# *Communication Design and Visualising Information*

**May 5, 2016 | Centre for Internet and Society, Bangalore**

Presented at the Workshop on Research Methods for Internet Policy in South and Southeast Asia, held on April 14, 2016, at the National Law University Delhi

# *Broad Principles of Visual Communication*

# *Identifying the Message, Audience and Medium*

**MESSAGE**

Interpretation
Organization
Visual Presentation

**AUDIENCE**

Language
Experience
Age
Knowledge
Education
Preferences
Expectations
Culture

**MEDIUM**

Appropriate Medium
(Print, Static, Interactive)
Exploring all Possibilities
of the Medium

The following icons have been used from The Noun Project: Speech Bubble by Focus, Group by Khomsun Chaiwong, Video by Alfa Design

# *Using Design Elements for Communication Goals*

**COMMUNICATION GOALS**

Setting the Context
Clarity of Form and Content
Building Hierarchy
Organization of Content - Sequence, Categorization

**COMPOSITION**

Contrast
Consistency
Emphasis

**ELEMENTS**

Typography
Colour
Space
Scale
Shape
Proportion

The Typography of Paul Rand
with Lewis Blackwell
Shattuck Hall • 7:00 pm
March 30, 2011
Design Lecture Series
Portland State University
Art Department
With wit and wisdom, Blackwell dissects the patterns of Rand's use of typography throughout his brands, book covers, and advertising work.

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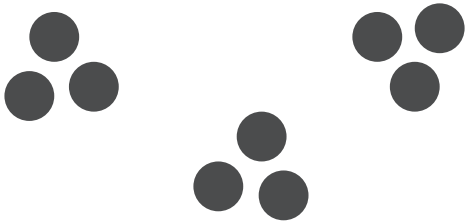
Frank Chimero, Source: https://blog.typekit.com/2011/03/17/type-study-typographic-hierarchy/

# *Organizing the Content*

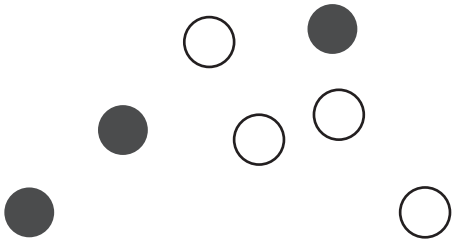
## Gestalt Principles of Perception

On the basis of principles of integration and segregation that connect and separate elements through proximity, similarity, and closure



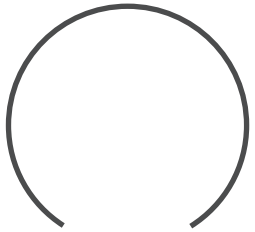
### PROXIMITY

The visual system tends to group together those elements that are close to one another, and segregate them from the more distant ones.



### SIMILARITY

The visual system tends to group together those elements that are equal or similar, and segregate the different ones from one another. This can happen at several levels of similarity based on different visual dimensions (such as color, size, orientation, etc.).

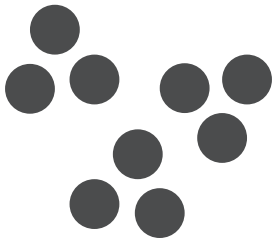


### CLOSURE

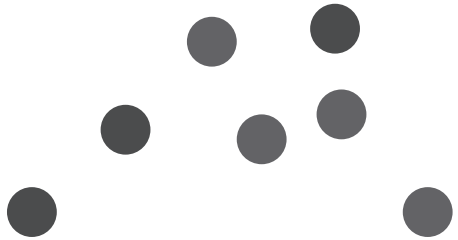
The visual system tends to group together series of elements that are placed in such a way as to generate a simple outline.

Jorge Frascara - Communication Design: Principles, Methods and Practice, 2004

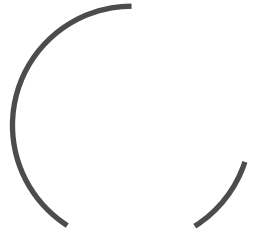
Subtle differences are not helpful



**PROXIMITY?**



**SIMILARITY?**



**CLOSURE?**

DT HISTORIA DE UNA MARCA

# Eternamente joven

**La cultura pop con motor nació hace seis décadas en Italia. La llamaron Vespa por su parecido con una avispa, un insecto rápido y ágil al que la naturaleza dotó de un diseño único. Como a su hermana de metal.** POR J. DE VELASCO Y M. JIMÉNEZ

Divertida, moderna y juvenil. Así es la Vespa, una moto que cumple ahora 60 años de vida, pero que no parece estar dispuesta a jubilarse. La primera moto salió de una fábrica de Pontedera, una ciudad cercana a Pisa, en la que antes de la II Guerra Mundial se fabricaban accesorios navales, vagones de trenes y maquinaria bélica. Tras la contienda, Italia era un país devastado y a las empresas no les quedó más remedio que imaginar productos de uso básico. La Vespa fue uno de ellos.

Generaciones de todo el mundo la han conducido desde entonces durante décadas, pero la irrupción de nuevos scooters procedentes de Asia, más económicos y rápidos, alejaron de nuestras ciudades al más querido de todos.

Lo que empezó como un objeto para la clase obrera ha ido evolucionando con sus usuarios. Primero fue el vehículo de los que eran incapaces de adquirir un coche; luego pasó a ser un símbolo de juventud y libertad que hacía furor entre tribus urbanas. Ya en los 80, se convirtió en el sueño del pijo, ansioso de colocar en ella una pegatina de Snoopy. Actualmente, la máquina ha superado cualquier barrera social y es indiscutiblemente un objeto de culto que genera simpatías allá por donde pasa. Ágil y con un ruido de motor inconfundible, está hecha para disfrutarla sin prisas, perfecta para evitar atascos.

La Vespa ha sido la base para un sinfín de transformaciones a lo largo de su historia: helicóptero, limusina, motocarro, Lego, carenado futurista e incluso tanque.

**"¡Parece una avispa!"**
Con esta exclamación quedó bautizada la moto más popular de la historia. Enrico Piaggio reaccionó así al ver el diseño del proyecto. El nuevo vehículo, al igual que el insecto, es independiente y se mueve velozmente entre el tráfico. El nombre le vino al pelo.

**Posición de conducción**
Muy cómoda, se puede montar incluso con falda.

**Transmisión**
No necesita cadena porque el motor se aloja sobre el eje trasero.

**Dónde se ha fabricado**

**Fenómeno mundial**
17 millones de unidades vendidas y 140 versiones lanzadas en hasta 114 países han convertido la Vespa en uno de los utilitarios más populares de la historia.

Volkswagen GOLF (1974-) 24 millones

Volkswagen (SCARABAJO (1938-2003)) 23,5 millones

Piaggio VESPA (1946-) 17 millones

Ford T (1908-1927) 16,5 millones

**Vespa GT-60**
Piaggio ha creado esta versión, con una estética retro, para conmemorar el 60 aniversario.

**Ficha técnica**

| | |
|---|---|
| Cilindrada | 244 cc |
| Potencia | 22 CV |
| Peso | 150 kg |
| Velocidad máx. | 122 km/h |

**Faro delantero**
En los primeros años iba colocado sobre el guardabarros.

**Cófanos**
Su forma abombada, herencia de la aeronáutica, mejora la refrigeración del motor.

**Una moto de cine**
Desde que Gregory Peck y Audrey Hepburn condujeran una Vespa en "Vacaciones en Roma", la avispa motorizada ha pasado al menos 80 castings de películas de éxito. Sus curvas se han dejado ver en "Atrapa a un ladrón" de Hitchcock, "La dolce vita" de Fellini, "American Graffiti", "Quadrophenia" –imprescindible para los fanáticos del scooter italiano– o "Scarface". Toda una carrera estelar a la que sólo le falta ganar un Oscar.

**Motor**
Va protegido y separado del conductor para evitar manchas en la ropa.

**Rueda de repuesto**
Junto al motor lleva un recambio de fácil sustitución en caso de pinchazo.

**Sin chasis**
Es la carrocería metálica la que hace de bastidor de la moto, en vez de un sistema de tubos.

**Horquilla**
Adopta el sistema del tren de aterrizaje delantero de los aviones.

**1884 Se crea Piaggio**
Fabrica accesorios navales, para el ferrocarril e incluso armas y aviones militares.

**1946 Nace la Vespa**
En abril se producen las 15 primeras unidades de la fábrica de Pontedera.

**1948 Primer club Vespa**
Y después de éste, en Italia, han surgido cientos por todo el mundo.

**1952 Moto Vespa España**
Se abre una fábrica en Madrid.

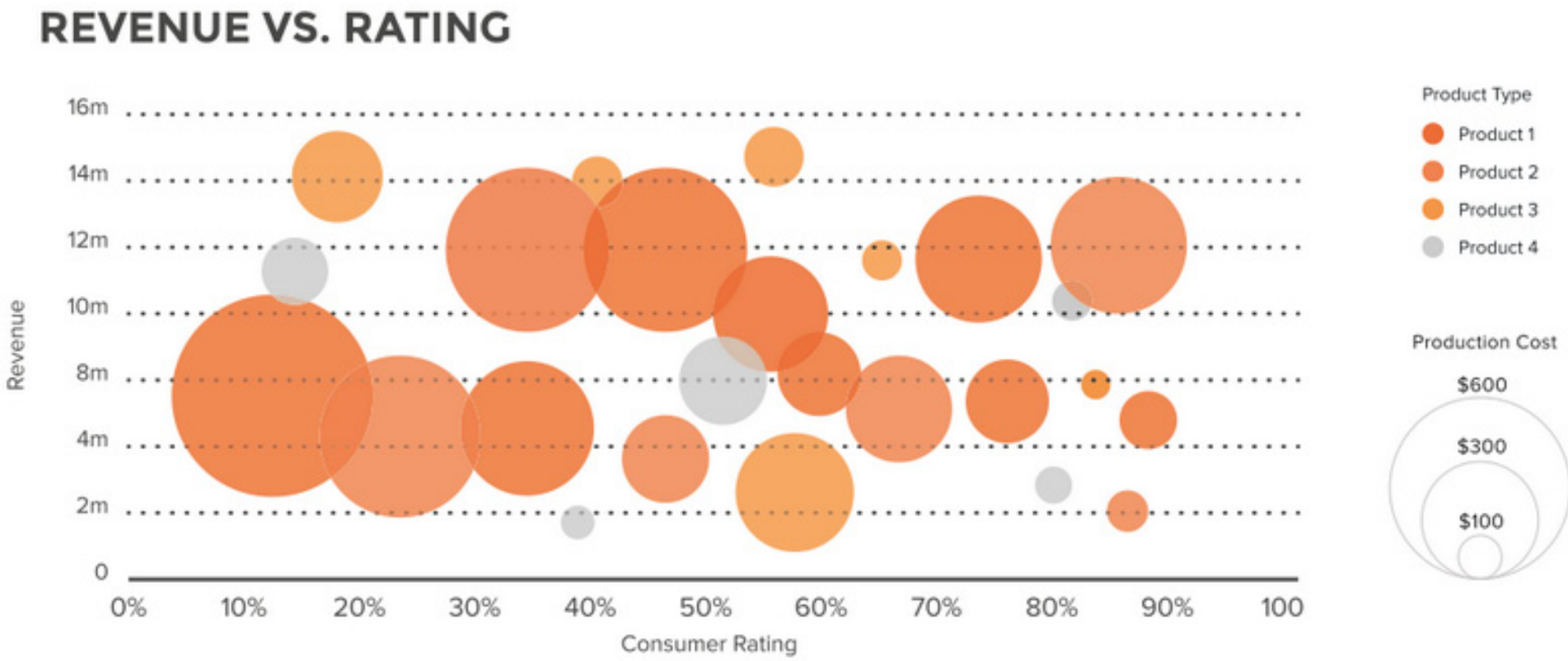
**1953 "Vacaciones en Roma"**
Hollywood inmortaliza este scooter por las calles de la capital italiana.

**1979 "Quadrophenia"**
Se estrena un filme de culto para los fans del mundo Vespa.

**1992-2000 Vuelta al mundo**
Giorgio Bettinelli recorre 254.000 km por todo el planeta.

**2006 60 aniversario**
Salen las versiones conmemorativas LX-60 y GT-60.

Julián De Velasco, https://www.flickr.com/photos/30944919@N03/3055474397/sizes/l/in/pool-16135094@N00/




https://visage.co/data-visualization-101-bubble-charts/

# *Visualising Data*

# *Types of Data*

Nominal - Eg. Male, Female

Ordinal - Eg. Abundant, Common, Rare

Quantitative

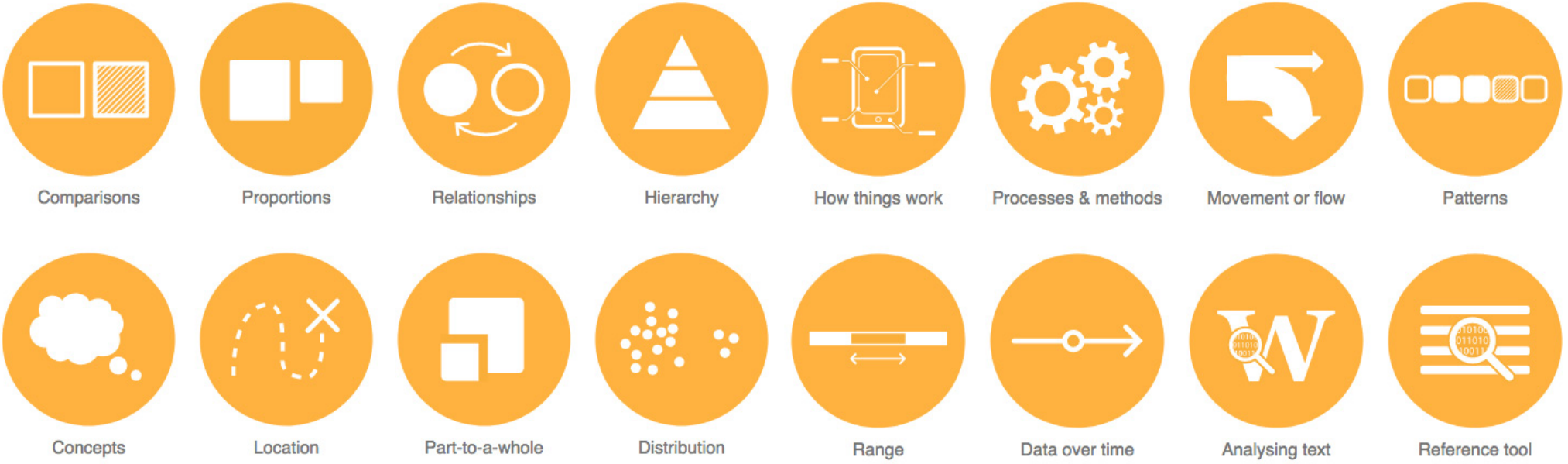
Relational - Eg. Networks

Spatial - Eg. Maps

http://mkweb.bcgsc.ca/vizbi/2012/principles.pdf, https://infoactive.co/data-design/ch01.html

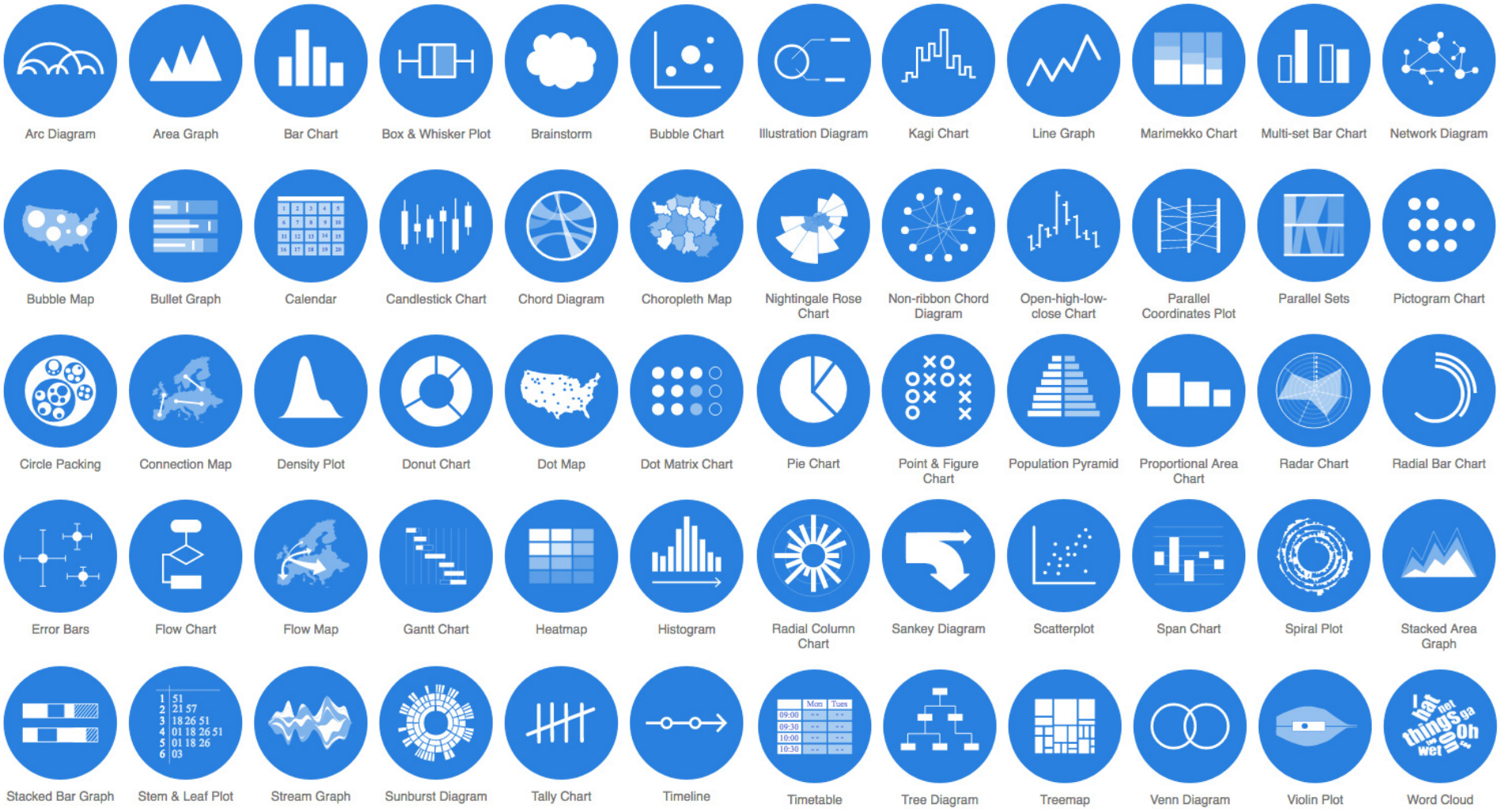
# *Identifying the Purpose*

"What do I know, what does it mean,
and why do I believe it's important?"




https://infoactive.co/data-design/ch12.html
Image Source: http://www.datavizcatalogue.com/search.html

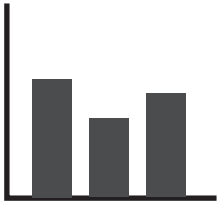
# *Using the Most Effective Format*



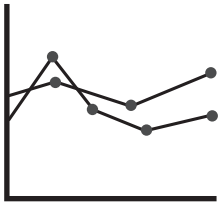

Source: http://www.datavizcatalogue.com/search.html

# Using elements based on the purpose of the visualization

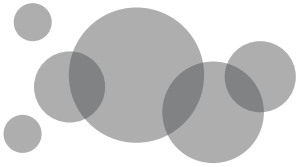
Allows more accurate comparisons



2D position along a common aligned scale



Slopes



Areas

Colour Intensity

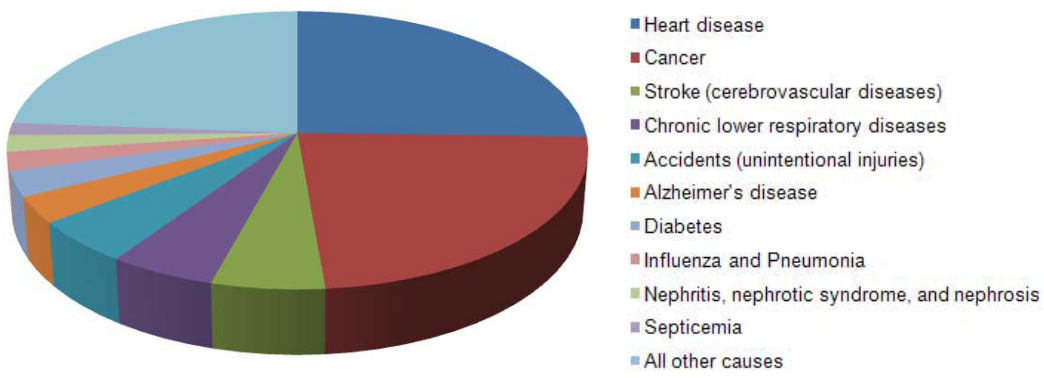
Allows more generic comparisons

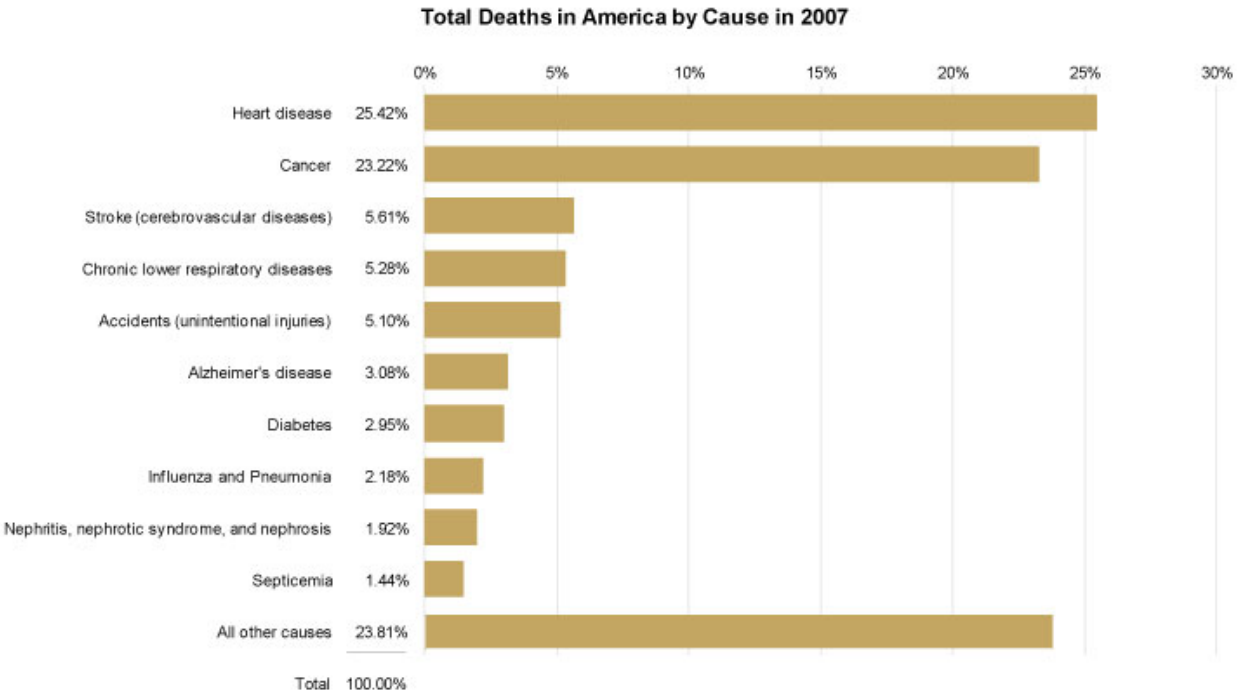
Colour Hue

http://www.creativebloq.com/how-design-better-data-visualisations-8134175

# *Choosing the Most Effective Format for Data Visualisation*

Assessing the Type of Data
Identifying the Purpose/ Message
Identifying the Accuracy required in the Data Representation



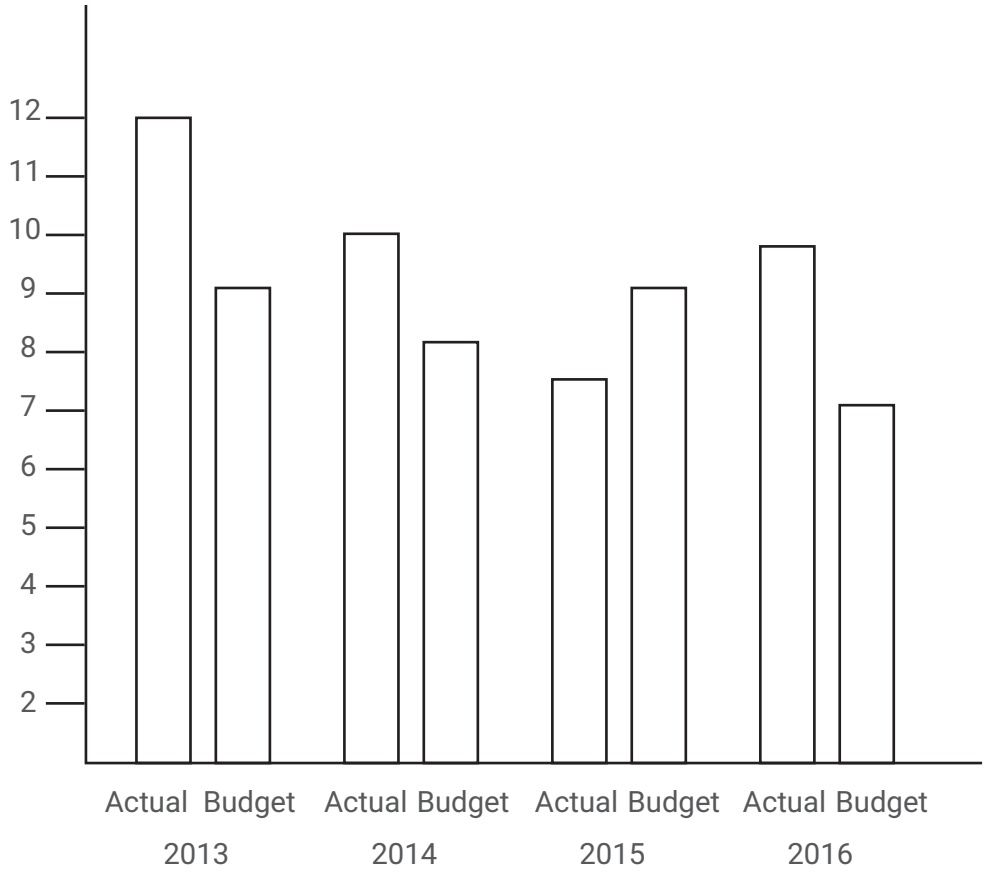

## CRITERIA FOR EVALUATING THE VISUALIZATION

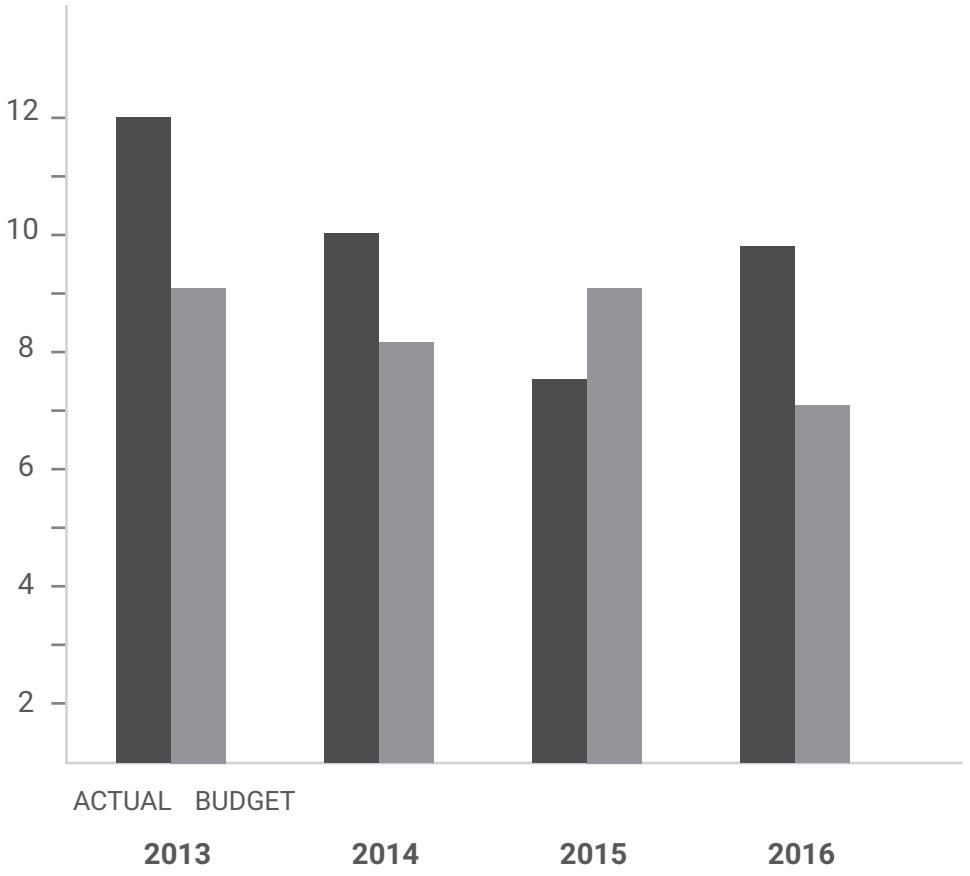
- Clearly indicates how the values relate to one another, which in this case is a part-to-whole relationship
- Represents the quantities accurately
- Makes it easy to compare the quantities
- Makes it easy to see the ranked order of values
- Makes obvious how people should use the information - what they should use it to accomplish - and encourages them to do this

Source: https://www.interaction-design.org/literature/book/the-encyclopedia-of-human-computer-interaction-2nd-ed/data-visualization-for-human-perception

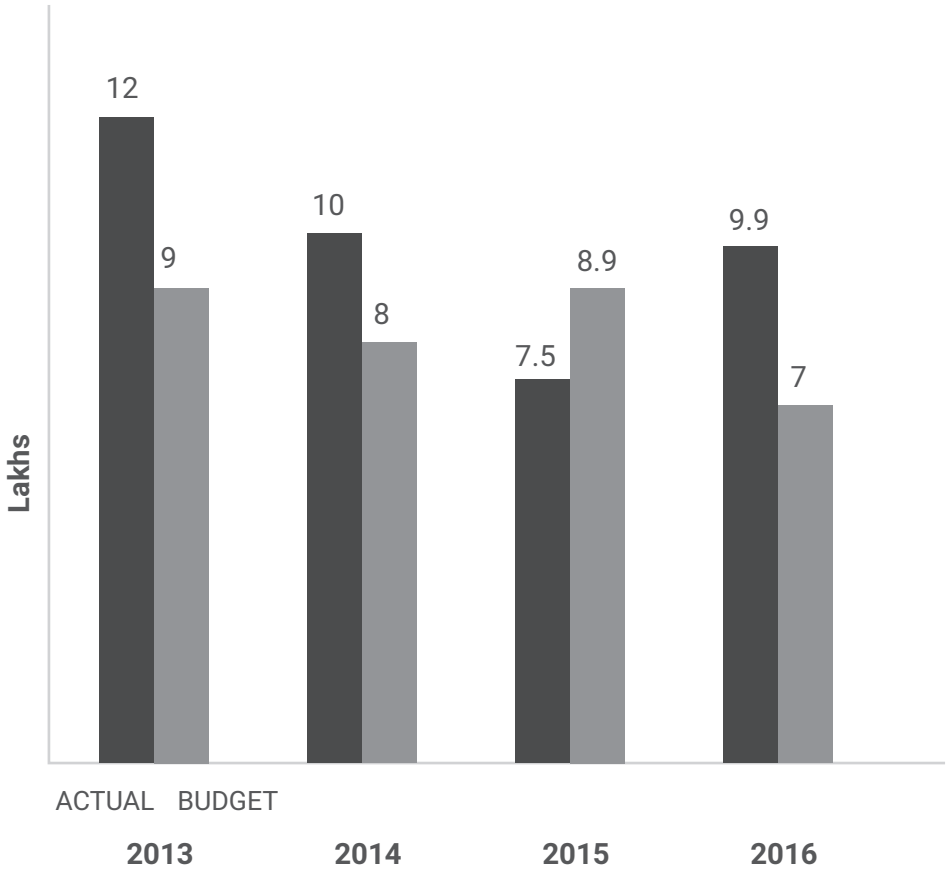
# *Aesthetics & Functionality of Visualisations*

# *Reducing Redundancy, Increasing Emphasis*




Stephen Few, https://www.perceptualedge.com/articles/visual_business_intelligence/sometimes_we_must_raise_our_voices.pdf


Lakhs
12
9
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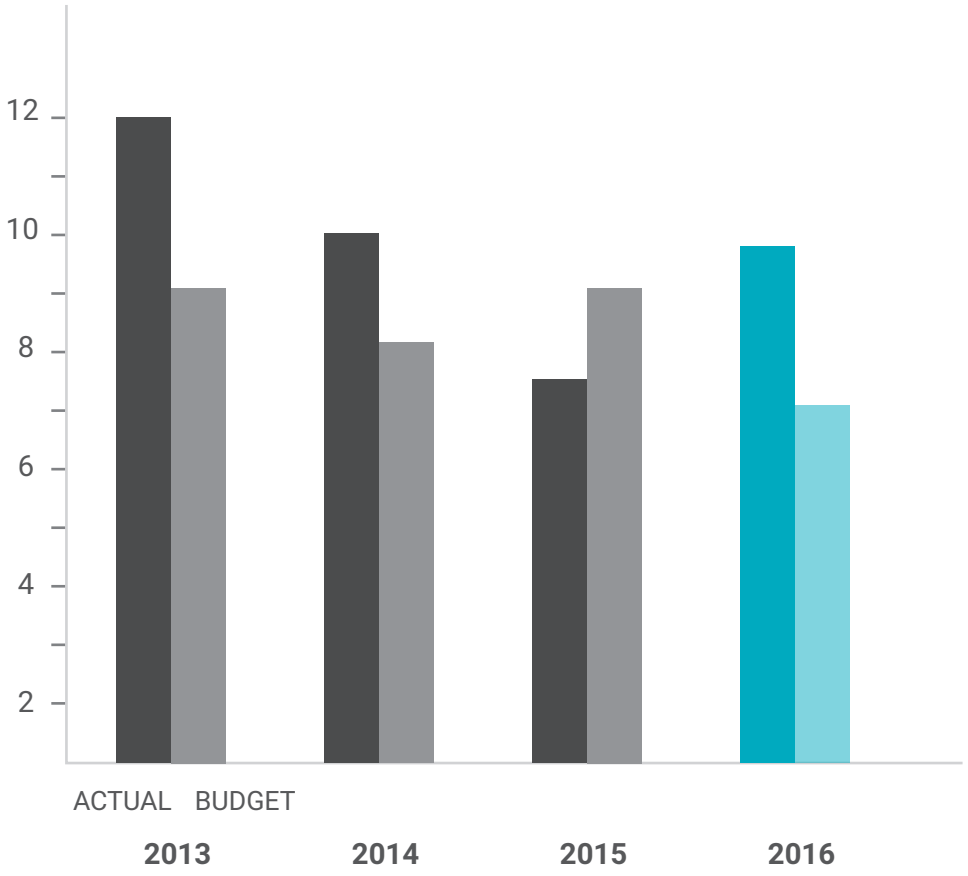
9.9
7
ACTUAL
BUDGET
2013
2014
2015
2016


12
10
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ACTUAL
BUDGET
2013
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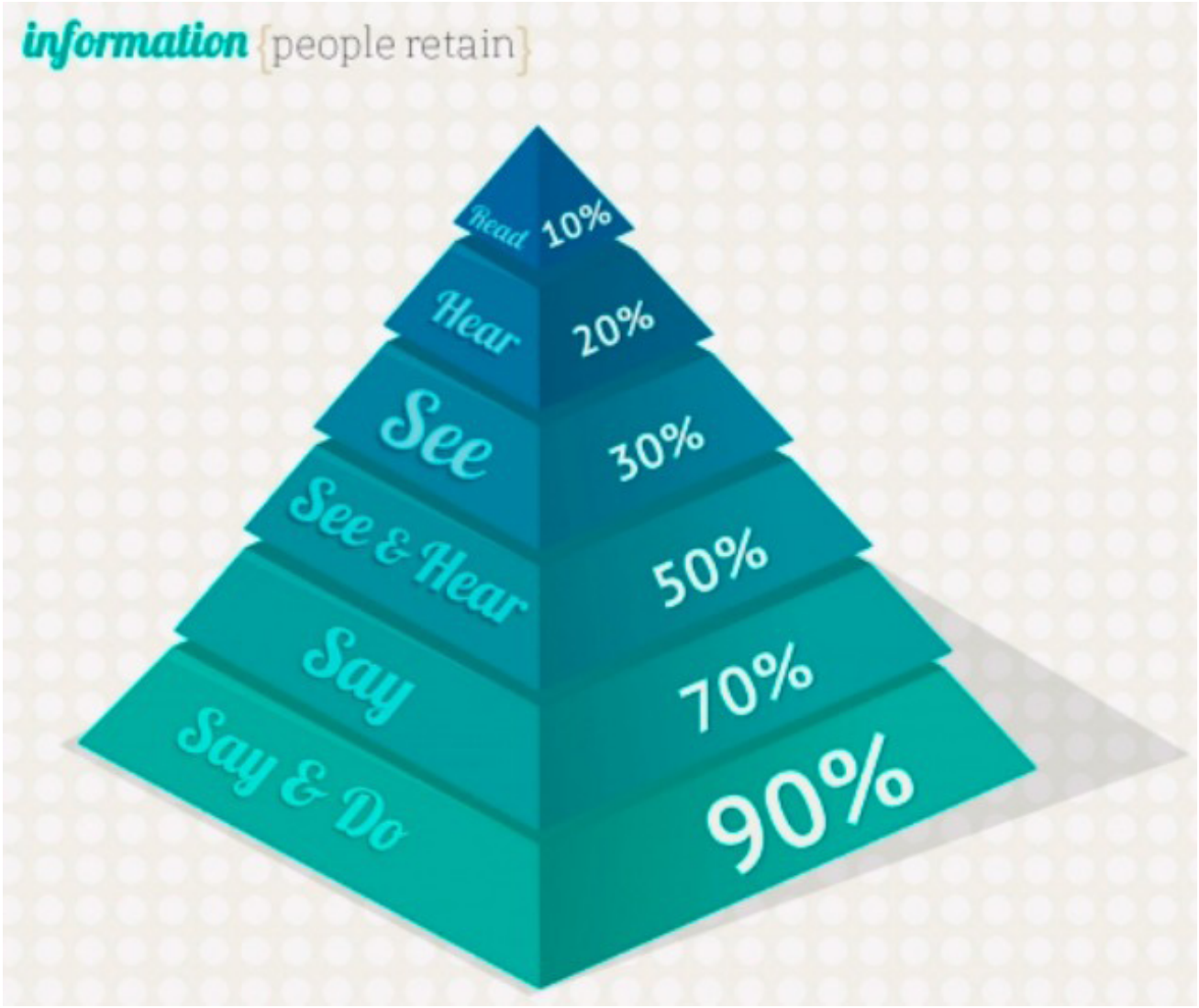
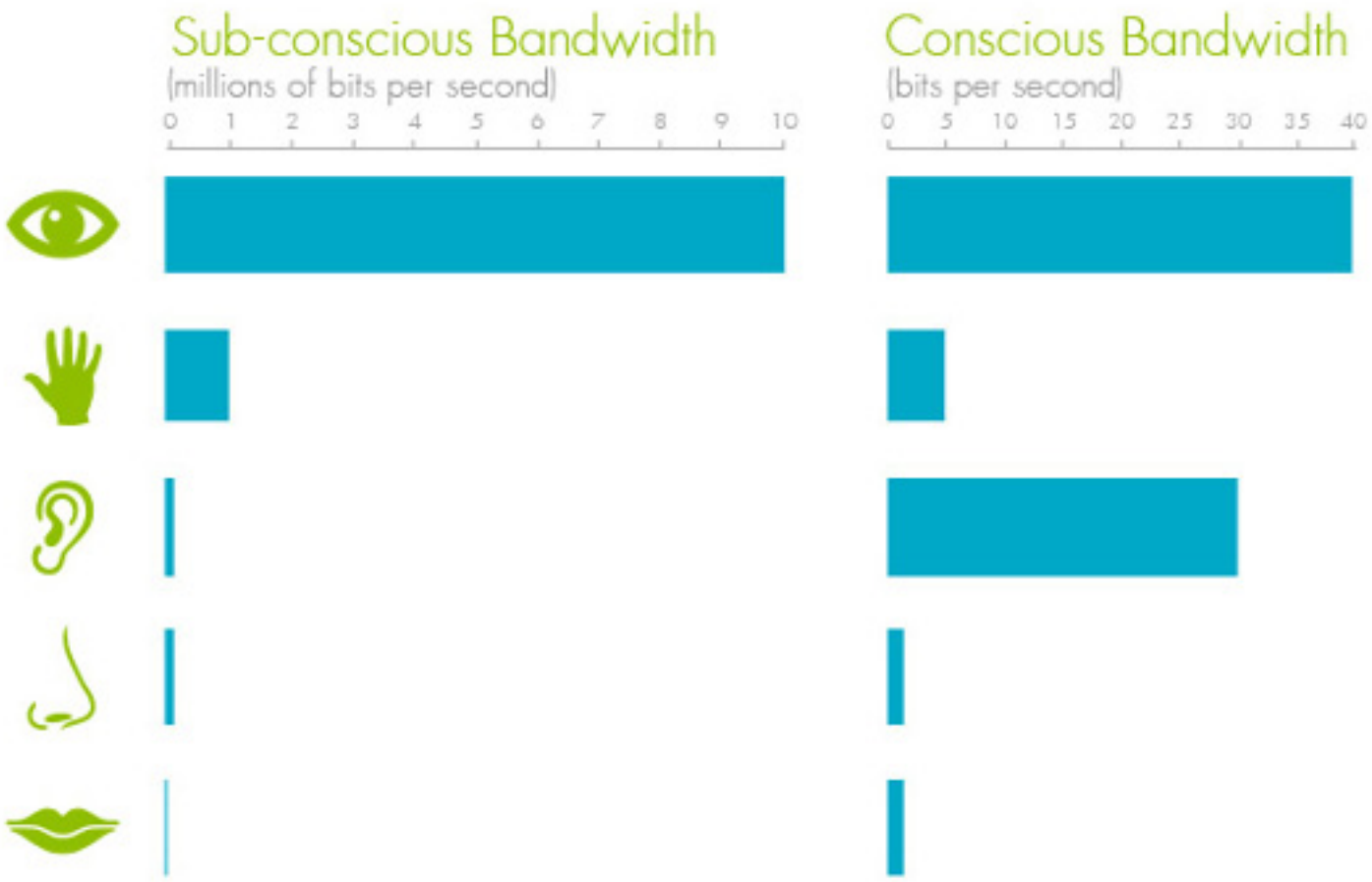
2015
2016

# *Aesthetics in the Way of Sense Making*



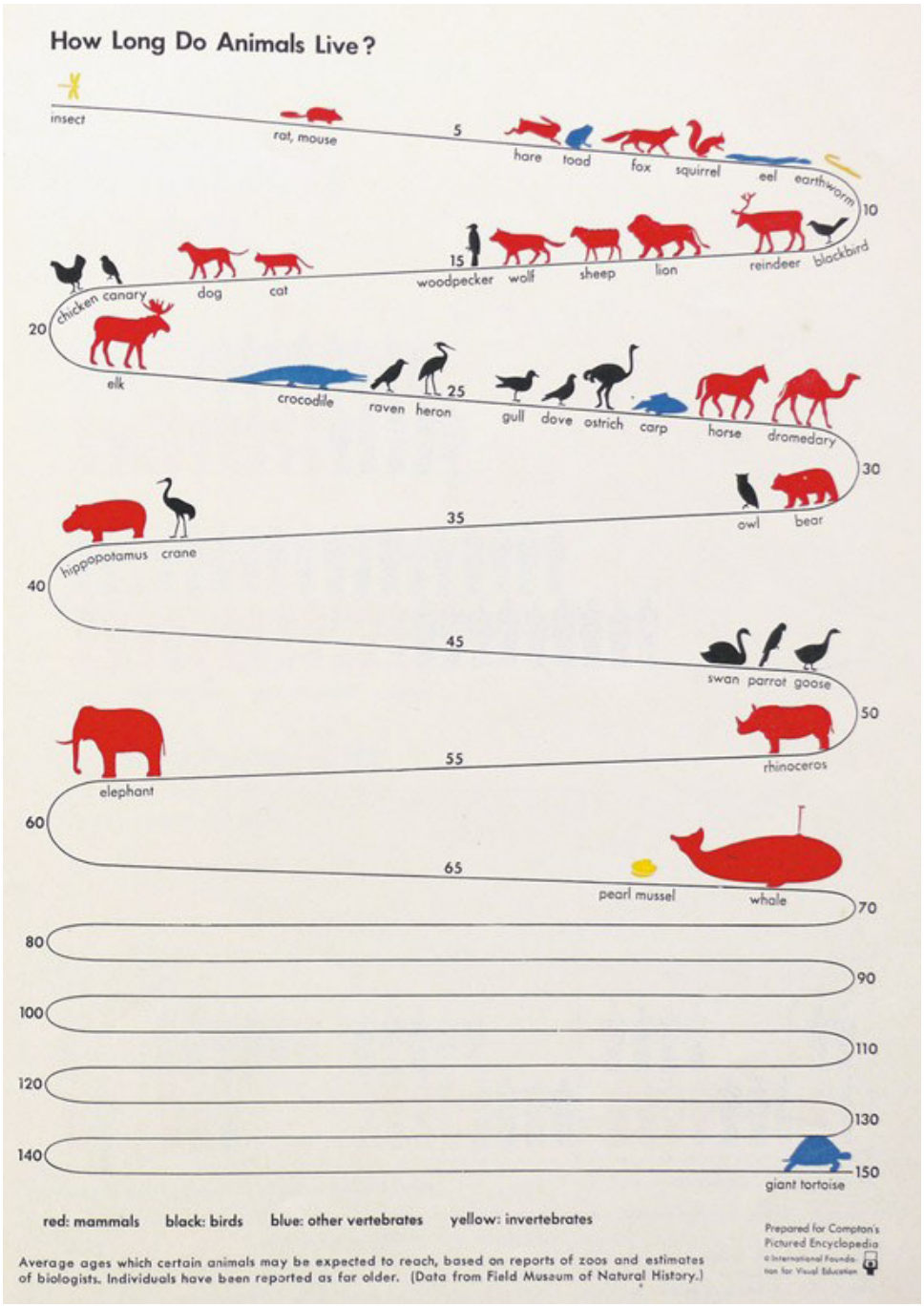

http://gizmodo.com/8-horrible-data-visualizations-that-make-no-sense-1228022038




# Visual Strength & Aesthetics to Support the Communication Function

Sensory bandwidths reaching sub-conscious and conscious mind, from Tor Norretranders' The User Illusion. Visualization from Stephen Few's Information Dashboard Design

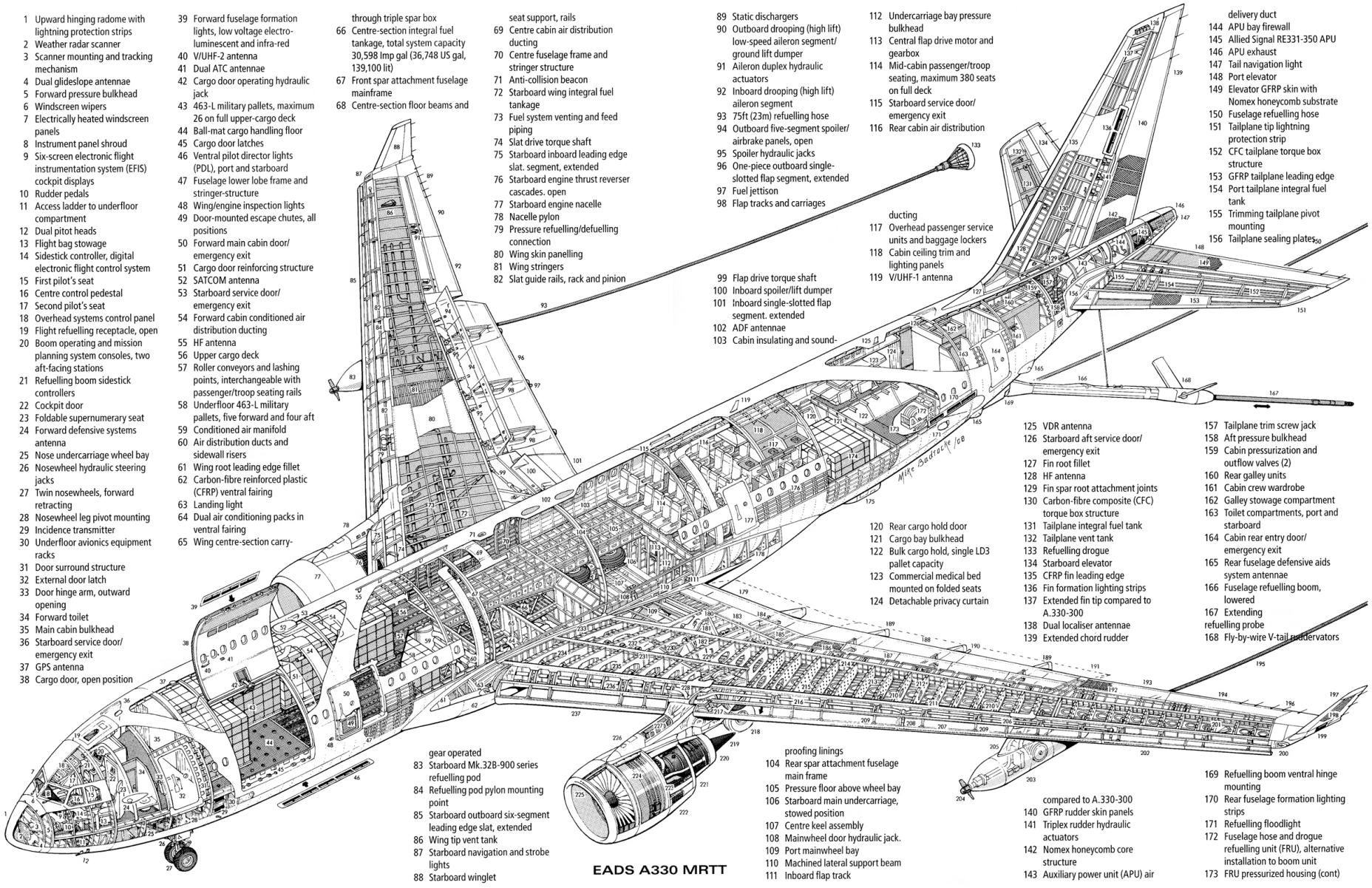
http://www.creativebloq.com/how-design-better-data-visualisations-8134175




Use of icons and pictograms when necessary

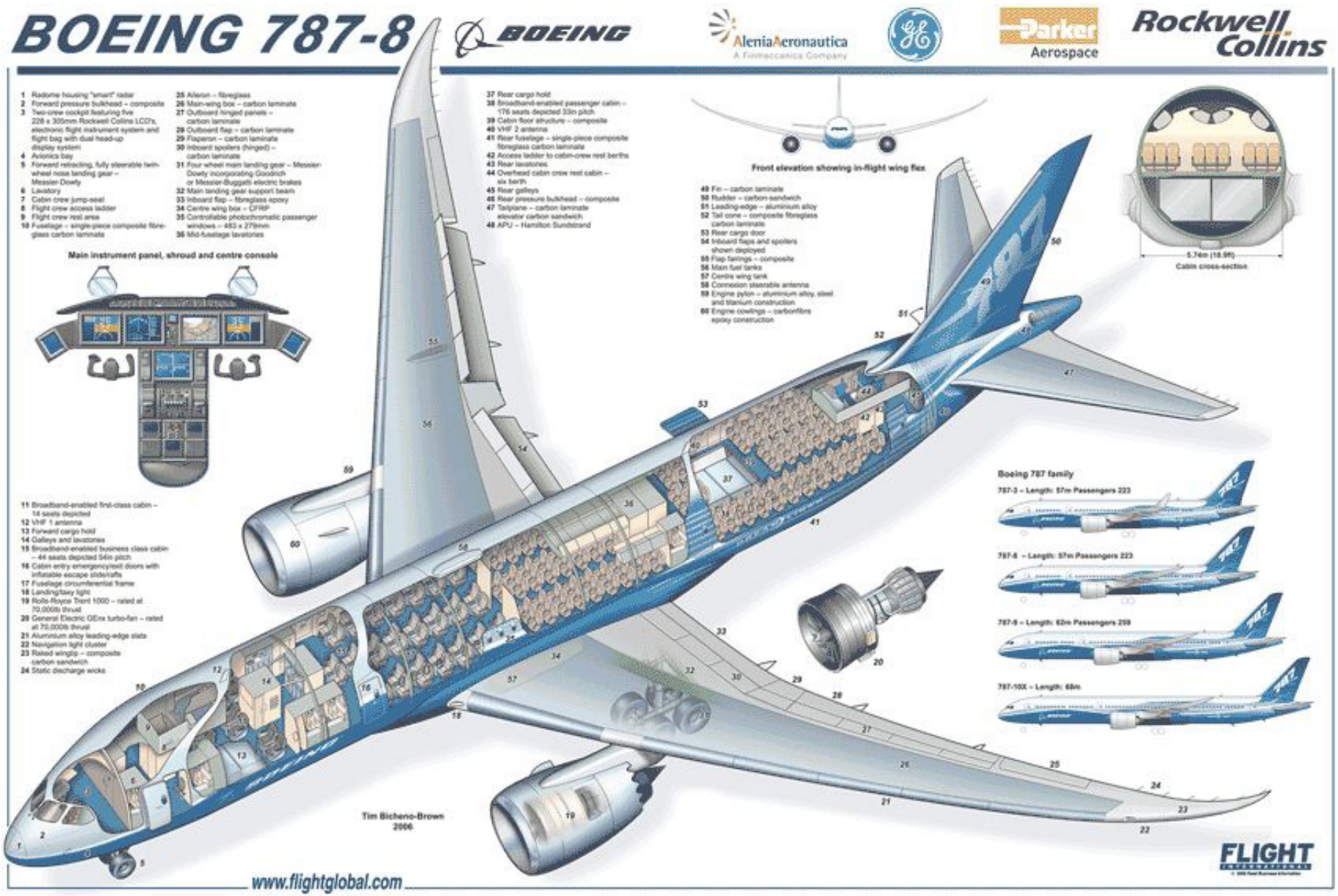
How long do animals live? 1939, Designed by Gerd Arntz, Uses the ISOTYPE Technique

https://www.brainpickings.org/2011/03/08/the-transformer-isotype/
http://www.gerdarntz.org/content/gerd-arntz#isotype




# Cut-away diagram showing aeroplane parts

http://adrenaline.uol.com.br/forum/threads/cutaway-drawing-diagramas-em-3d-de-maquinas-mostrando-partes-internas-fotos.267964/page-3

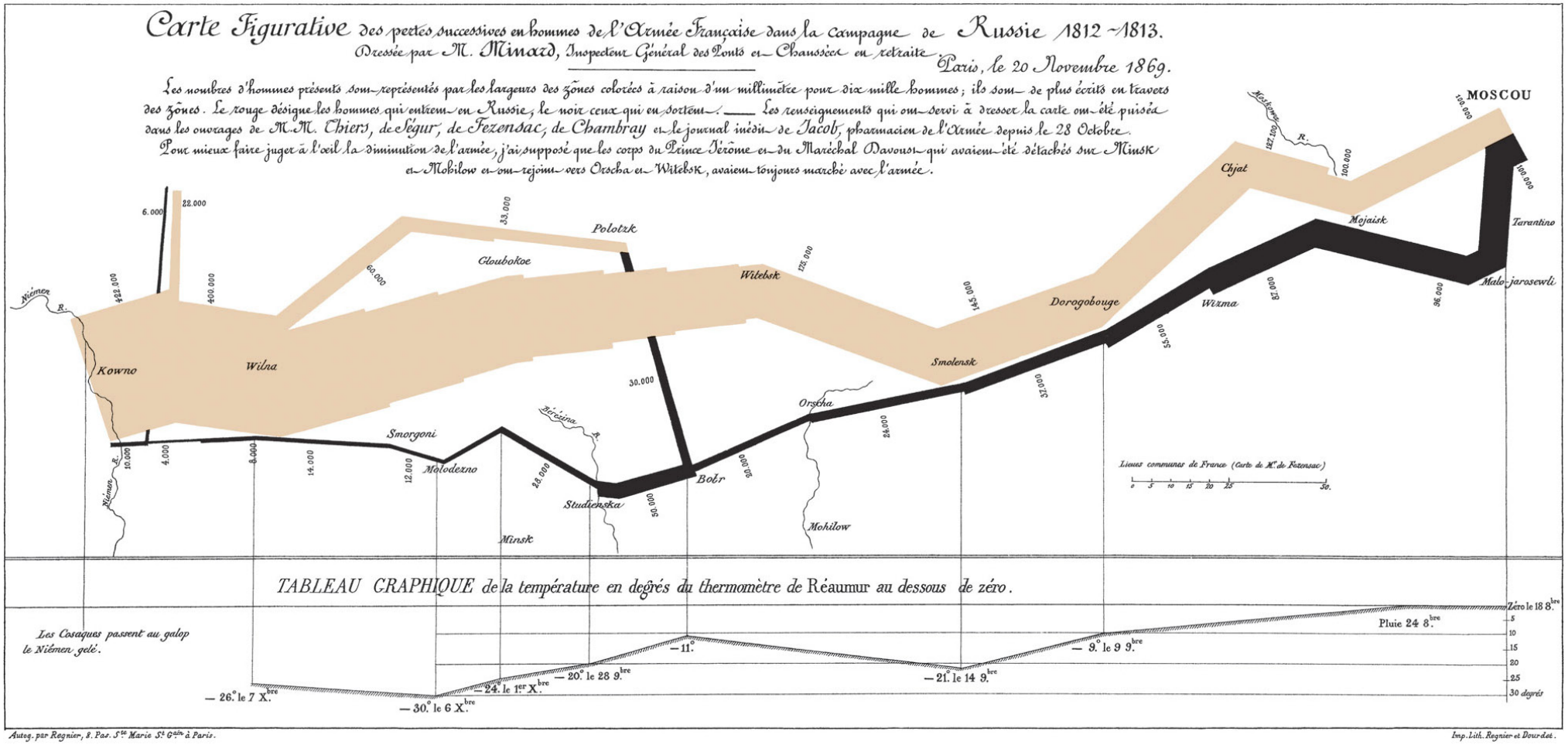



Cut-away diagram showing aeroplane parts

http://infographics-inspiration.blogspot.in/search/label/technology

Aesthetics to make information more engaging

# *Layering Information, Retaining Simplicity*



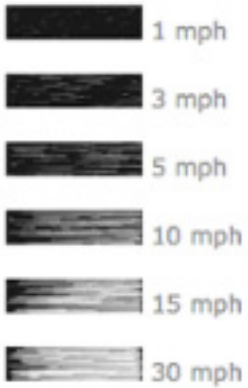

Charles Minard's 1869 chart showing the number of men in Napoleon's 1812 Russian campaign army, their movements, as well as the temperature they encountered on the return path.

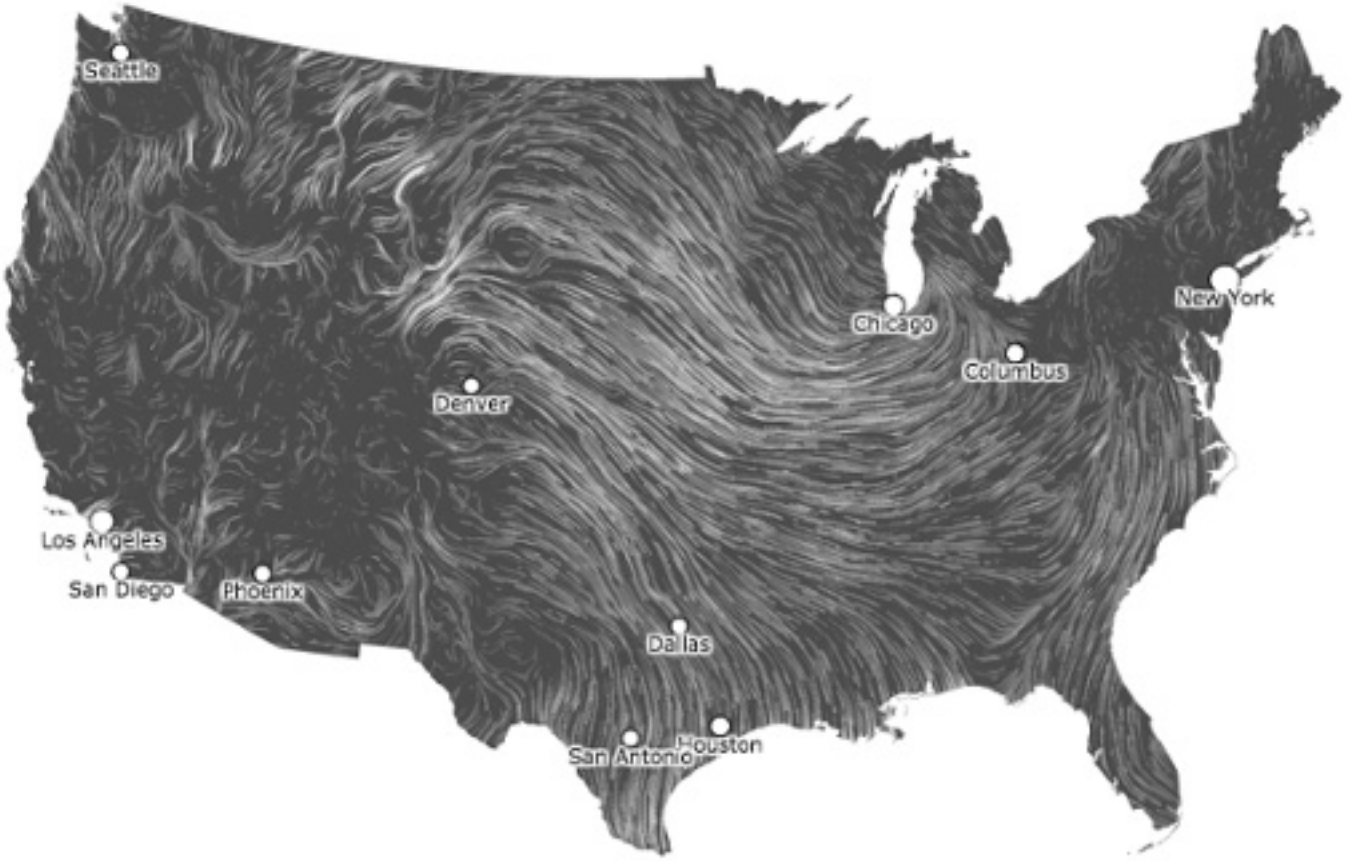
https://en.wikipedia.org/wiki/File:Minard.png

# wind map

**Dec. 2, 2015**
10:36 am EST
(time of forecast download)

top speed: **29.1 mph**
average: **8.1 mph**

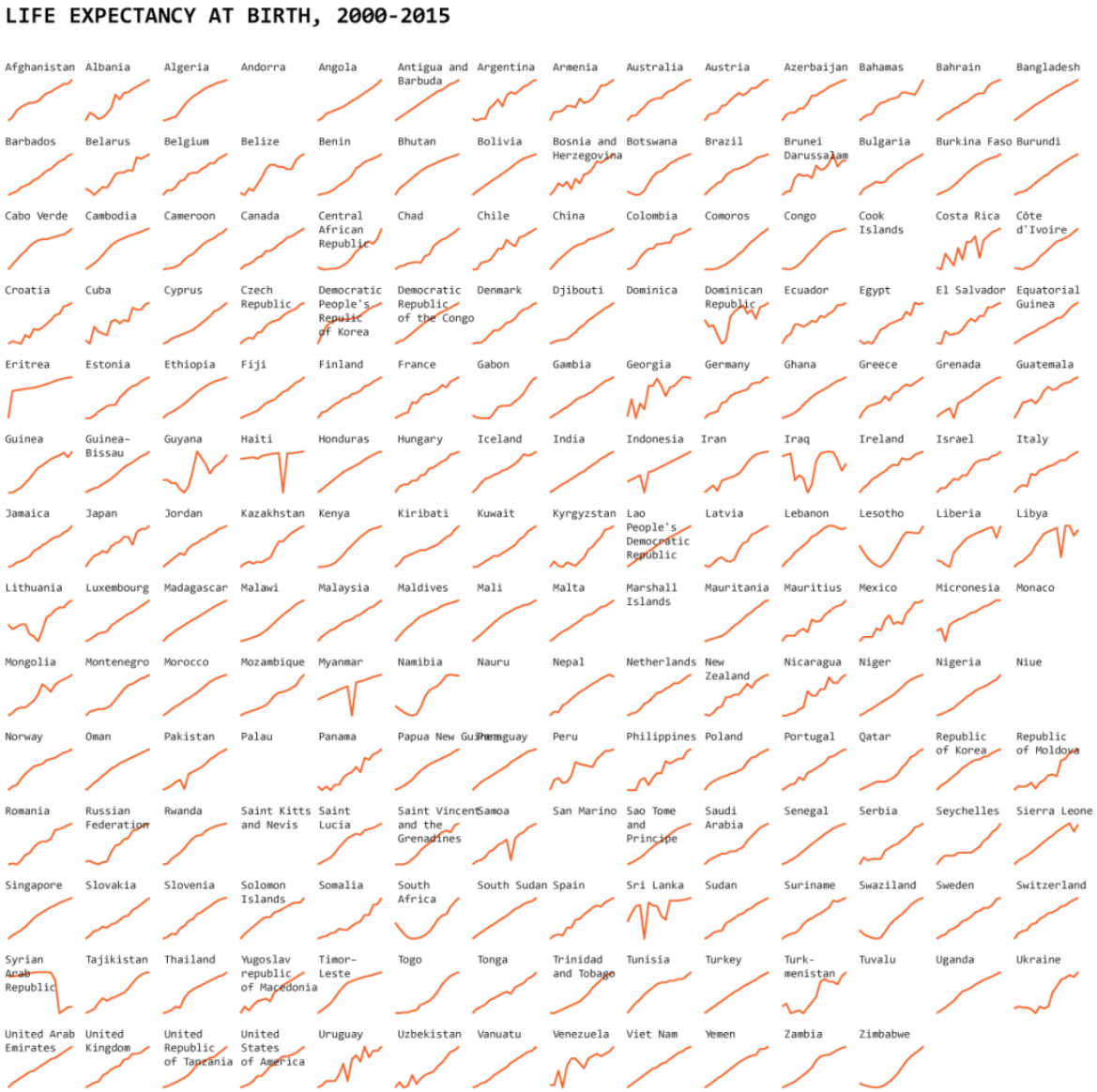



http://hint.fm/wind/

# *When the Purpose is Not Known Yet*

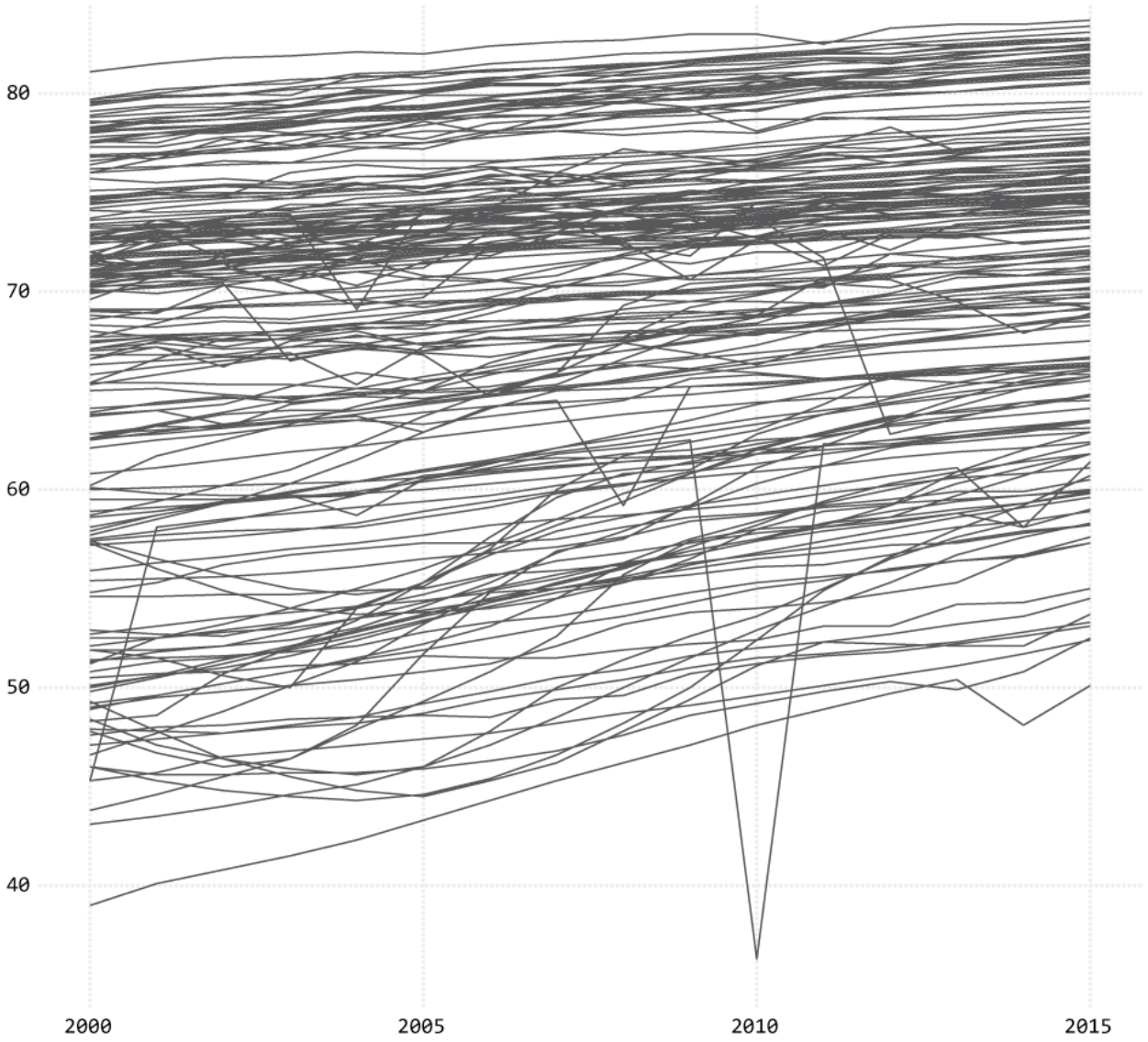
# *Reorganizing Data to Find Patterns*




http://flowingdata.com/2017/01/24/one-dataset-visualized-25-ways/

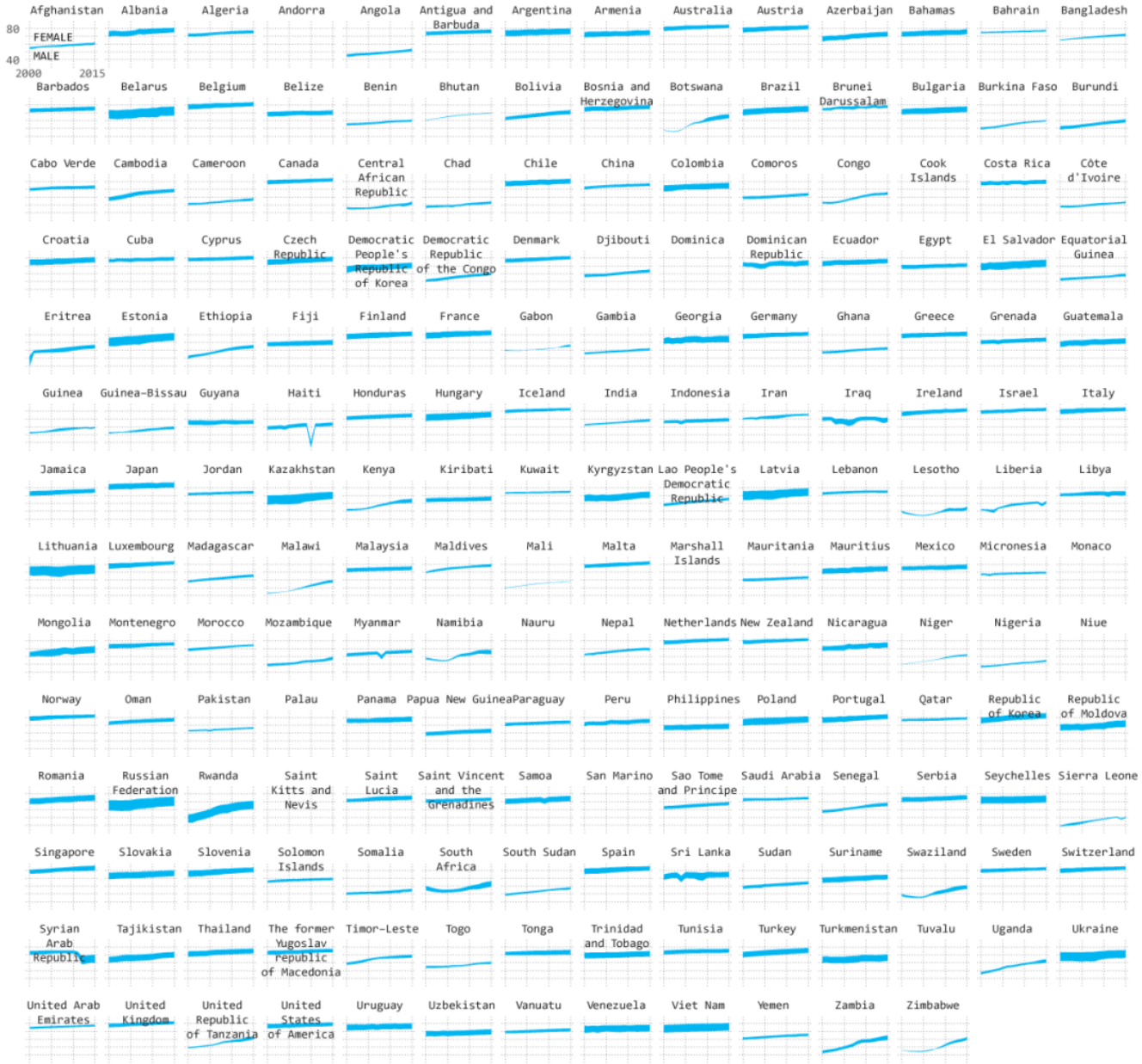
## LIFE EXPECTANCY AT BIRTH, 2000-2015

Each line represents a country.



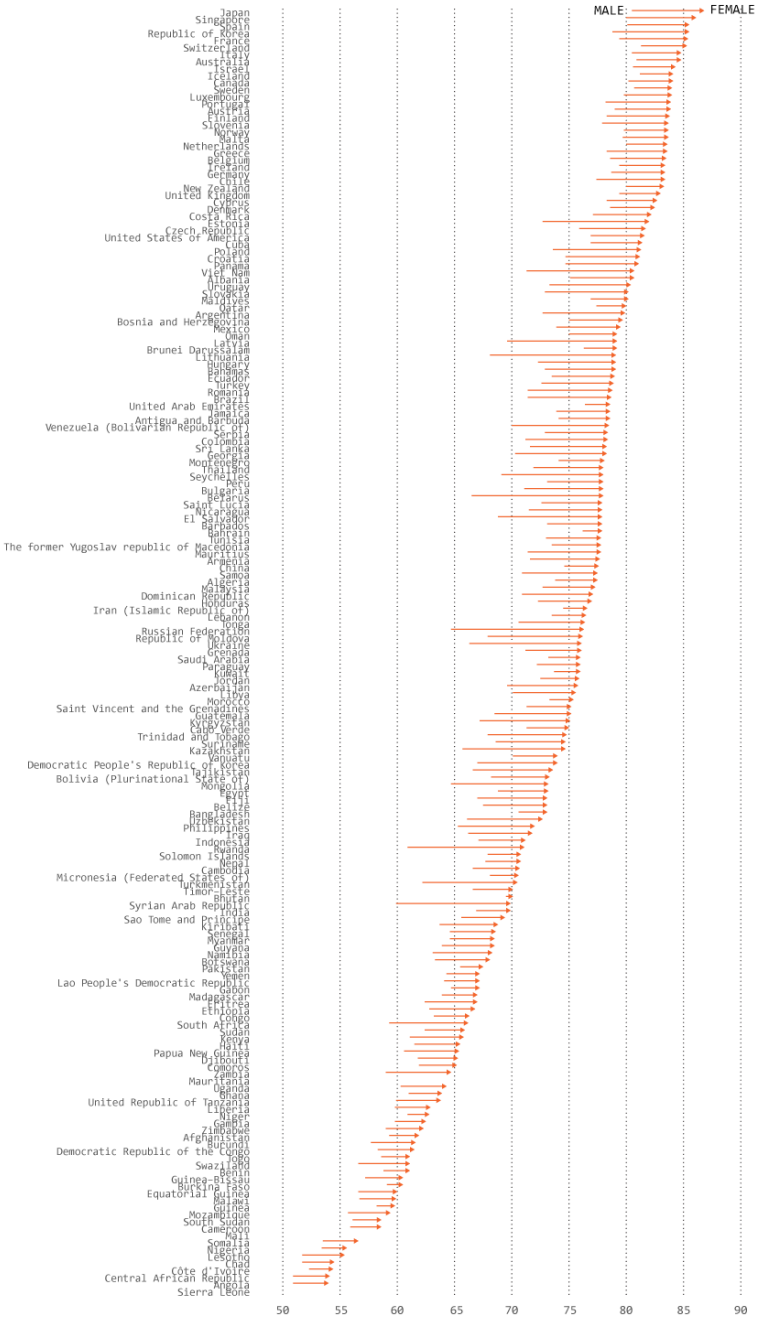

http://flowingdata.com/2017/01/24/one-dataset-visualized-25-ways/

# LIFE EXPECTANCY FOR MALE AND FEMALE, 2000-2015

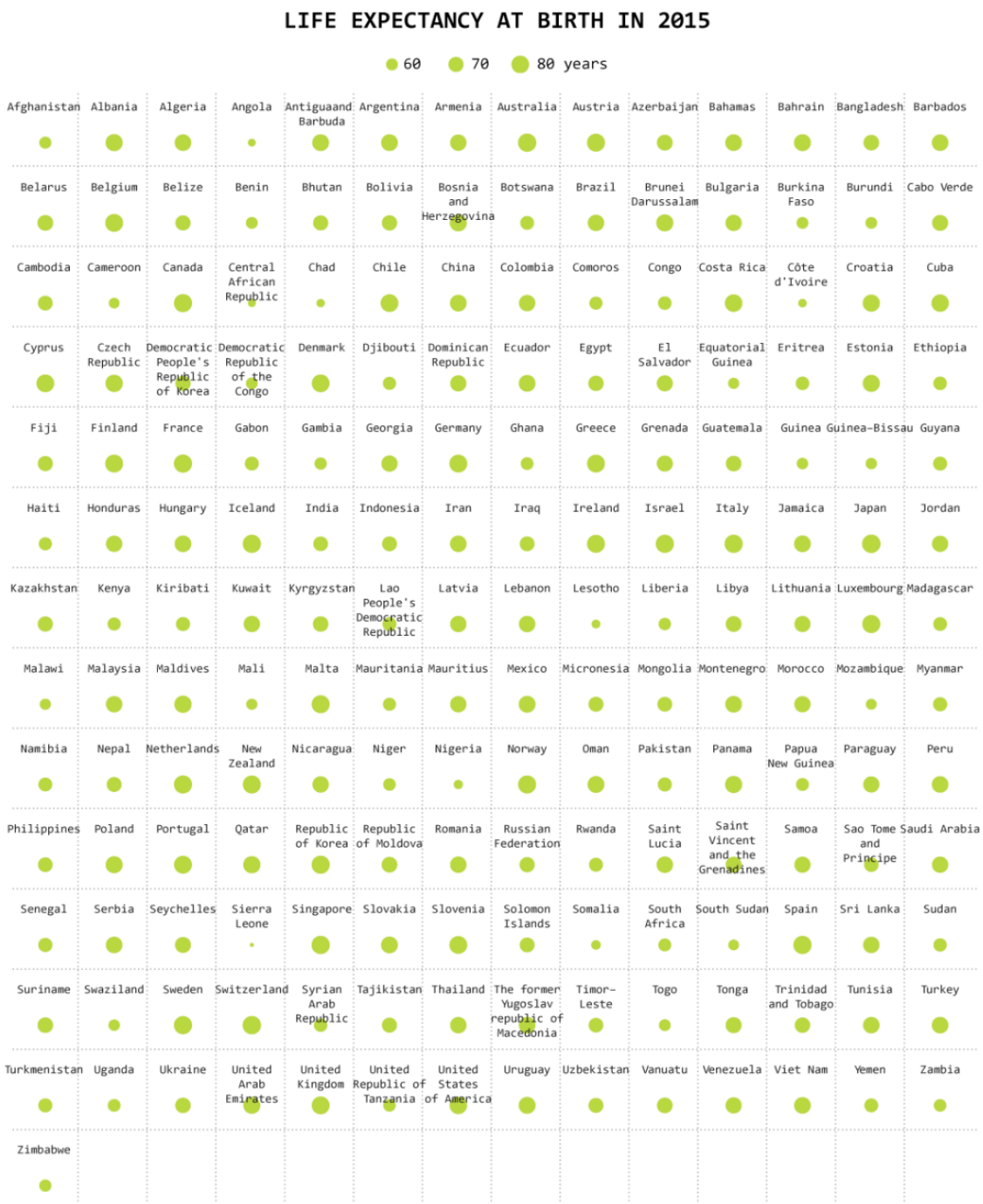



http://flowingdata.com/2017/01/24/one-dataset-visualized-25-ways/

**LIFE EXPECTANCY AT BIRTH**
**FOR MALES AND FEMALES, 2015**




http://flowingdata.com/2017/01/24/one-dataset-visualized-25-ways/




http://flowingdata.com/2017/01/24/one-dataset-visualized-25-ways/

# *Communication Strategy & Storytelling*

Creating a narrative

Storyboards

Summarize Visually

Contextualise

Engage, get attention

Give details

Make it accessible, interesting

Invent new ways of representing information

Come back to the intended message and evaluate

## REFERENCES

Jorge Frascara - Communication Design: Principles, Methods and Practice, 2004

Stephen Few - Data Visualization for Human Perception, Interaction Design Foundation

Infoactive - DATA + DESIGN, https://infoactive.co/data-design