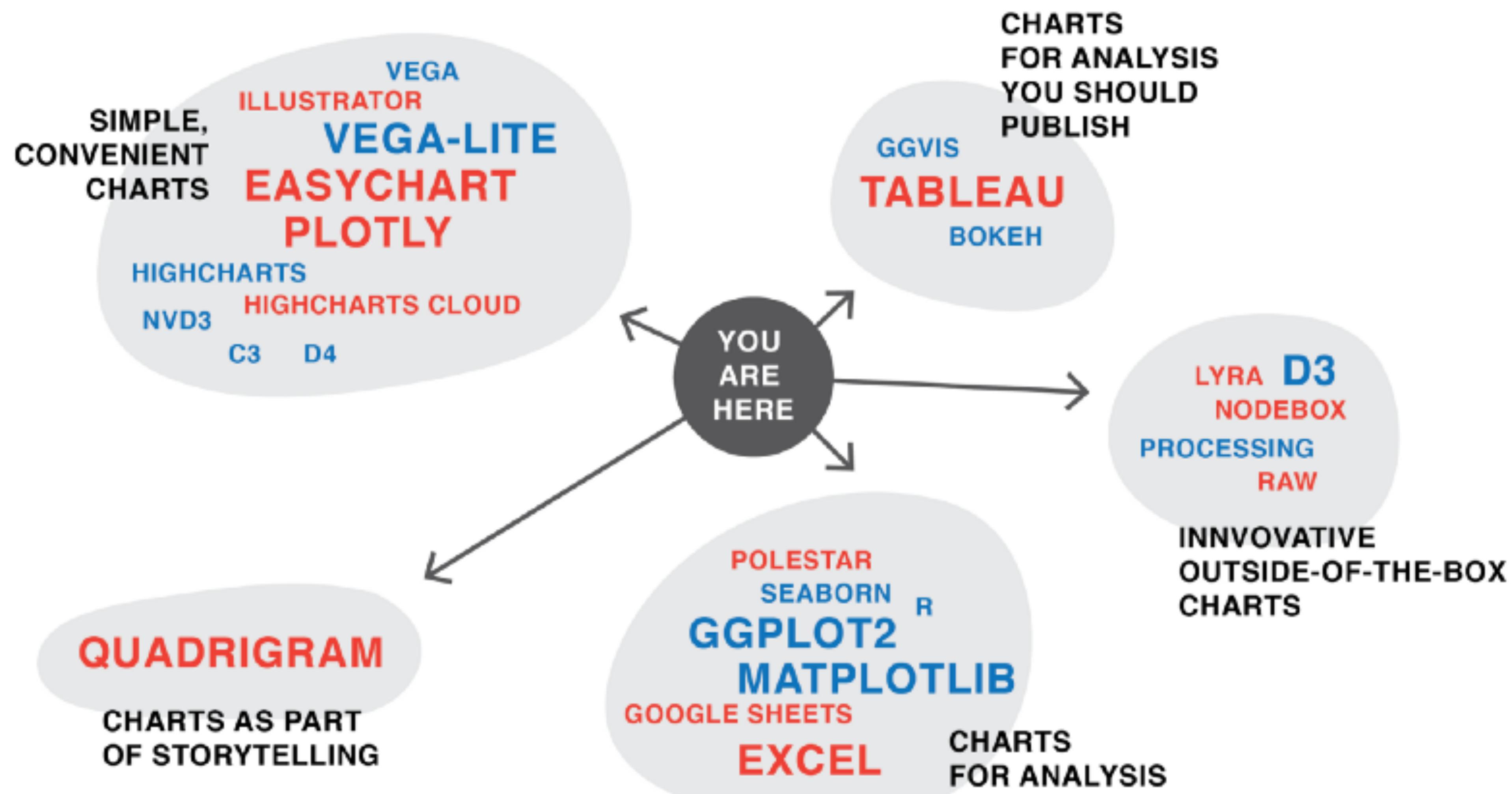
For charts that  
need to be  
responsive



3 “We still live in an ‘apps are for the easy stuff, code is for the good stuff’ world.”

**3** “We still live in an ‘apps are for the easy stuff, code is for the good stuff’ world **when it comes to responsive charts.**”

4 “Every tool forces  
you down a path.”



SIMPLE,  
CONVENIENT  
CHARTS

VEGA  
ILLUSTRATOR  
MPLITE  
**ECHART**  
PLOTLY

HIGHCHARTS  
D3  
C3 D4

**PIVOT**  
**GRAM**

CHARTS AS PART  
OF STORYTELLING

YOU  
ARE  
HERE

PC  
REBORN  
**PLOT2**  
MATPLOTLIB  
GOOGLE SHEET  
**EXCEL**  
CHARTS  
FOR ANALYSIS

**D3**  
NODEBOX  
PROCESSING  
RAW  
INNOVATION  
OUT-OF-THE-BOX  
CHARTS



**What a tool  
encourages  
you to do**



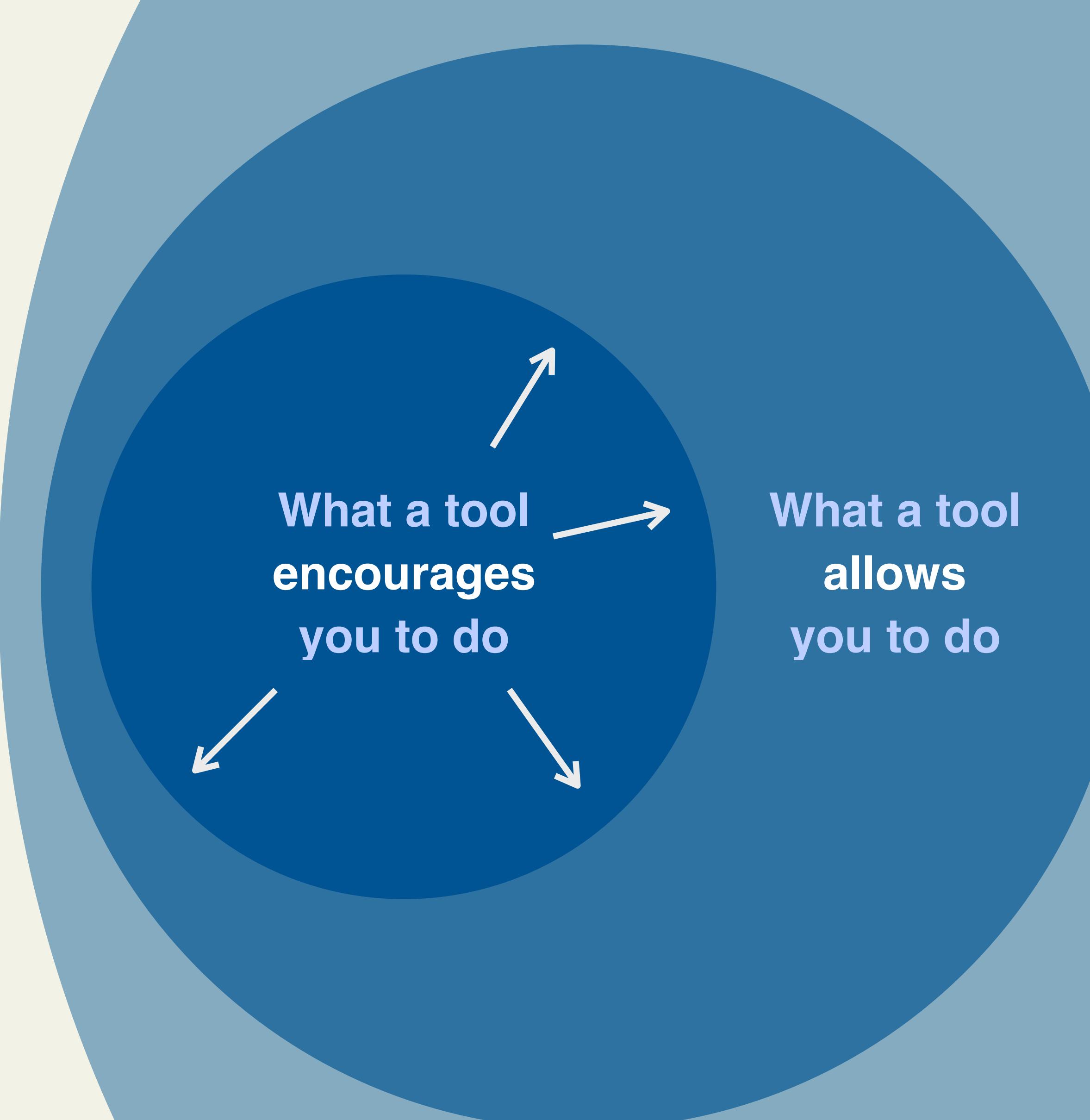
**What a tool  
encourages  
you to do**

**What a tool  
allows  
you to do**

**What a tool  
encourages  
you to do**

**What a tool  
allows  
you to do**

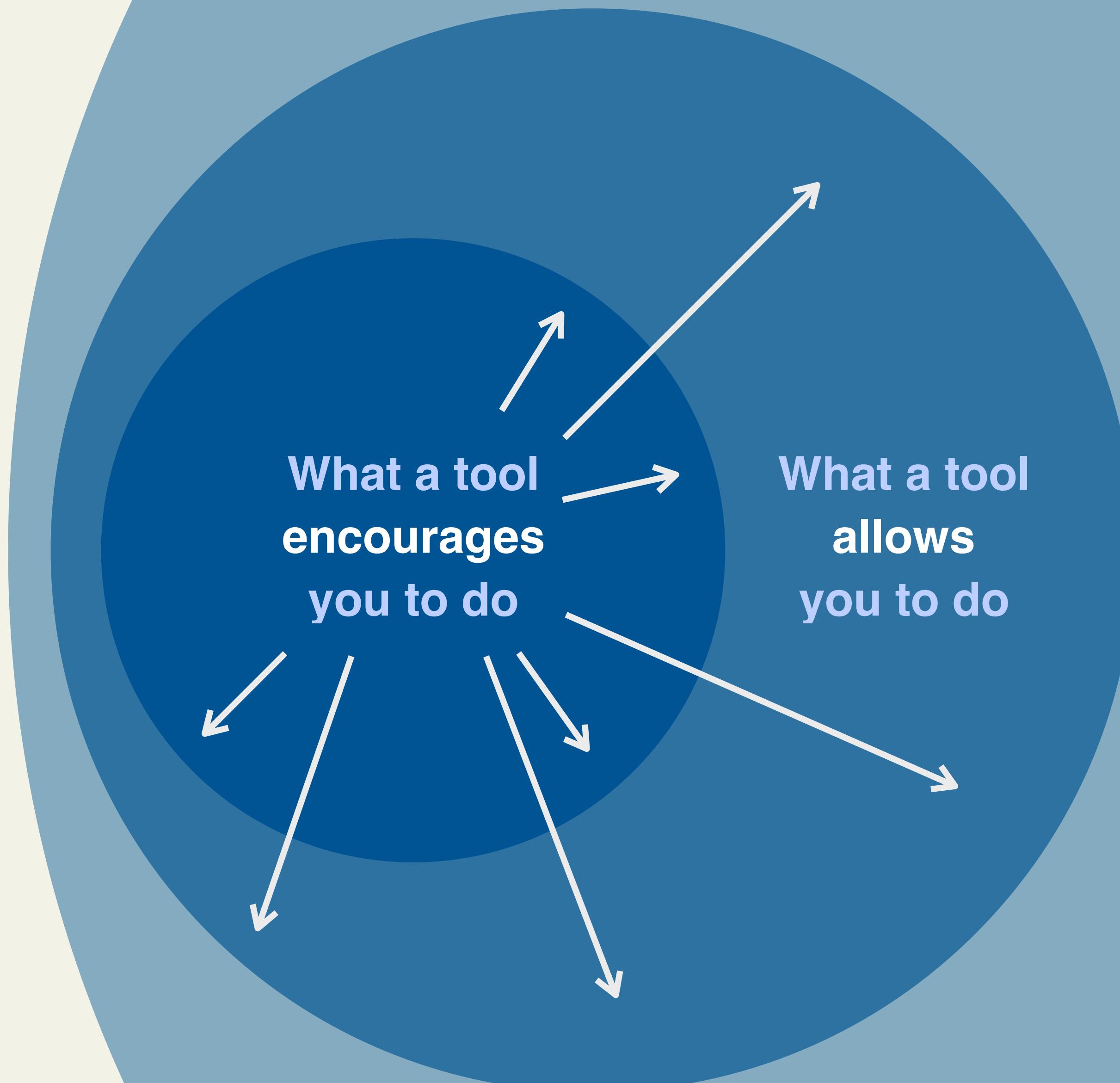
**What a tool  
forbids  
you to do**

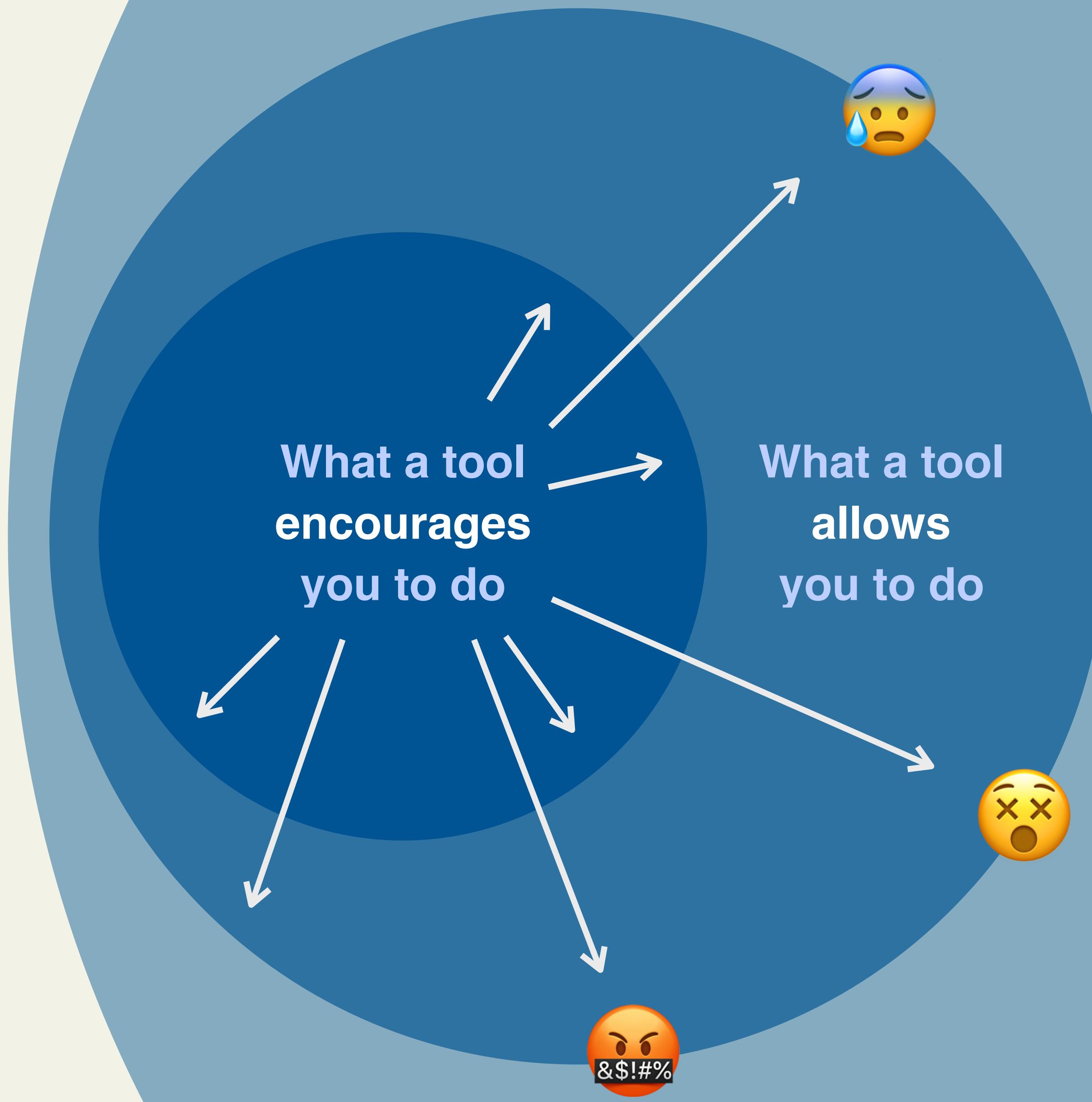


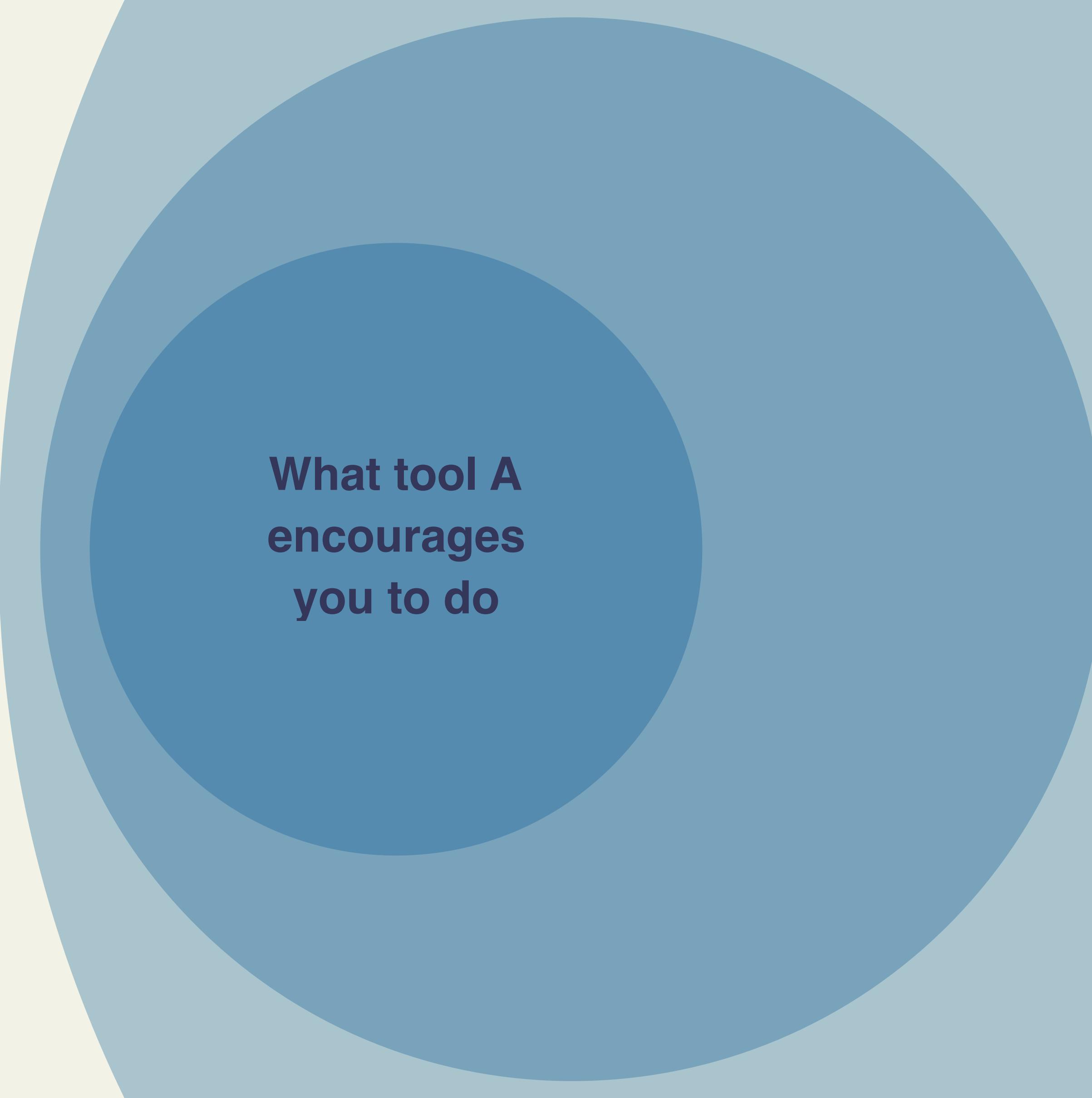
**What a tool  
encourages  
you to do**

**What a tool  
allows  
you to do**

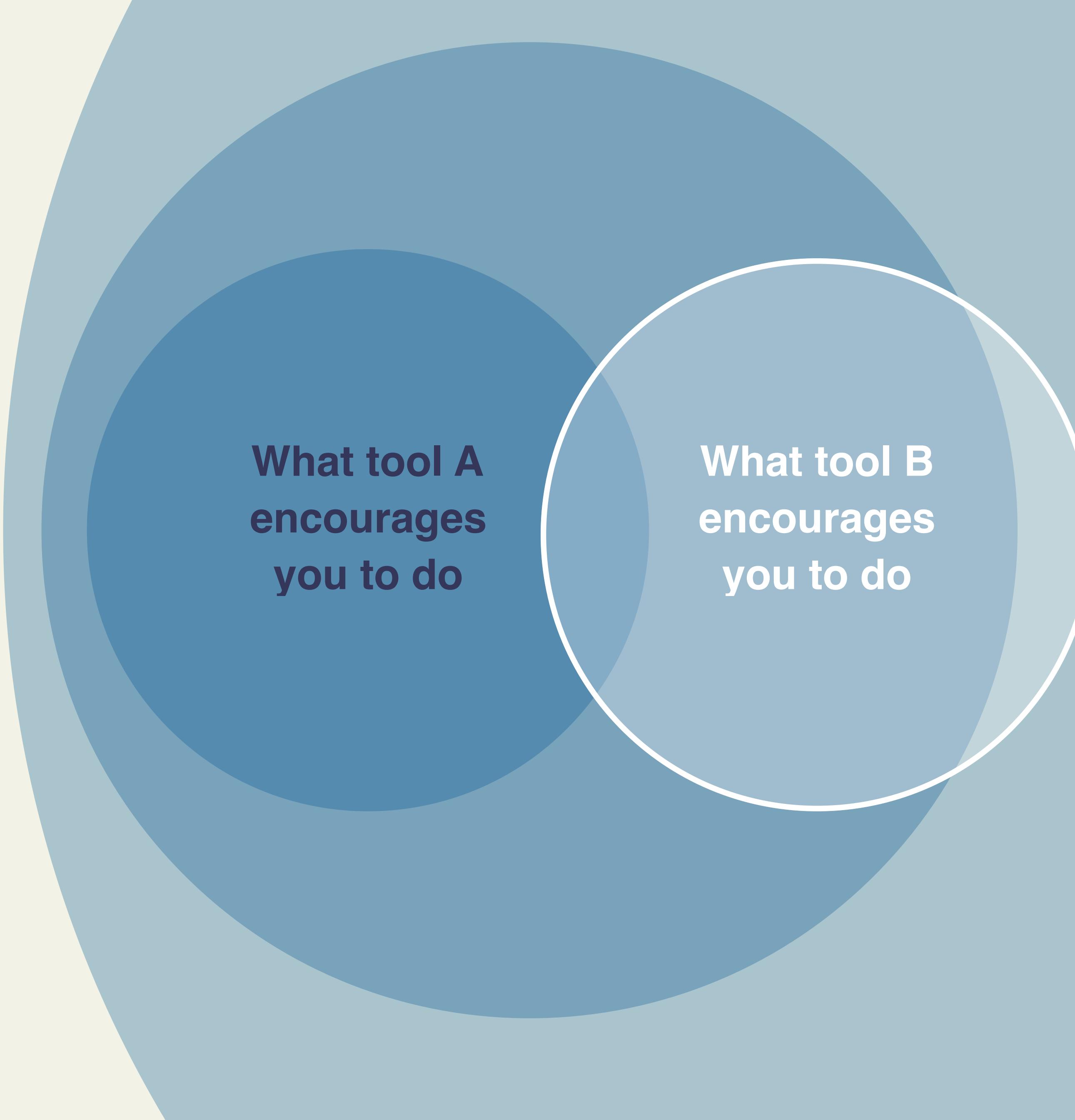
**What a tool  
forbids  
you to do**







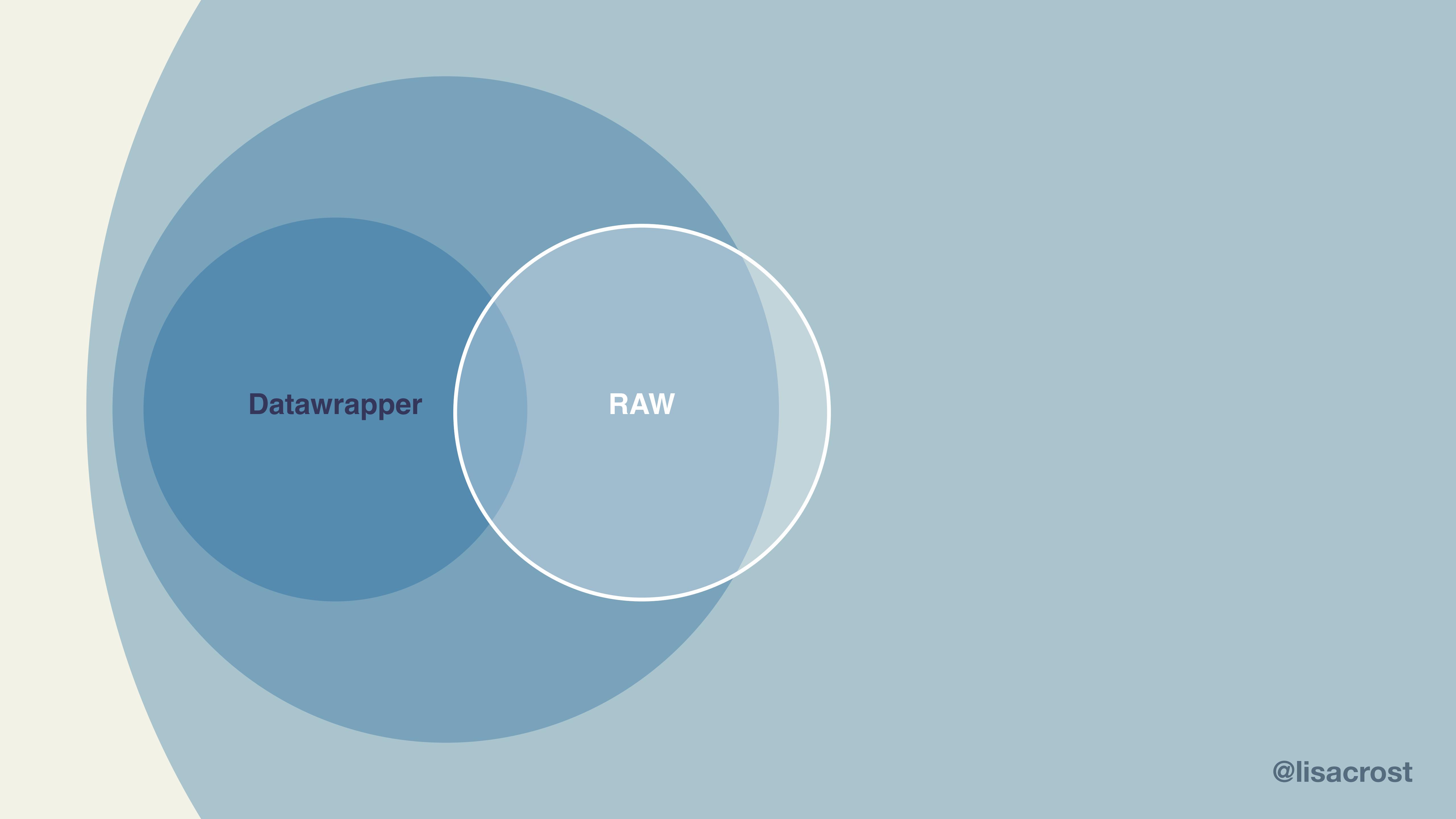
**What tool A  
encourages  
you to do**



A Venn diagram consisting of two overlapping circles. The left circle is dark blue and contains the text 'What tool A encourages you to do'. The right circle is light blue and contains the text 'What tool B encourages you to do'. The overlapping area between the circles is shaded in a medium blue.

**What tool A  
encourages  
you to do**

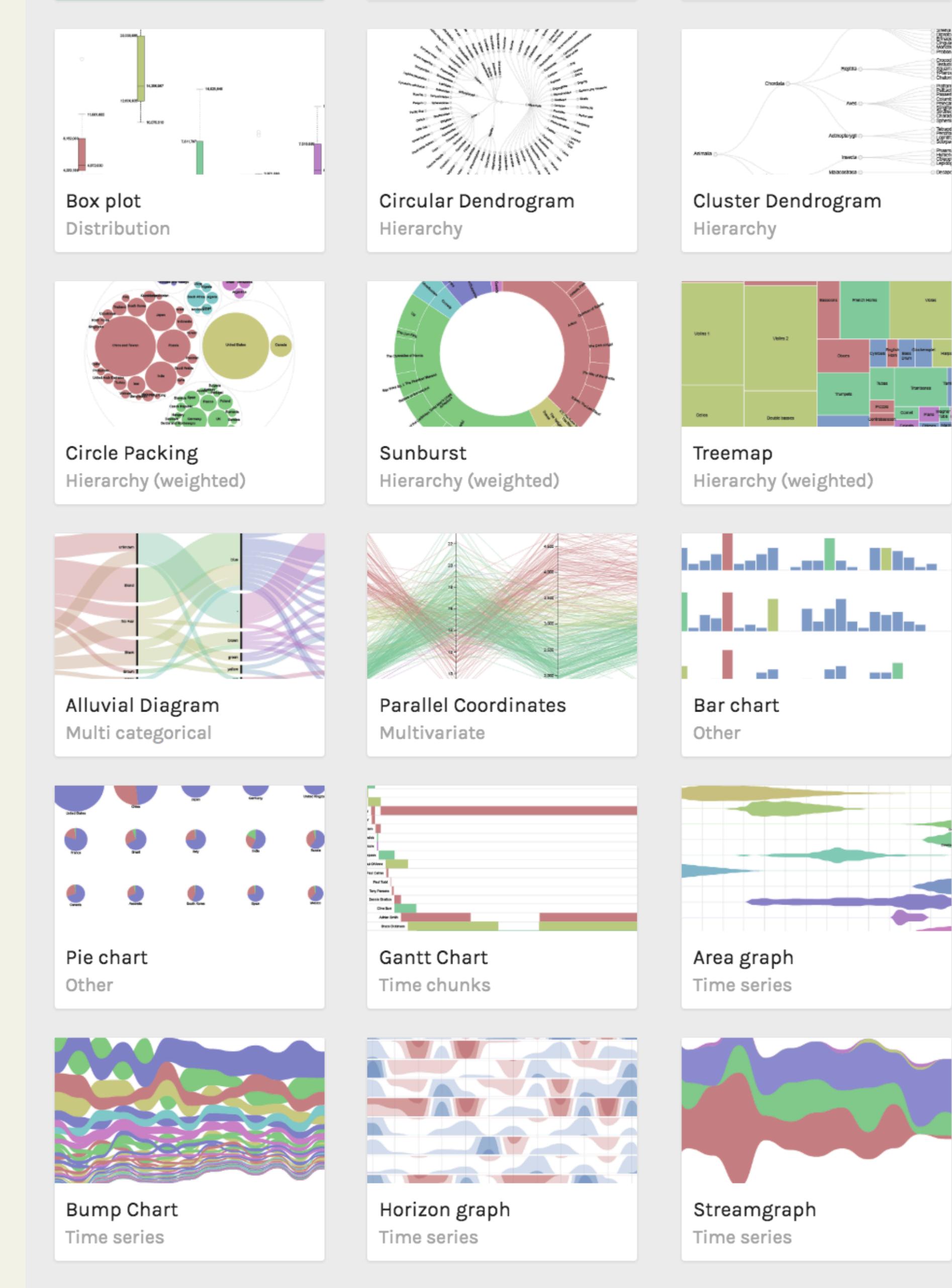
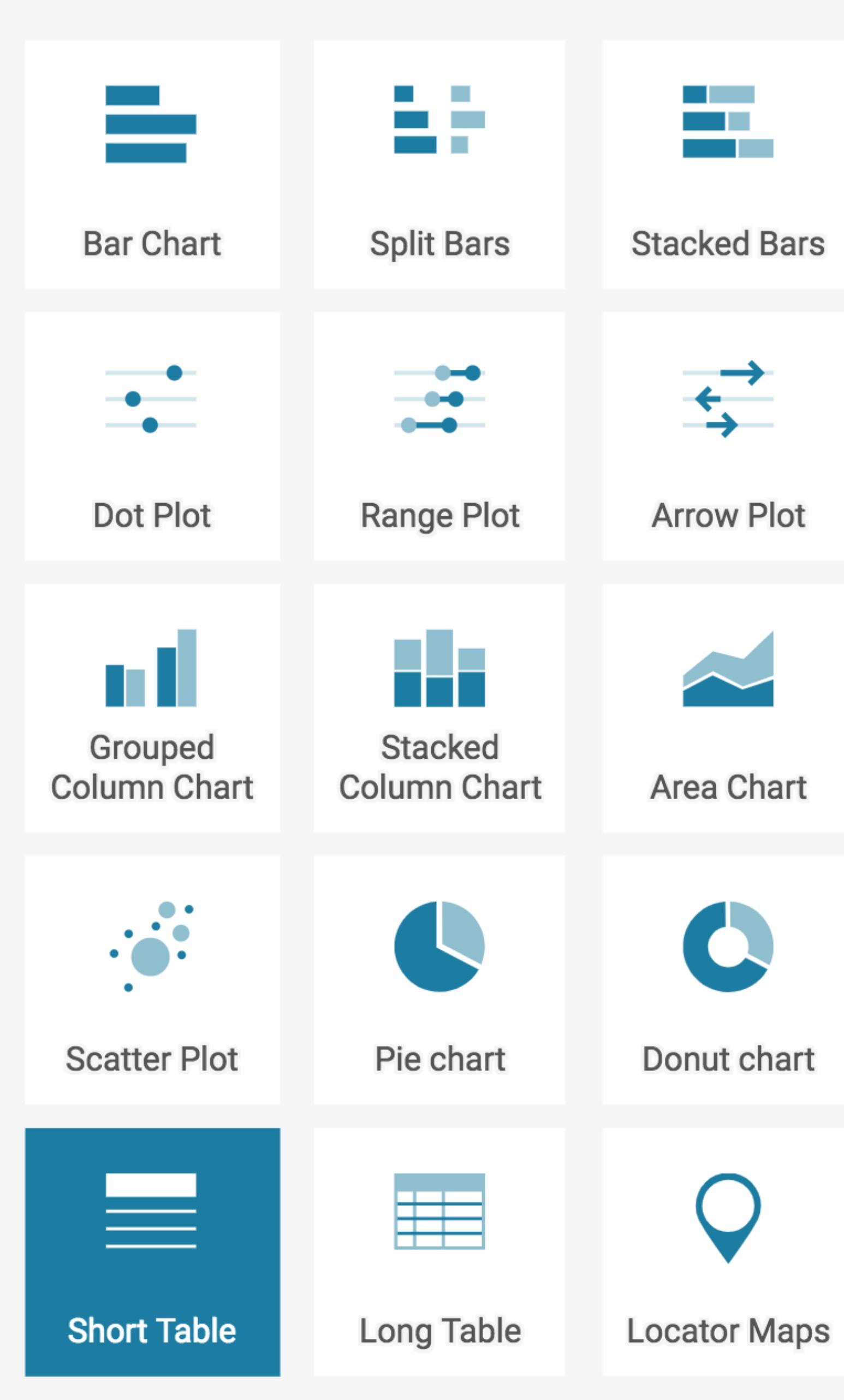
**What tool B  
encourages  
you to do**



A Venn diagram consisting of two overlapping circles. The left circle is dark blue and contains the text "Datawrapper". The right circle is light blue and contains the text "RAW". The intersection of the two circles is white.

Datawrapper

RAW

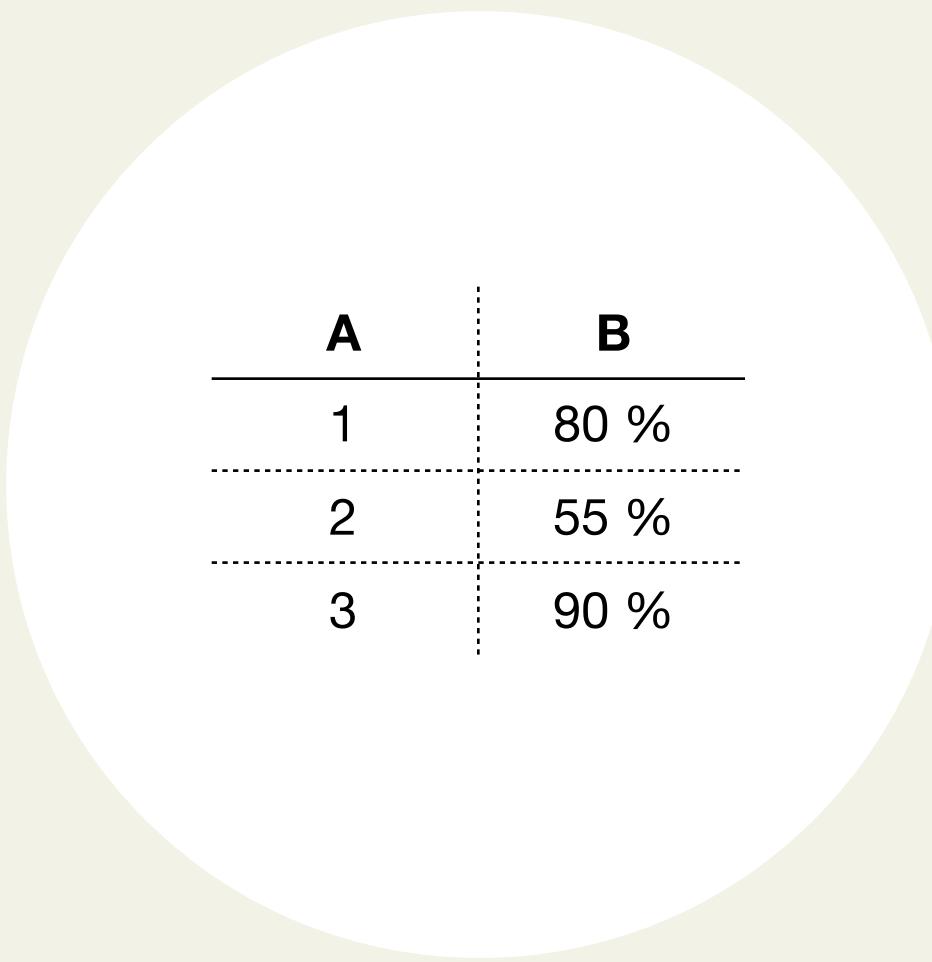


@lisacroft

“We shape our tools and,  
thereafter, our tools shape us.”

— John Culkin (1967)

Your  
Back-  
ground



Tool



Your  
Goal

Your  
Back-  
ground

A	B
1	80 %
2	55 %
3	90 %

Tool



Your  
Goal

Design  
Back-  
ground

A	B
1	80 %
2	55 %
3	90 %

Design  
Tool

Beautiful  
Vis

Beauty

Analytics  
Back-  
ground

A	B
1	80 %
2	55 %
3	90 %

Analyt.  
Tool

Vis for  
Analytics

Insight

- o Who am I and why got I asked to talk about tools?

## I-4 My lessons learned, revisited

- 5 Why building charting tools is so hard
- 6 What I want for the future

# 5 Why building charting tools is so hard

## 5 Why building charting tools is so hard.

(The part where I build  
empathy for chart builders.)

5

“Why don’t they just  
implement       ? ”

← less needs

more needs →

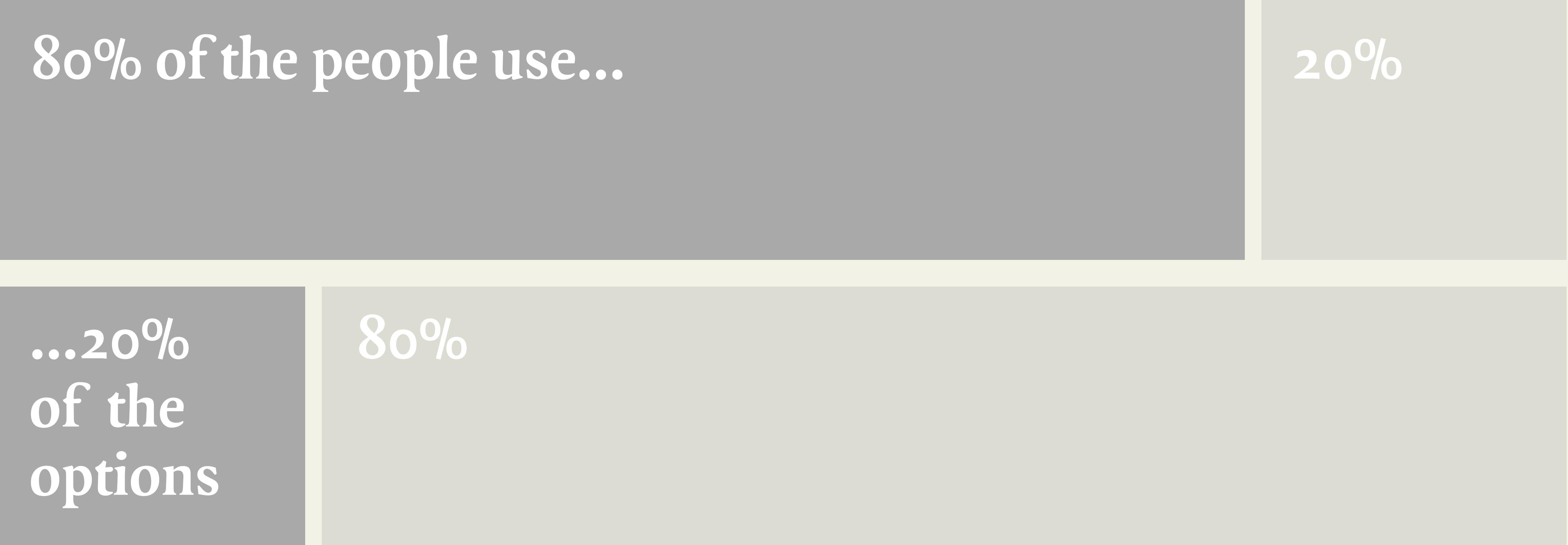


80% of the people

20%

← less needs

more needs →



80% of the people use...

20%

...20%  
of the  
options

80%

← less needs

more needs →

80% of the people use...

20%

...20%  
of the  
options

80%

**SUPERHACKS**

← less needs

more needs →

80% of the people use...

20%

...20%  
of the  
options

80%

Jon  
Schwabish

@lisacrost

## HOW GROUPS OF PEOPLE LIVE

Select among the following demographics.

SEX

AGE GROUP

RACE OR ORIGIN

Female

18 to 24

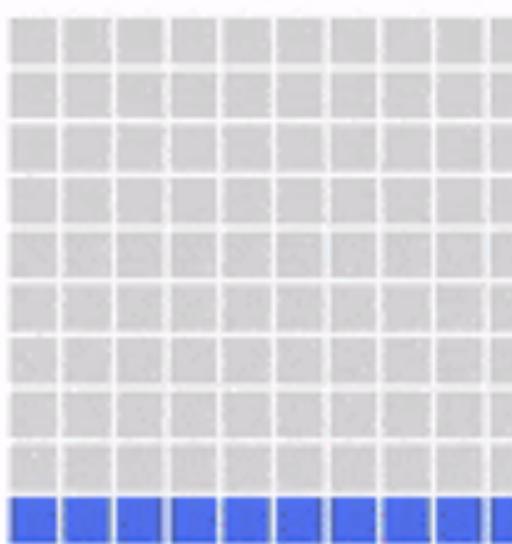
White

*There are about this many people in this group...*

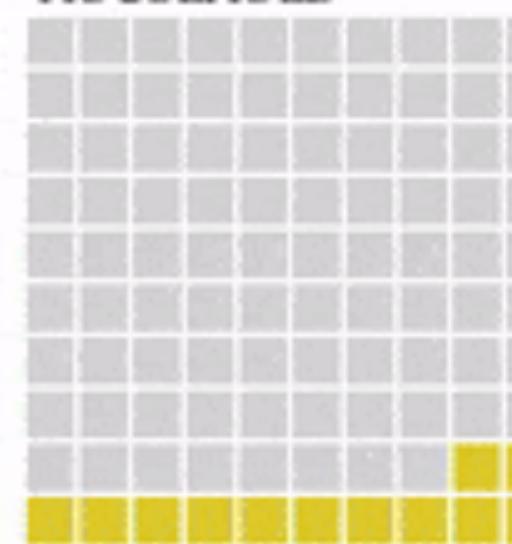
10,211,313

*...and of these people, here are their percentage breakdowns.*

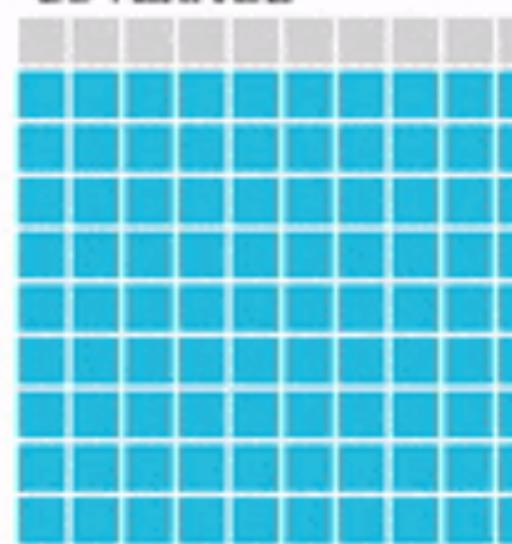
MARRIED



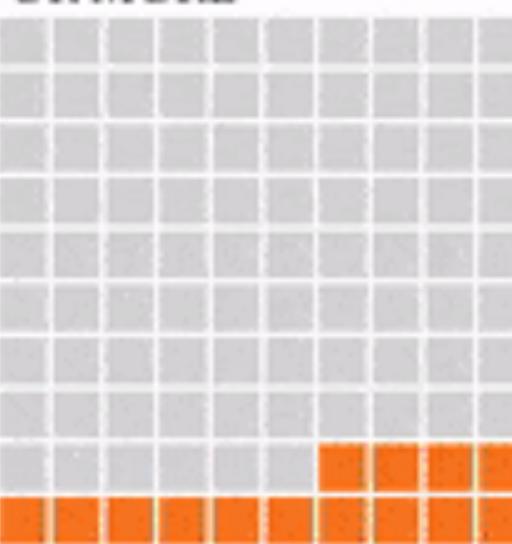
OWN CHILDREN IN  
HOUSEHOLD



HAS HEALTHCARE  
COVERAGE



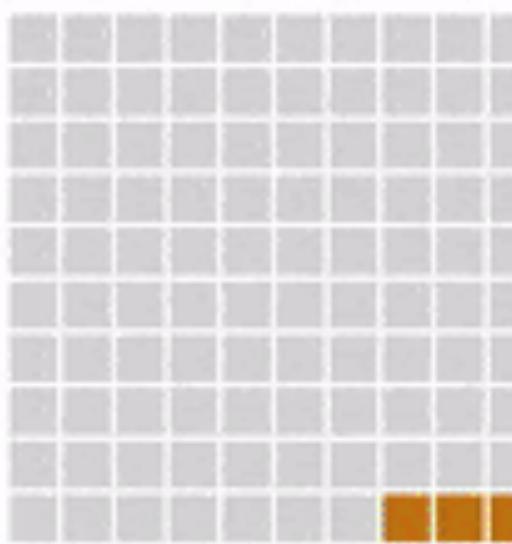
BACHELOR'S DEGREE  
OR MORE



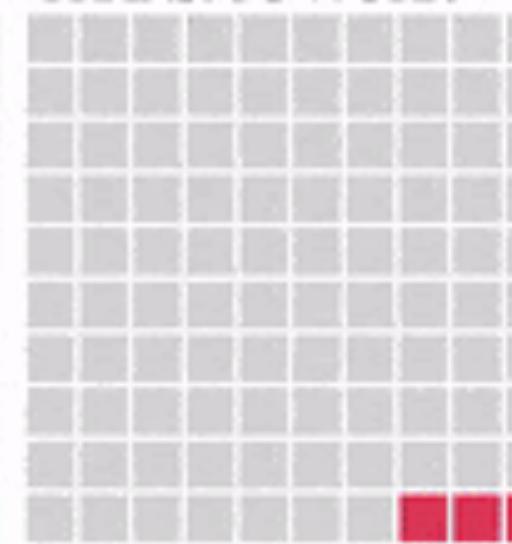
EMPLOYED



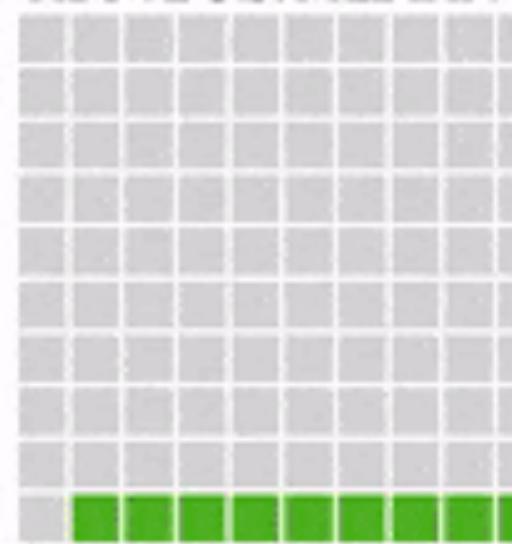
SELF-EMPLOYED



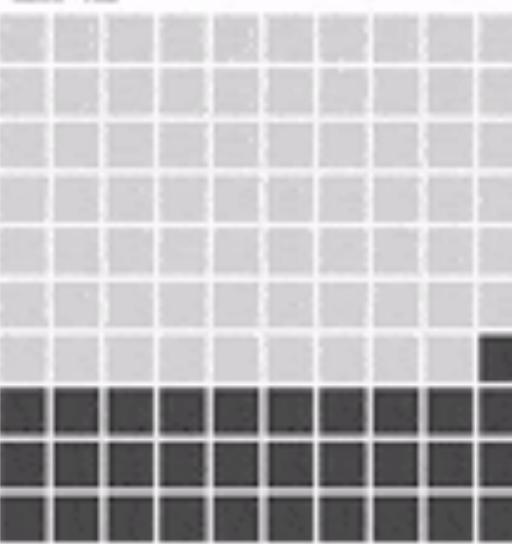
PRIMARILY PUBLIC  
TRANS. TO WORK



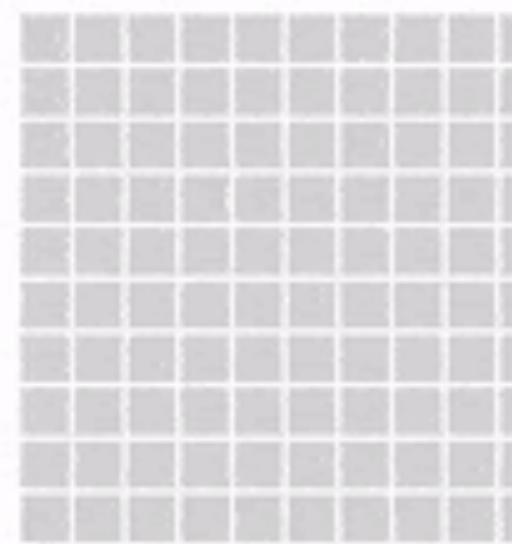
PERSONAL INCOME  
ABOVE U.S. MEDIAN



BELOW POVERTY  
LINE



VETERAN



BORN OUTSIDE US



COGNITIVE OR  
PHYSICAL DIFFICULTY



HEARING OR VISION  
DIFFICULTY



WIDOWED



more needs →

20%

Jon  
Schwabish

@lisacroft

← less needs

more needs →

80% of the people use...

20%

...20%  
of the  
options

80%

← hard to screw up

easy to screw up →



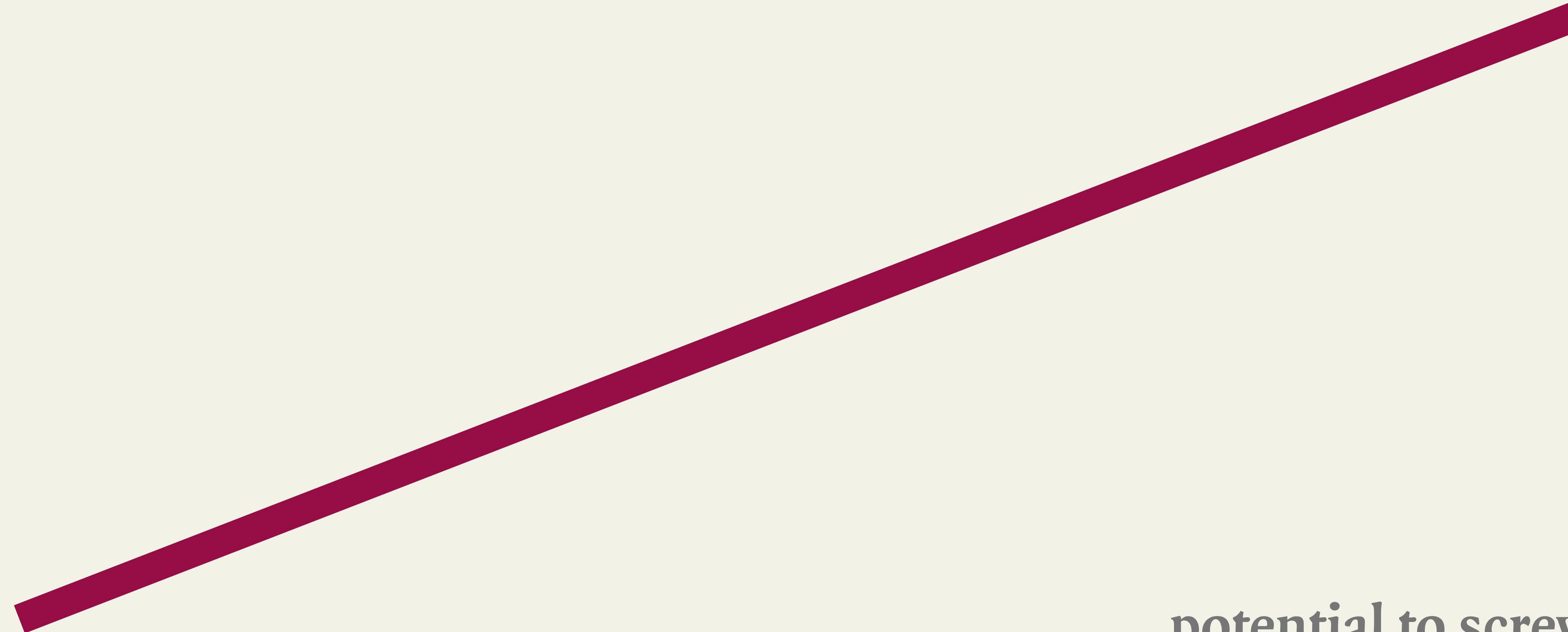
charting options



potential to screw up

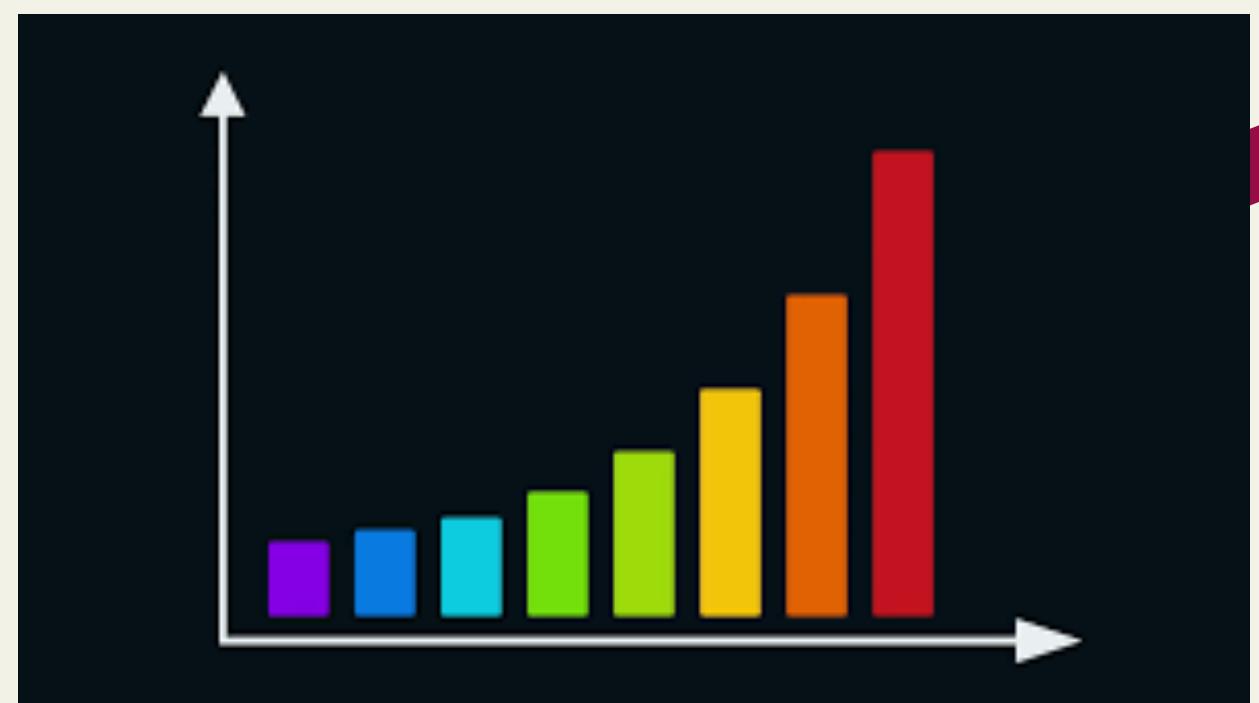


charting options



potential to screw up

↑  
charting options



potential to screw up

← less needs

more needs →

80% of the people use...

20%

...20%  
of the  
options

80%

← hard to screw up

easy to screw up →

← less needs

more needs →

80% of the people use...

20%

20%

80%

...80% of the UI.

20%

← less needs

more needs →

80% of the people use...

20%

20%

80%

...80% of the UI.

20%

← less needs

more needs →

80% of the people use...

20%

# The functionality vs simplicity Dilemma

of Click&Drag Tools

...80% of the UI.

20%

Structure
Traces
Subplots
Transforms
<b>Style</b>
<b>General</b>
Traces
Axes
Legend
Annotation
Shapes
Images
<b>Analysis</b>
<b>Export</b>

↶ Collapse All

› Defaults

› Title

› Layout

› Interactions

Drag

Mode Zoom

Click

Mode  Click Event  
 Select Data Point

Hover

Mode X Axis

Background Color This color is computed from other parts of the figure but you can [override it](#).

Border Color This color is computed from other parts of the figure but you can [override it](#).

Header

Page design

Dots

Layout

Margins

Line styles

X axis

Y axis

Labels

Popups

Trend lines

Box plot

Annotations

**Configure x-axis**

Select column date

Custom range: min - max

Custom ticks e.g. 2000,2005,2012

Tick format: 2015, Feb, Mar

Grid lines  show  hide  tick marks

**Configure y-axis**

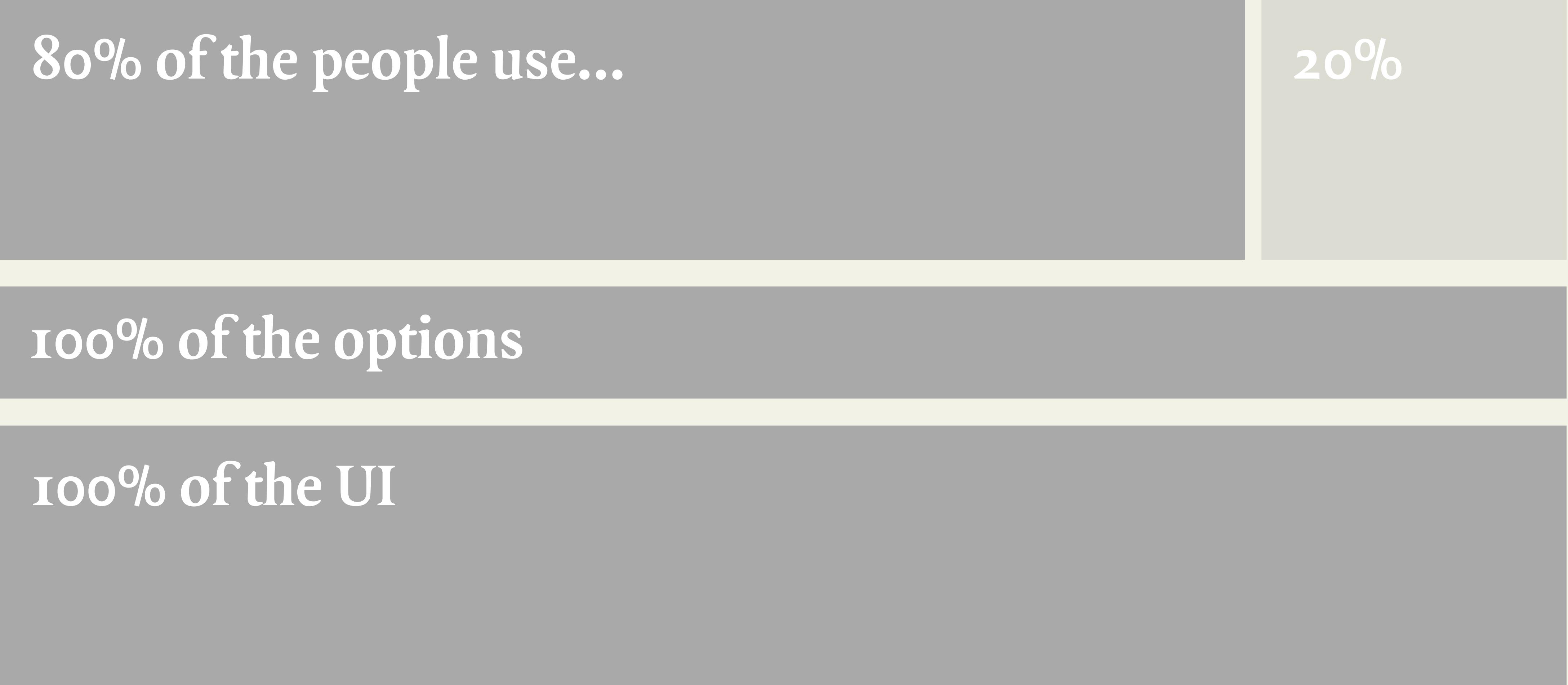
**Customize lines**

**Labeling**

**Customize symbols**

← less needs

more needs →



80% of the people use...

20%

100% of the options

100% of the UI

← less needs

more needs →

80% of the people use...

20%

100% of the options

100% of the UI

← less needs

more needs →

80% of the people use...

20%

20%

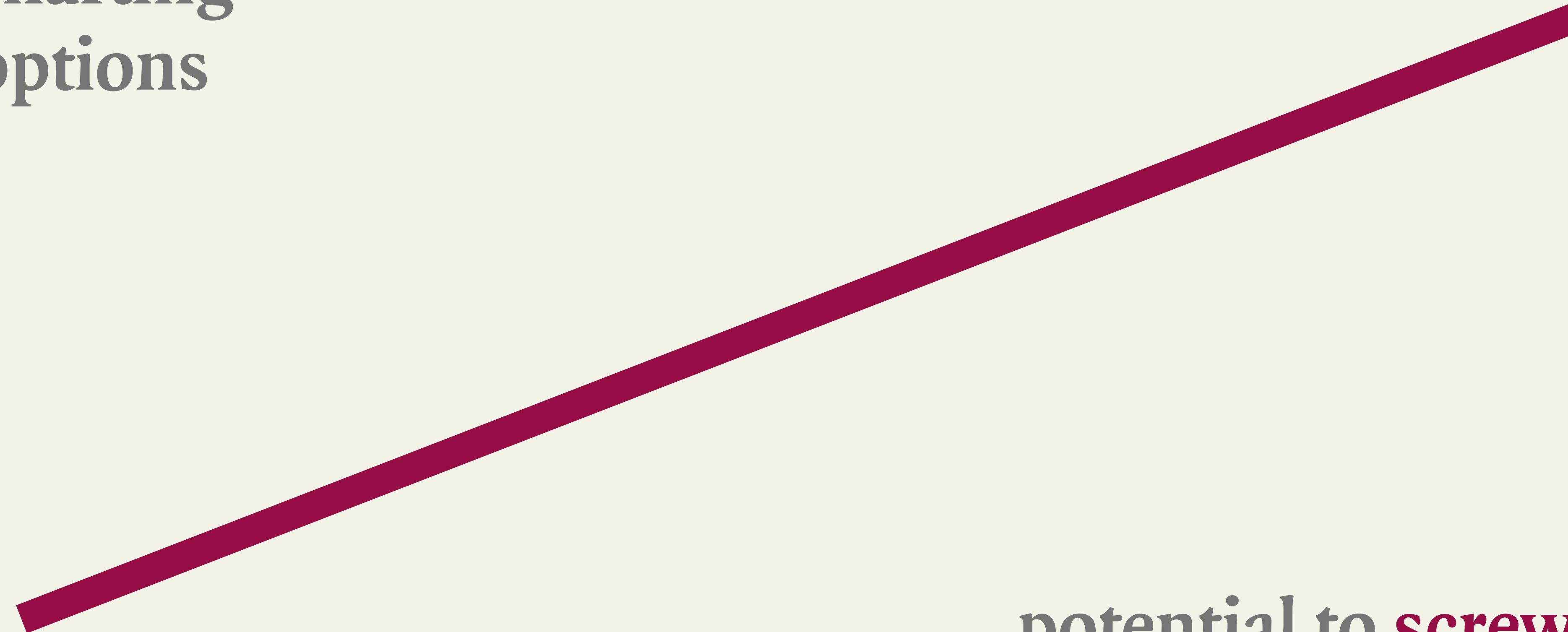
80% of the options = better charts.

...80% of the UI.

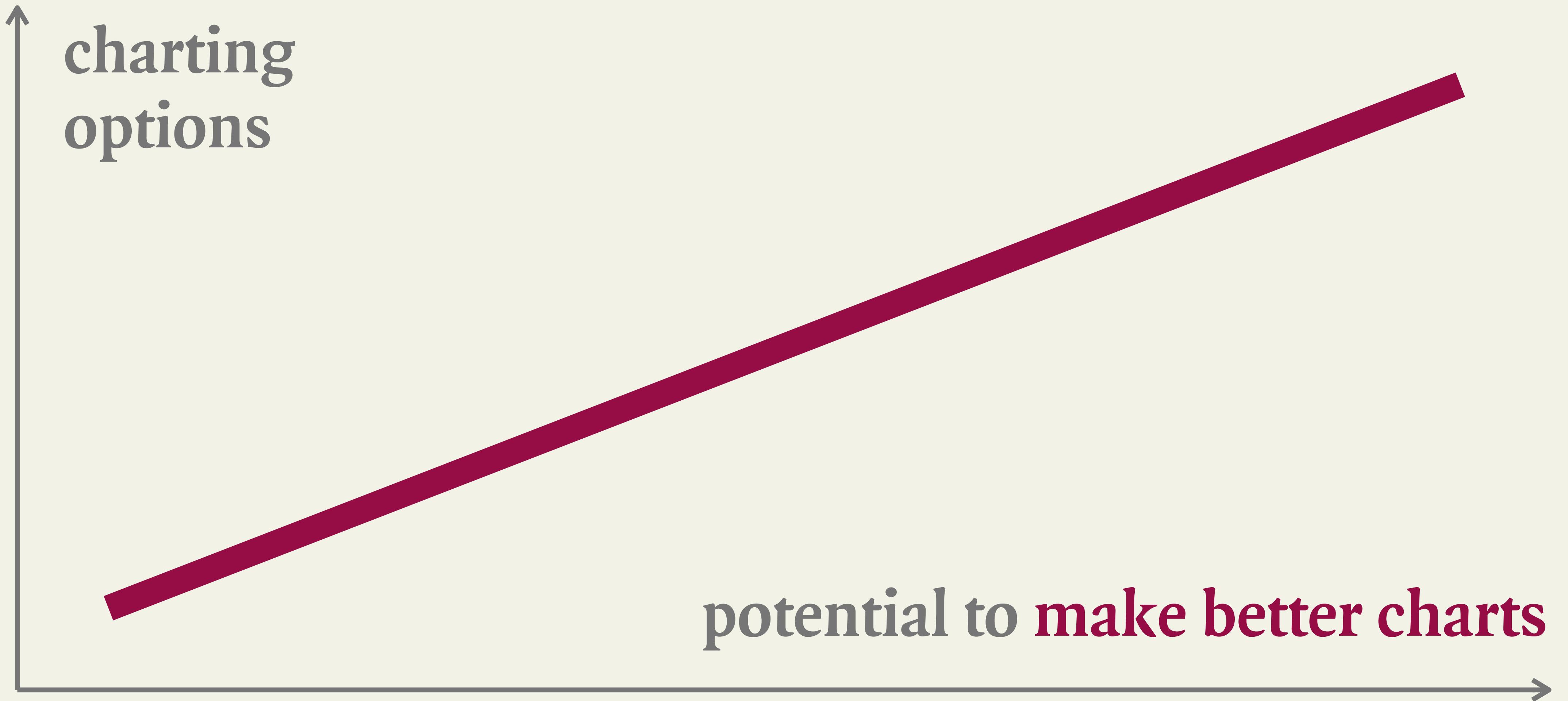
20%

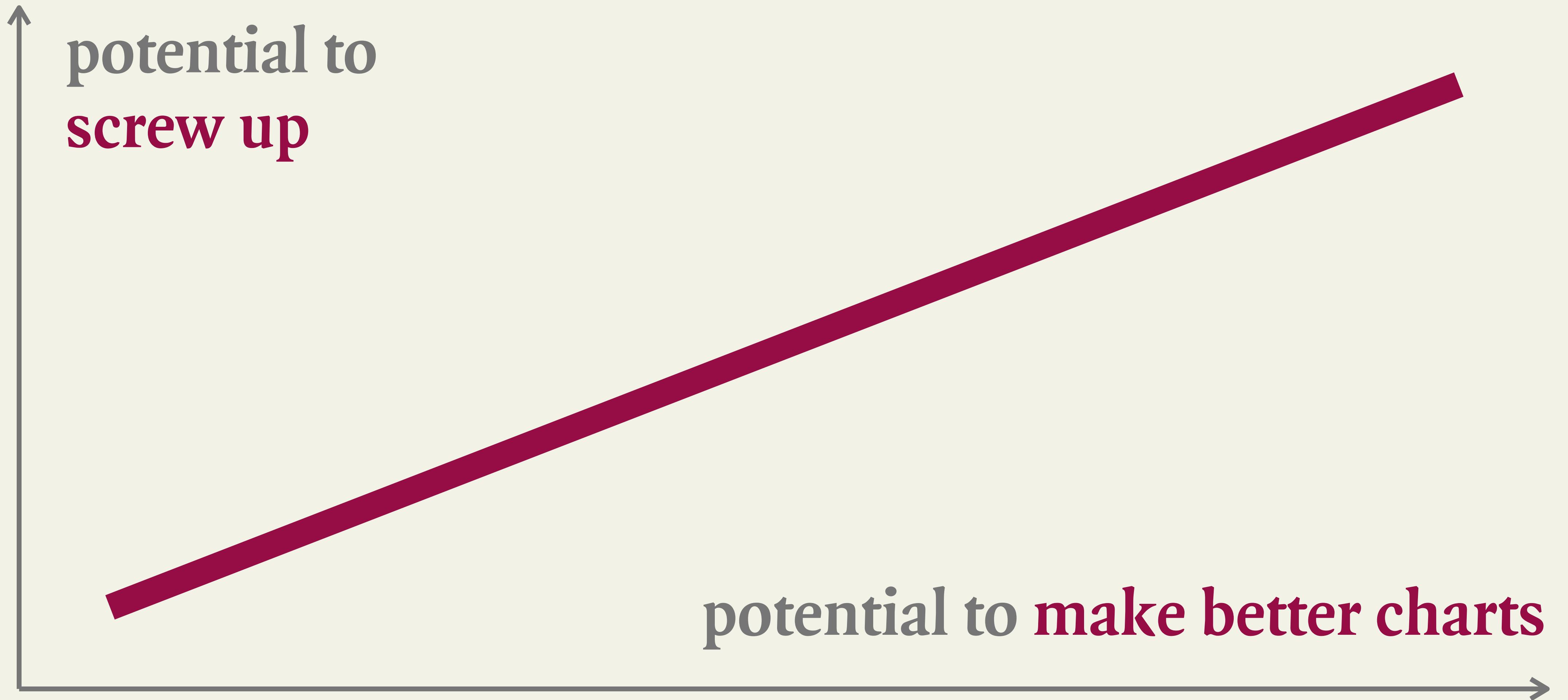


charting  
options



potential to screw up





← less needs

more needs →

80% of the people use...

20%

20%

80% of the options = better charts.

...80% of the UI.

20%

# 6 What I want for the future.

# 6 What I want for the future.

- Better UIs.
- Make it easier to create artsy responsive charts.
- More software-as-a-teacher.

Structure
Traces
Subplots
Transforms
<b>Style</b>
<b>General</b>
Traces
Axes
Legend
Annotation
Shapes
Images
<b>Analysis</b>
<b>Export</b>

↶ Collapse All

> Defaults

> Title

> Layout

↳ Interactions

Drag

Mode Zoom

Click

Mode  Click Event  
 Select Data Point

Hover

Mode X Axis

Background Color This color is computed from other parts of the figure but you can [override it](#).

Border Color This color is computed from other parts of the figure but you can [override it](#).

Header

Page design

Dots

Layout

Margins

Line styles

X axis

Y axis

Labels

Popups

Trend lines

Box plot

Annotations

**Configure x-axis**

Select column date

Custom range: min - max

Custom ticks e.g. 2000,2005,2012

Tick format: 2015, Feb, Mar

Grid lines  show  hide  tick marks

**Configure y-axis**

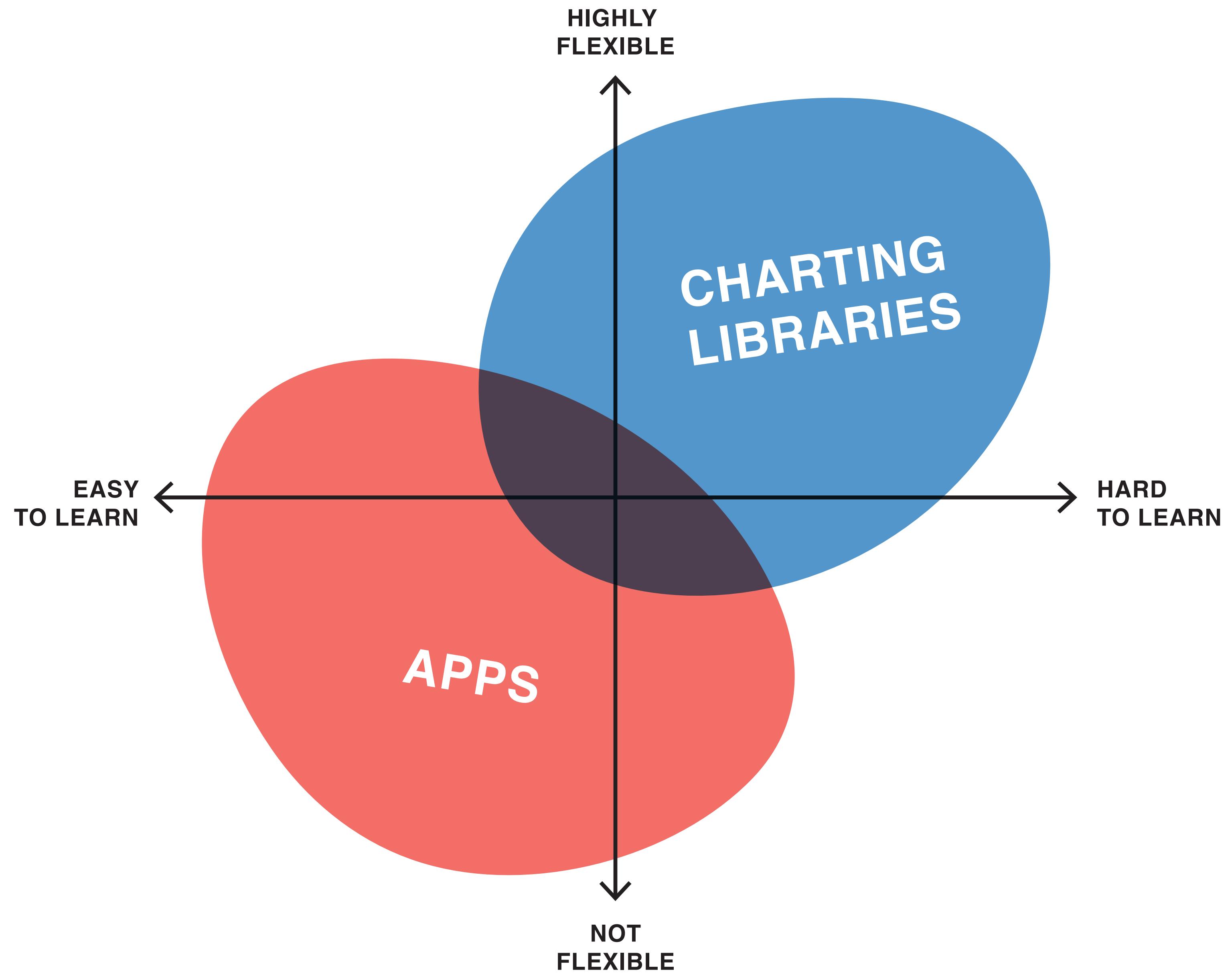
**Customize lines**

**Labeling**

**Customize symbols**

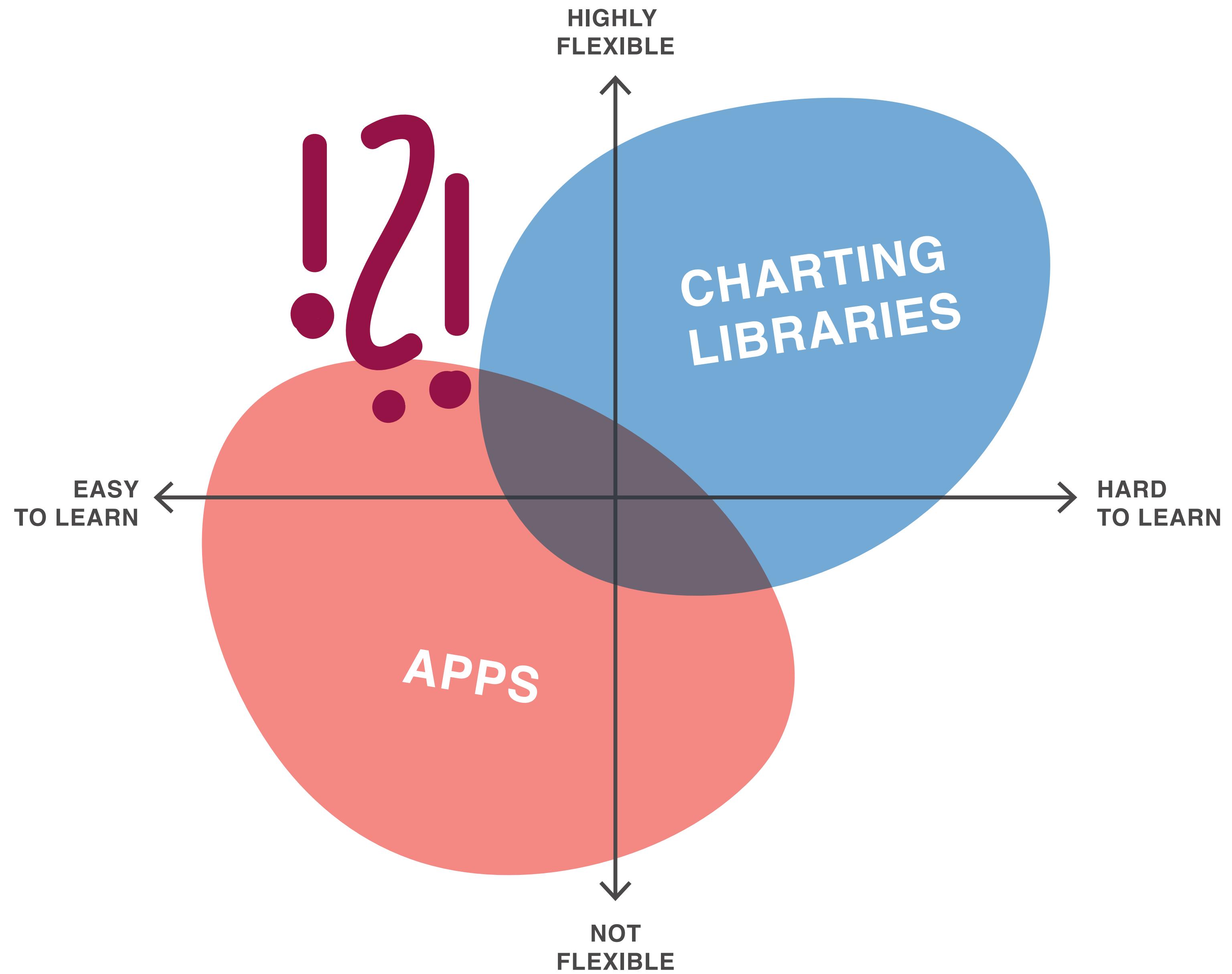
# 6 What I want for the future.

- Better UIs.
- Make it easier to create artsy responsive charts.
- More software-as-a-teacher.



For charts that  
need to be  
responsive





For charts that  
need to be  
responsive



# 6 What I want for the future.

- Better UIs.
- Make it easier to create artsy responsive charts.
- More software-as-a-teacher.



Selected template  
**Scatter**



**i** Need help with this template?

Header ▶

Page design ▶

Dots ▶

Layout ▶

Margins ▶



Scatter



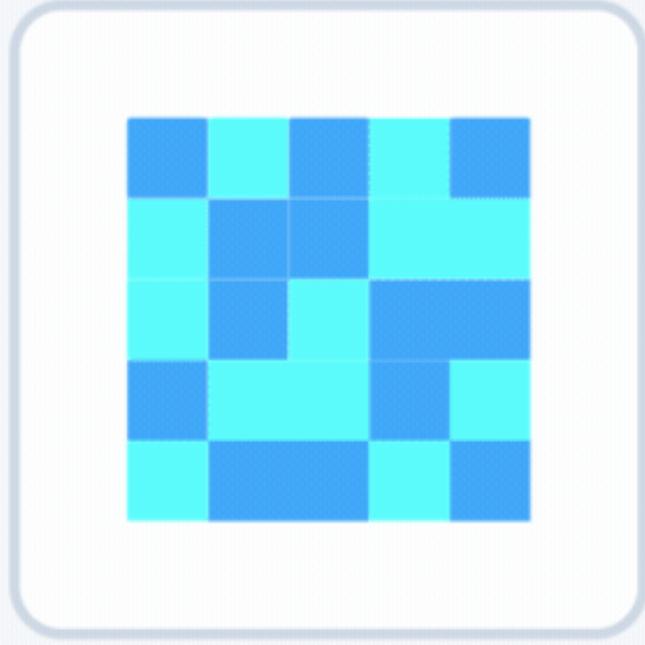
Bar



Line



Area



Heatmap



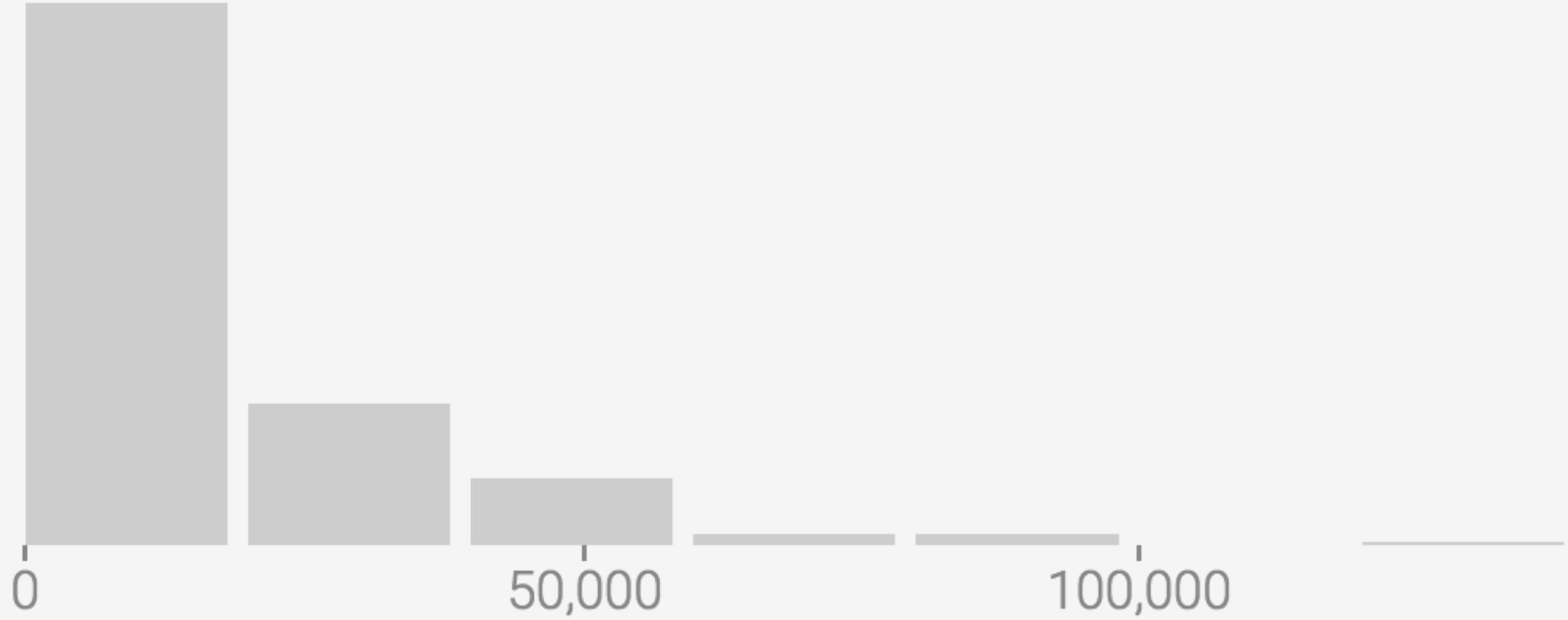
Table



Contour



Pie



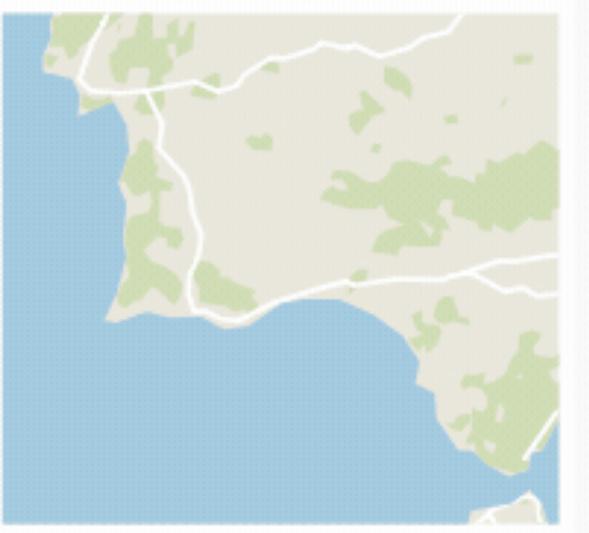
Min: **599** Max: **132,877** Mean: **17,232** Median: **10,996**

The chart above shows how the values in the selected column are distributed. [Learn more...](#)

# Map styles



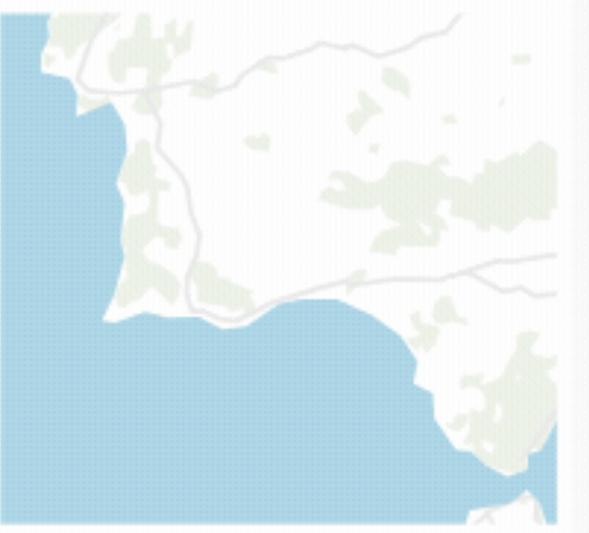
LIGHT



EARTH



GRAY



MARITIME

Need help?

Labels

Buildings \*

3D Buildings \*

Roads

Water

\* zoom in to see these features

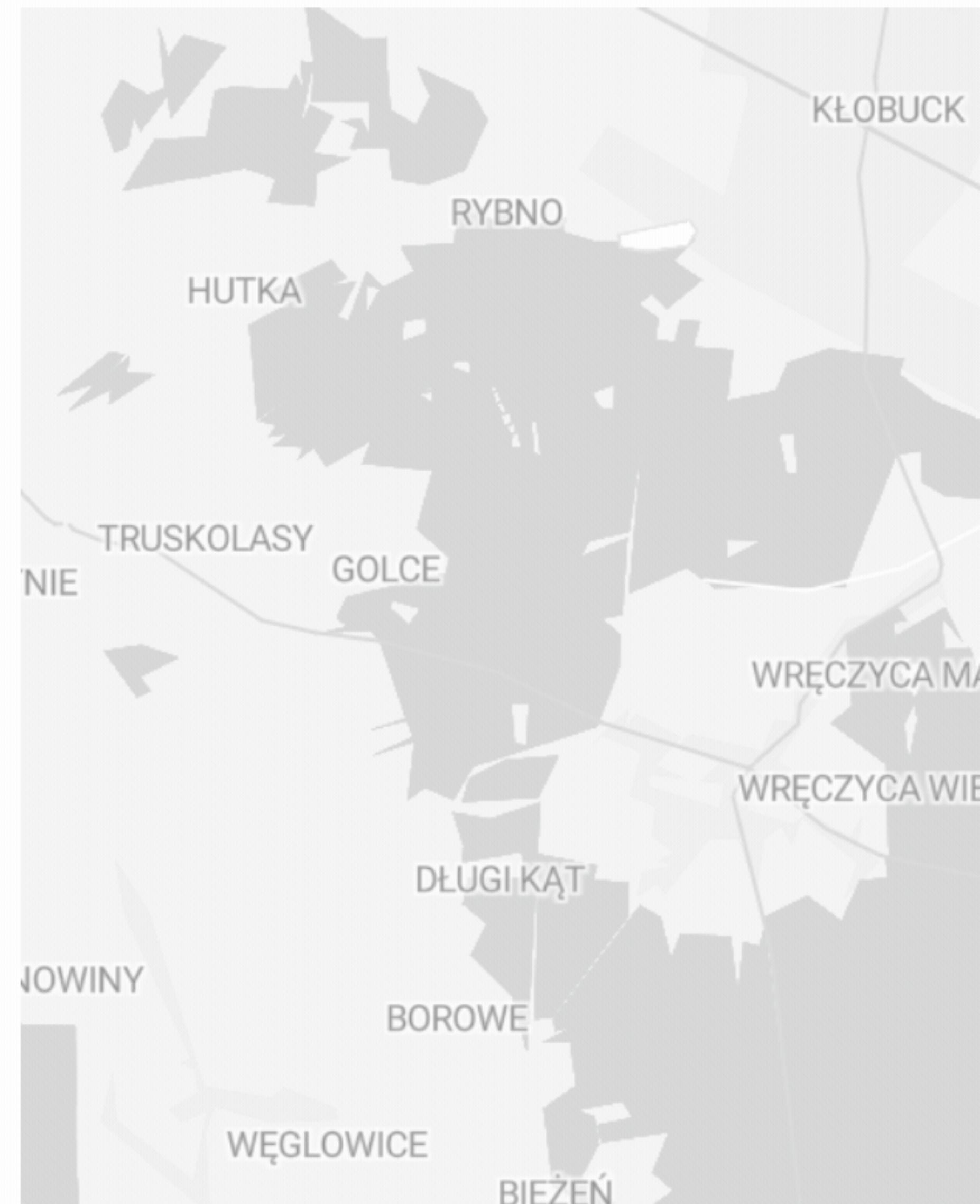
Country borders

Inner country borders

Green areas

Urban areas

?



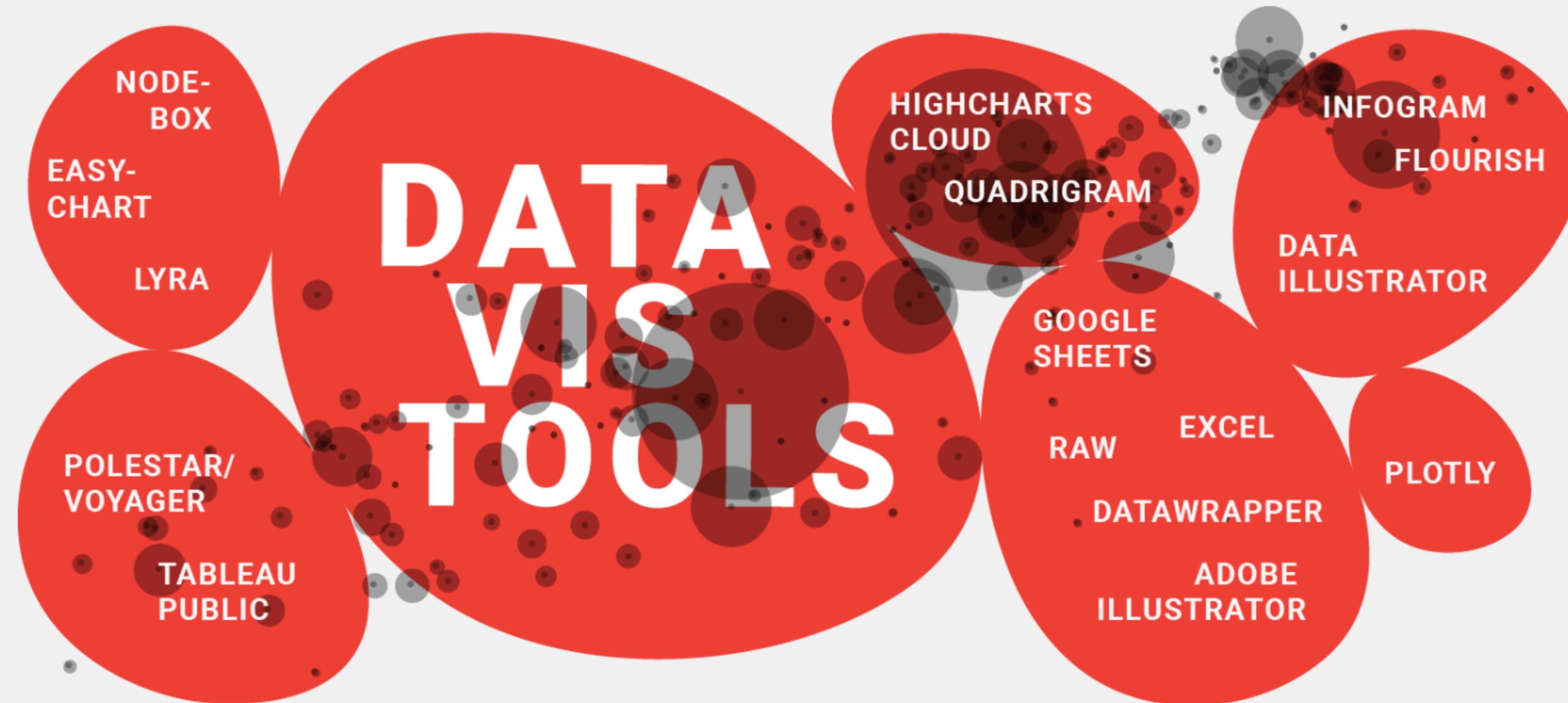
# 6 What I want for the future.

- Better UIs.
- Make it easier to create artsy responsive charts.
- More software-as-a-teacher.

# One Chart, Nine Tools – Revisited

18 Oct 2018

Views about the world and data visualization.



Portfolio & Twitter

All Blog Articles

One Chart, Nine Tools –  
Revisited 18 Oct 2018

"You want them" vs "They  
want you" 05 Jan 2018

That Frustrating Thing About  
Creating Data Vis in  
Newsrooms 24 Oct 2017

*Disclaimer: Since November 2017 I work for Datawrapper, a charting tool. Which means that I can't review any charting tool unbiased anymore. I will still try.*

2.5 years ago I wrote an article recreating the same bubble chart with 24 different charting tools: twelve charting apps and twelve libraries/frameworks. Afterward, I wrote an article for SOURCE explaining what I had learned during this experiment.

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