

Information Graphics

What is an infographic?

Some Definitions

- Explanation graphics (Holmes)
- Stories, narrative (Visual.ly, Segel and Heer)
- Journalism + data + design (Vital)
- Functional art (Cairo)

Cairo's Continuum

Infographics

Visualization

Presentation

Exploration

A More Inclusive Approach

Visualization

Explanation

Exploration



Infographics

A Practical Definition

Infographic: an explanatory visualization of data or ideas that uses visual analogies to convey complex information in a manner that is easily understood

—Mark Smiciklas

A Practical Difference

“What is the key difference between a visualization and a data-based infographic? The visualization is created by a program that can be applied to many datasets, the infographic is hand-crafted for a particular dataset.”

—Robert Kosara

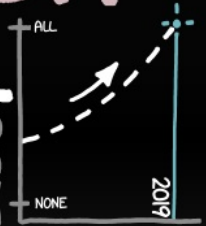
Possible Goals

- Explain something specific
- Aid understanding by visual means
- Attract attention (“go viral”)

BY THE YEAR

2018 2019 2020

ALL INFORMATION



WILL BE

6 YEARS FROM NOW
(72 MONTHS)

COMMUNICATED

YES!

YES!

IN

THIS

CLEAR AND CONCISE



Not the Goal

- Aesthetically pleasing images that don't add to meaning

VOLUME

Amount of Big Data stored across the world (in petabytes)

VARIETY**PEOPLE TO PEOPLE**

NETIZENS, VIRTUAL COMMUNITIES, SOCIAL NETWORKS, WEB LOGS...

**PEOPLE TO MACHINE**

ARCHIVES, MEDICAL DEVICES, DIGITAL TV, E-COMMERCE, SMART CARDS, BANK CARDS, COMPUTERS, MOBILES...

**MACHINE TO MACHINE**

SENSORS, GPS DEVICES, BAR CODE SCANNERS, SURVEILLANCE CAMERAS, SCIENTIFIC RESEARCH...



**2.9
MILLION**

EMAILS SENT EVERY SECOND



**20
HOURS**

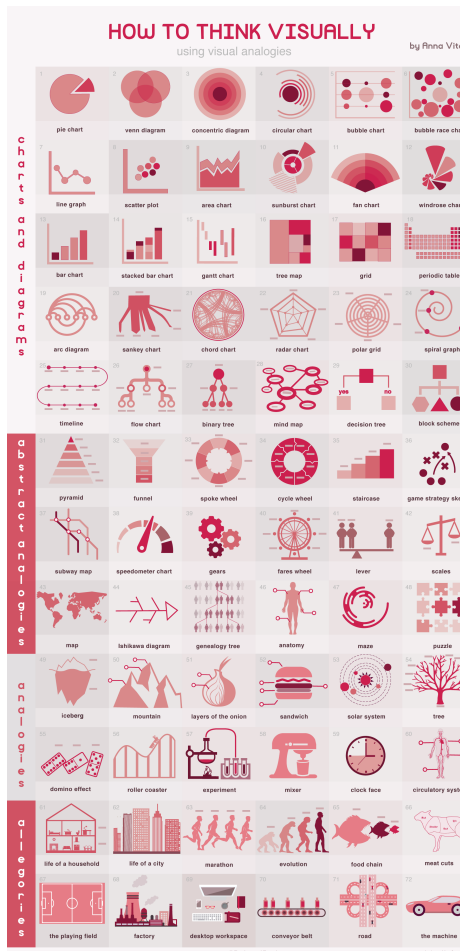
OF VIDEO UPLOADED EVERY MIN



**50
MILLION**

TWEETS PER DAY

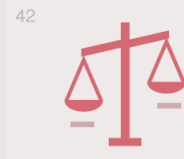
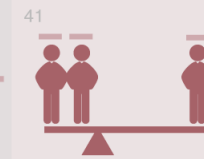
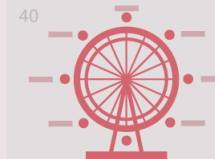
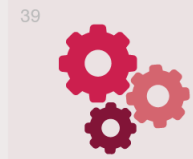
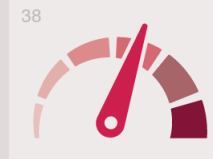
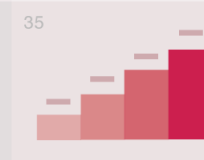
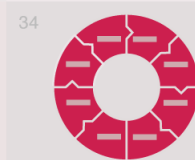
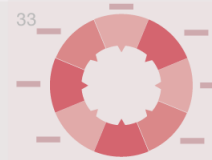
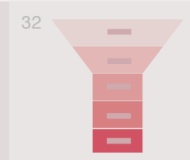
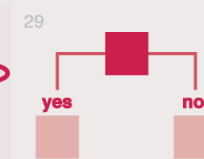
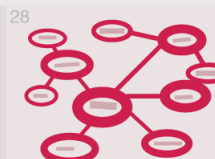
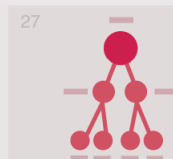
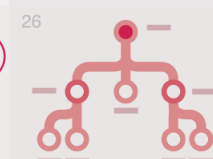
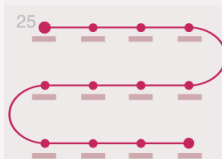
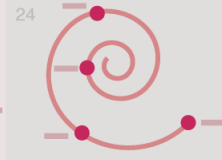
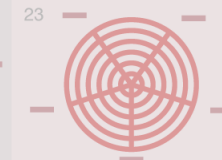
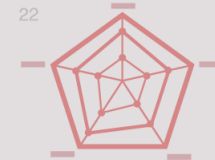
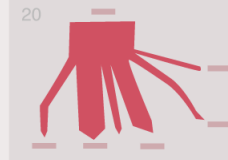
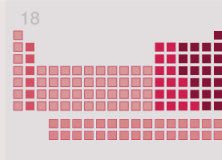
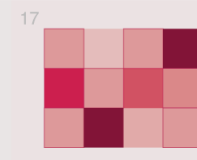
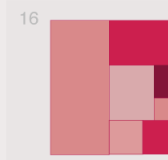
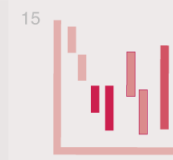
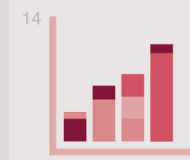
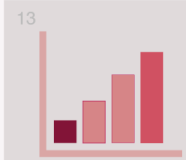
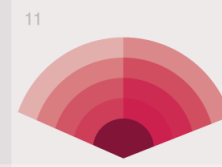
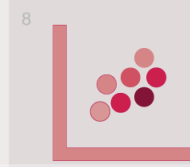
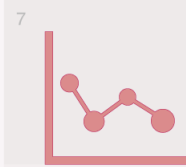
Visual Analogies

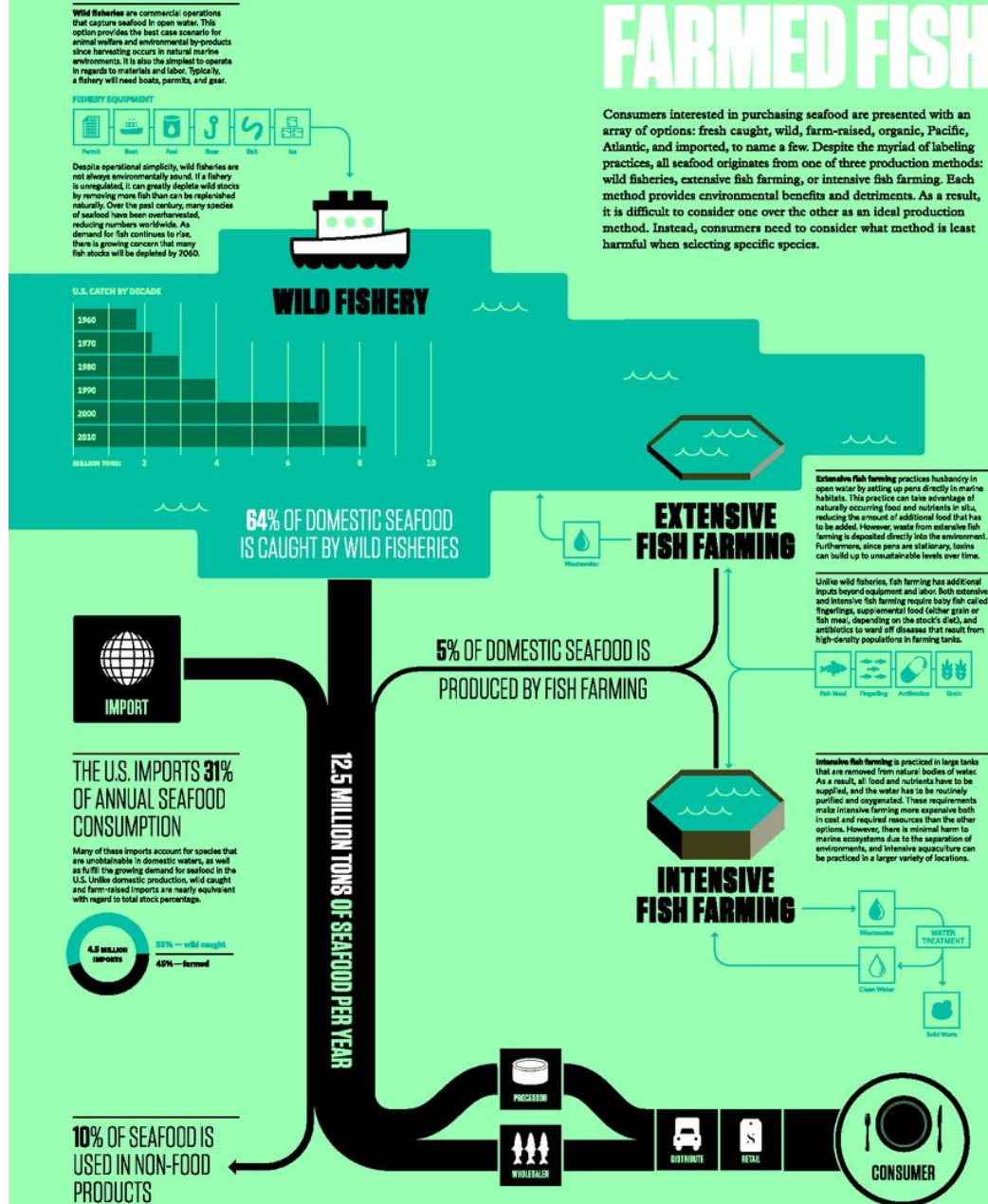


Anna Vital

<http://anna.vc/image/112863438962>

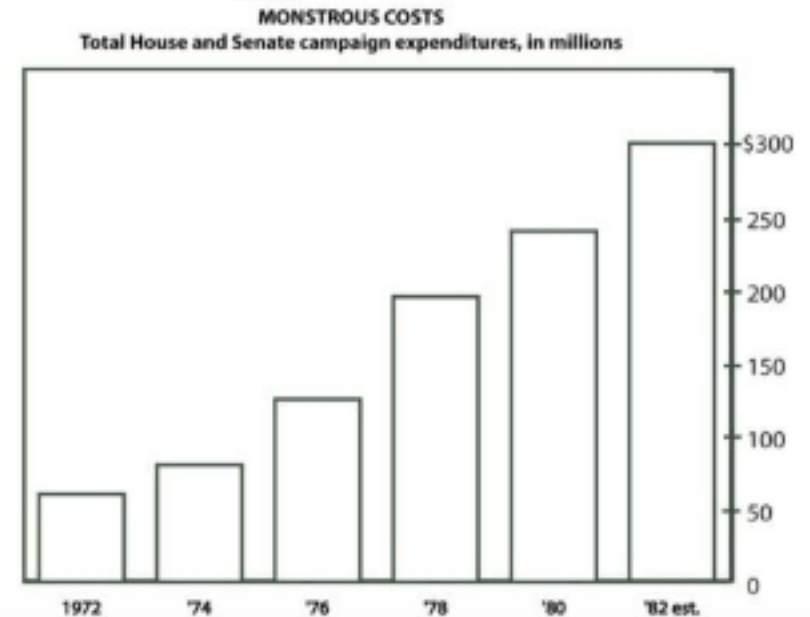
charts and diagrams





What about the data-ink ratio?

Revisiting Chart Junk



Bateman et al, 2010. *Useful junk?: The effects of visual embellishment on comprehension and memorability of charts.*

Icons and Images

Icons

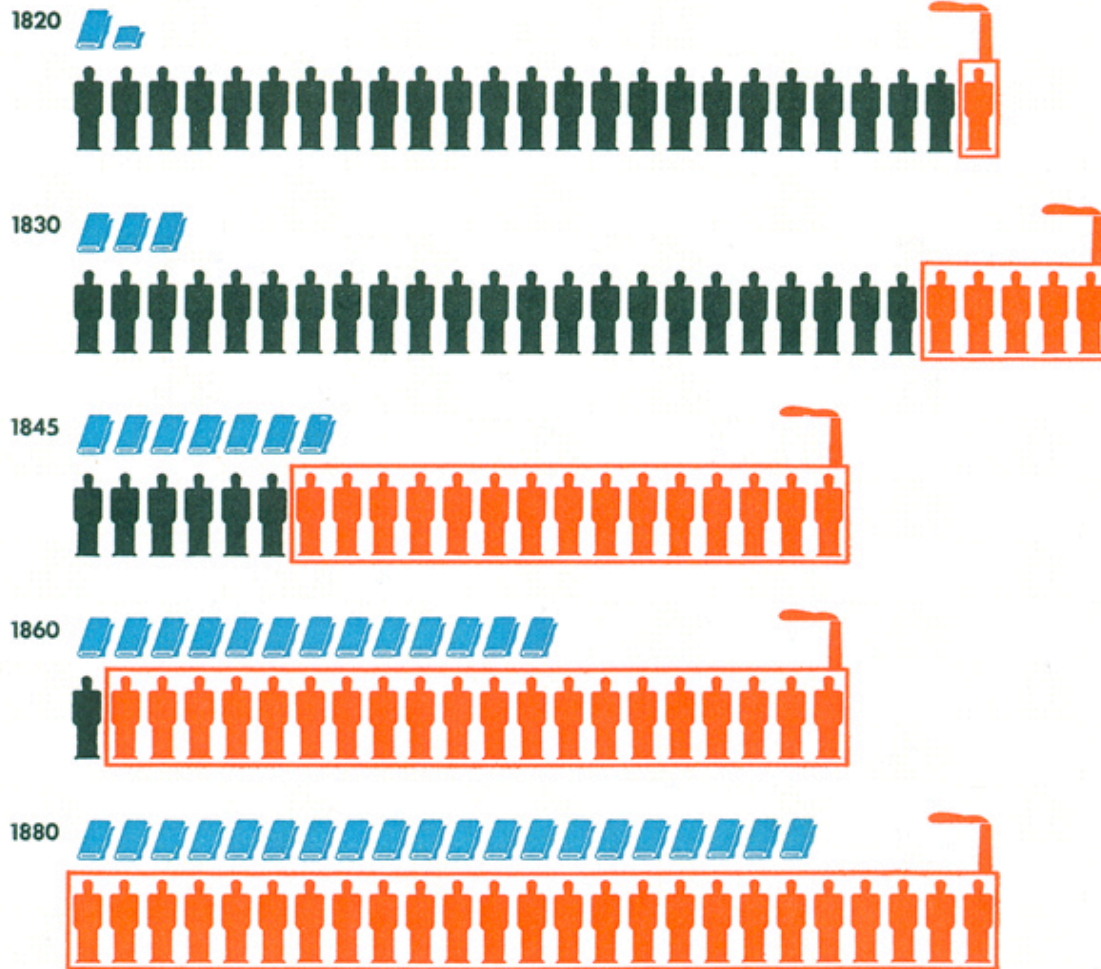
- Follow icon standards 
- Be aware of cultural differences 
- Avoid ambiguity 
- Be aware of how context affects meaning 
- Use a consistent style  

Use Literal Analogies

Make an abstract idea concrete



Home and Factory Weaving in England



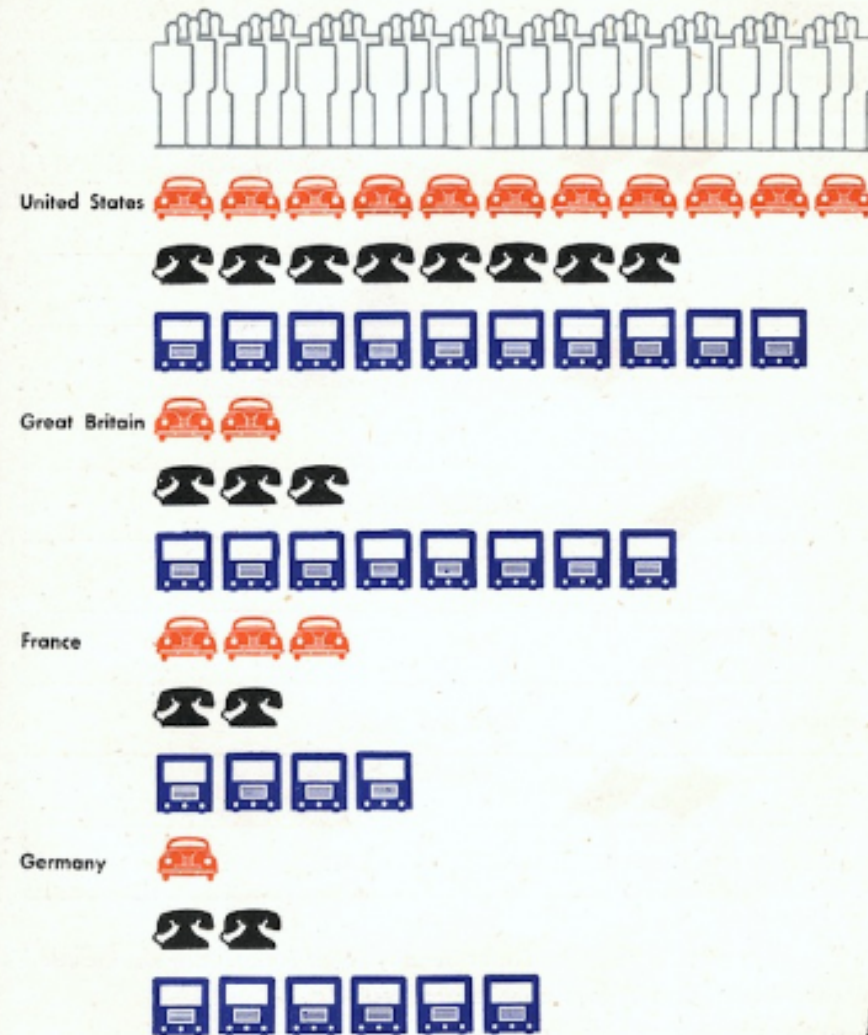
Each blue symbol represents 50 million pounds total production
 Each black man symbol represents 10,000 home weavers
 Each red man symbol represents 10,000 factory weavers

ISOTYPE

International
 System Of
 TYpographic
 Picture
 Education

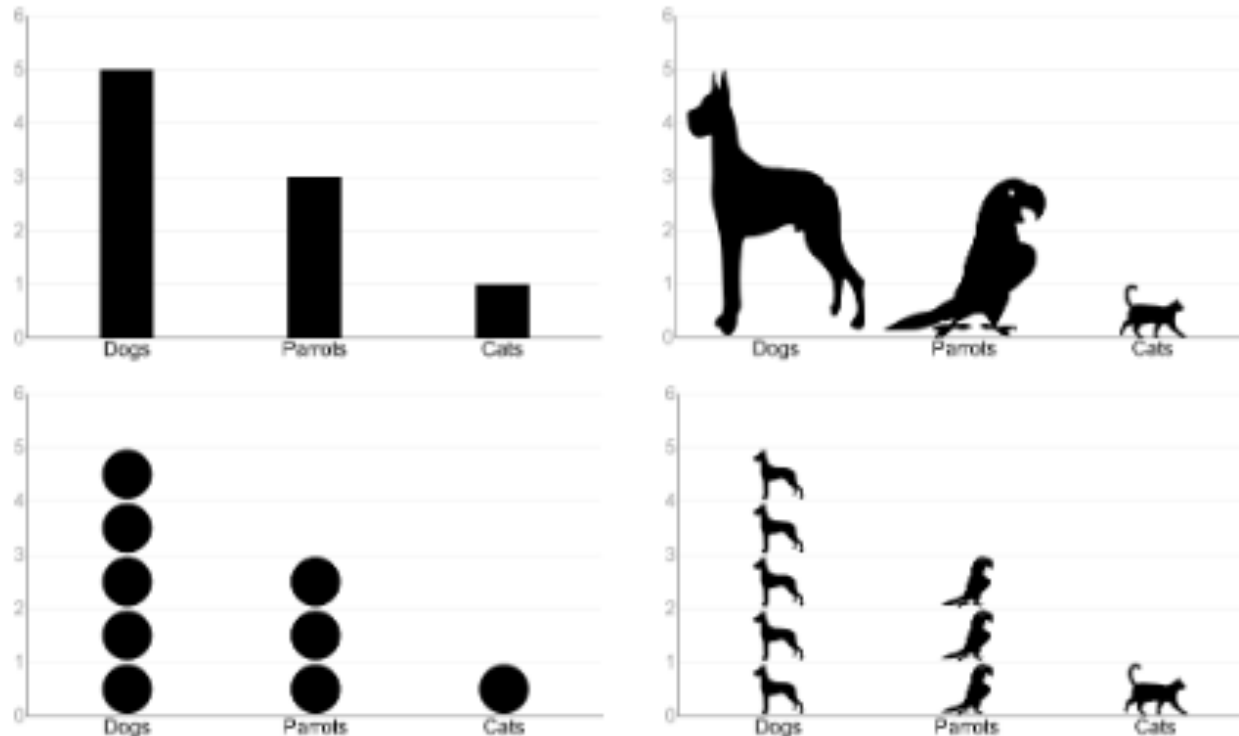
Otto and
 Marie
 Neurath, Gerd
 Arntz

Motor Cars, Telephones, Radio Sets 1937 per 50 population



Britain is close to America in radio sets per head, but in motor cars and telephones European countries lag far behind American standards.

Is ISOTYPE Effective?



Haroz, Kosara, and Franconeri, *ISOTYPE Visualization—Working Memory, Performance, and Engagement with Pictographs*, CHI 2015

Is ISOTYPE Effective?

- Repeated small icons were easier to read and compare
- Increased memorability
- Words were better than icons as labels
- Complex backgrounds were bad for performance, memory

Haroze, Kosara, & Franconeri, *ISOTYPE Visualization—Working Memory, Performance, and Engagement with Pictographs*, CHI 2015

Icon Sources

- The Noun Project
(<https://thenounproject.com>)
- Flat Icon (<http://www.flaticon.com>)
- Glyphicons (<http://glyphicons.com>,
used in Bootstrap)
- AIGA/USDOT (<http://www.aiga.org/symbol-signs/>)
- Google searches
- Make your own in Illustrator or Inkscape



Lauren Manning, <https://www.flickr.com/photos/laurenmanning/5658951917/>

Good Typography Helps

- Stick to one or two typefaces
- Mix fonts carefully (use same typeface unless you want contrast)
- Keep line lengths short
- Use white space

Hello Myriad

Hello Palatino

Hello Helvetica

Hello Bodoni

Infographics and Icons Are Good For

- Simplifying complex ideas, relationships, or processes
- Improved long-term retention (if used effectively)
- Viewer enjoyment and engagement

Research Is Mixed

- 3-D takes longer to evaluate
- High data-to-ink ratio correlates with faster response and greater accuracy
- OR no significant difference

Be Mindful Of

- Whether quick quantitative comparisons are necessary. If so, don't use infographic form
- Finding good visual analogies
- Using graphical icons that match the data story

Berkeley SCHOOL OF
INFORMATION