# Ateliers « cas concret »
recueil de visualisations

Carte chronologique
Historical timeline
Theme river
Temple of Time
Temporal activity and intensity diagram
Time Wheel
Spiral graph
Multivariate historical timeline
Bubblechart timeline
Bankruptcy timechart
Sparklines
Bumps chart
Diagrammes hélicoïdaux
BBC time chart
PeopleGarden
Home to school surrounds diagram
Memory timeline
History flow
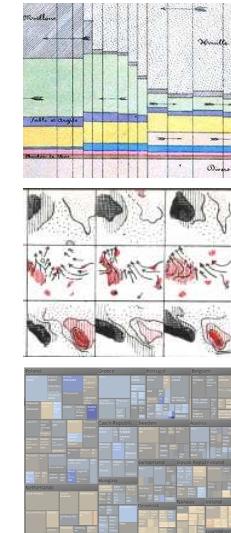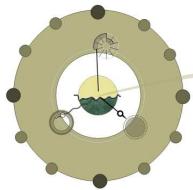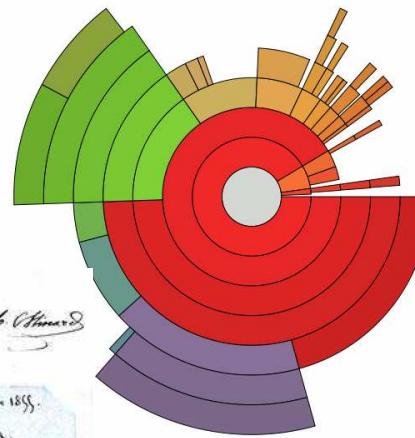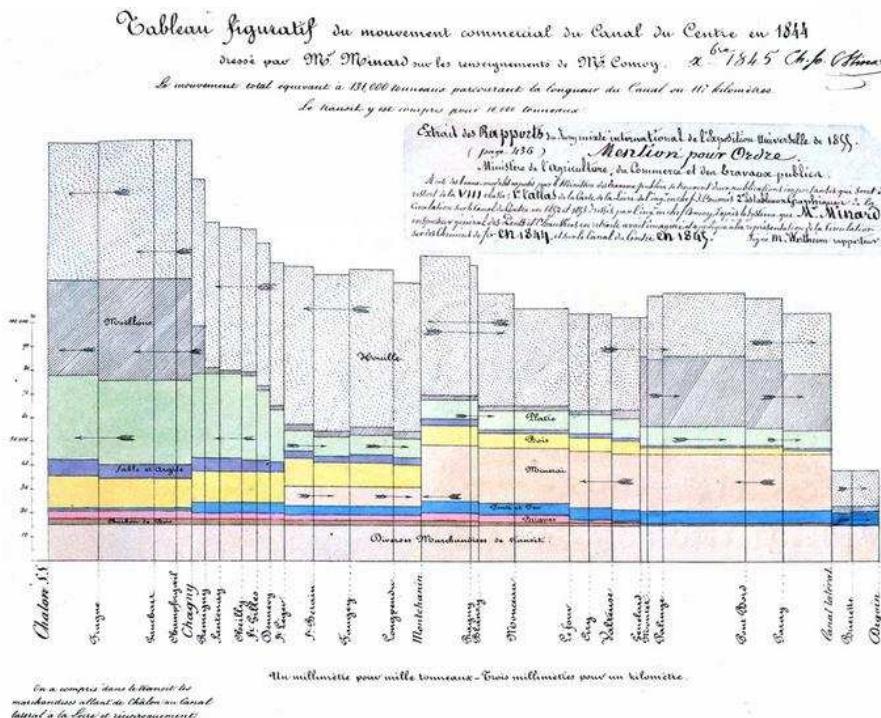
Pie chart
Tableau figuratif
World cloud
Histograms
Candlestick chart
Statistical chart
Bar / line chart
Polar-area charts
Scatter Plot
Tree map
Mosaic display
Star plot
Cognitive maps
Tableau poléométrique
Infosky visual explorer
Multidimensional icons
Chernoff faces
Periodic Table metaphor
Small multiples
Vues figurées
Dot maps
Choropleth thematic maps
Brockaus planetarium
Chrono-chorématique

Formalismes

Pie chart

Multi-level pie or Ring chart
Disk usage in Linux file system
http://en.wikipedia.org/wiki/Pie_chart

Tableau figuratif

Charles-Joseph Minard, 1844
http://euclid.psych.yorku.ca/SCS/Gallery/milestone/sec5.html
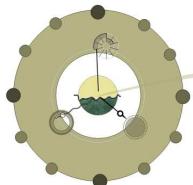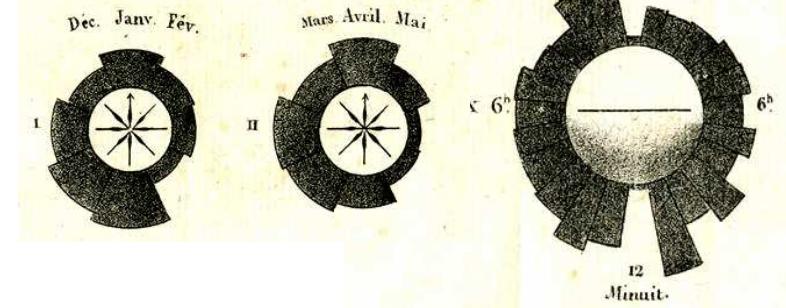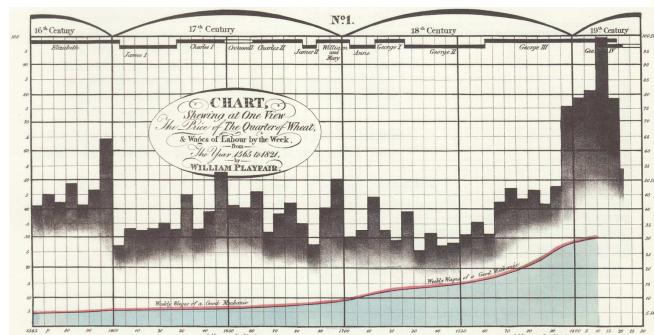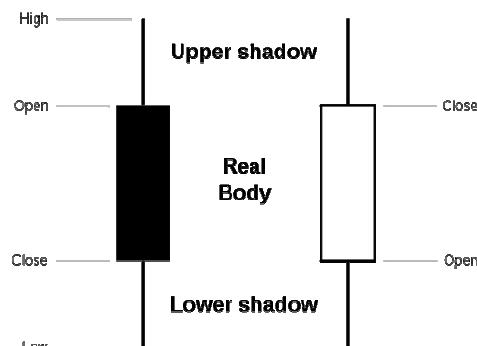
World cloud

*http://knowminer.know-center.tugraz.at/*

**Formalismes**
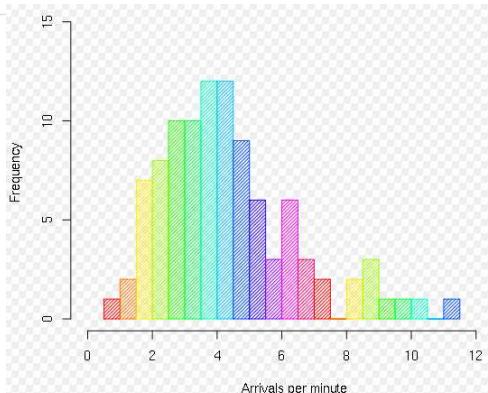
## Histograms

K.Pearson 1895

Purpose: to roughly assess the probability distribution of a given variable by depicting the frequencies of observations occurring in certain ranges of values
Illustration and definition from
http://en.wikipedia.org/wiki/Histogram

High
Open
Close
Low
Close
Open
Upper shadow
Real Body
Lower shadow

Candlestick chart

M.Homma 18th century

Combination of a line-chart and a bar-chart, in that each bar represents the range of price movement over a given time interval
Illustration and definition from
*http://en.wikipedia.org/wiki/Candlestick_chart*
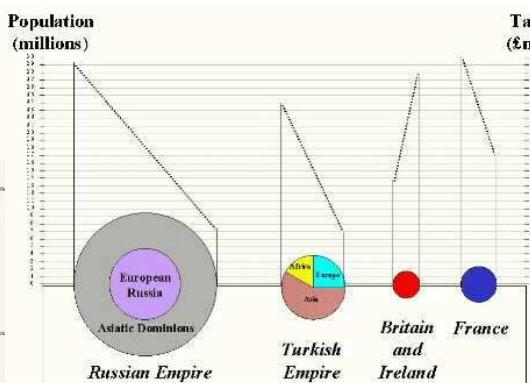
Statistical chart

William Playfair 1801
*http://www.datavis.ca*

Bar / line chart

W.Playfair , 1821
Price of wheat relatively to wages (three parallel time series)
In E.R Tufte The visual display of quantitative information ,
*Graphic Press, Cheshire 2001*

Polar-area charts

André Michel Guerry 1829
Polar-area charts (predating those by Florence Nightingale, showing frequency of events for cyclic phenomena
http://www.datavis.ca
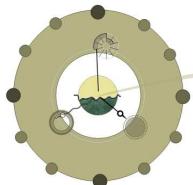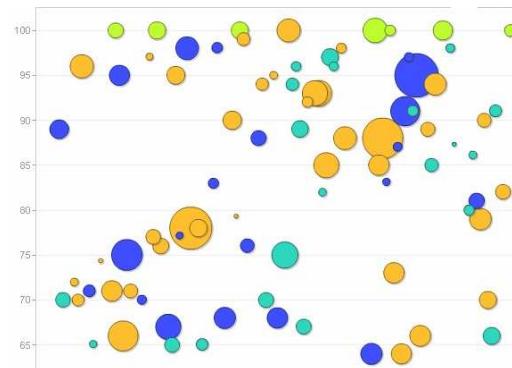
Formalismes

Scatter Plot
https://wiki.smu.edu.sg/is480/Reporting_Module

Scatter plot
http://vis.berkeley.edu/courses/cs294-10-fa07/wiki/index.php/A2-Ken-ichiUeda
Tree Species by Height
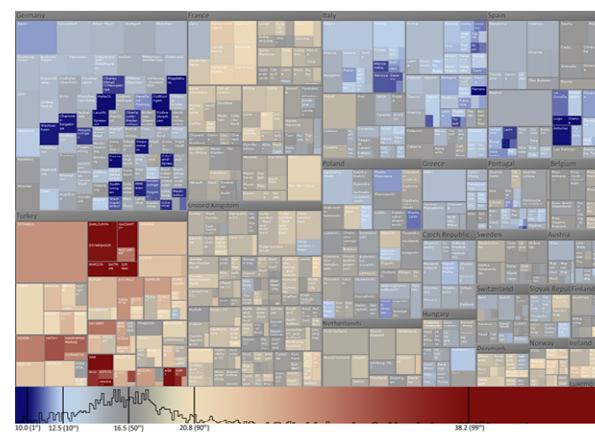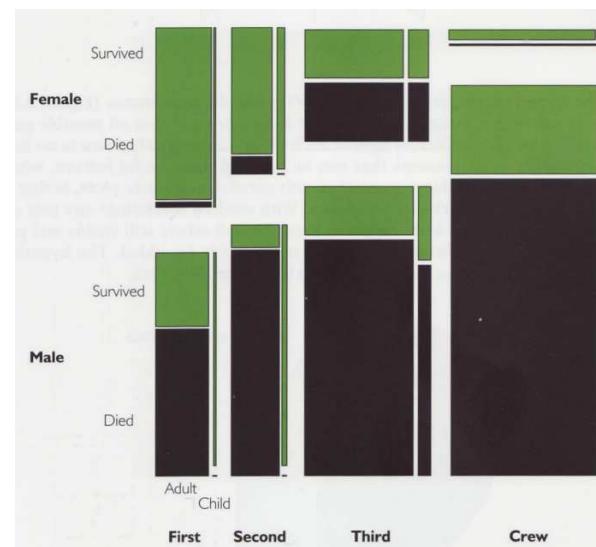
Tree map
Visual Analytics for Mobile Communication Networks
Sara Johansson
http://ncva.itn.liu.se/research?l=en

Ratio of children in the European OECD member countries. The colour of each region represents the percentage of the total population that falls within the 0-14 age group. Size in the Treemap shows the size of the total population
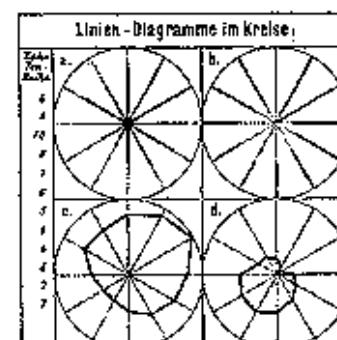
Mosaic display
*R.Spence Information Visualization*
Addison Wesley 2001

Star plot
Georg von Mayr, 1877
http://datavis.ca/milestones//admin/uploads/images/vonmayr2.gif
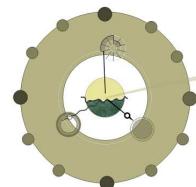
**Formalismes
Métaphores**
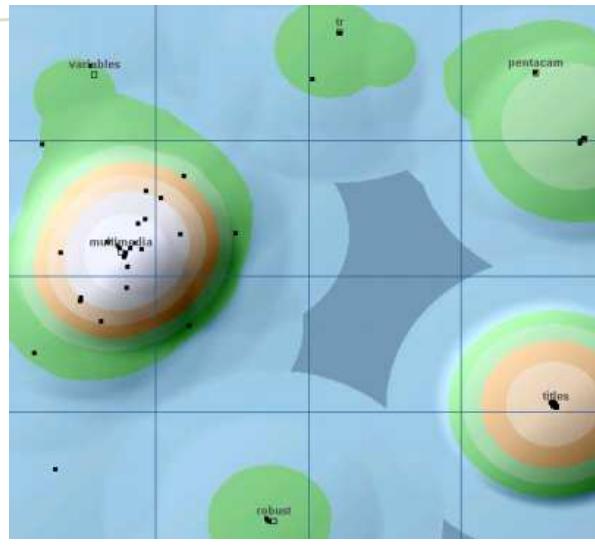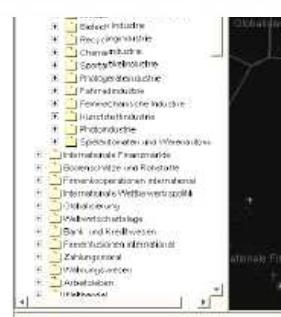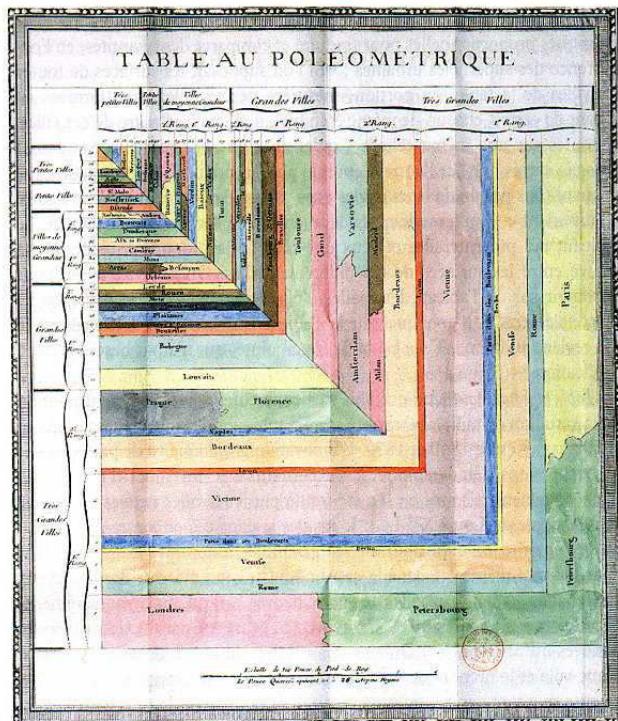
Cognitive maps

*http://intraspec.ca/cogmap.php
http://know-center.tugraz.at/wp-
content/uploads/2010/12/Diplomarbeit-Vedran-
Sabol.pdf*

Tableau poléométrique

*Charles de Fourcroy 1782
http://euclid.psych.yorku.ca/SCS/Gallery/im
ages/palsky/defourcroy3.jpg*

Use of geometric, proportional figures
(squares) to compare demographic
quantities by superposition, an early tableau
graphique

Infosky visual explorer

http://www.infovis-wiki.net/index.php/InfoSky
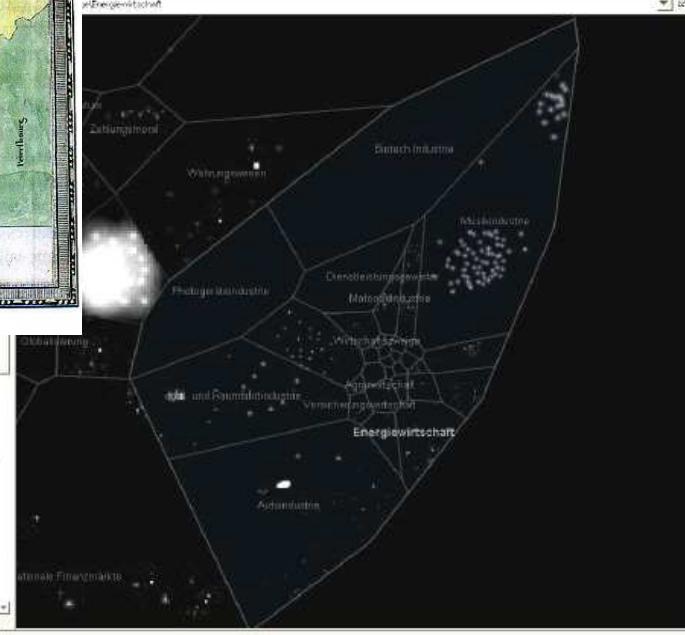
enabling users to interactively explore large,
hierarchically structured document collections
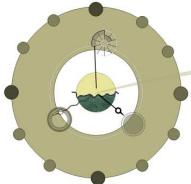
Métaphores
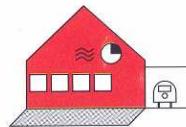
house
£400,000
garage
central heating
four bedrooms
good repair
large garden
Victoria 15 mins
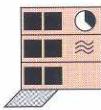
Flat
£300,000
no garage
central heating
two bedrooms
poor repair
small garden
Victoria 20 mins
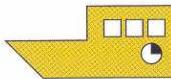
houseboat
£200,000
no garage
no central heating
three bedrooms
good repair
no garden
Victoria 15 mins

Multidimensional icons

in R.Spence, Information Visualization, Addison
Wesley 2001

	College Degree	Family Income	Women in Work Force	Unemploy Rate	Divorce Rate	Crime Rate
	15-20 %	$54000-65000	51-59 %	> 6 %	13-17 %	67-280
	20-26 %	$45000-54000	59-64 %	3-6 %	17-20 %	280-500
	26-33 %	$36000-45000	64-69 %	< 3 %	20-25 %	500-860
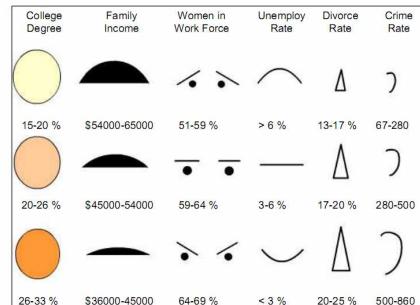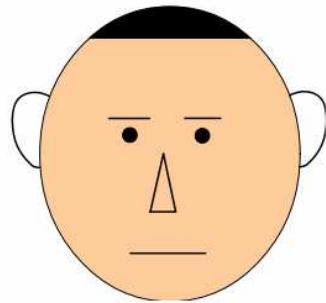
Figure 6. A Chernoff face for the state of Ohio

Chernoff faces

http://proceedings.esri.com/library/userconf/educ0
4/papers/pap5000.pdf

A PERIODIC TABLE OF VISUALIZATION METHODS

Periodic Table

http://www.visual-
literacy.org/periodic_table/periodic_table.html

Modèles

Small multiples
Francis Galton, pub. 1863.
in M.Friendly, A Brief History of Data Visualization

Multivariate weather charts, arranged as small multiples
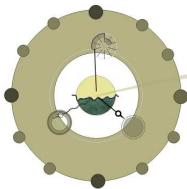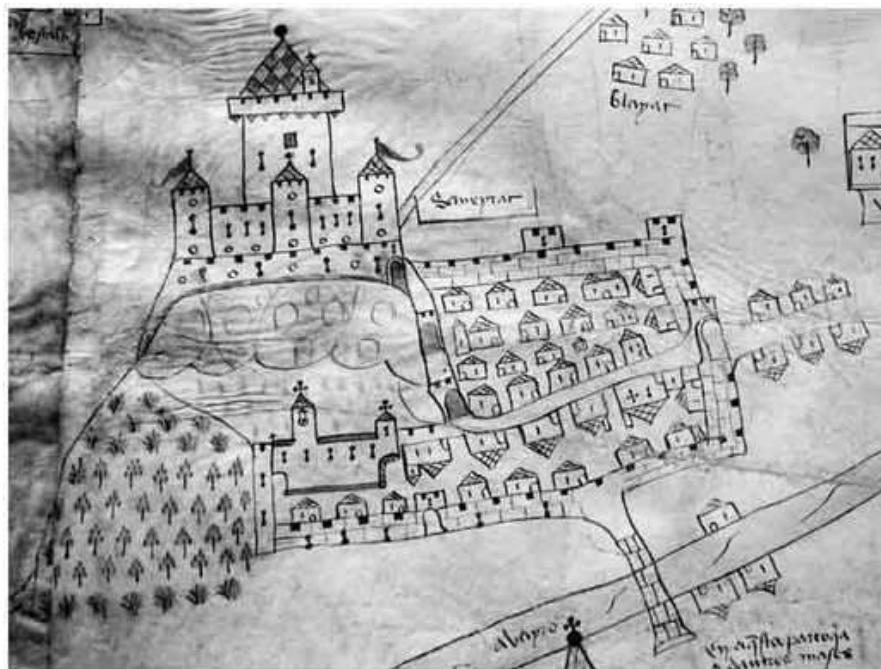
Ill. 4. — Le bourg de Sévérac-le-Château

Vues figurées
http://www.cairn.info/resume.php?ID_ARTICLE=RHIS_093_0 621
Entre carte, image et pièce juridique : la vue figurée de la baronnie de Sévérac-le-Château (1504)
Juliette Dumasy

Cartes confectionnées dans l'ensemble de l'Europe à partir du XIV**e** siècle pour servir de pièces à conviction devant les tribunaux […]. Elle représente, avec élégance et méticulosité, l'ensemble des villages et hameaux de ce pays, avec leurs feux, églises et châteaux – soit en tout plus de 800 édifices.
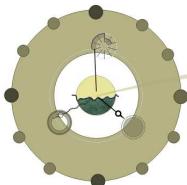
Modèles
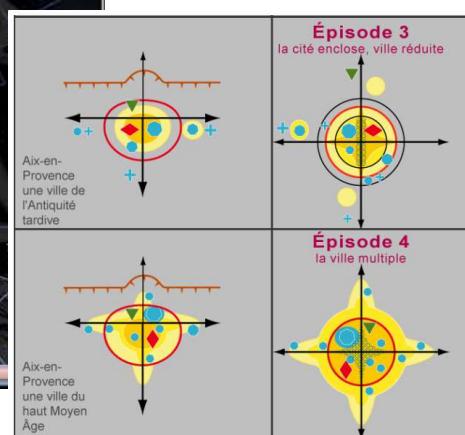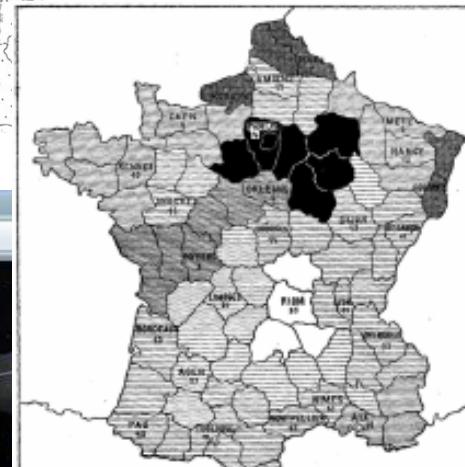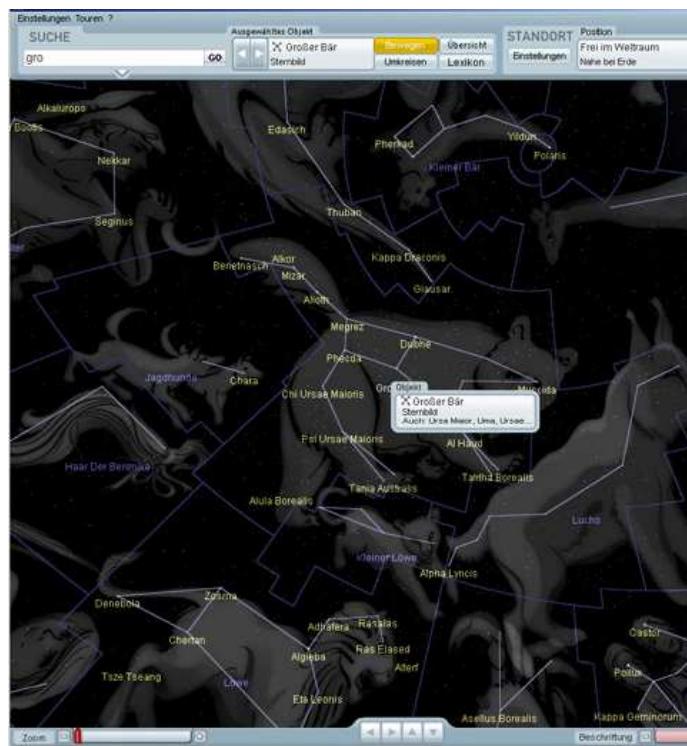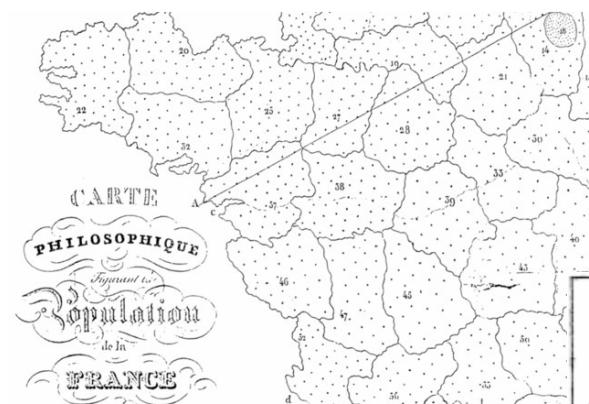
Dot maps

Armand- Joseph Frère de Montizon 1830
In La naissance de la démocartographie.
Analyse historique et sémiologique, G.Palsky
Espace, populations, sociétés Vol 2 Num   2
pp. 25-34 1984
http://www.persee.fr/web/revues/home/prescript/
article/espos_0755-7809_1984_num_2_2_956

Choropleth thematic maps

Pierre Charles Dupin 1819
http://www.datavis.ca

Brockaus planetarium

http://www.brockhaus.de/digitale_produkte/brockhaus
_multimedial/produkt/planetarium.php

Chrono-chorématique

*http://www.culture.gouv.fr/culture/cnau/pdf/2009_06_*
02_chorematique_livret.pdf
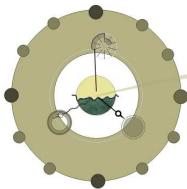
Timelines (etc.)
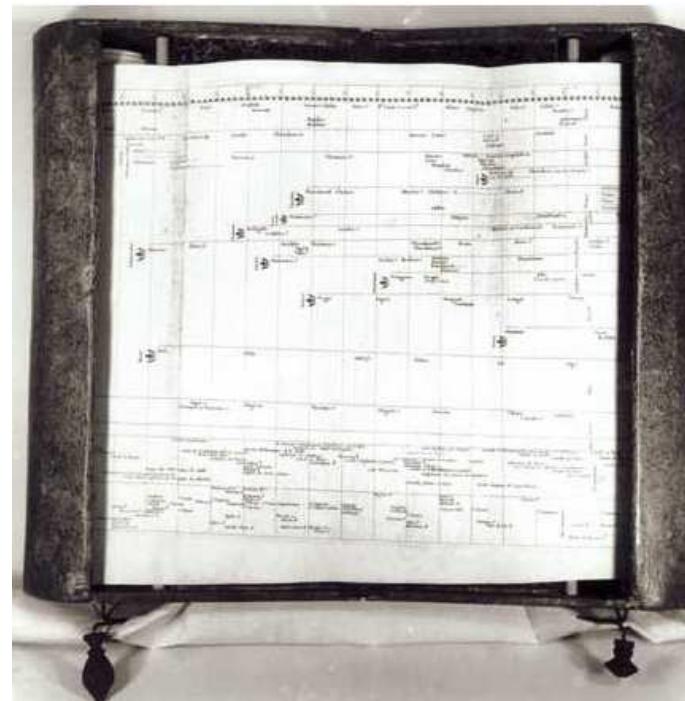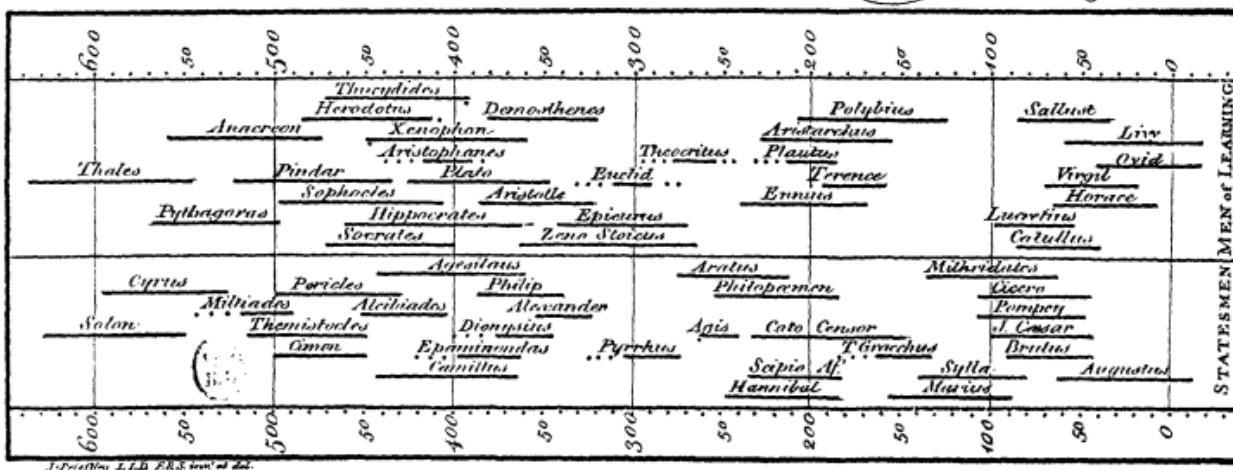
Carte chronologique
Jacques Barbeu-Dubourg 1753
http://www.datavis.ca/gallery/timelines.php
The earliest modern timeline

An annotated timeline of history (from Creation) on a 54-foot scroll, including names and descriptive events, grouped thematically, with symbols denoting character (martyr, tyrant, heretic, noble, upright, etc.) and profession (painter, theologian, musician, monk, etc.)-

Historical timeline
Joseph Priestley, 1765
http://euclid.psych.yorku.ca/SCS/Gallery/images/priestley.gif

Life spans of 2,000 famous people, 1200 B.C. to 1750 A.D.), quantitative comparison by means of bars
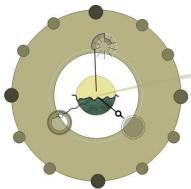
Timelines (etc.)
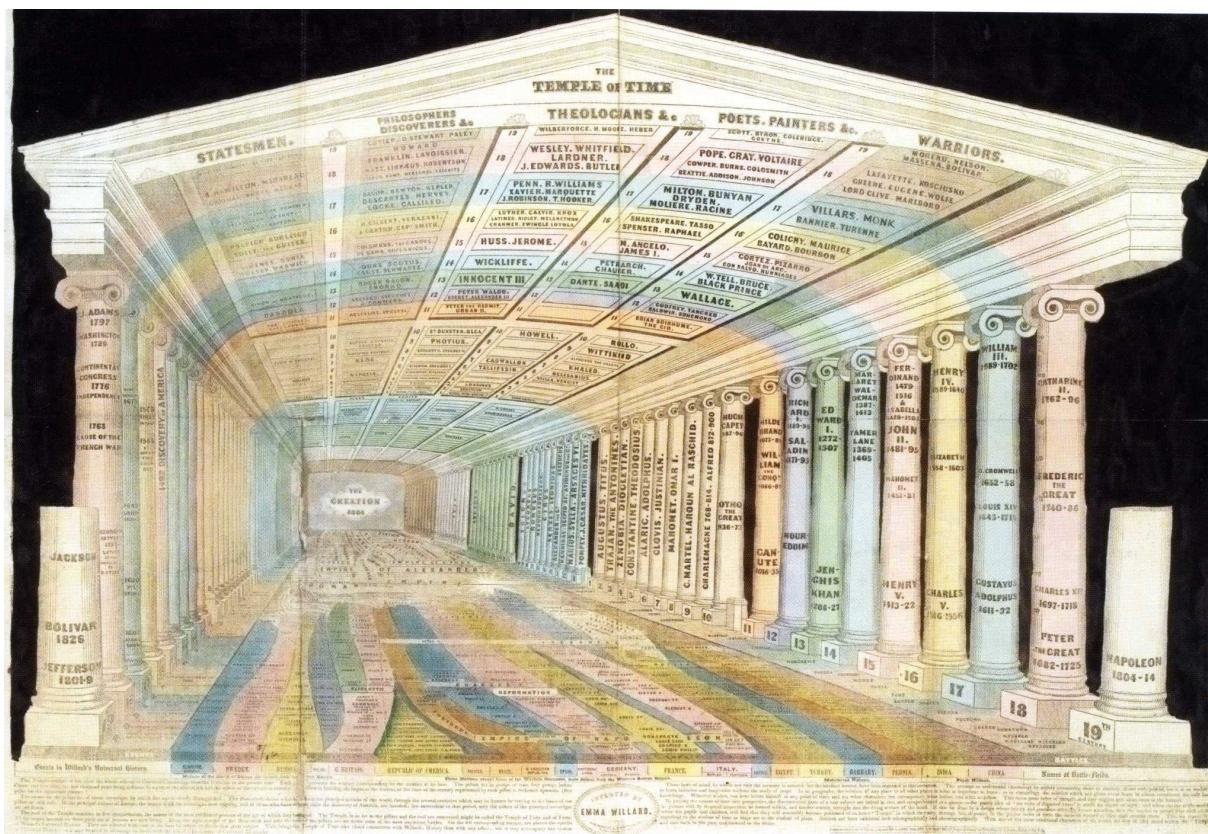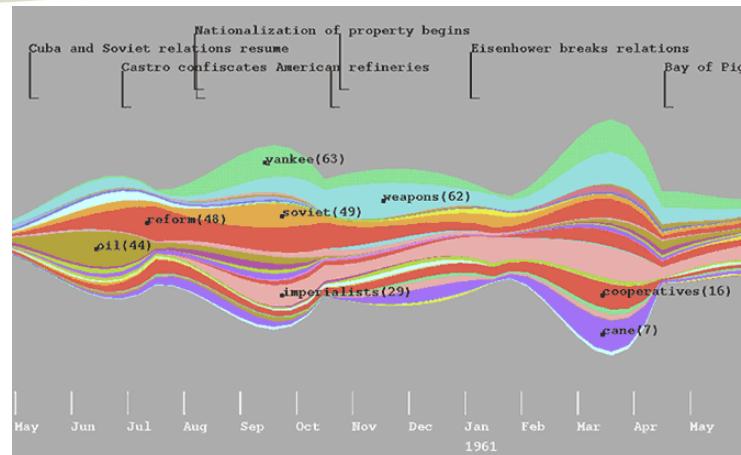
Theme river

http://vis.pnnl.gov/research_themeriver.stm
Voir aussi :
*http://www.ifs.tuwien.ac.at/~silvia/wien/vu-infovis/references/havre-ieeeinfovis00.pdf*

The ThemeRiver™ visualization helps users identify time-related patterns, trends, and relationships across a large collection of documents.

Emma Willard's Temple of Time

http://www.datavis.ca/gallery/timelines.php

The Temple of Time is a three-dimensional projection of historical chronography created in 1846 by Emma Willard, an American girls' educator. In the temple, the vertical columns represent centuries, with those on the right showing names of important figures from the Old World while those on the left show figures from the New World. The floor shows a historical stream chart. The ceiling functions as a chart of biography.
It was designed as a mnemonic device that allowed people to memorize information by imagining it as architectural details in a three-dimensional mental space.

Timelines (etc.)

Temporal activity and intensity diagram

http://geoanalytics.net/GeoVis08/a15.pdf

Sabol, V., Granitzer, M. and Kienreich, W. (2007). "F used Exploration of Temporal Developments and Topical Relationships in Heterogeneous Data Sets", 3rd International Symposium of Knowledge and Argument Visualization, 11th International Conferenc e Information Visualisation. London, UK: IEEE Computer Society.

variable axes
time axis
reduced color intensity
lines connecting time and feature values

User interaction:
Rotation of variable axes
(moving axes of interest into a position parallel to the time axis)

Time Wheel

*Image from
http://ieg.ifs.tuwien.ac.at/~aigner/presentations/Time Viz06.pdf
Quotation: C. Tominski, J. Abello, and H. Schumann, "Axes -based Visualizations with Radial Layouts," in Proc. of ACM Symp. on Applied Computing.
ACM Press, 2004, pp. 1242–1247.*

Spiral graph

*http://www.informatik.uni-rostock.de/~ct/pub_files/Aigner08TimeVis.pdf
Visual Methods for Analyzing Time-Oriented Data
W.Aigner, S.Miksch, W.Müller, H.Schumann, and C.Tominski
IEEE Transactions on Visualization and Computer Graphics, Vol. 14, No. 1, 2008.*

[extracts of original legend] Visual representations of a time-oriented dataset describing the number of influenza cases over a period of three years – left: SpiralGraph encoding 27 days per cycle (improperly parameterized – periodic pattern is hard to see right: SpiralGraph encoding 28 days per cycle (properly parameterized – periodic pattern stands out).
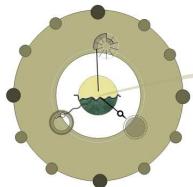
Timelines (etc.)

Address http://www.impactvisuel.net/wp-content/uploads/2009/01/bubblechart_timeline_75pct.png
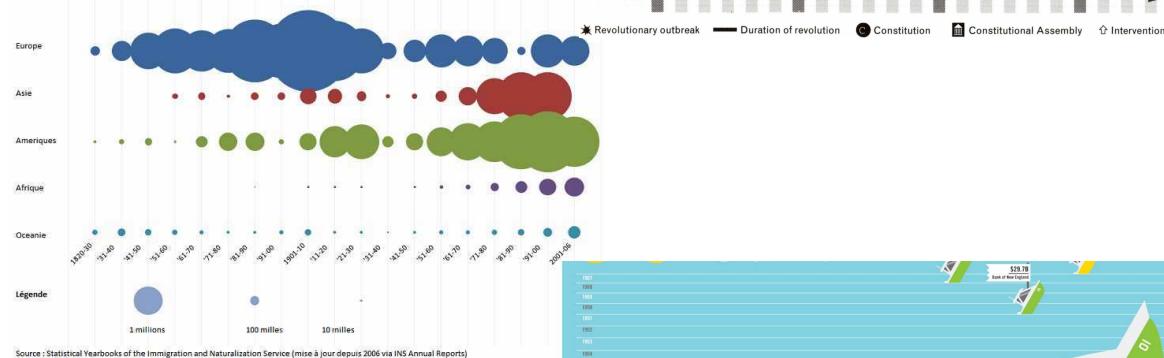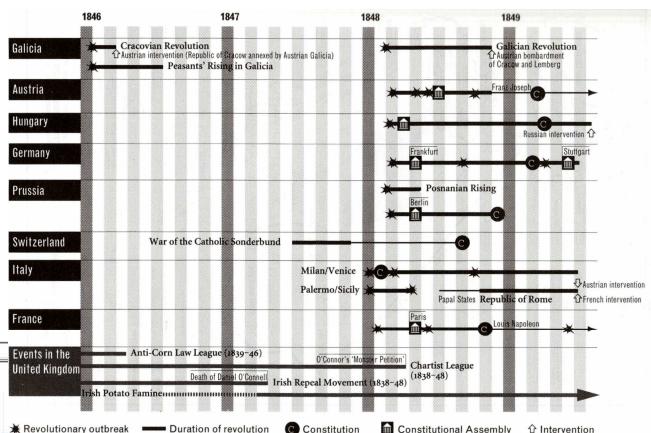
Bubblechart timeline

www.impactvisuel.net

The Bankruptcy timechart

*Data : BankruptcyData.com
[in] awesome.goodmagazine.com*
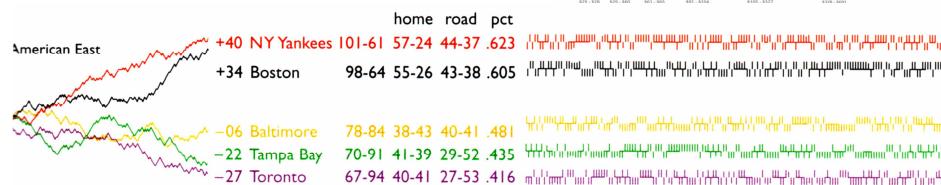
Sparklines

*E.R Tufte Beautiful evidence
Graphics Press 2006*

Timelines (etc.)

Bumps chart

T. Granger 2003
In E.R Tufte Beautiful evidence
Graphics Press 2006

Diagrammes hélicoïdaux

Albums de statistique graphique, 1884
In Des chiffres et des cartes , G.Palsky   CTHS 1996

BBC time chart

http://www.bbc.co.uk/history/

PeopleGarden

A PeopleGarden showing messages from a
message board with 1200 postings over
a 2-month period. Height of flower denotes
amount of time a user has been at the board.

*http://smg.media.mit.edu/papers/Xiong/pgarden_
uist99.pdf*
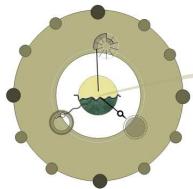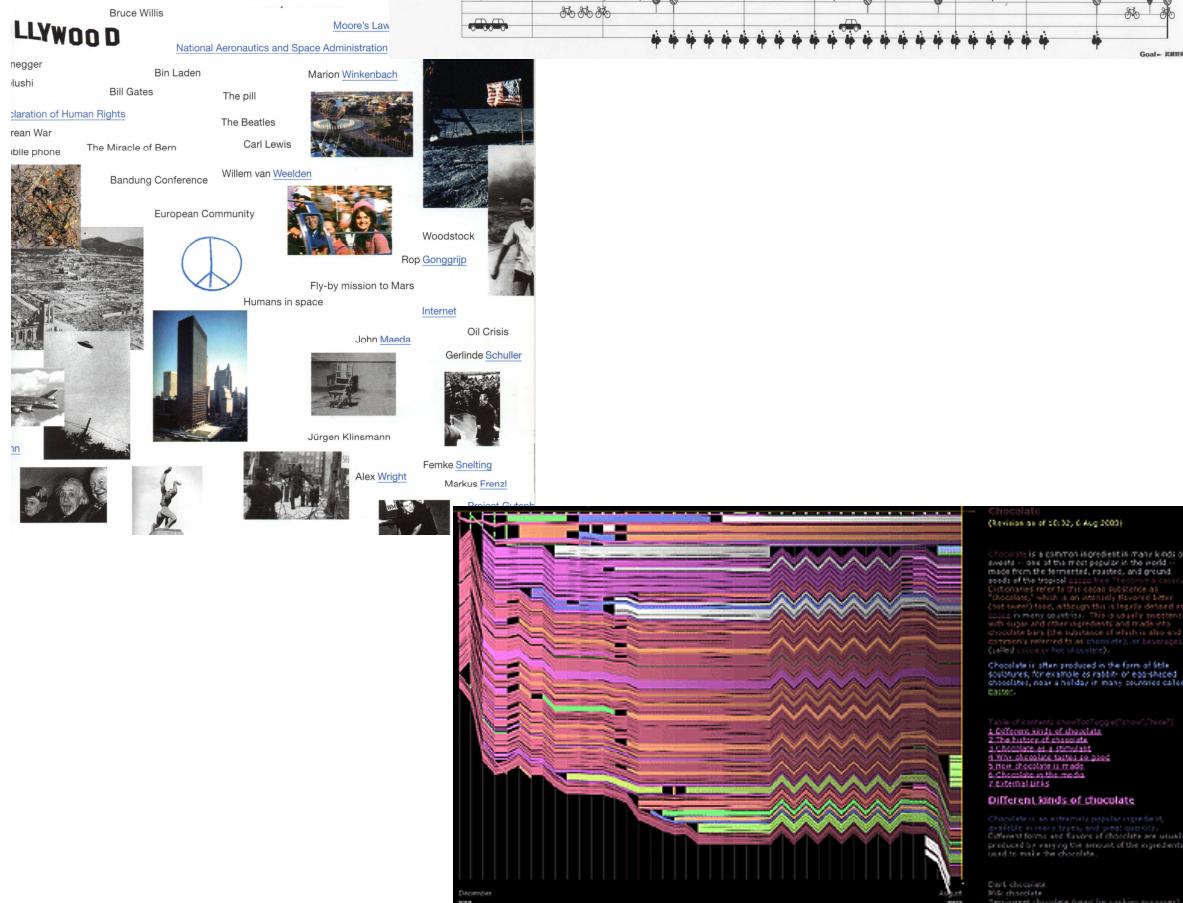
Figure 8. A PeopleGarden showing messages from a message board with 1200 postings over
a 2-month period. Height of flower denotes amount of time a user has been at the board.

Timelines (etc.)

Home to school surrounds diagram

A.Yabuuchi
Informational diagrams Pie books 2009 p215

Memory timeline

In G.Schuller designing
universal knowledge
Lars Müller publishers 2008

History flow

The colorful history flow diagrams take a lengthy edit history and turn it into a picture. The image shows the history of the Wikipedia article on chocolate.

http://www.bewitched.com/historyflow.html
Fernanda Viégas Martin Wattenberg