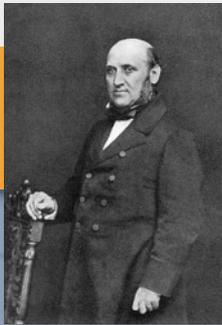


5

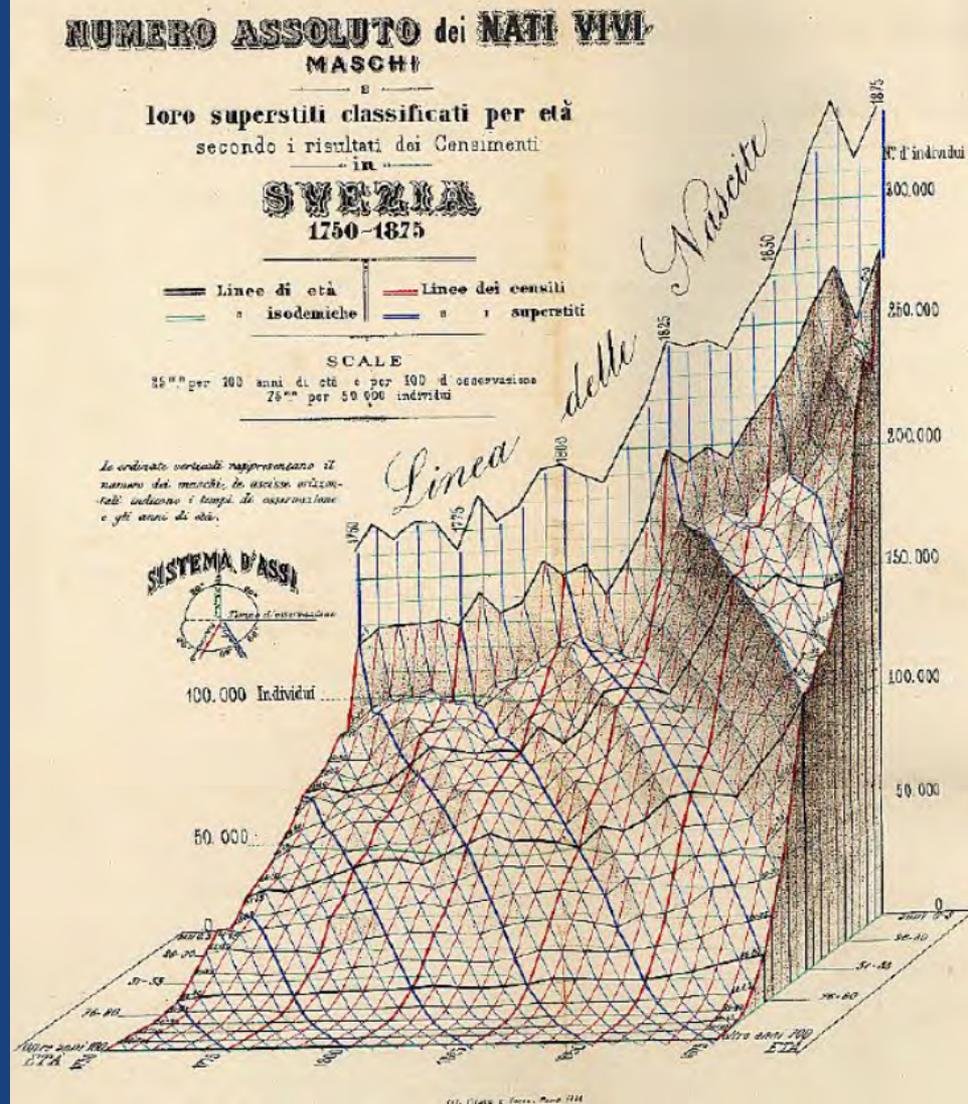
LESSONS

from History's Early
DATA ROCKSTARS

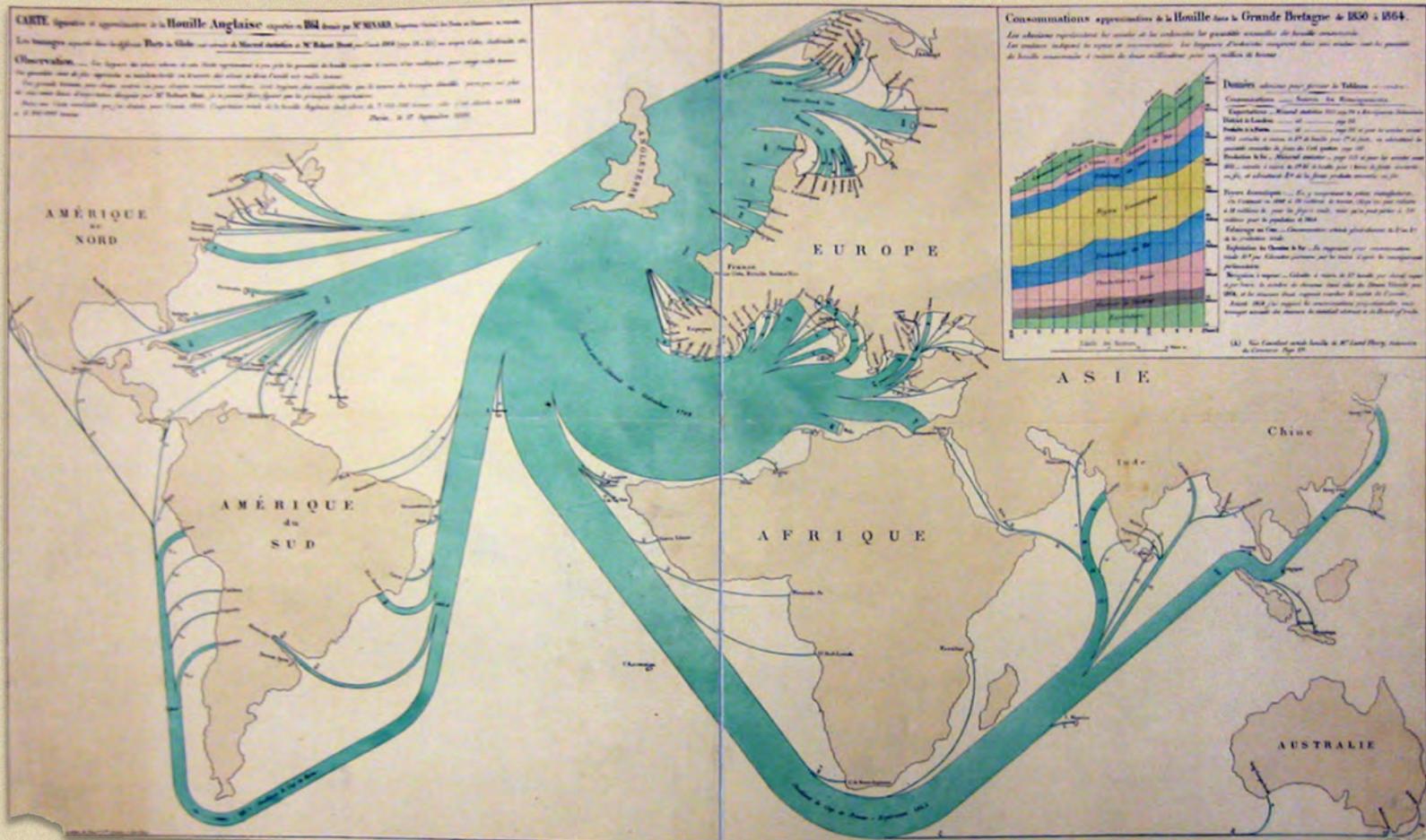


Data visualization has a rich and exciting history.

The pioneers, **DATA ROCKSTARS** in their day, developed new ways of showing data.



What are the **most important lessons** we can apply to what we do today?



These are the lessons we're going to look at:

- 1 Visualizations help people understand the data
- 2 Talk about your work with others
- 3 Use a pencil
- 4 Be creative
- 5 Let Big Data inspire you

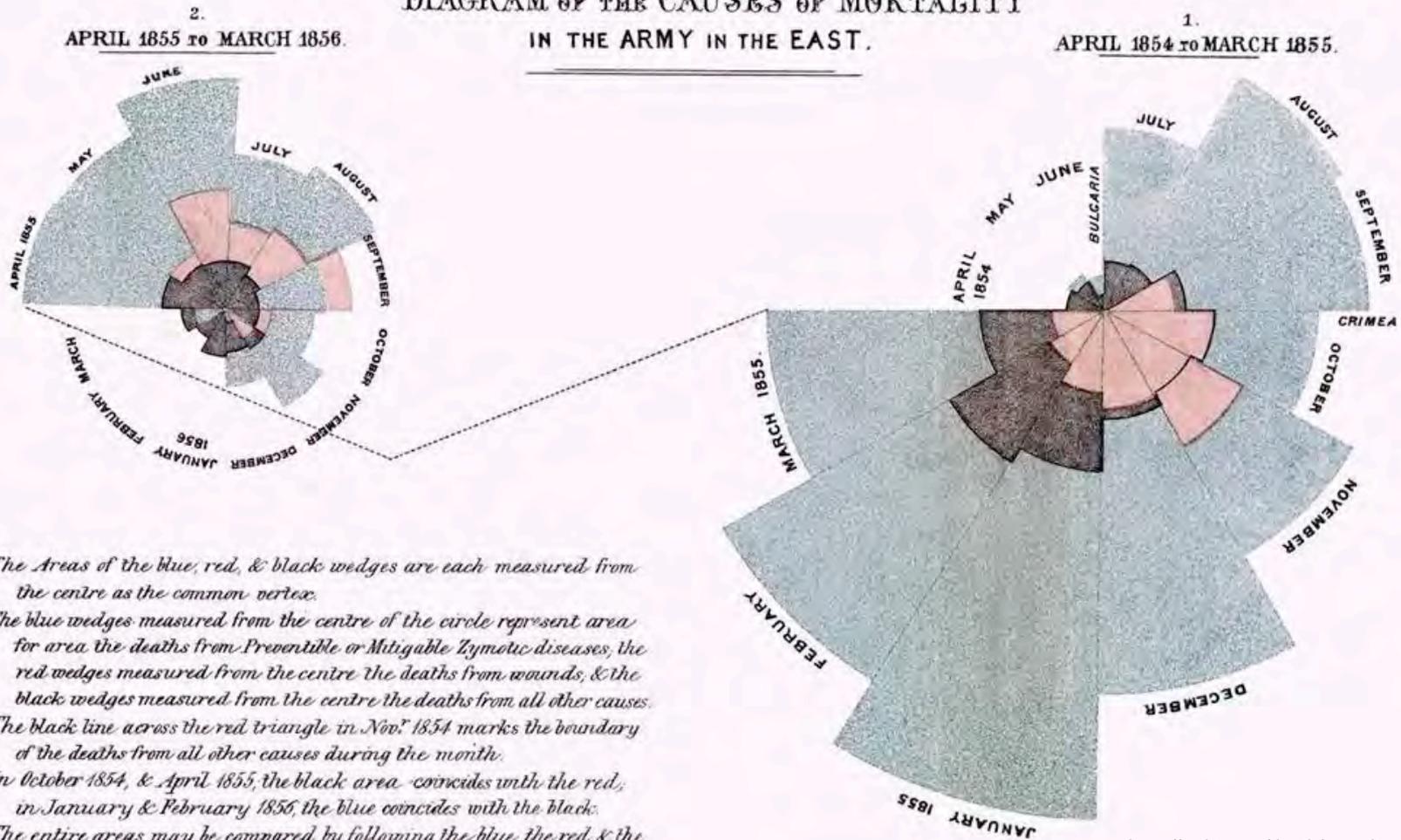
Ps:

there's a link to a list of all the images and charts used in this slide deck at the end.



Visualizations help people **understand** their data.

DIAGRAM OF THE CAUSES OF MORTALITY IN THE ARMY IN THE EAST.



Florence Nightingale is most famous for being the **Lady of the Lamp** during the Crimean War (1853-56).

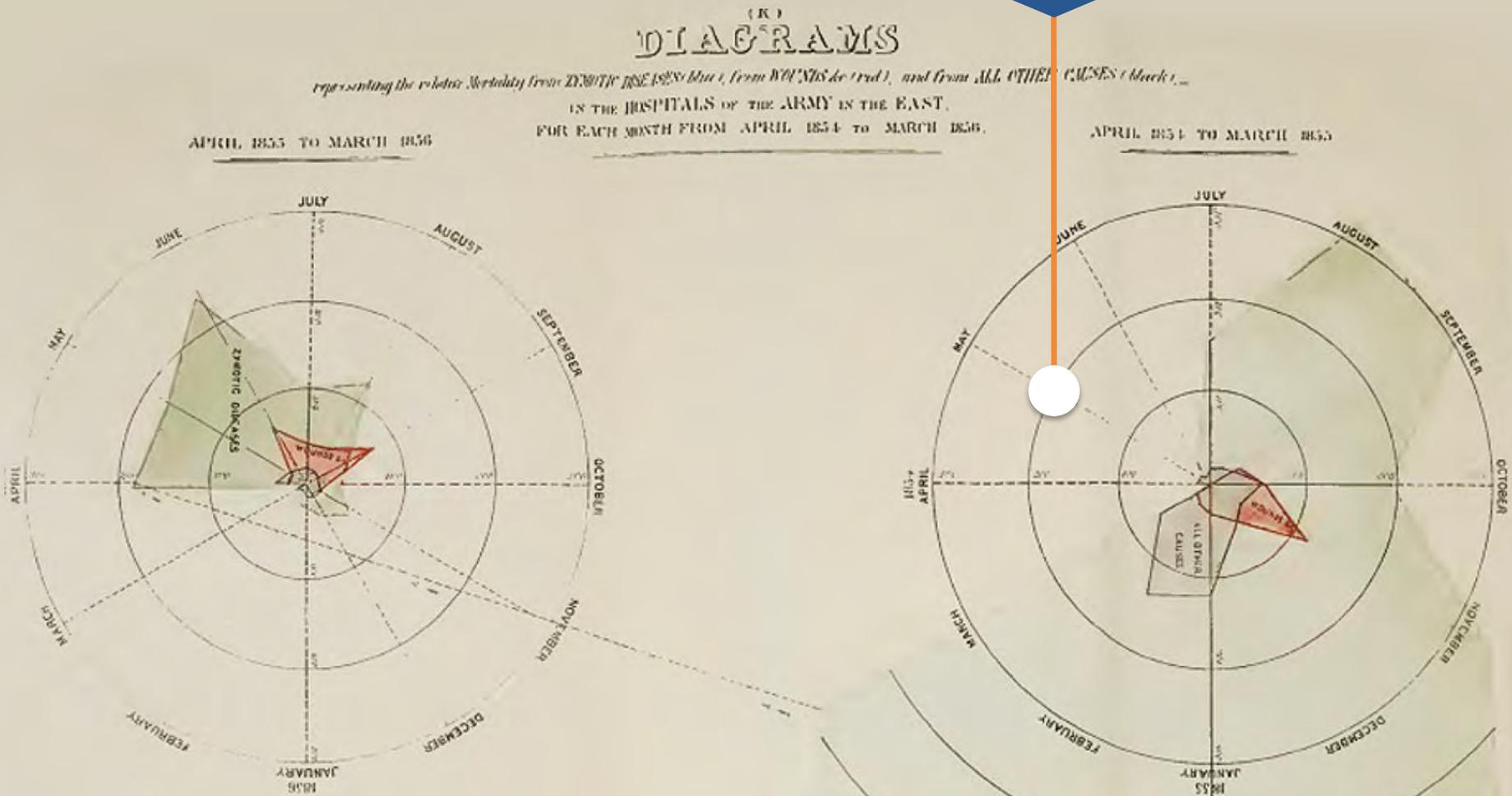


Conditions in the field hospitals were atrocious and she did whatever she could to **improve care** for sick and injured soldiers.



But she was also a

DATA ROCKSTAR



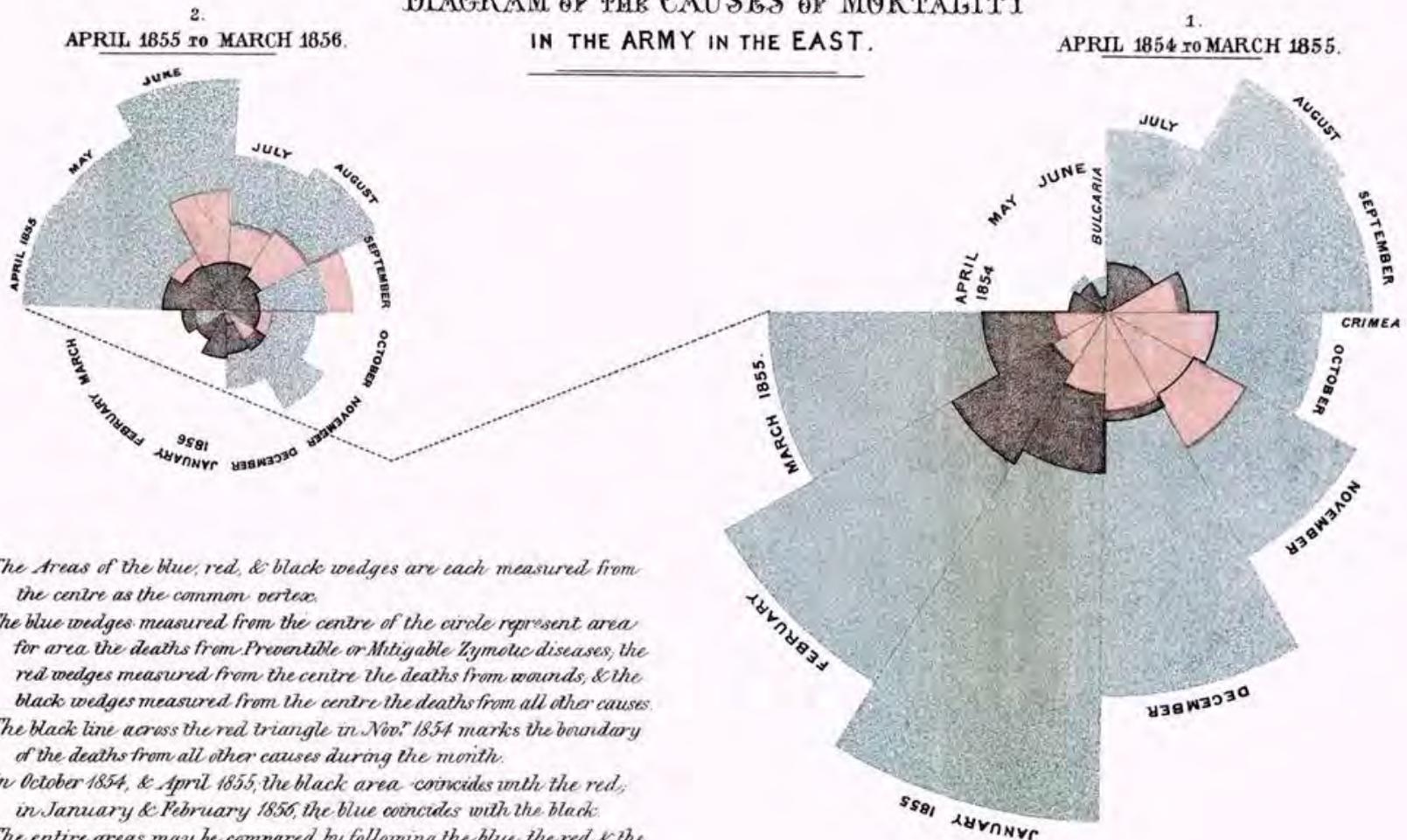
*“Diagrams are of great utility for illustrating certain quantities of **vital statistics** by conveying ideas on the subject through the eye, which cannot be so readily grasped when contained in figures.”*

Page I, “Mortality of the British Army”,
1858



This chart shows how soldiers died over 2 years in the war (the blue represents **curable diseases**).

DIAGRAM OF THE CAUSES OF MORTALITY
IN THE ARMY IN THE EAST.



After the war, she was commissioned by the British Government to write a **report on the causes of deaths** of soldiers in the war:

MORTALITY

OF THE

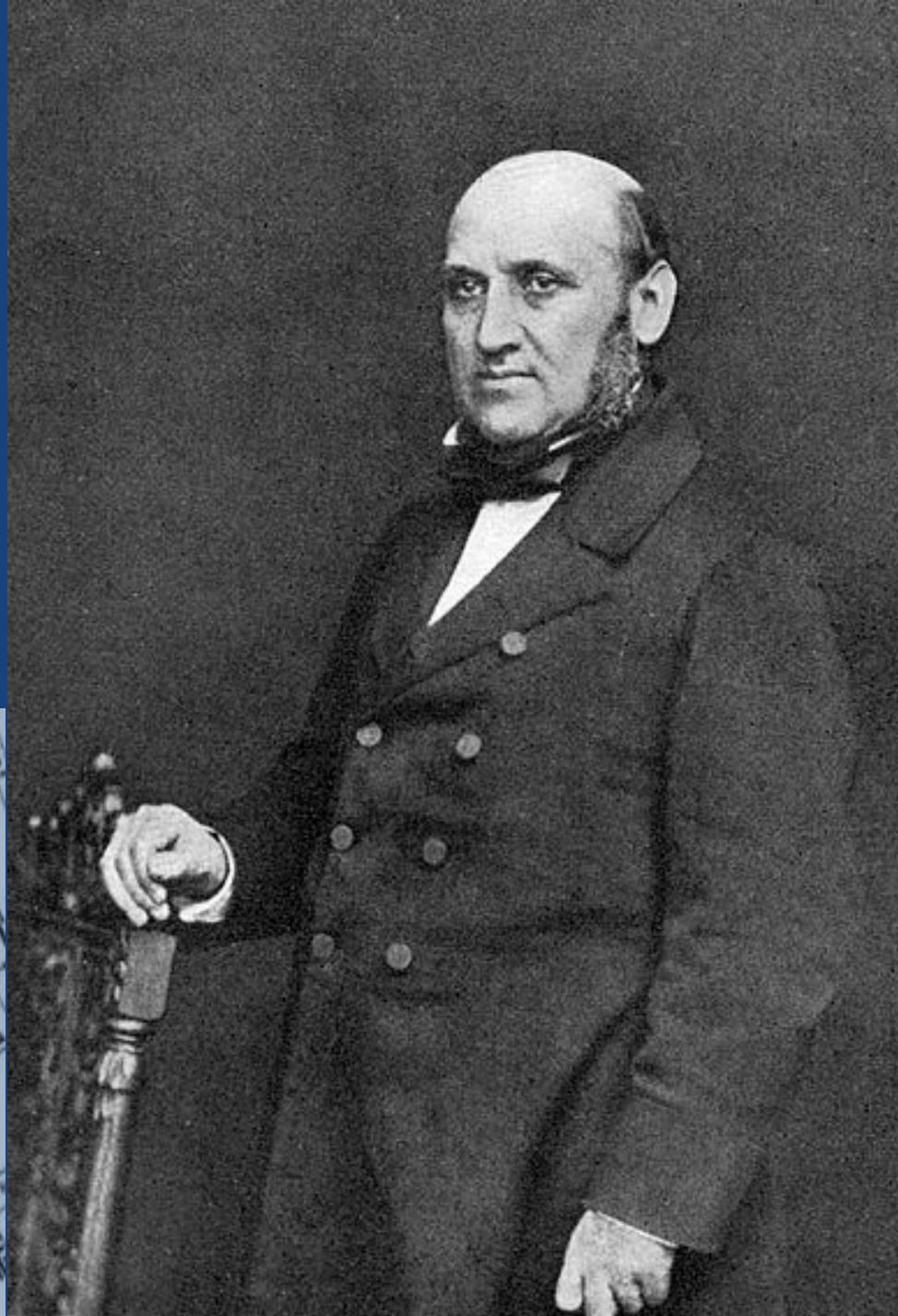
BRITISH ARMY,

AT HOME, AT HOME AND ABROAD, AND DURING THE RUSSIAN WAR,

AS COMPARED WITH THE

The report was co-authored by William Farr, a pioneer of **medical statistics**.

He also helped compile statistics for John Snow's Cholera map.



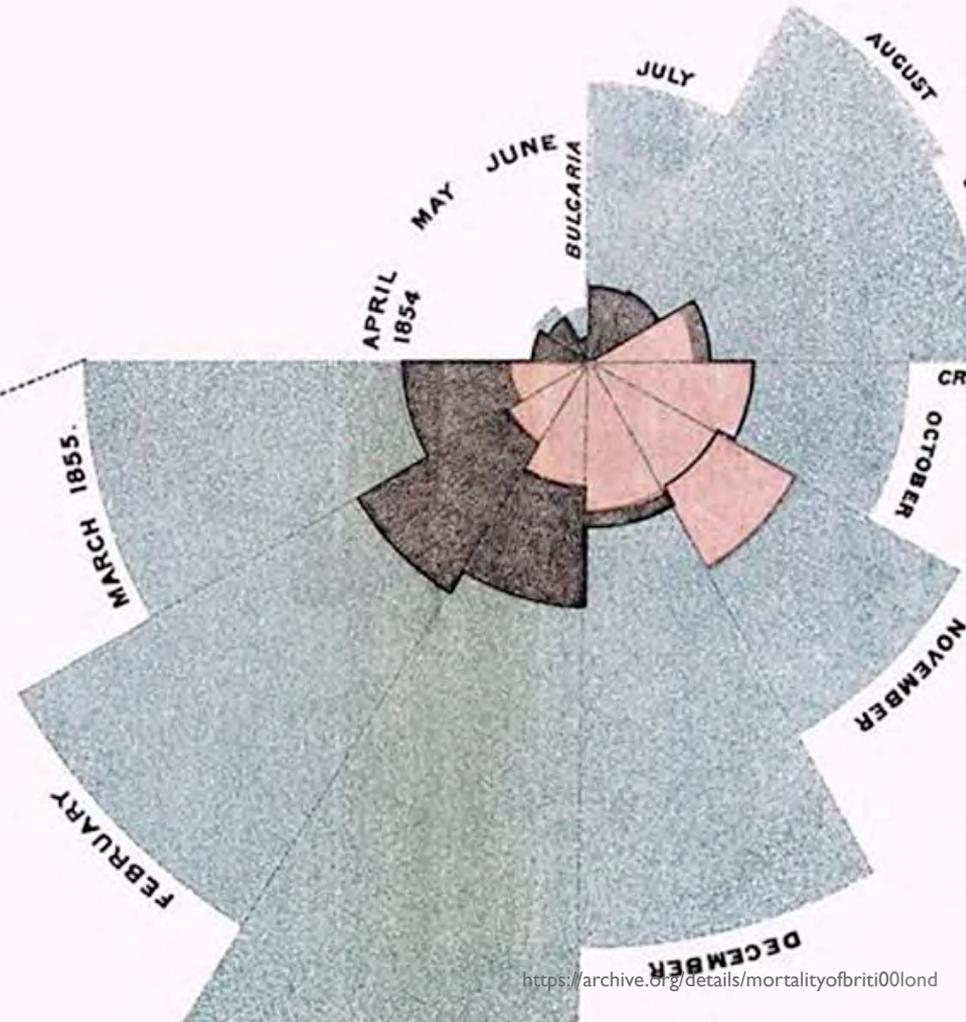
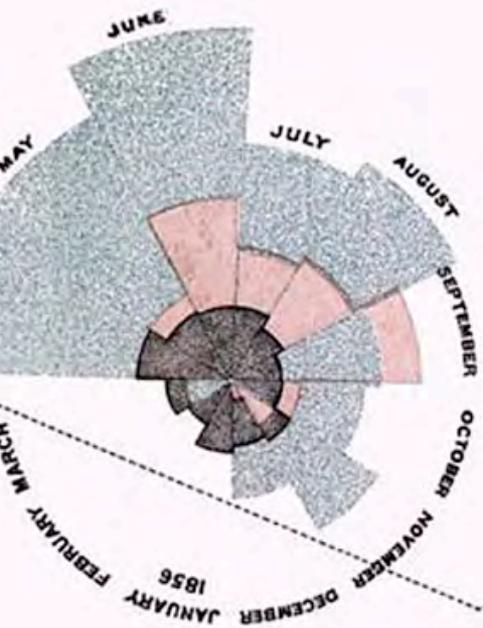
But Farr did not want charts in the report.

His approach to reports was “the dryer the better”.

Months	Estimated Average Monthly Strength of the Army.	DEATHS.			ANNUAL RATE OF MOR- TALITY PER 1,000.		
		Zymotic Diseases.	Wounds and Injuries.	All other Causes.	Zymotic Diseases.	Wounds and Injuries.	All other Causes.
1854 April	8,571	1	..	5	1·4	..	7·0
May	23,333	12	..	9	6·2	..	4·6
June.. .. .	28,333	11	..	6	4·7	..	2·5
July	28,722	359	..	23	150·0	..	9·6
August	30,246	828	1	30	328·5	·4	11·9
September ..	30,290	788	81	70	312·2	32·1	27·7
October	30,643	503	132	128	197·0	51·7	50·1
November ..	29,736	844	287	106	340·6	115·8	42·8
December ..	32,779	1,725	114	131	631·5	41·7	48·0
1855 January ..	32,393	2,761	83	324	1022·8	30·7	120·0
February	30,919	2,120	42	361	022 0	10 0	140 1

She included these charts.

They had a **great impact** and led to legislative change.



as of the blue, red, & black wedges are each measured from centre as the common vertex.
wedges measured from the centre of the circle represent area
the deaths from Preventible or Mitigable Zymotic diseases, the
wedges measured from the centre the deaths from wounds, & the
wedges measured from the centre the deaths from all other causes.
line across the red triangle in Nov. 1854 marks the boundary
deaths from all other causes during the month.
1854, & April 1855; the black area coincides with the red;

2

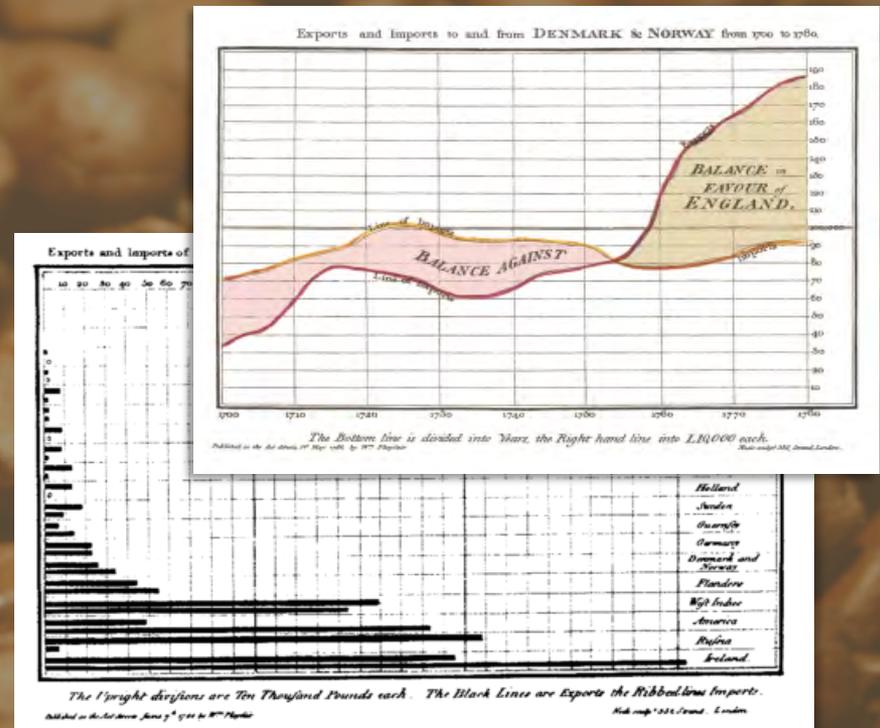
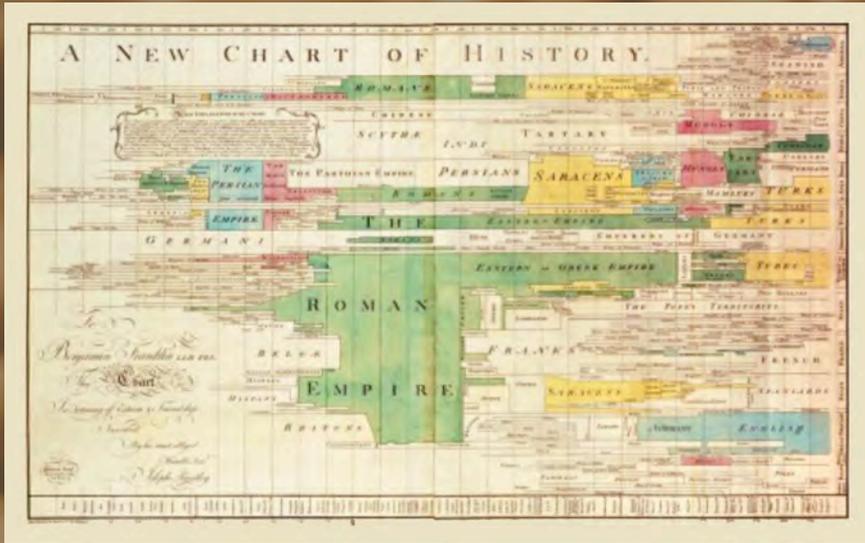
Talk about your work
with others.



Coffeehouses sprang up in the 17th and 18th centuries. They became places for people to **share ideas and inspiration.**



Out of those conversations came **standardized x-axes, line charts, bar charts** and more.





Beyond drinking coffee,
what else can we do
in the 21st century?

Go to conferences!

Meeting other like-minded people will inspire you, too.



Go to user groups and meetups.

Smaller and more intimate, these are places to share projects, ideas and techniques.



Get active on social networks.

On blogs, Twitter, Facebook and other social networks, there is an active conversation happening right now.



John Burn-Murdoch ✓

@jburnmurdoch

+ Follow

@visualisingdata @albertocairo At the risk of becoming annoying I'd love your thoughts on my variation on slopegraphs pic.twitter.com/rVCJtPJ0tq

← Reply ↻ Retweet ★ Favorite ⋮ More



RETWEETS

4

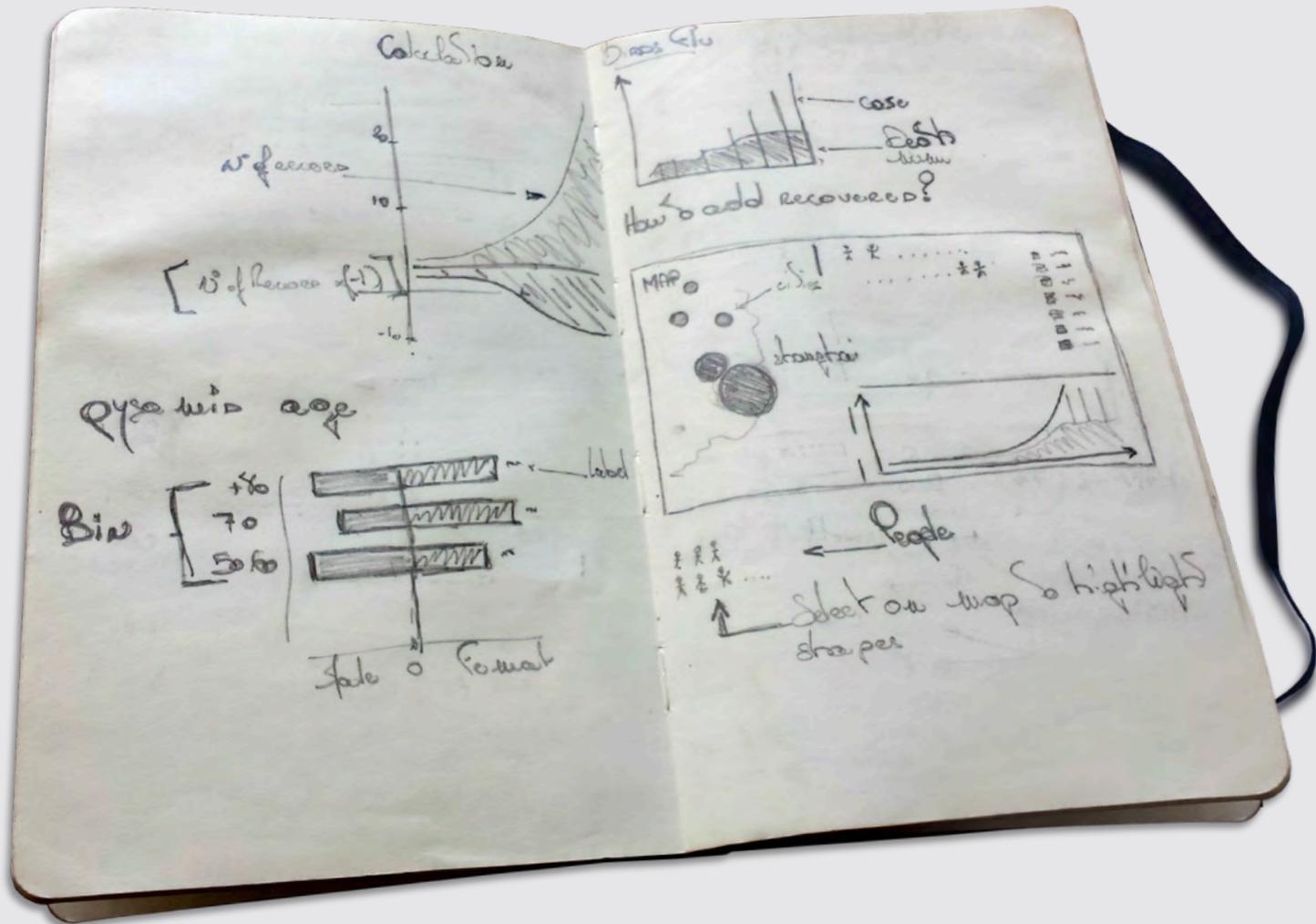
FAVORITES

6



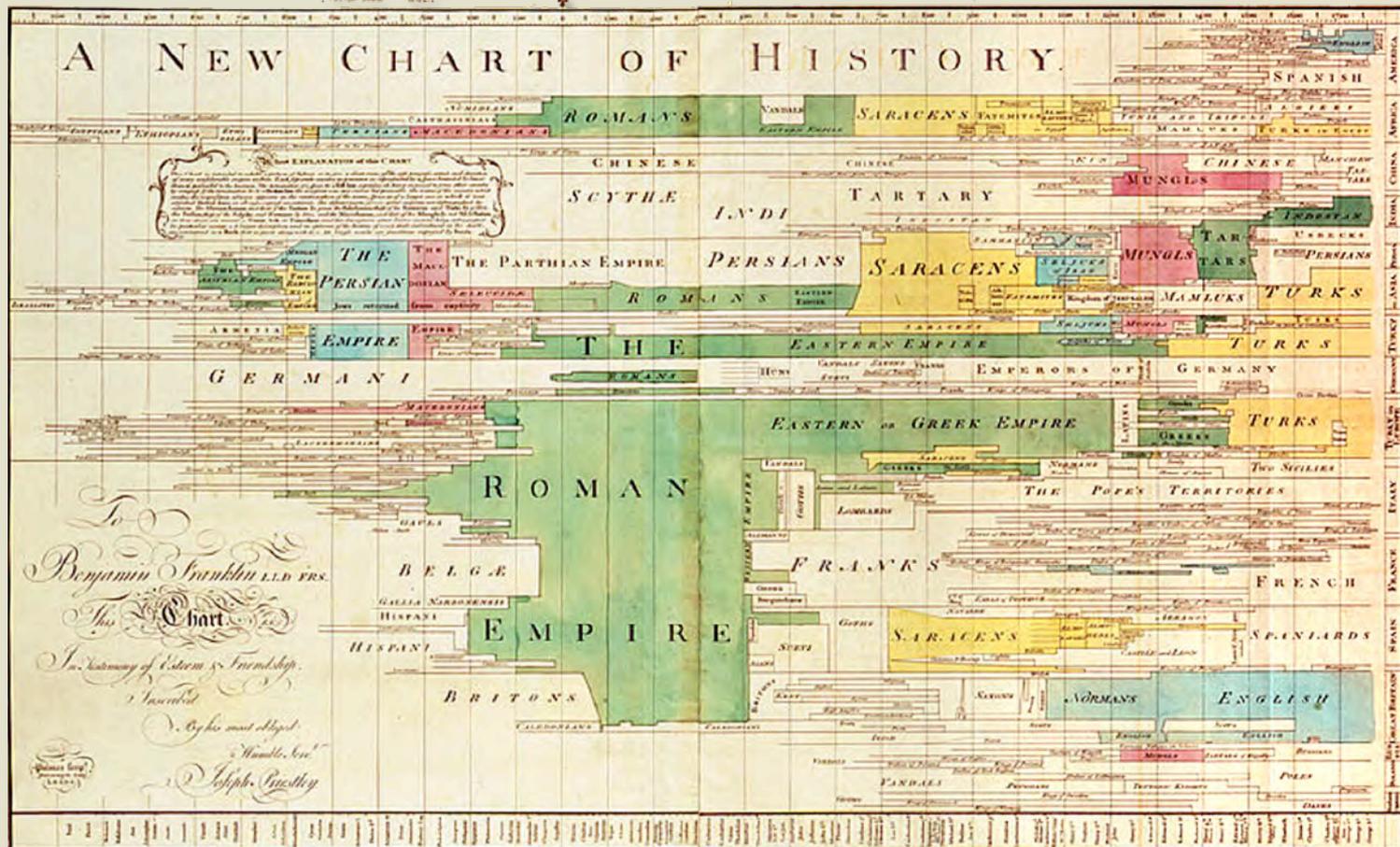
3

Use a pencil.



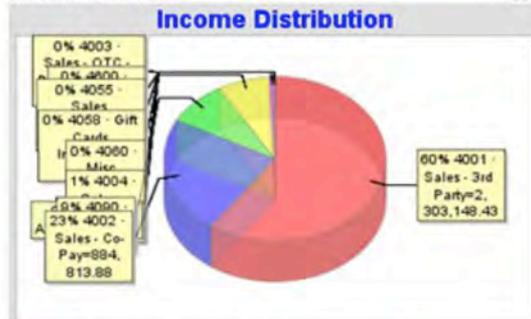
Joseph Priestley, drew this by hand in the 18th century. Every mark, every label was carefully considered. Would he have done a better job with **modern tools**?

A New Chart of History, Joseph Priestley, 1769



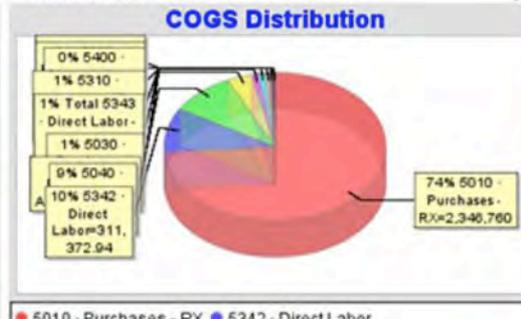
Would you design something like this if you'd started with pen and paper?

Income Distribution



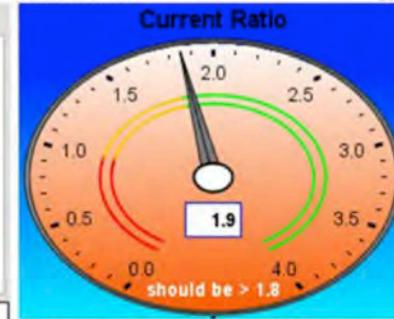
- 4001 - Sales - 3rd Party
- 4002 - Sales - Co-Pay
- 4090 - HM
- 4095 - AD
- 4004 - Sales - OTC
- 4060 - Misc. Income
- 4058 - Gift Cards Income
- 4055 - Sales Discounts
- 4600 - Merchandise Sales
- 4003 - Sales - OTC - Diabetes/Breathin

< COGS Distribution >



- 5010 - Purchases - RX
- 5342 - Direct Labor
- 5040 - Purchases - HM
- 5050 - Purchases - AD
- 5030 - Purchases - Other RX
- Total 5343 - Direct Labor - Payroll Taxes
- 5310 - Advertising/Promotion
- 5400 - Direct Labor - Insurance
- 5200 - Freight/Shipping
- Total 5700 - Automobile Exp.

Current Ratio



AR / AP Ratio



Expense Distribution

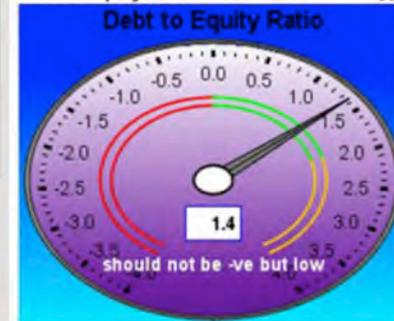


- 6140 - Rent Expense - Building
- 6020 - Administrative Labor Expense
- 6320 - Credit Card / Merch. Fees
- 6270 - Interest Exp. - Line of Credit
- 6100 - Office Supply
- 6080 - Accounting & Legal
- 6260 - Miscellaneous Exp.
- 6040 - Admin Labor - Insurance
- 6120 - Travel Expense
- 6700 - Repairs and Maintenance

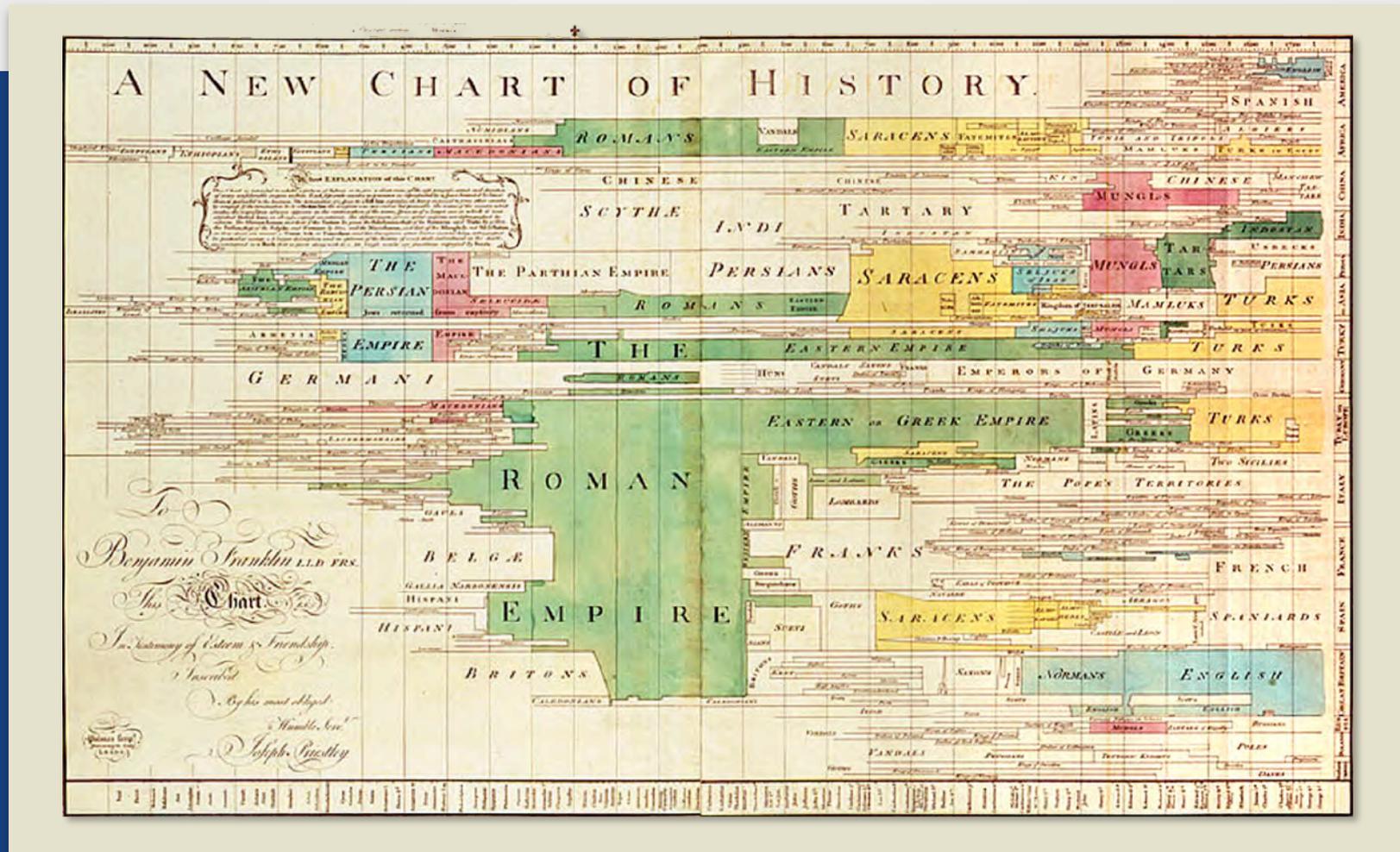
Profit and Loss



Debt to Equity Ratio

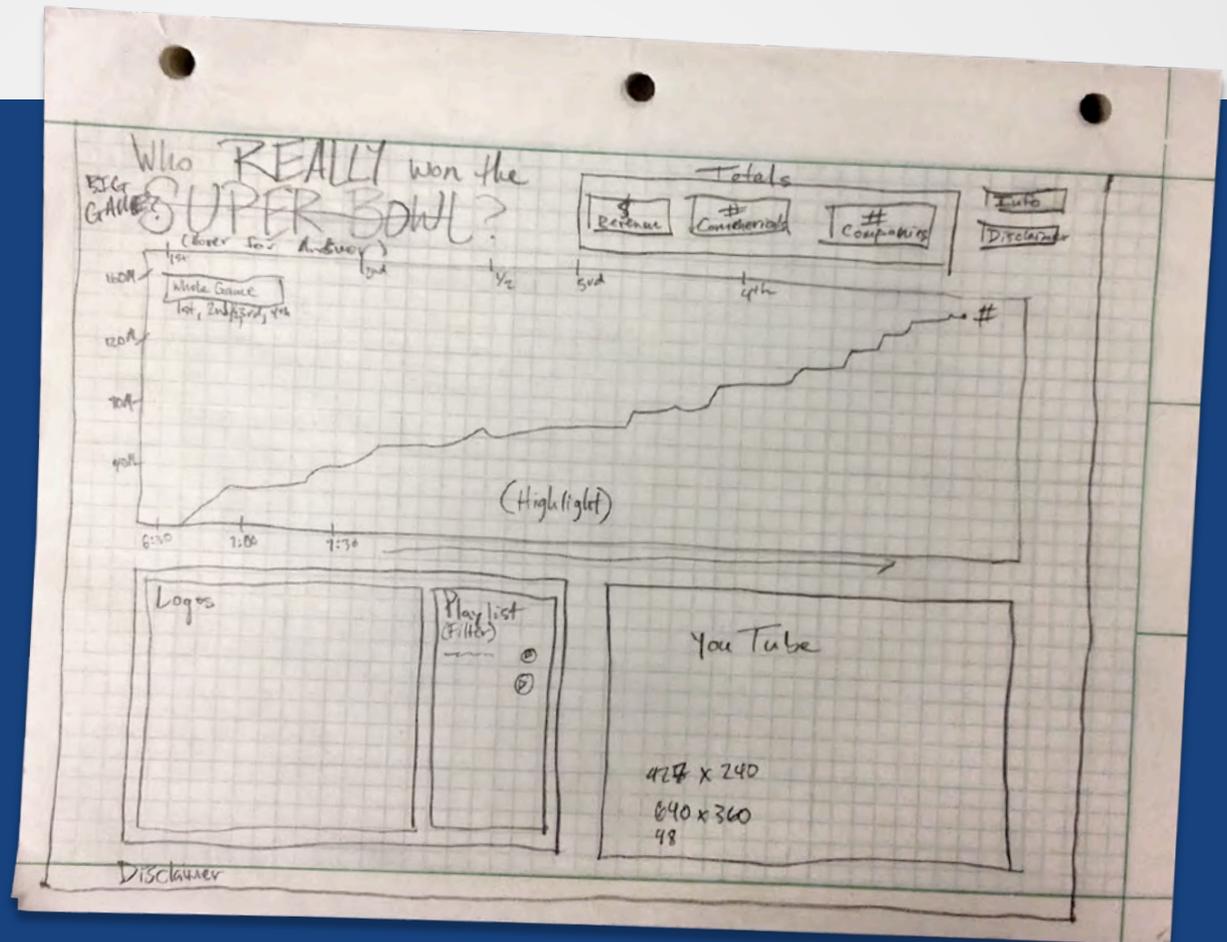


Hand-drawing charts focuses the mind on the **presentation** and **design**.

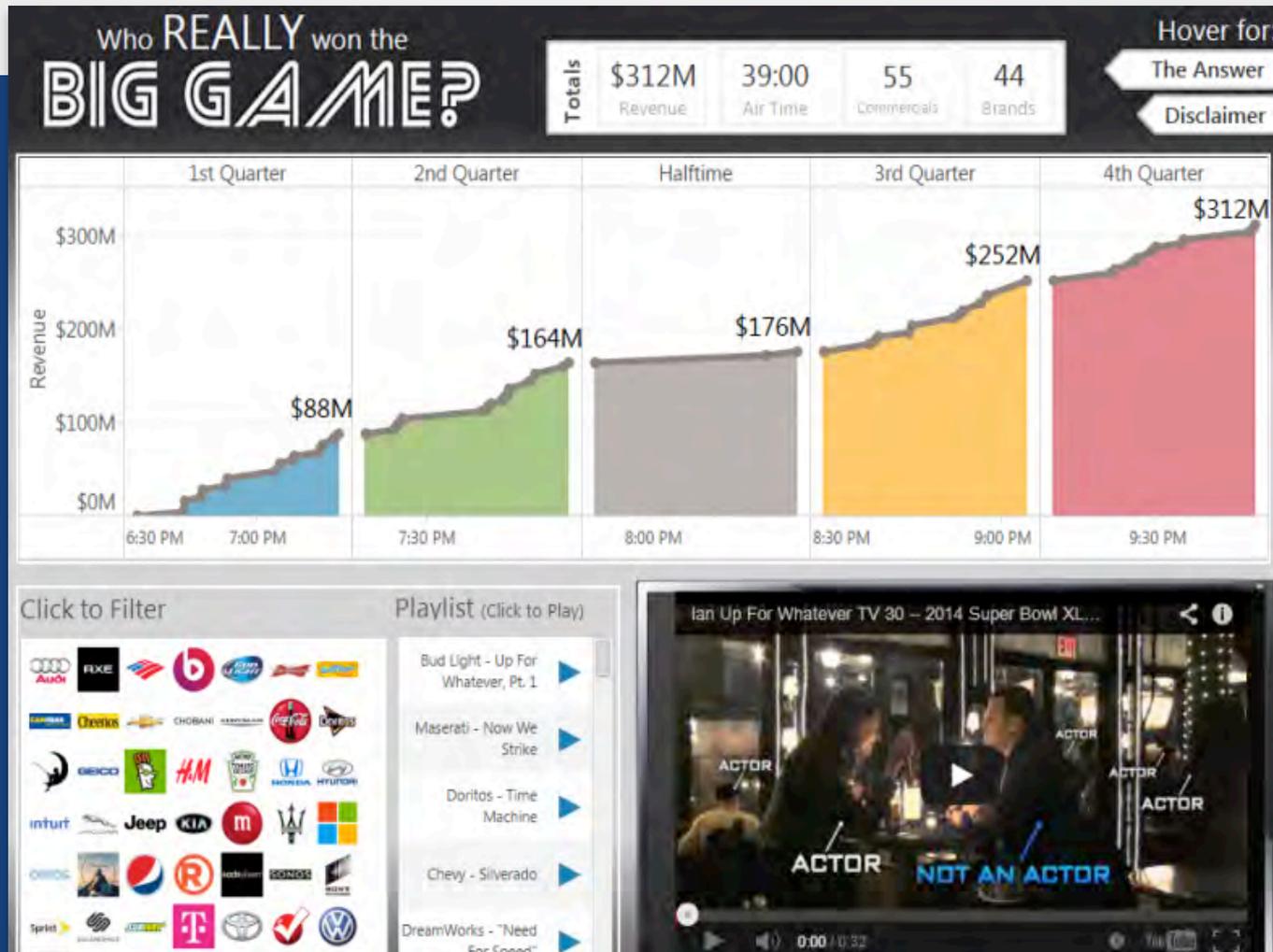


Even today, **prototyping** makes you consider both design and usability up front.

You become more aware of the relevance of clear, concise marks and the folly of over-elaborate designs.



This dashboard works better because it was **designed**, not thrown together.





Matt Francis

@Matt_Francis



Following

The starting point to any successful [#dataviz](#) or [#tableau](#) dashboard.

pic.twitter.com/pRKac08gt3

[↩ Reply](#) [↻ Retweet](#) [★ Favorite](#) [📁 Pocket](#) [⋮ More](#) [Assign To](#) [📧 HootSuite](#)

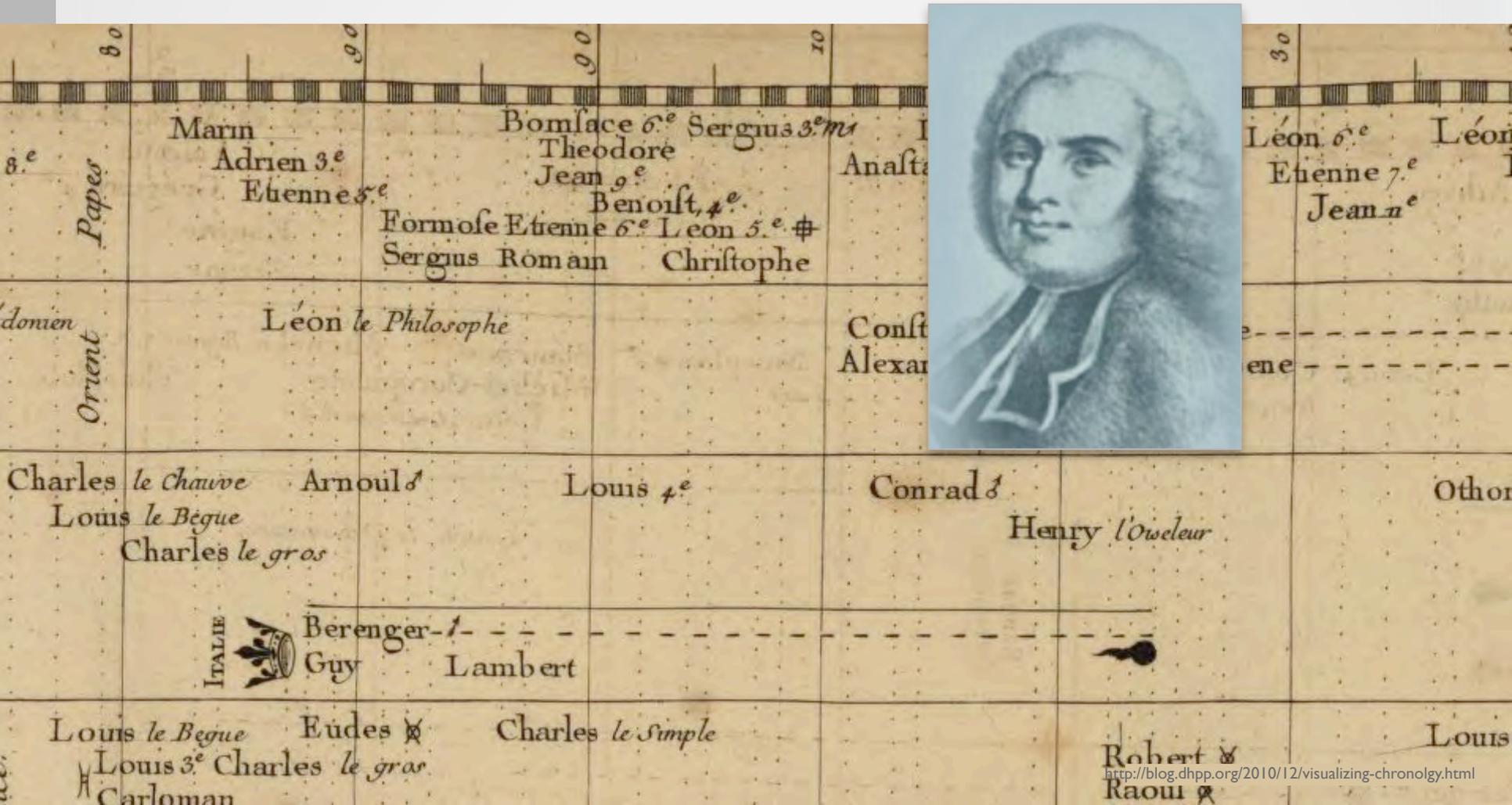


4

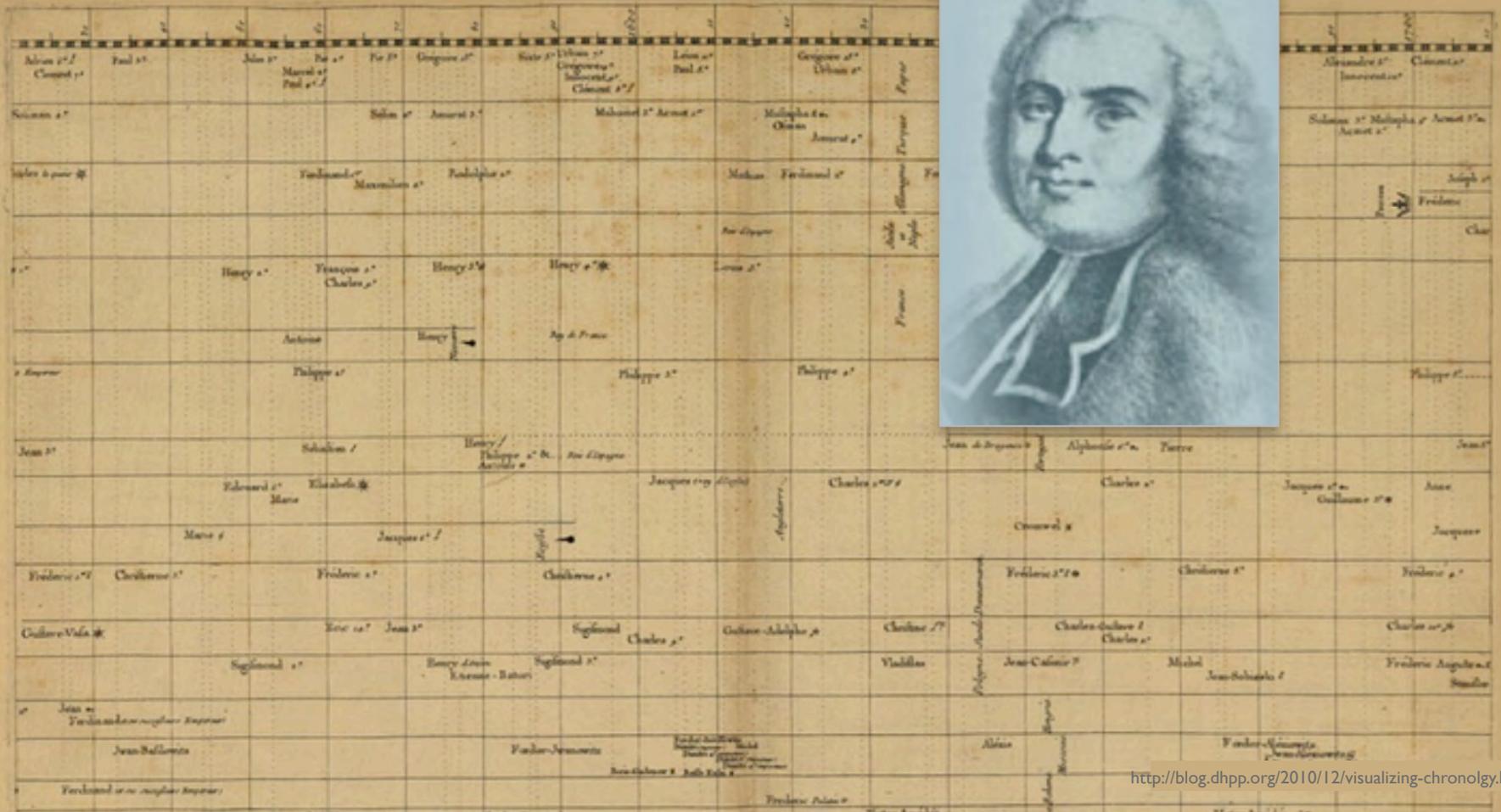
Get creative.



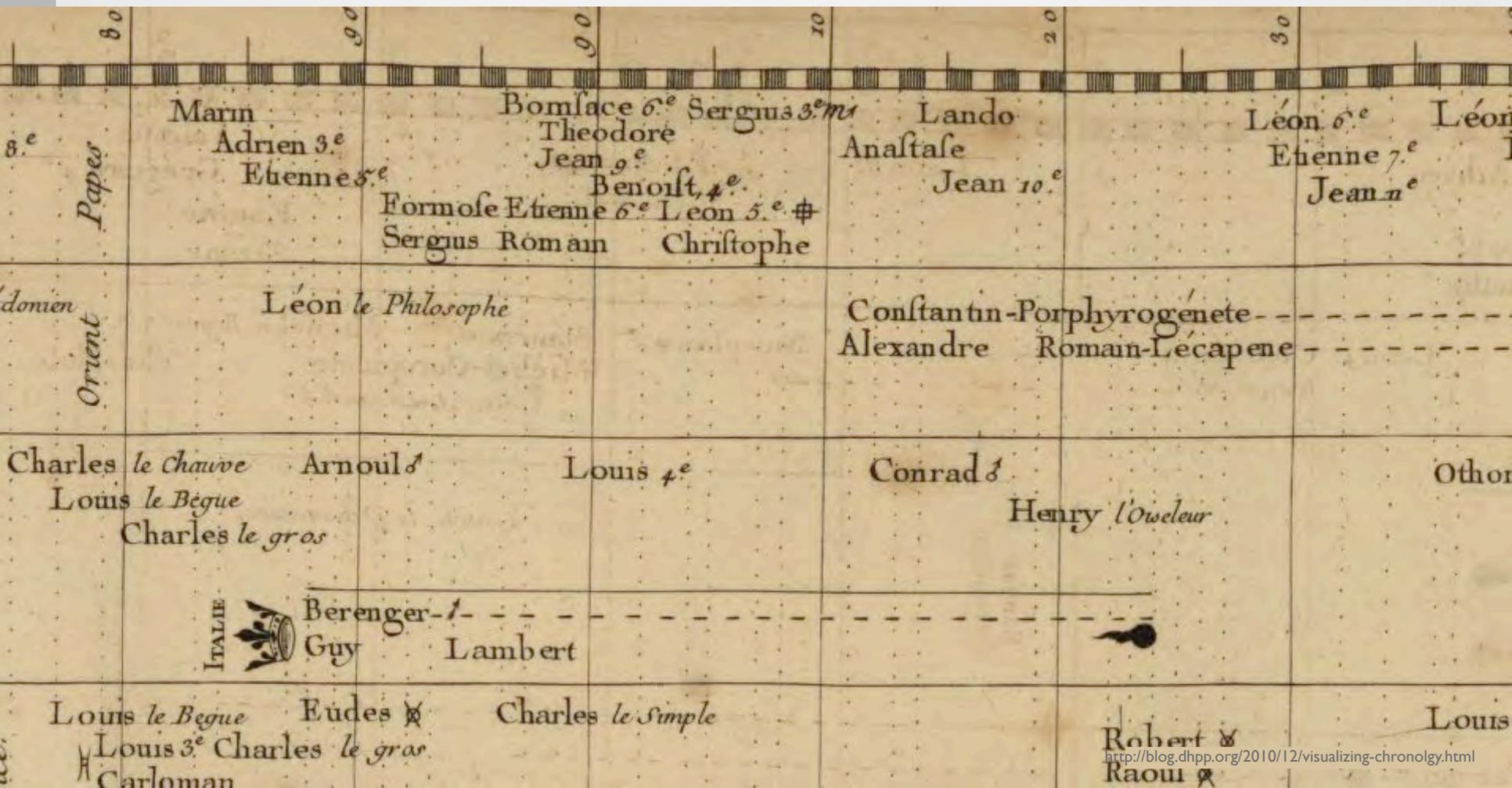
Jacques Barbeu-Dubourg was one of the first to create a **uniform time line chart** in his Chronographie Universelle in 1753.



Unfortunately, it was 54 feet long!



How could he make it **viewable**?



His solution? Simple: build a mechanical scroller to show one section at a time.

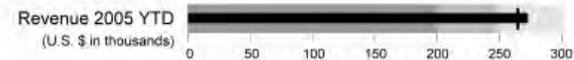


Innovations like this continue into the 21st century. For example, Stephen Few's **bullet charts** and **Tufte's Sparklines** are widely used.



Bullet Graph Design Specification

Last Revision: October 10, 2013



Overview

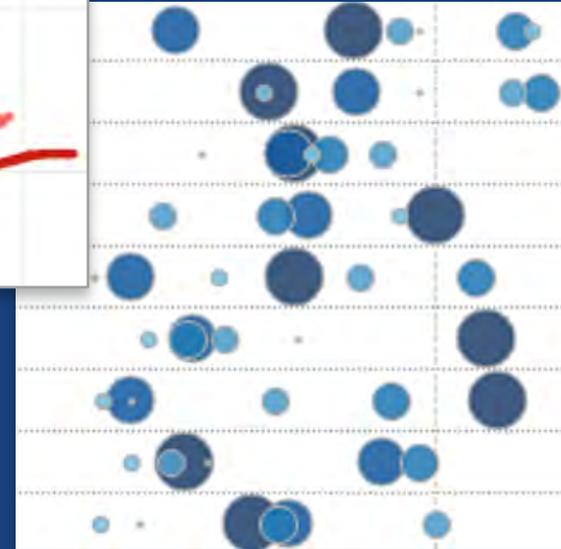
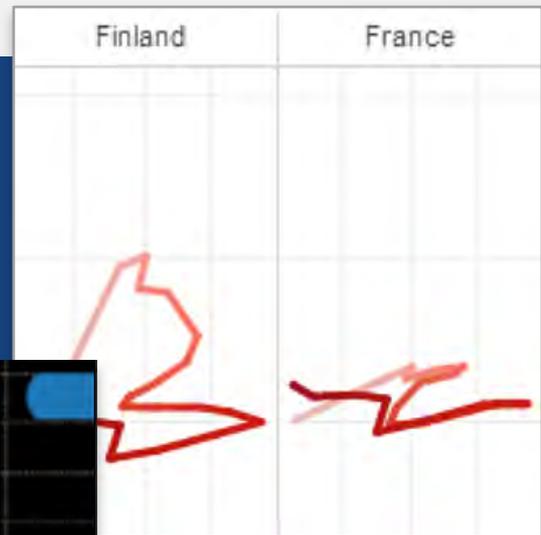
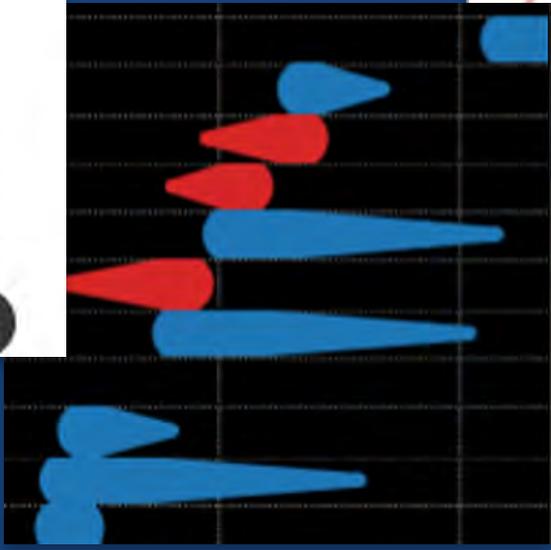
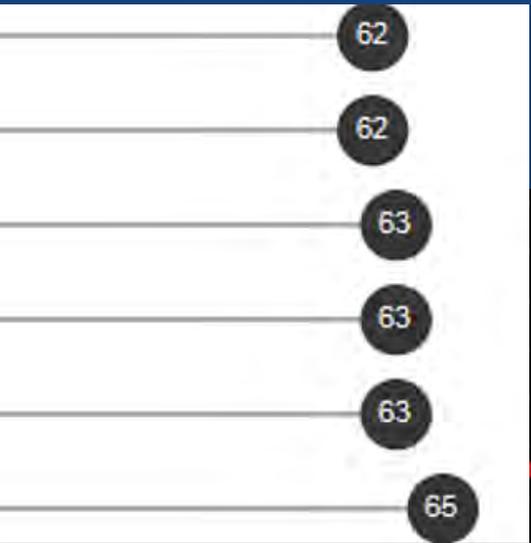
The bullet graph was developed to replace the meters and gauges that are often used on dashboards. Its linear and no-frills design provides a rich display of data in a small space, which is essential on a dashboard. Like most meters and gauges, bullet graphs feature a single quantitative measure (for example, year-to-date revenue) along with complementary measures to enrich the meaning of the featured measure. Specifically, bullet graphs support the

Sign up Contest

Employee	Sign ups	History	Week 1
Adrian	302		31
Bay	304		32
Cailyn	294		25
Elizabeth	259		24
Holly	313		25
Rianna	308		33
Sam	223		19
Scott	271		35

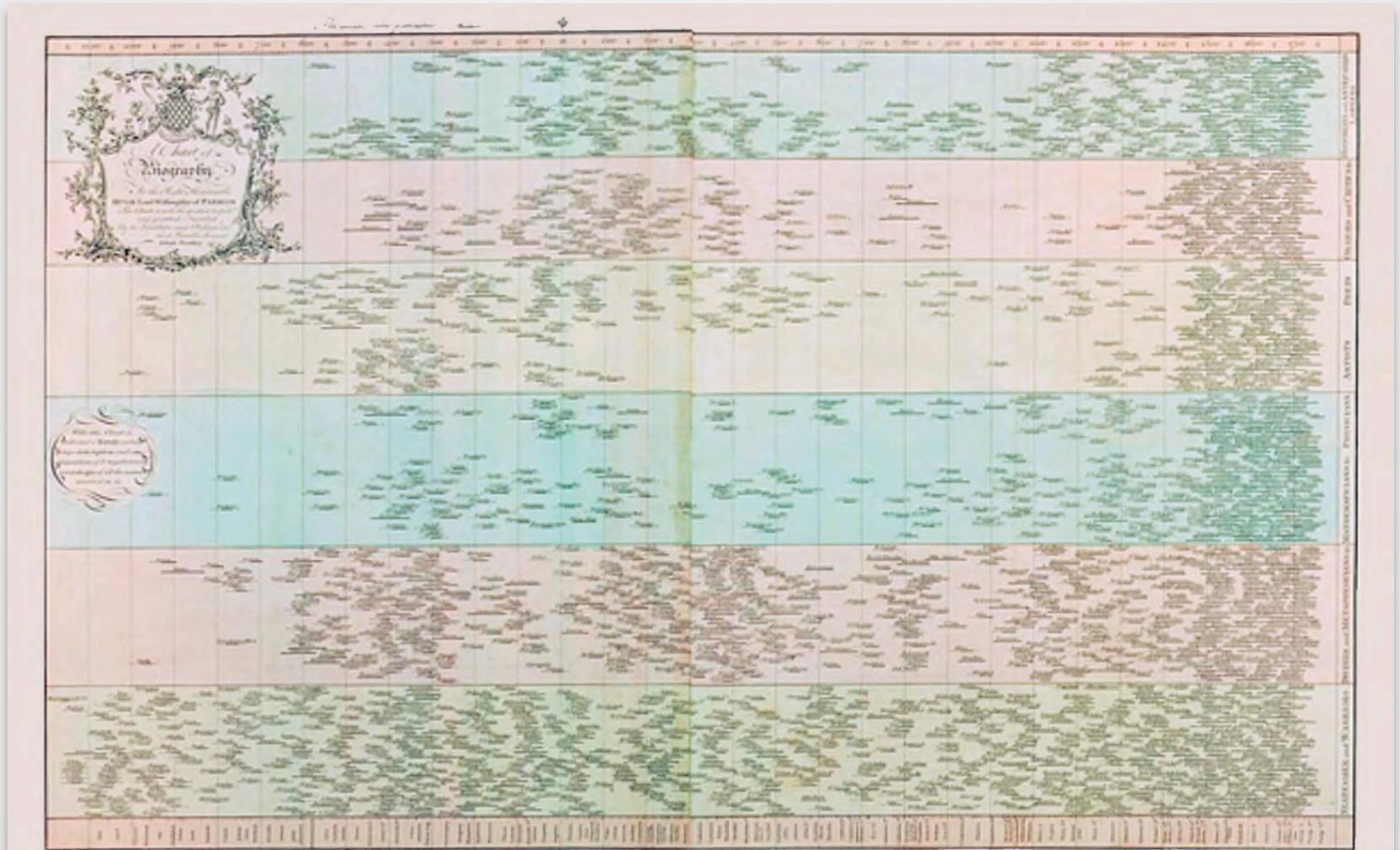
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Elizabeth	259		24
Holly	313		25
Rianna	308		33
Sam	223		19
Scott	271		35

Play around with your **visualization tools**. Be creative. You too may discover a beautiful, effective, new way of answering questions.

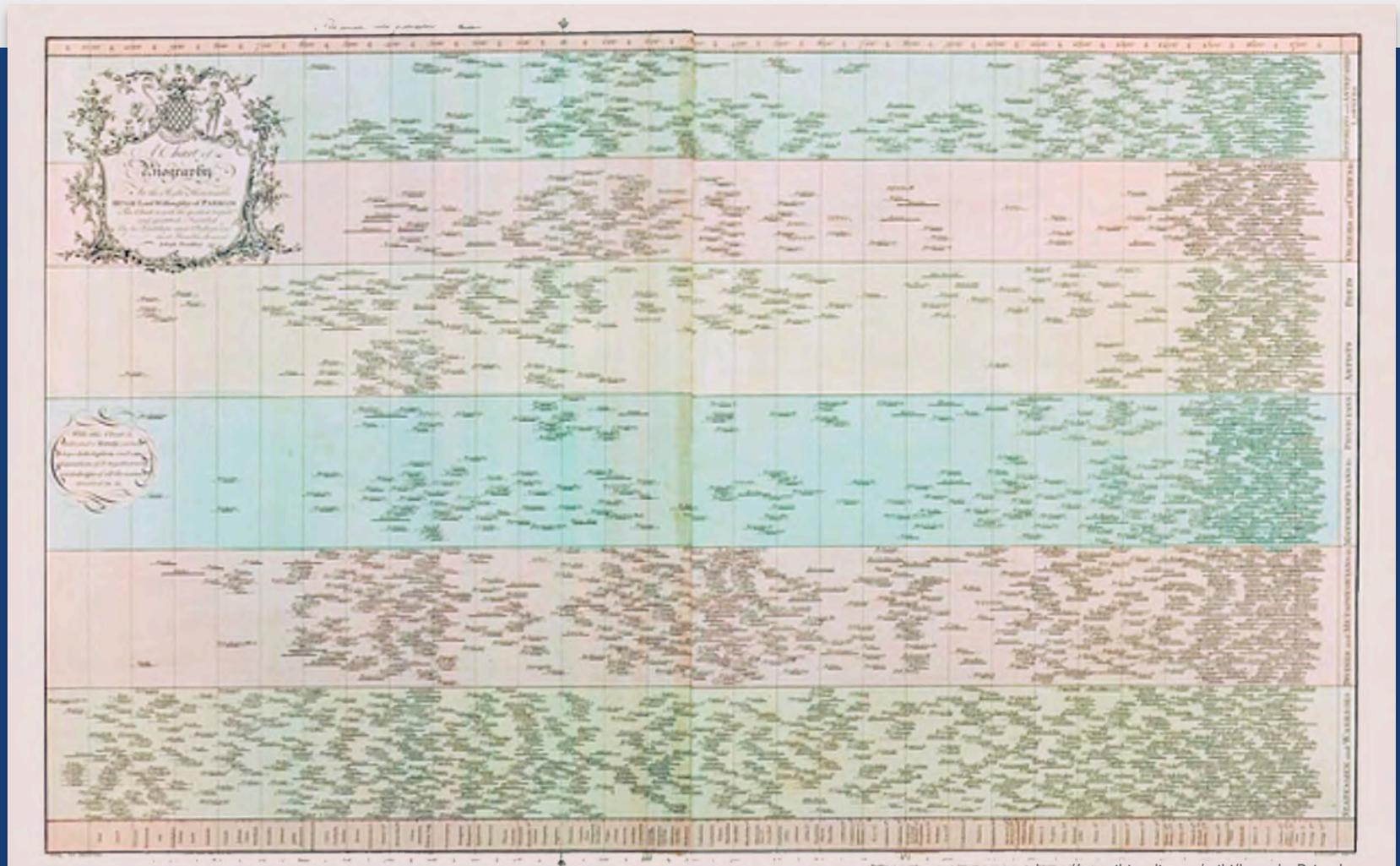


5

Let Big Data **inspire** you.

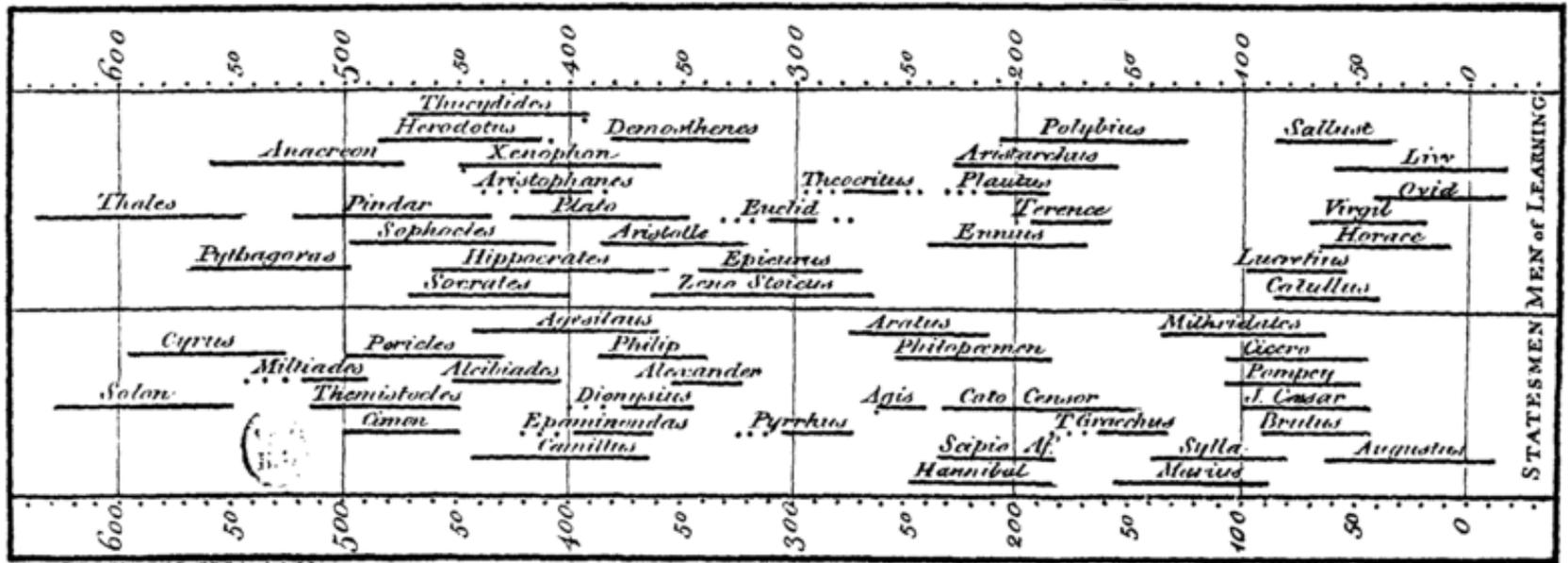


Joseph Priestley's Chart of Biography (1765) shows the lifespans of 2,000 famous people over 3,000 years.



Each mark shows the lifespan of a famous person.

A Specimen of a Chart of Biography.



He painstakingly collected, cleaned and analysed 2,000 names.

Data collection, quality and storage were issues then, too!

Fringing fl. d. 1754. 47 B C

Fimbria d. 84 B C

Fingal d. 283

Firmicus Maternus fl. 340 F

Firmilian d. 270 F

Fitzherbert d. 1538 L

Flamininus d. 182 B C

Flamstead d. 1719. 74 M

Flavio fl. 1302 M

Flavius fl. 306 B C. L

Fleury d. 1743. 91

Florus Lucius fl. 116 H

Folkes Martin d. 1754. 64 M

Fortescue fl. 1450 L

Foster d. 1763. 56 D

Fox George d. 1681 D

— John d. 1587. 69 D

Fracastorius d. 1553. 71 P

Francis 1st d. 1547. 52

— St. d. 1227. 46 D

— Mayronis d. 1325 D

Franciscus Pedemontanus fl. 1310 Ph

Franco fl. 1047 M

Fulgencius d. 549 A

Fust John d. ab. 1466 Pr

G

G ADDO Gaddi d 1312. 73 Pa

Gainas d. 400

Galba d 69. 72

Galeazzo of Milan d. 1402

Galen d. 200. 70 Ph

Galileo d. 1642. 78 M

Gallienus d. 268. 50

Gallus El. Cornel d. 26 B C 43

Gama Vasques de d. 1522

Gamaliel d. 229 J

— 4th d. af. 392 J

Gardiner d. 1555. 72 D

Gariopontus fl. in 12 Cent. Ph

Gascoigne d. 1413 L

Gaspar Barthius d. 1658. 71 Cr

Gassendi d. 1655. 56 M

Gataker d. 1654. 79 Cr

“Laborious and tedious as the compilation of this work has been... a variety of views were continually opening upon me during the execution of it.”

Joseph Priestley, “A Description of the Chart of Biography”



We've always had **more data** than we know how to use.

Enjoy the new challenges and **invest in the tools** to cope with today's volumes.



Want to know more?

1

[Read about how to design great visualizations here](#)

2

[What are the 5 most influential visualizations of all time?](#)

3

[See a list of all the images and charts used in this slide deck.](#)

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