

# Digital Poetics

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Poetics: how the elements and structures of language produce knowledge/experience

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Digital: numerical, distinct, discrete elements and structures—as opposed to continuous analog structures.

# Digital Poetics

Production of Digital Knowledge

Forms of Reading

Forms of Visual Language

Visual Epistemology

Data Humanism

Metaphor

Language of Interface

Reading and Interface

Visual assets of interface

Storytelling

Data Visualization

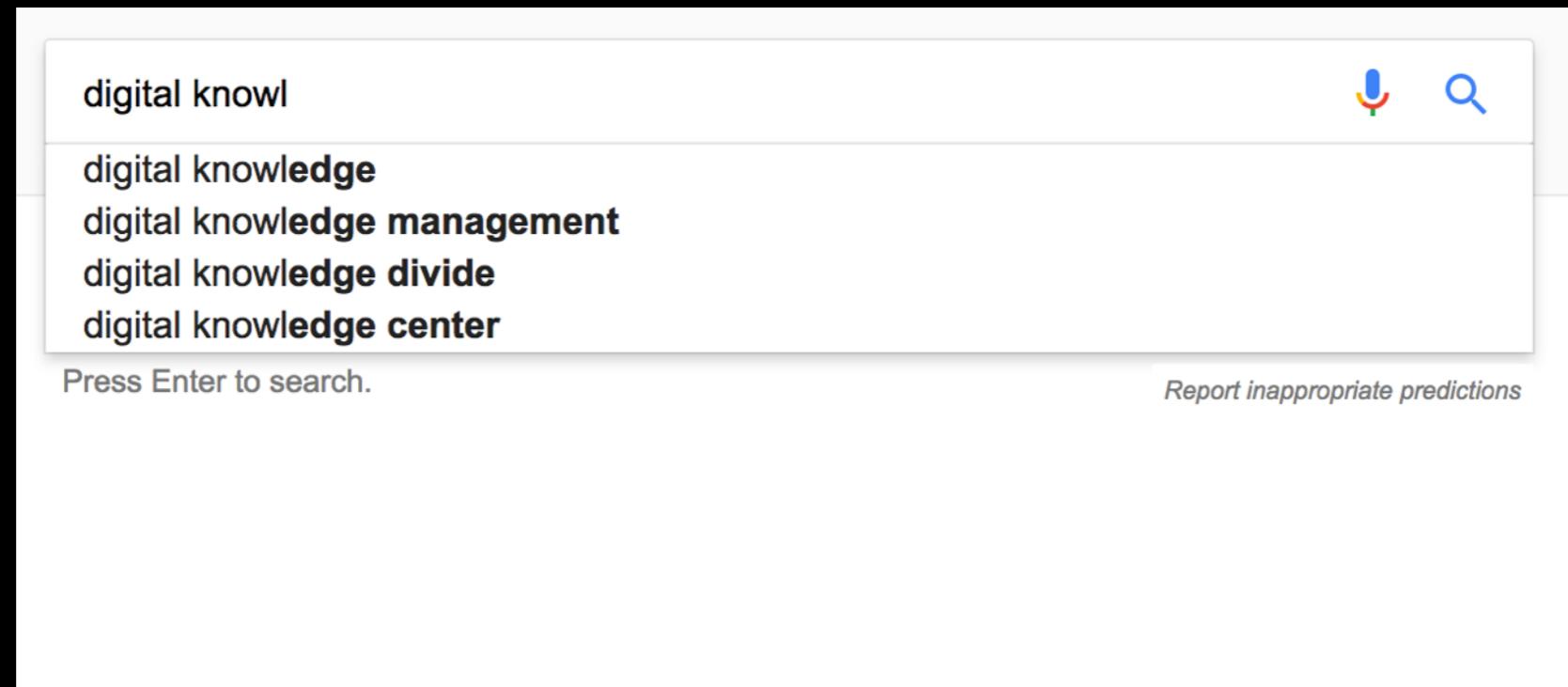
Data Journalism

# Digital Poetics: Production of Digital Knowledge

**data = information      units of digital knowledge**

**data = measurements      a structured series of measurements**

# Digital Poetics: Production of Digital Knowledge



THE QUERY

# Digital Poetics: Production of Digital Knowledge

Five Step Process

1. Reading / Research
2. Organizing / Taxonomies
3. Building / Data Structures
4. Searching / Aggregating
5. Displaying / Generating Knowledge

Measurements —> Meaning

# Digital Poetics: Forms of Reading

As long as the book had to take care of all serial data flows, however, words trembled with sensuality and memory. All the passion of **reading consisted of hallucinating a meaning between letters and lines**: the visible or audible world of romantic poetry.

Friedrich A. Kittler, Gramophone, Film, Typewriter, 1986

# Digital Poetics: Forms of Reading

## Bright Star, Would I Were Stedfast

By John Keats

Bright star, | would I | were sted| fast as | thou art---

A

Not in | lone splen| dor hung | aloft | the night,

B

And watch | ing, with | eter| nal lids | apart,

A

Like na | ture's pa| tient, sleep | less Er| emite,

B

The mo | ving wa | ters at | their priest| like task

C

Of pure | ablu | tion round | earth's hu| man shores,

D

Or ga| zing on | the new | soft-fal| len mask

C

Of snow | upon | the moun| tains and | the moors;

D

No---yet | still sted| fast, still | unchange| able,

E

Pillow'd | upon | my fair | love's ripe| ning breast,

F

To feel | for e| ver its | soft swell| and fall,

E

Awake | for e| ver in | a sweet | unrest,

F

Still, still | to hear | her ten| der-ta| ken breath,

G

And so | live e| ver---or | else swoon | in death.

G

Structure for human memory

# Digital Poetics: Forms of Reading

and the reader transforms the data  
into images...

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Structure for human memory

# Digital Poetics: Forms of Reading

and the reader transforms the data  
into images...

to “visualize”

# Digital Poetics: Forms of Reading

and the reader transforms the data  
into images...

to “visualize”

*origin:* Samuel Taylor Coleridge  
“for the images are at least consistent, and it was  
the intention of the writers to mark the seasons by this  
allegory of visualized puns.” —*Biographia Literaria*

# Digital Poetics: Forms of Reading

Will the power of evoking images of things  
that are *not there* continue to develop  
in a human race increasingly inundated  
by a flood of prefabricated images?

—Italo Calvino, *Visibility*, 1986

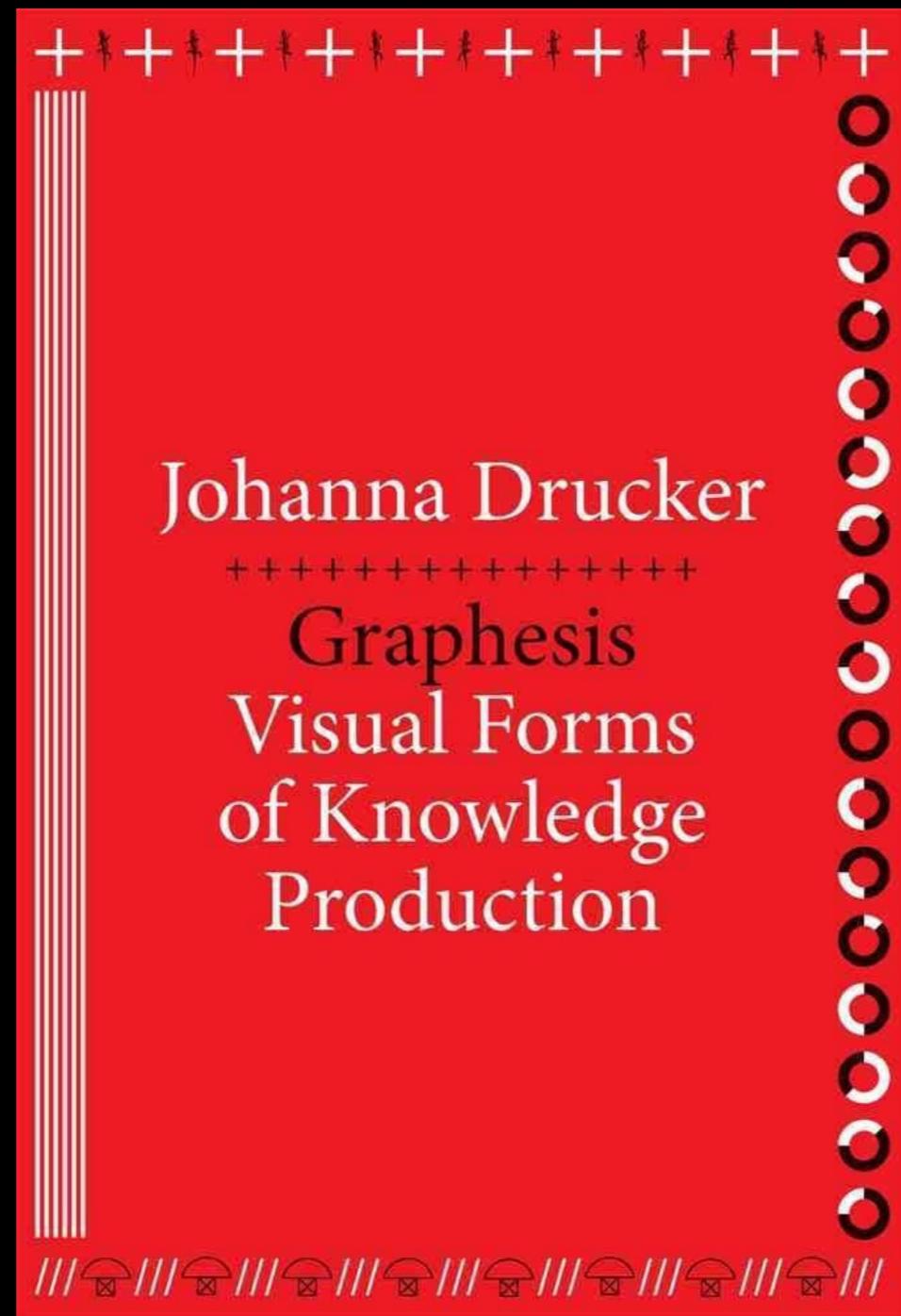
# Digital Poetics: Forms of Reading

How do we read visual language?

How do we read now?

What is the digital imagination?

# Digital Poetics: Visual Language



# Languages of Form

Visual codes are notoriously unstable, too imprecise to communicate knowledge with certainty...Unlike language, which has a grammar, or mathematics, which operates on explicit protocols, visual images are not governed by principles in which a finite set of components is combined in accord with stable, fixed, and finite rules.

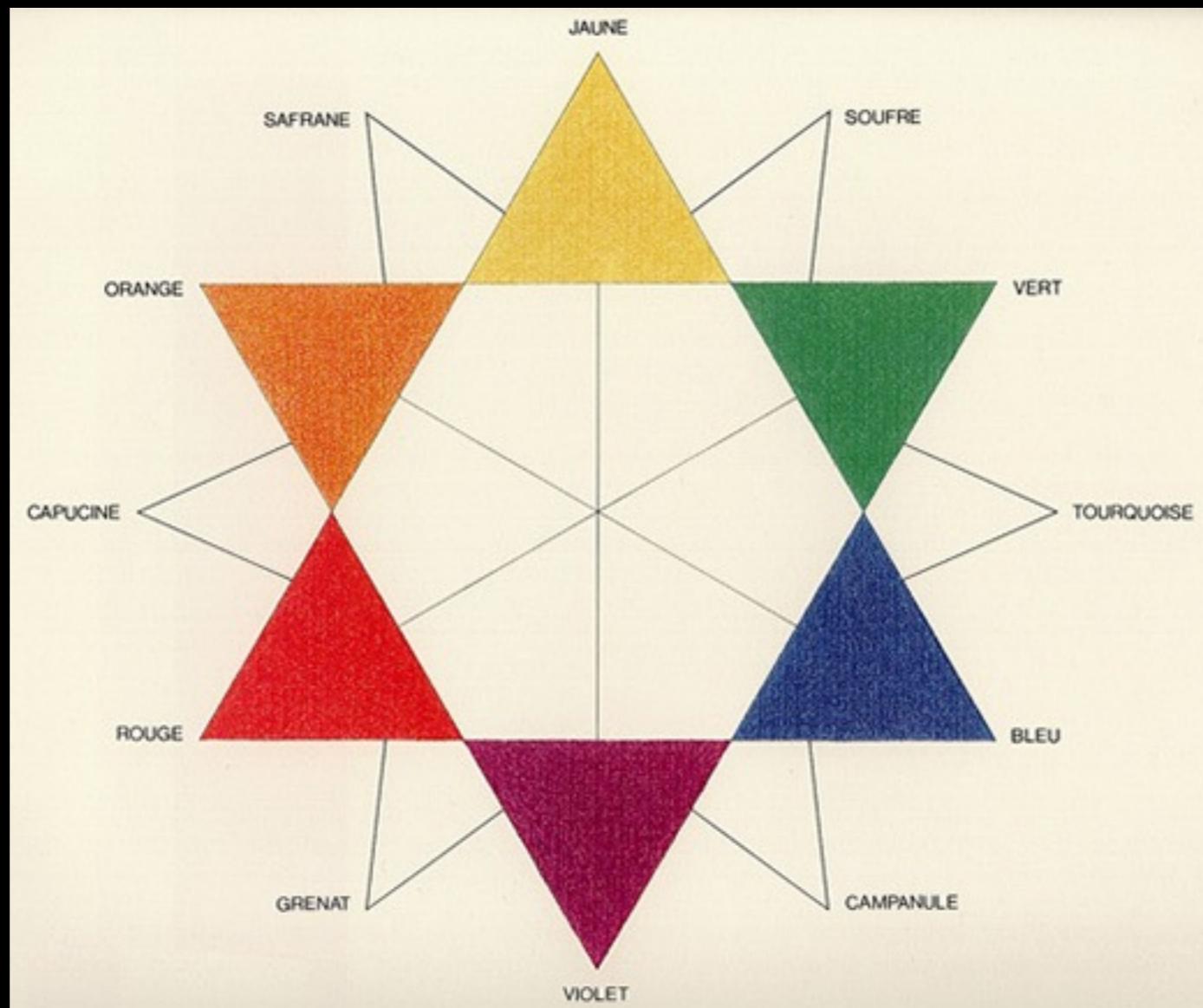
—Drucker pp. 23-24

# The Grammar of Ornament

Owen Jones, 1856

Imperial impulse  
inspirational journey  
fetishistic/reifying  
knowledge of peoples  
machine reproduction  
Power of spatial arrangement  
and color palette/editing

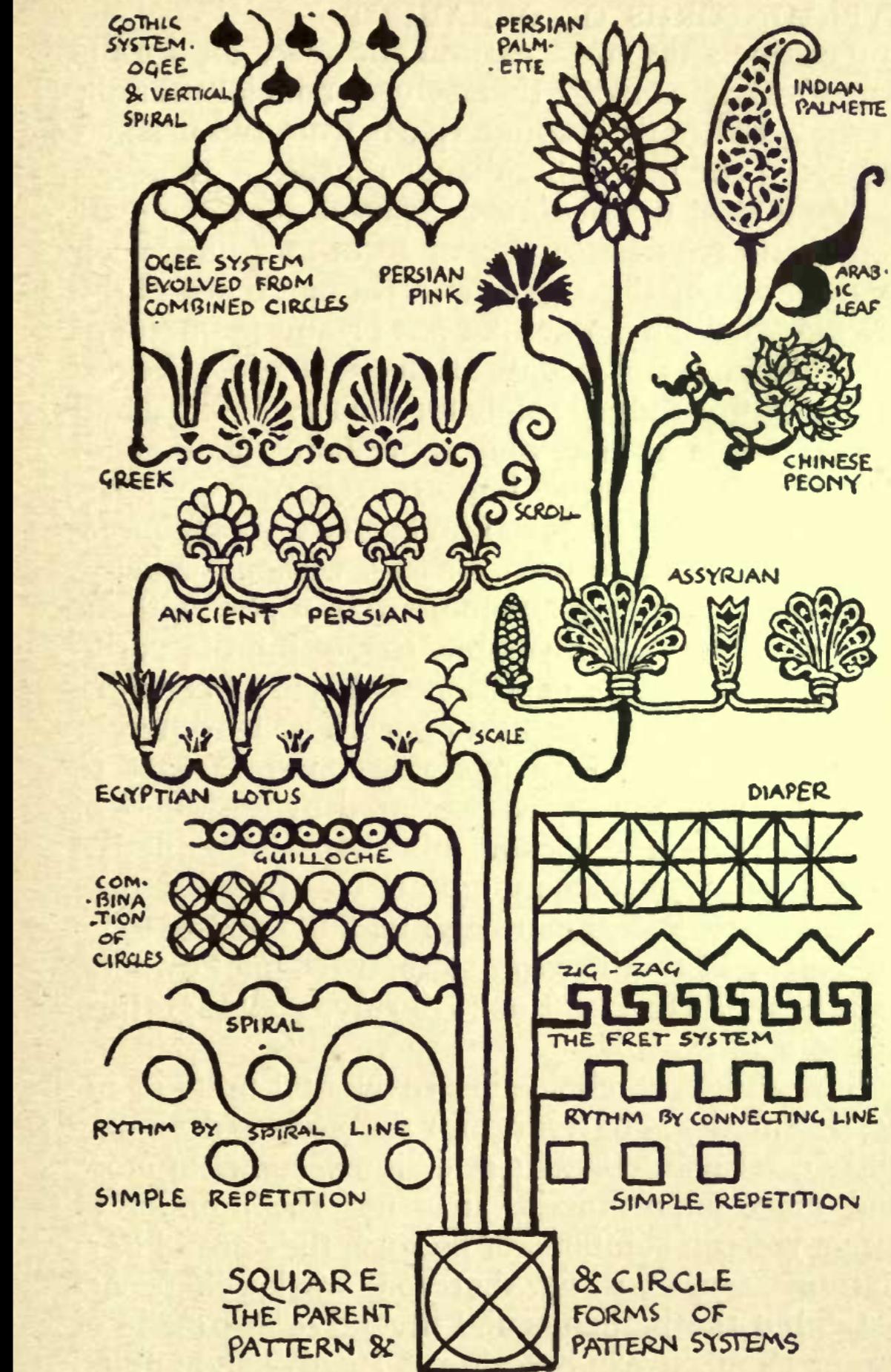




Charles Blanc, Grammaire des arts décoratifs 1867

# Line and Form

Walter Crane, 1900



TREE OF TYPICAL PATTERN FORMS, UNITS, AND SYSTEMS.

# point and line to plane

Kandinsky, 1926

Point in language?  
Music/Silence...



# point and line to plane

Kandinsky, 1926

Dynamics of geometric expression

relationship to one another. Here no boundaries can be fixed and the realm of points is unlimited (Fig. 3).



Fig. 3  
Examples of point forms.

Therefore, depending on the size and form, the basic sound of the point is variable. This variability should, nevertheless, be understood in no other sense than as a relative innermost colouration of the basic inner nature, which yet rings its pure tone.

Basic Sound

# point and line to plane

Kandinsky, 1926

Point in language?

We have here various cases and possibilities.

The simplest and briefest is that of the centrally-placed point—of the point lying in the center of a surface which is square in shape (Fig. 4).

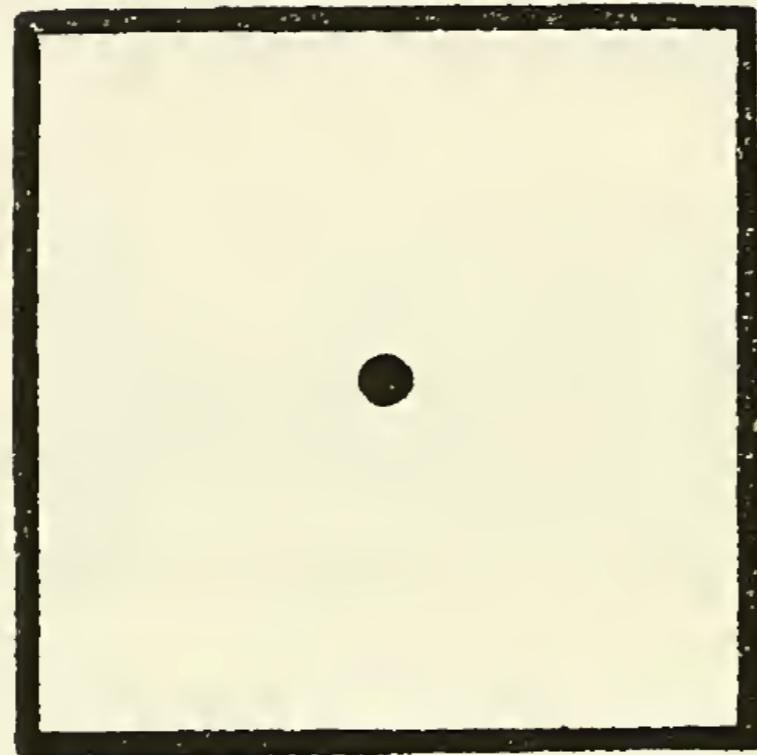
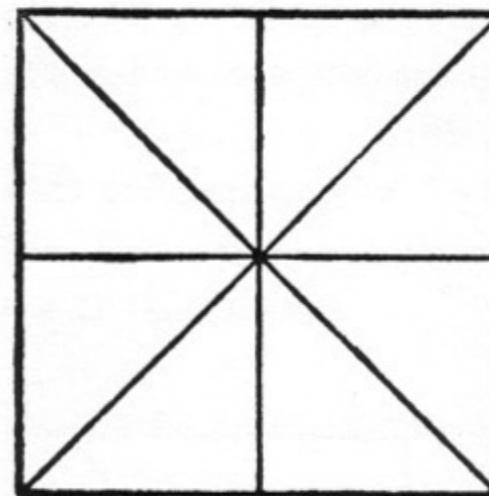
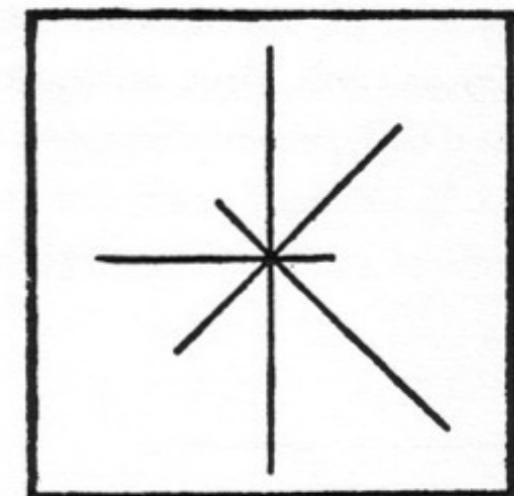


Fig. 4

# point and line to plane

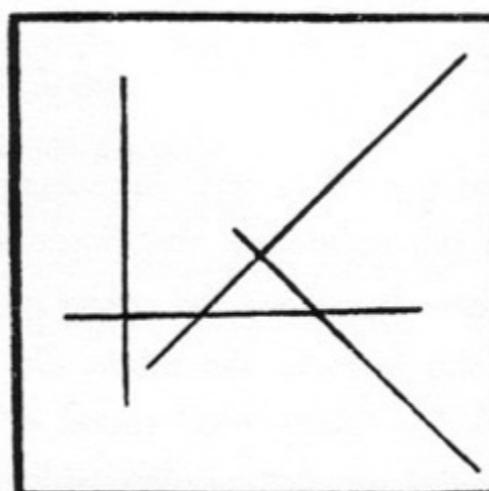


**Fig. 95**  
Silent lyric  
of the four elementary lines—  
expression of rigidity.

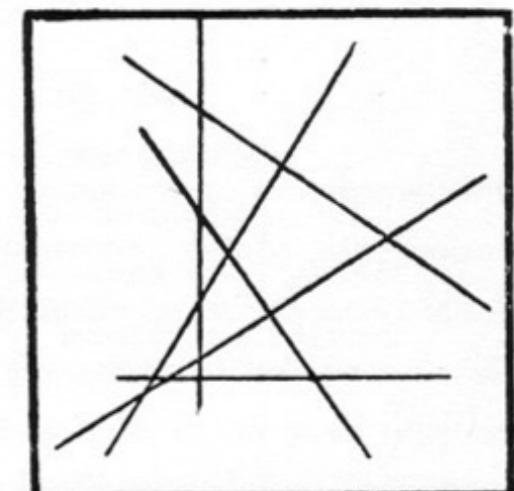


**Fig. 96**  
Dramatization  
of the same elements—  
complex pulsating expression.

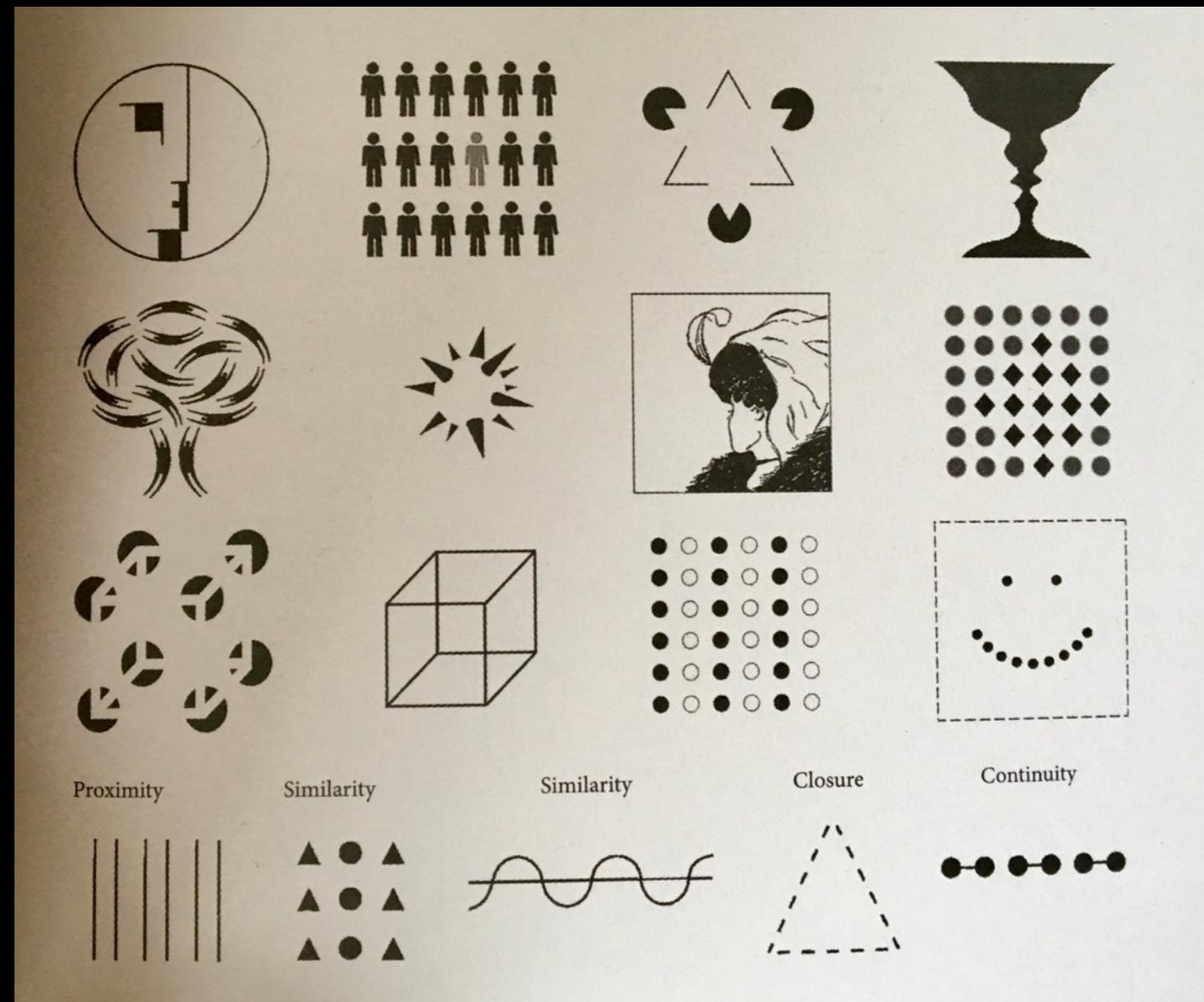
Use of the eccentric:



**Fig. 97**  
Diagonals centered.  
Horizontal-vertical acentric.  
Diagonals in the greatest tension.  
Balanced tensions of the  
horizontal and vertical.



**Fig. 98**  
Everything acentric.  
Diagonals strengthened  
through their repetition.  
Restraint of the dramatic sound  
at the point of contact above.

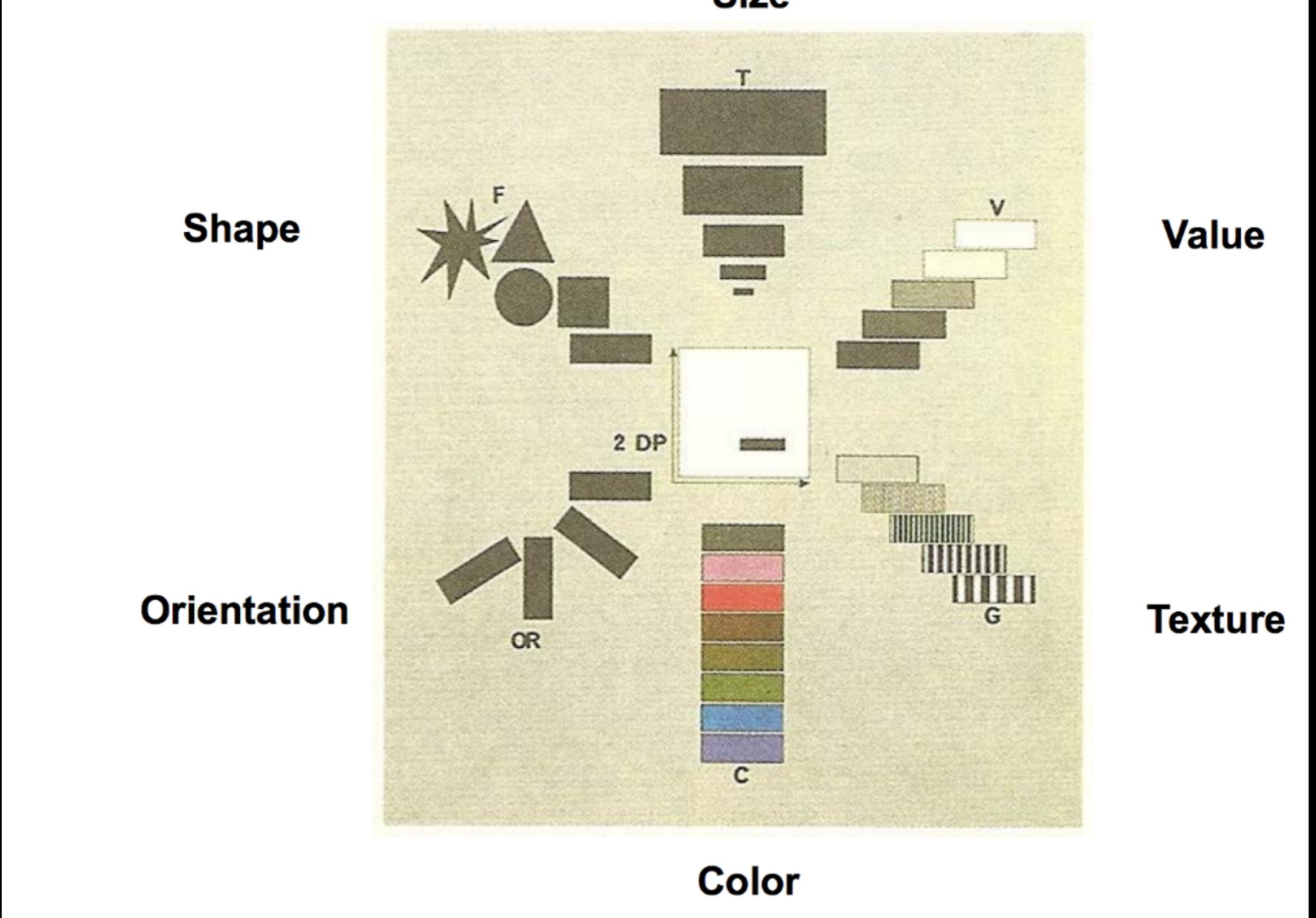


Gestalt Diagrams

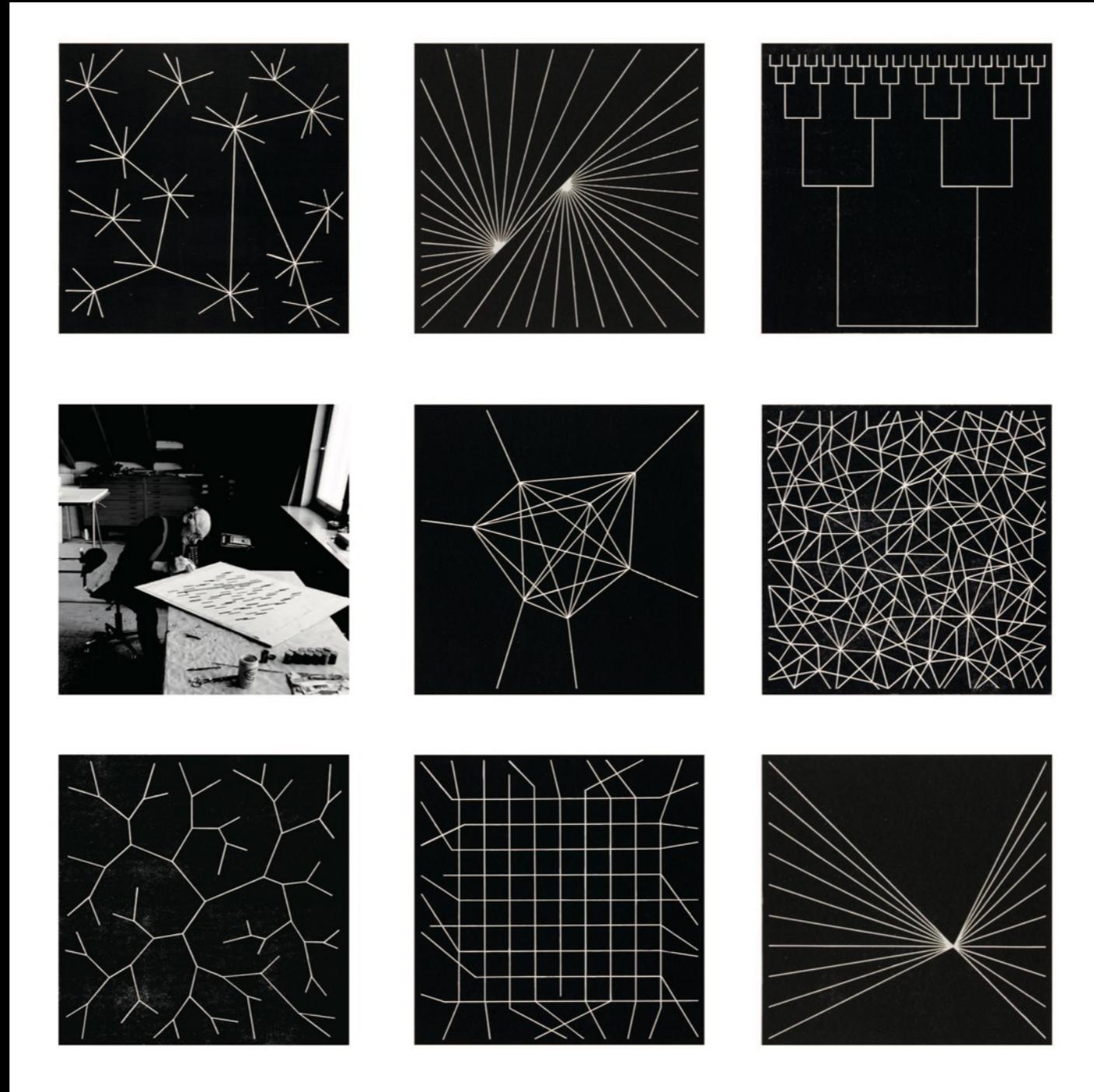
	<i>Points</i>	<i>Lines</i>	<i>Areas</i>	<i>Best to show</i>
<i>Shape</i>		<i>possible, but too weird to show</i>	<i>cartogram</i>	<i>qualitative differences</i>
<i>Size</i>			<i>cartogram</i>	<i>quantitative differences</i>
<i>Color Hue</i>				<i>qualitative differences</i>
<i>Color Value</i>				<i>quantitative differences</i>
<i>Color Intensity</i>				<i>qualitative differences</i>
<i>Texture</i>				<i>qualitative &amp; quantitative differences</i>

Semiology of Graphics and Graphic Variables for use in Cartography  
by Jacques Bertin, 1967

## Retinal Variables

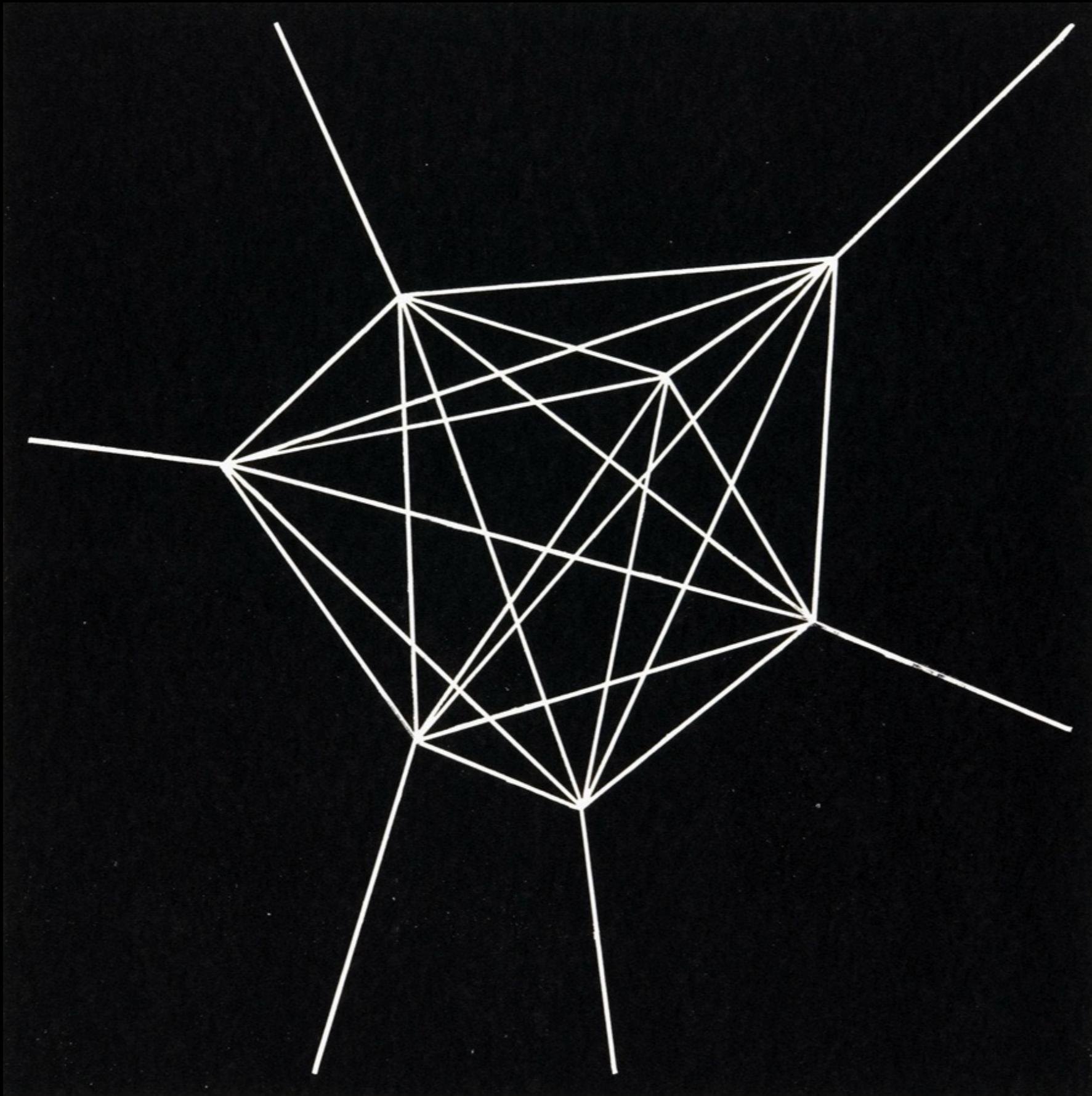


Semiology of Graphics and Graphic Variables for use in Cartography  
by Jacques Bertin, 1967



Anton Stankowski, Visual Presentation of Invisible Process, 1967

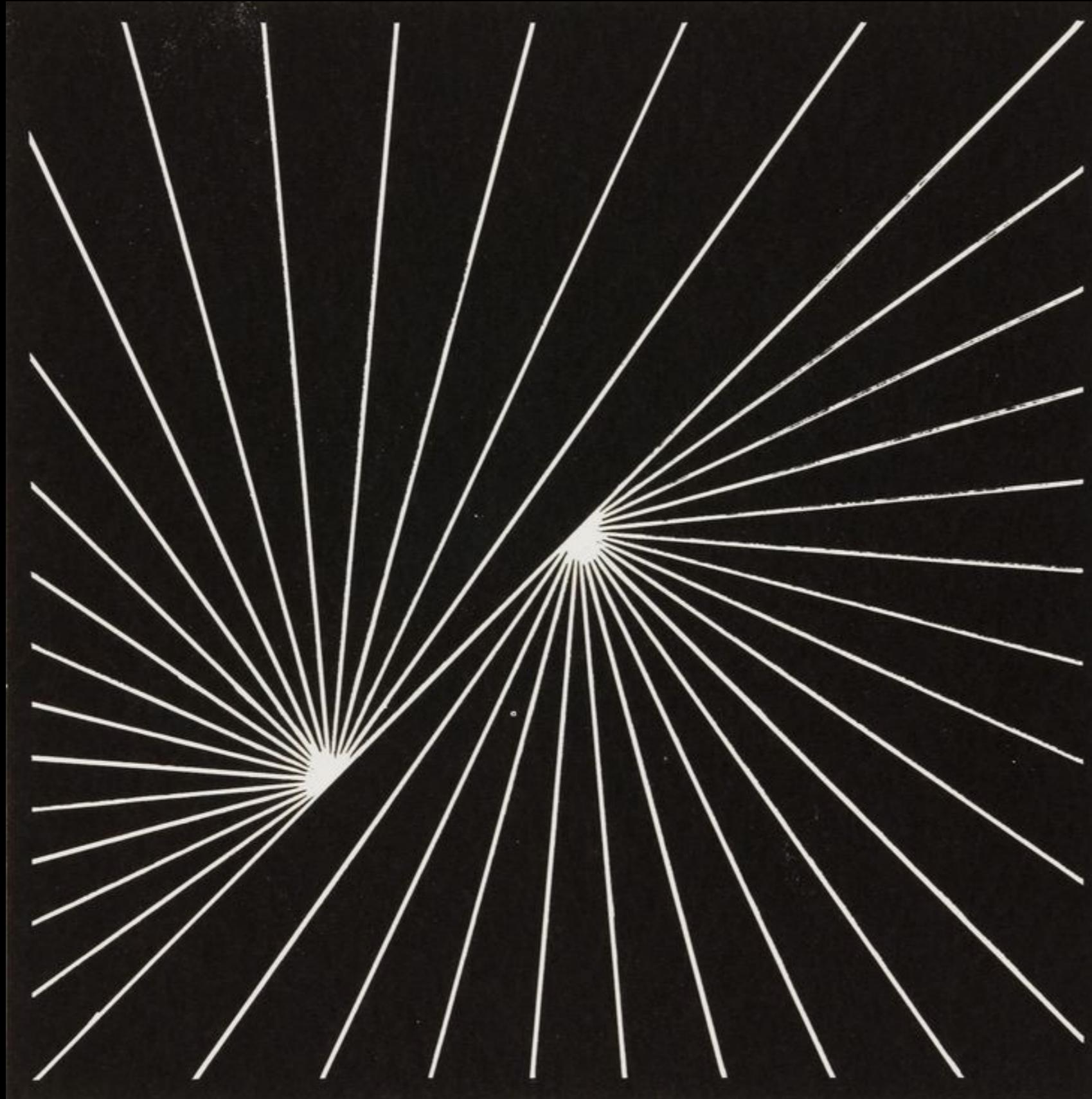
# Visual Presentation of Invisible Processes



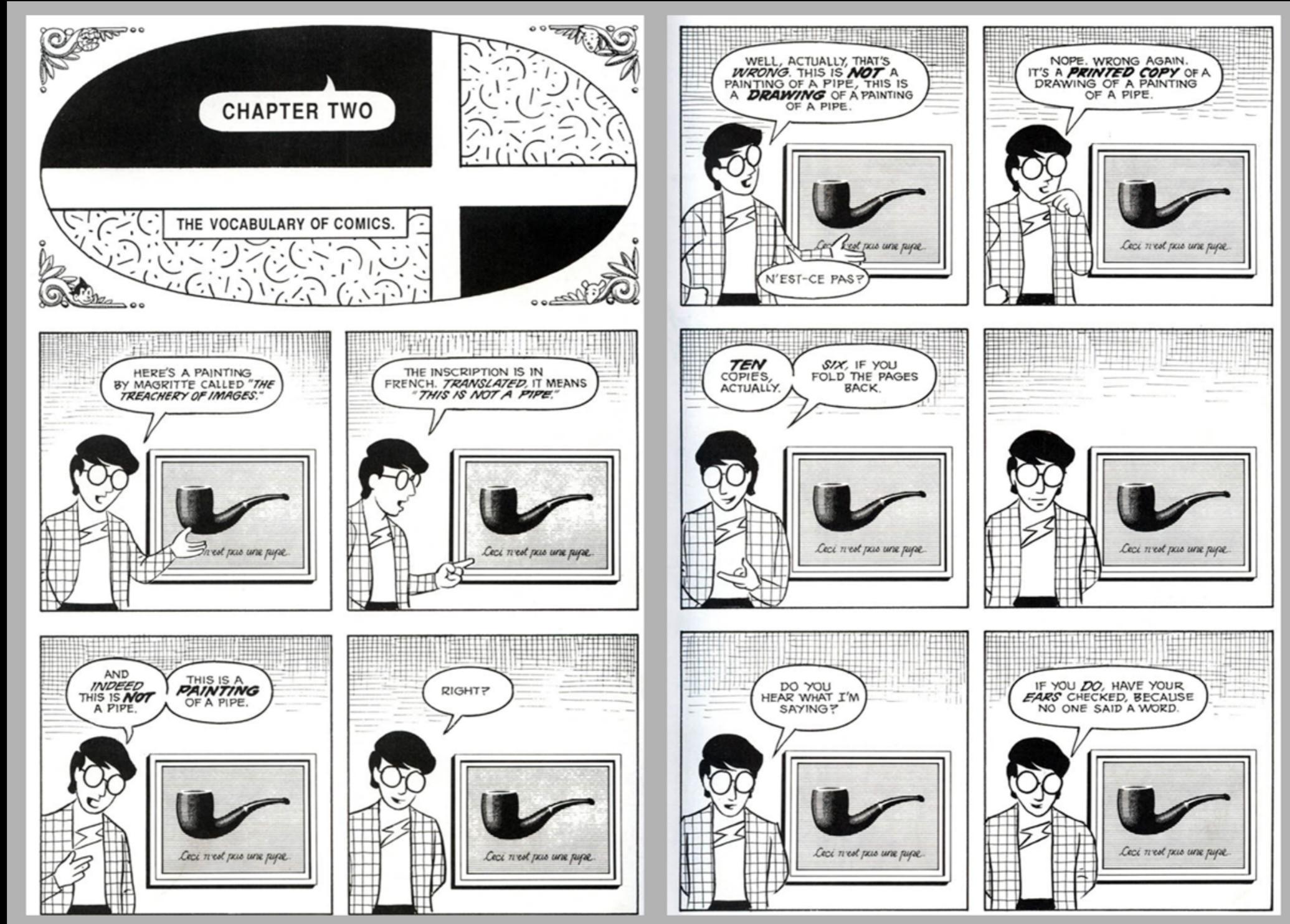
Anton Stankowski, 1967

Linocuts  
Speculative systems  
Algorithmic sensibility  
Imaging Computation  
Easy for Computation

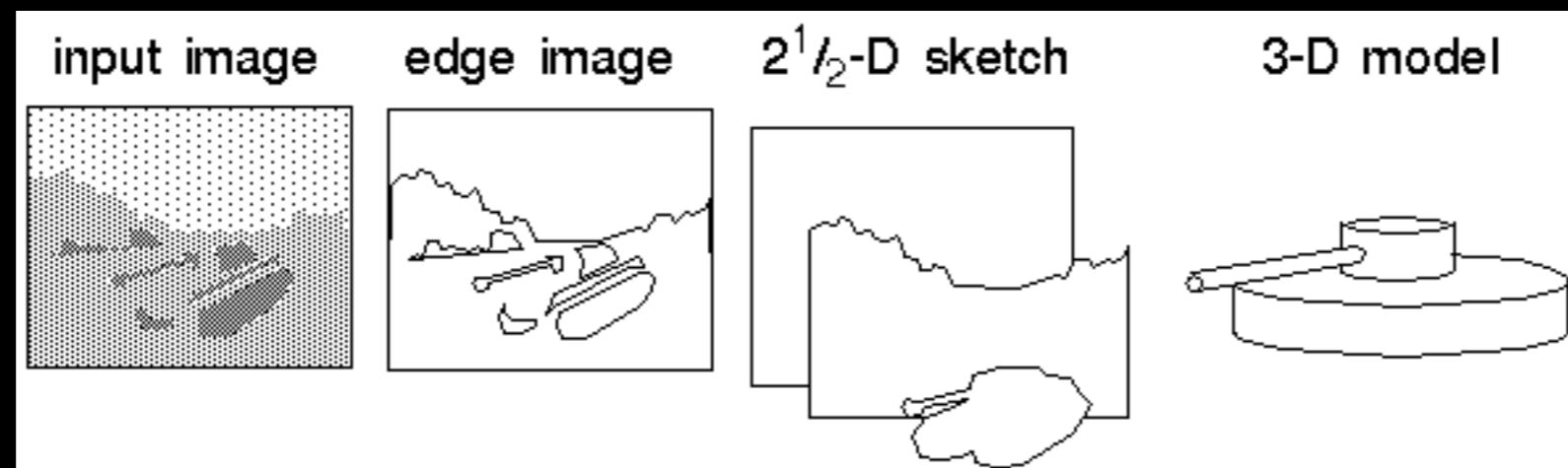
# Visual Presentation of Invisible Processes



Anton Stankowski, 1967



Scott McCloud, Understanding Comics  
(Visual narrative/ like film/ linear)



David Marr, *Vision*, 1982:  
how a computer comes to see/model the world

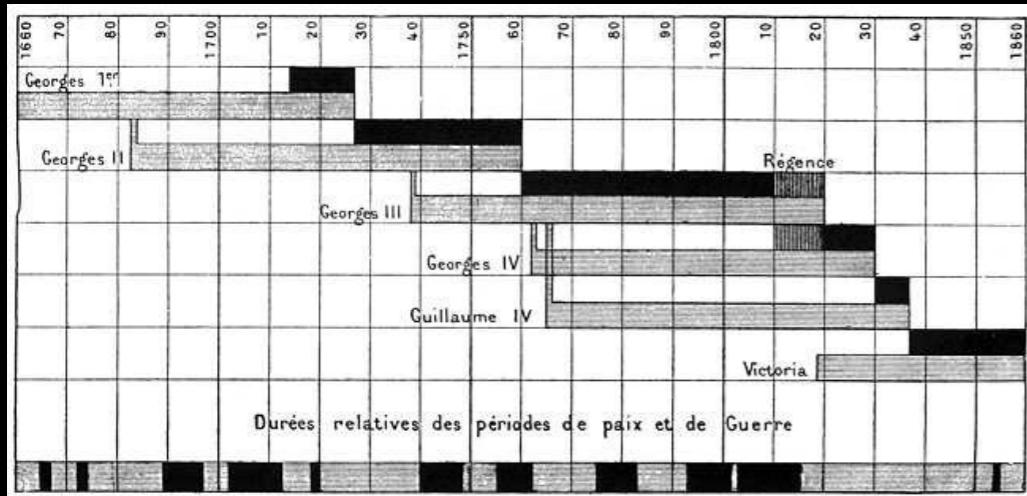
# Digital Poetics: Visual Epistemology

The Construction of Visual Forms of Knowing

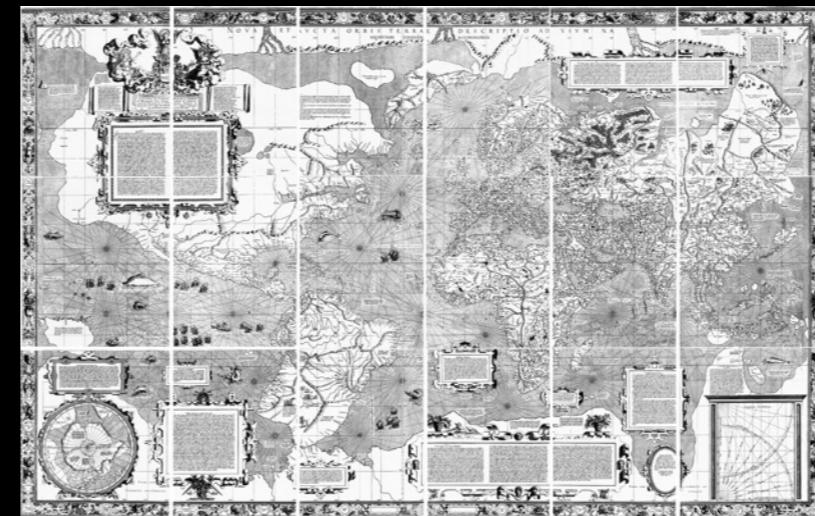
Seeing is Knowing

Mathematical, spatial understanding of the world

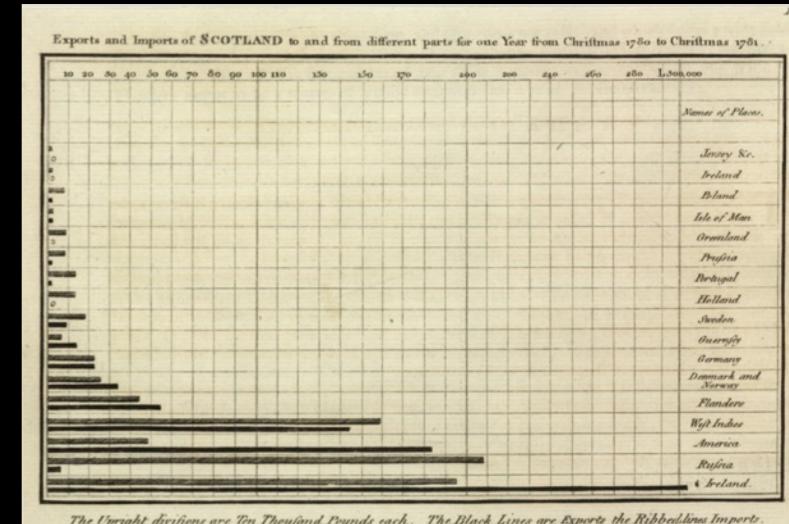
# Forms of visual knowledge



Timekeeping



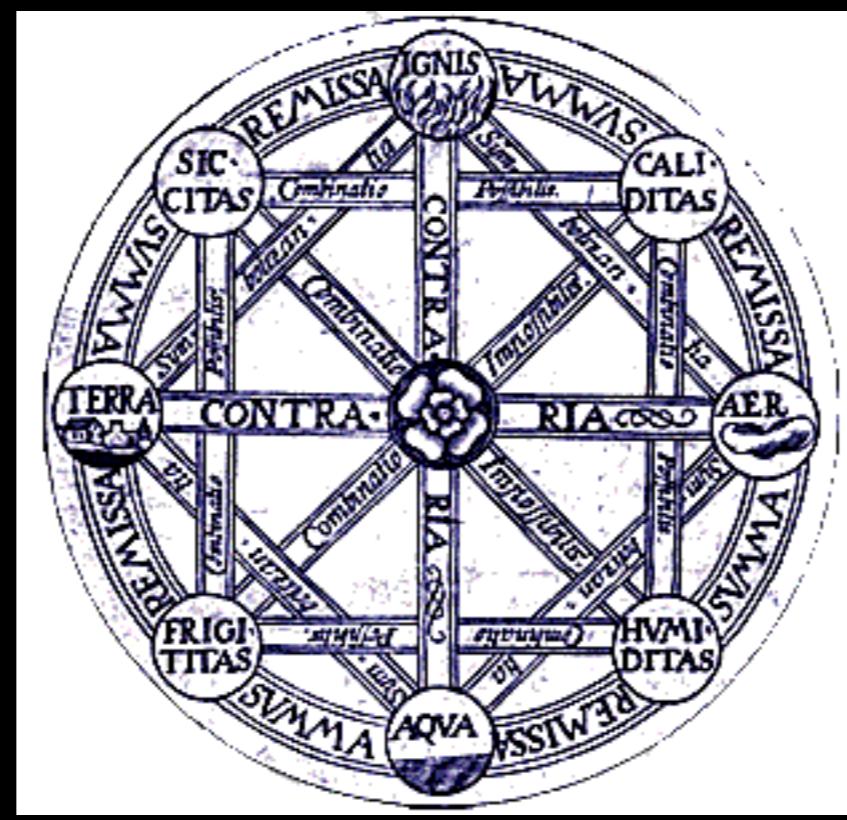
Space-making



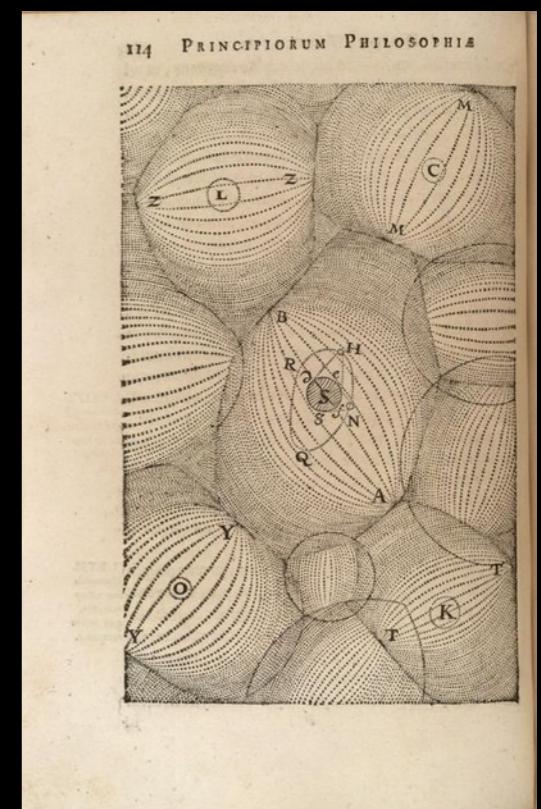
Administration and record-keeping



Trees of knowledge



Knowledge generators



Dynamic systems

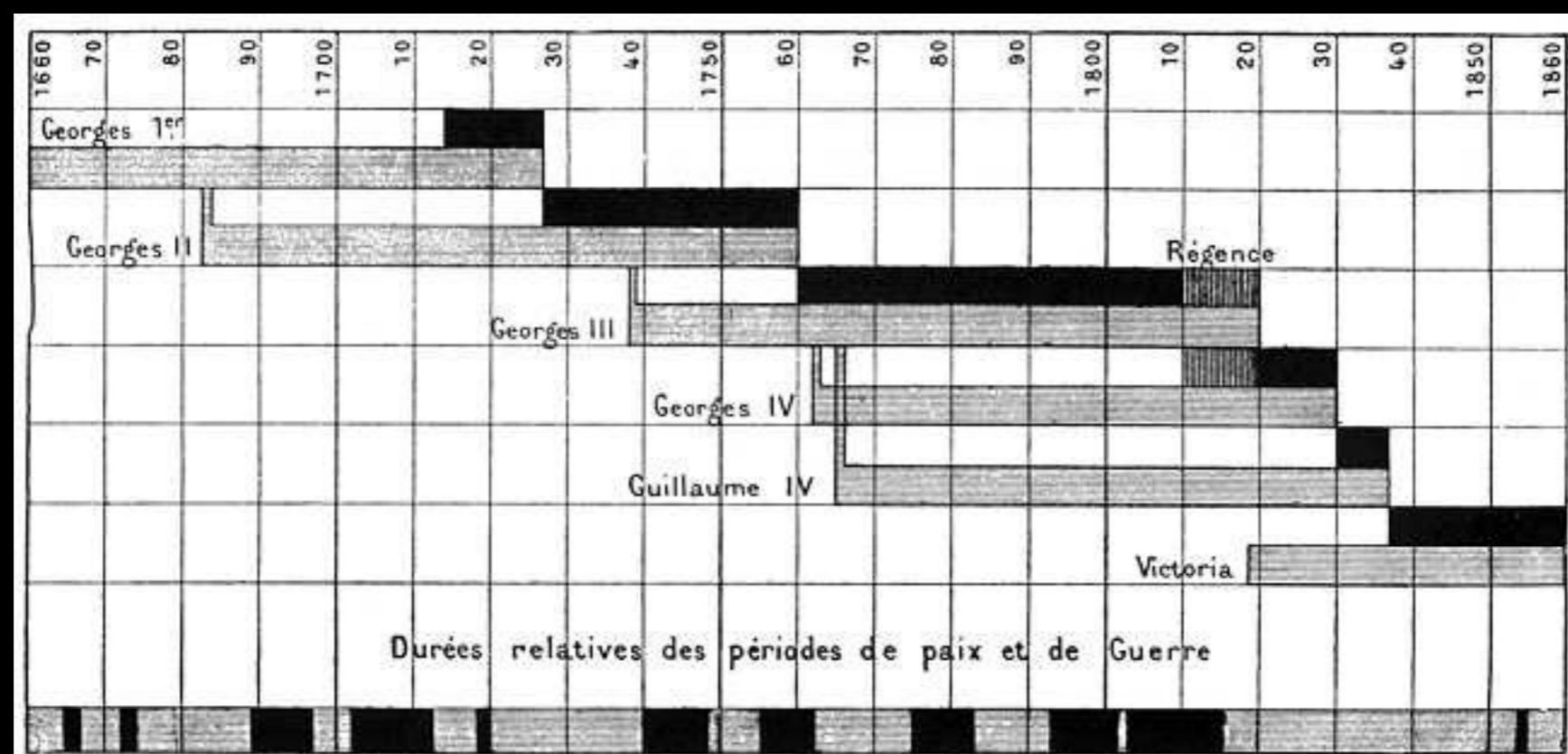
Drucker's taxonomy — where these forms come from, implicit historical aesthetic

# Timekeeping



Babylonian start chart and calendar, 720 BCE

# Timekeeping



Etienne-Jules Marey, Timeline of the reigns  
of the English monarchs, 1885

# Timekeeping

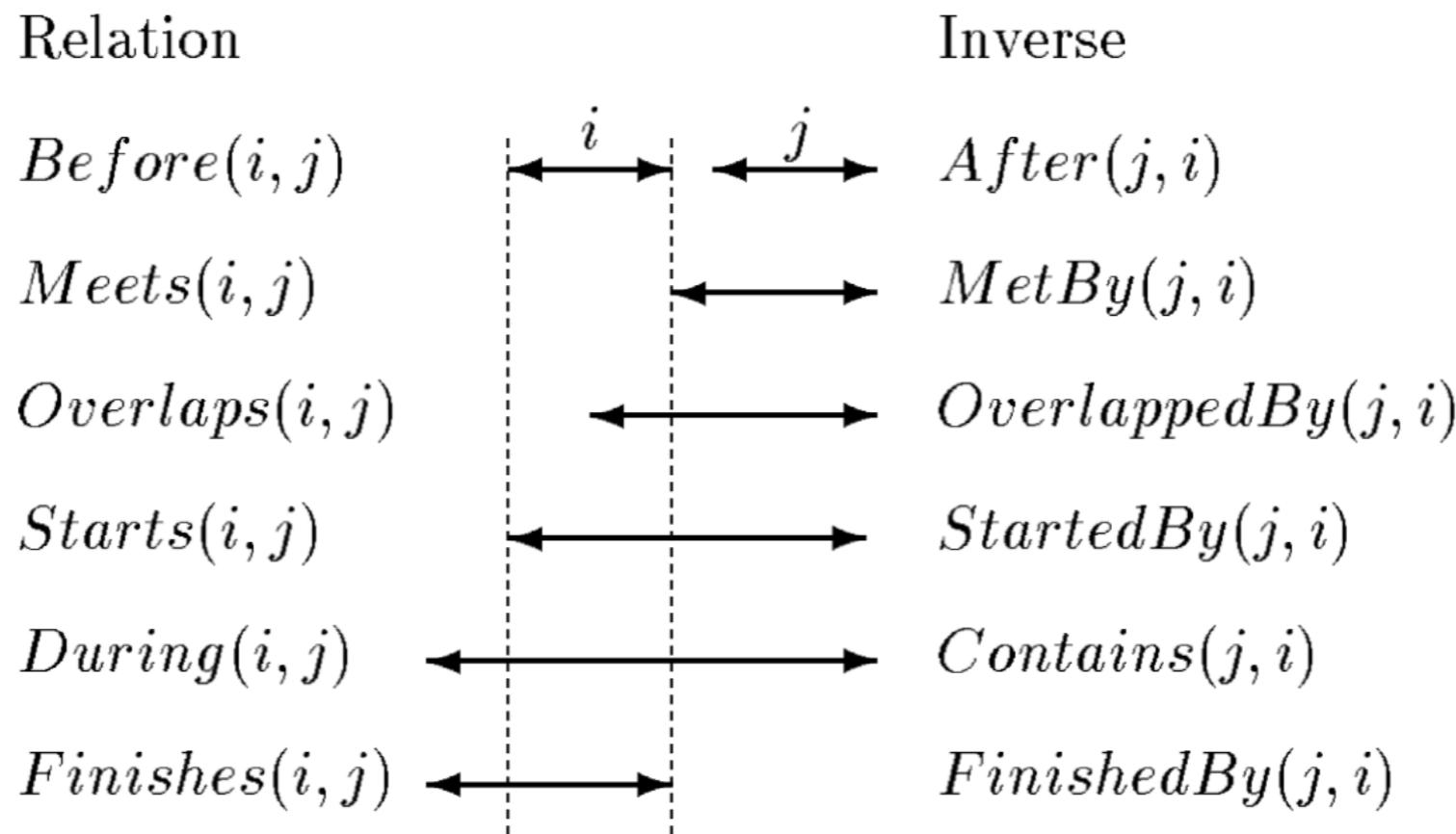
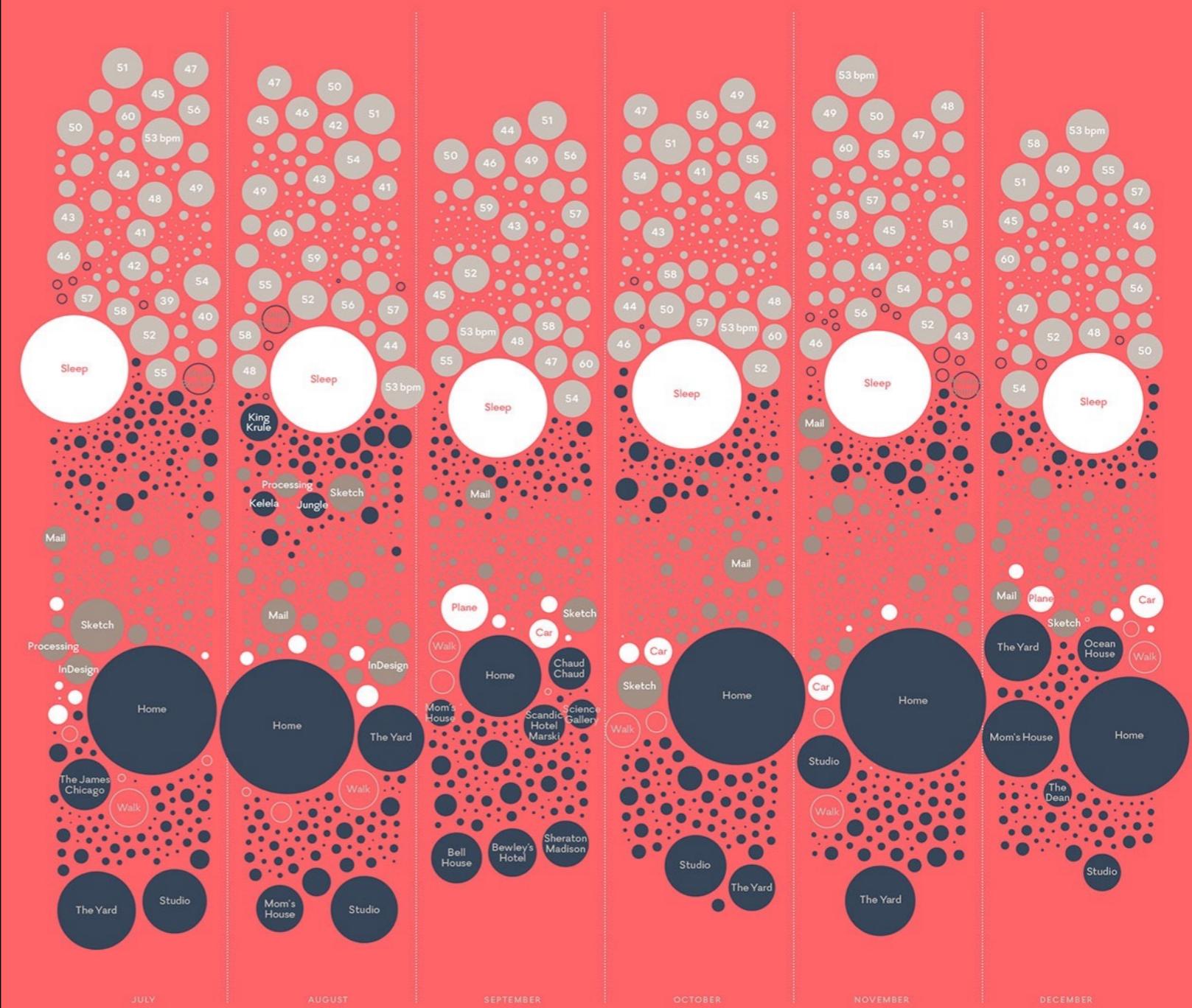


Figure 4: The possible relations between time periods (equality not shown)

# Timekeeping

# 2014



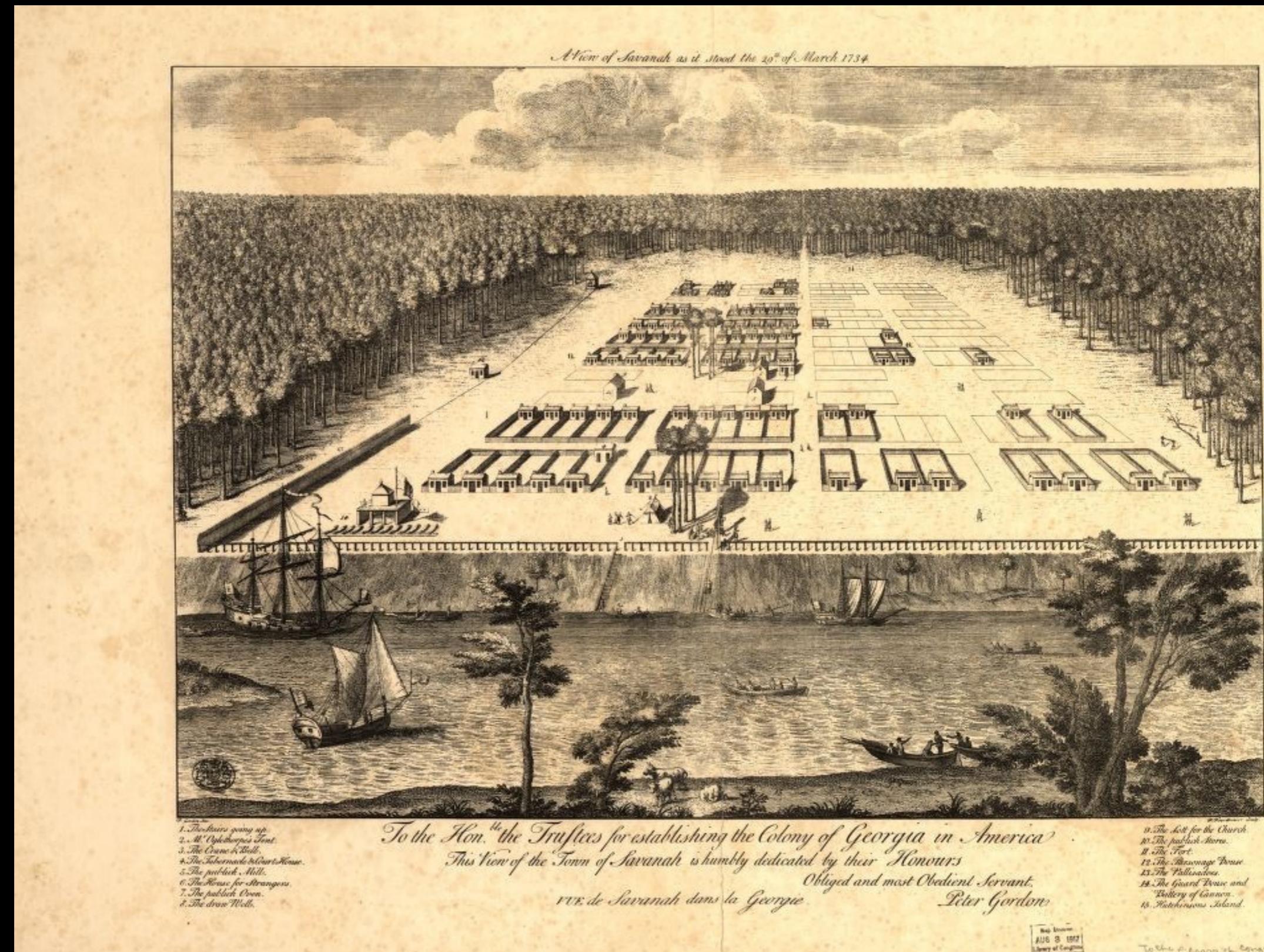
Nicholas Felton  
Annual Report 2014

# Space-making

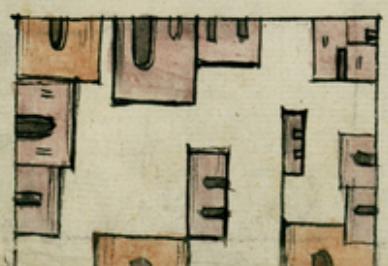
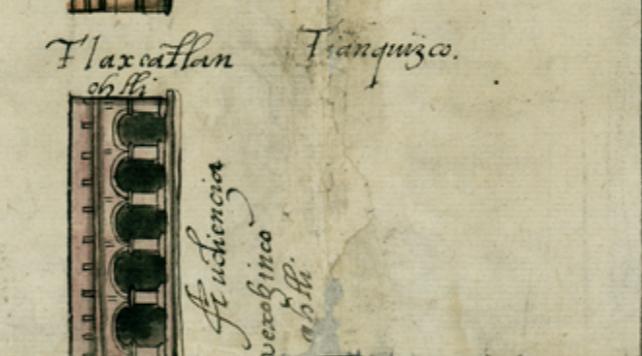
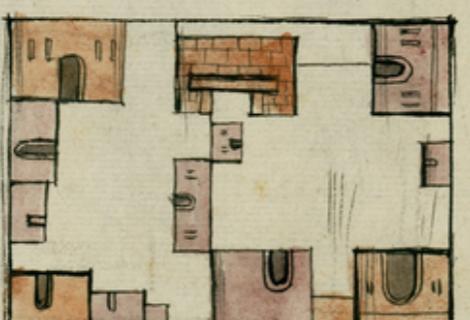
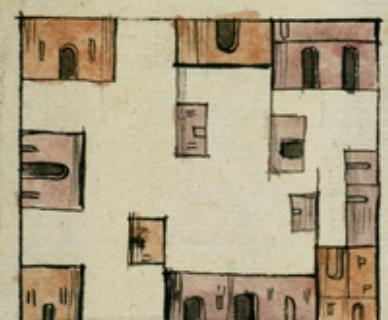
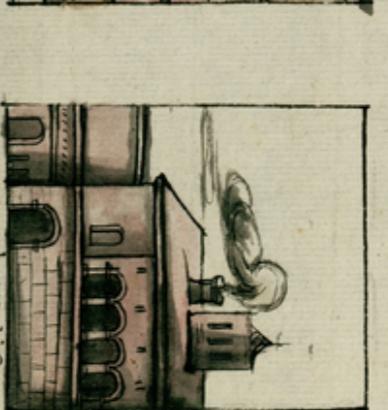
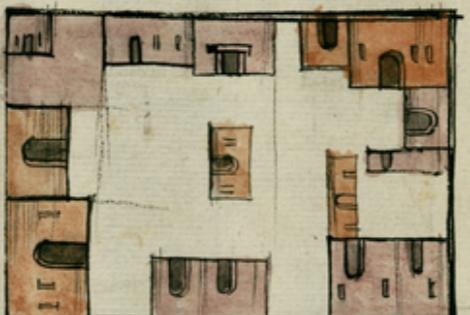
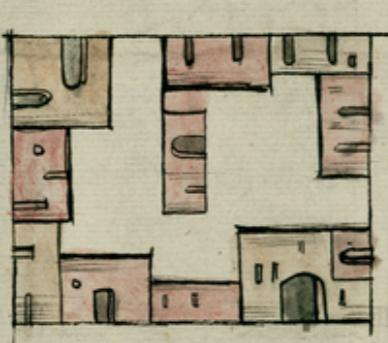
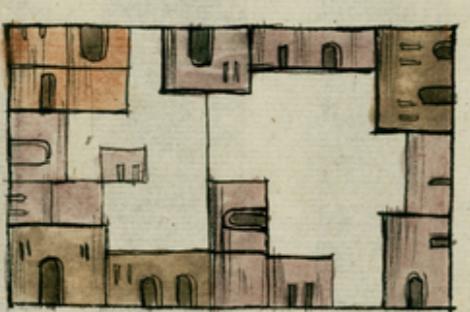
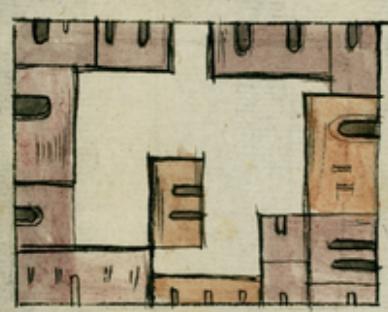
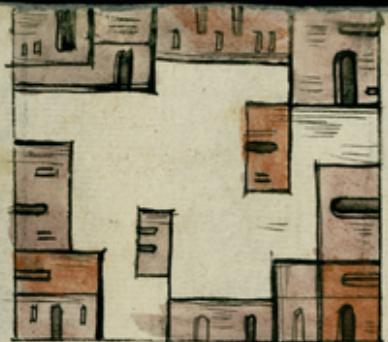


Gerhard Mercator, *World Map*, 1569

Using an  
actual  
map  
(pictorial)

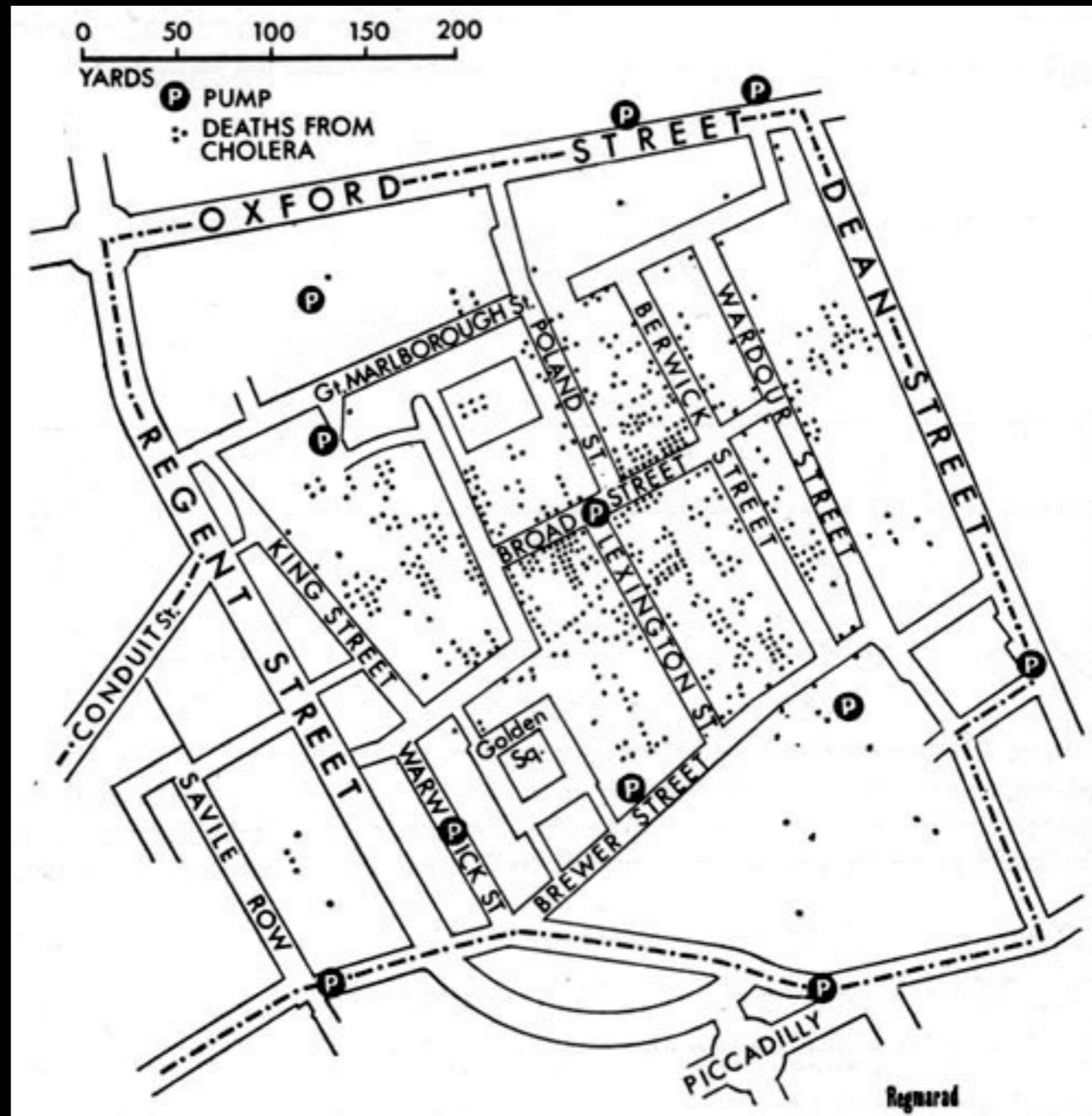


Peter Gordon, A view of Savannah as it stood the 29th of March 1734.



ochoa

# Space-making



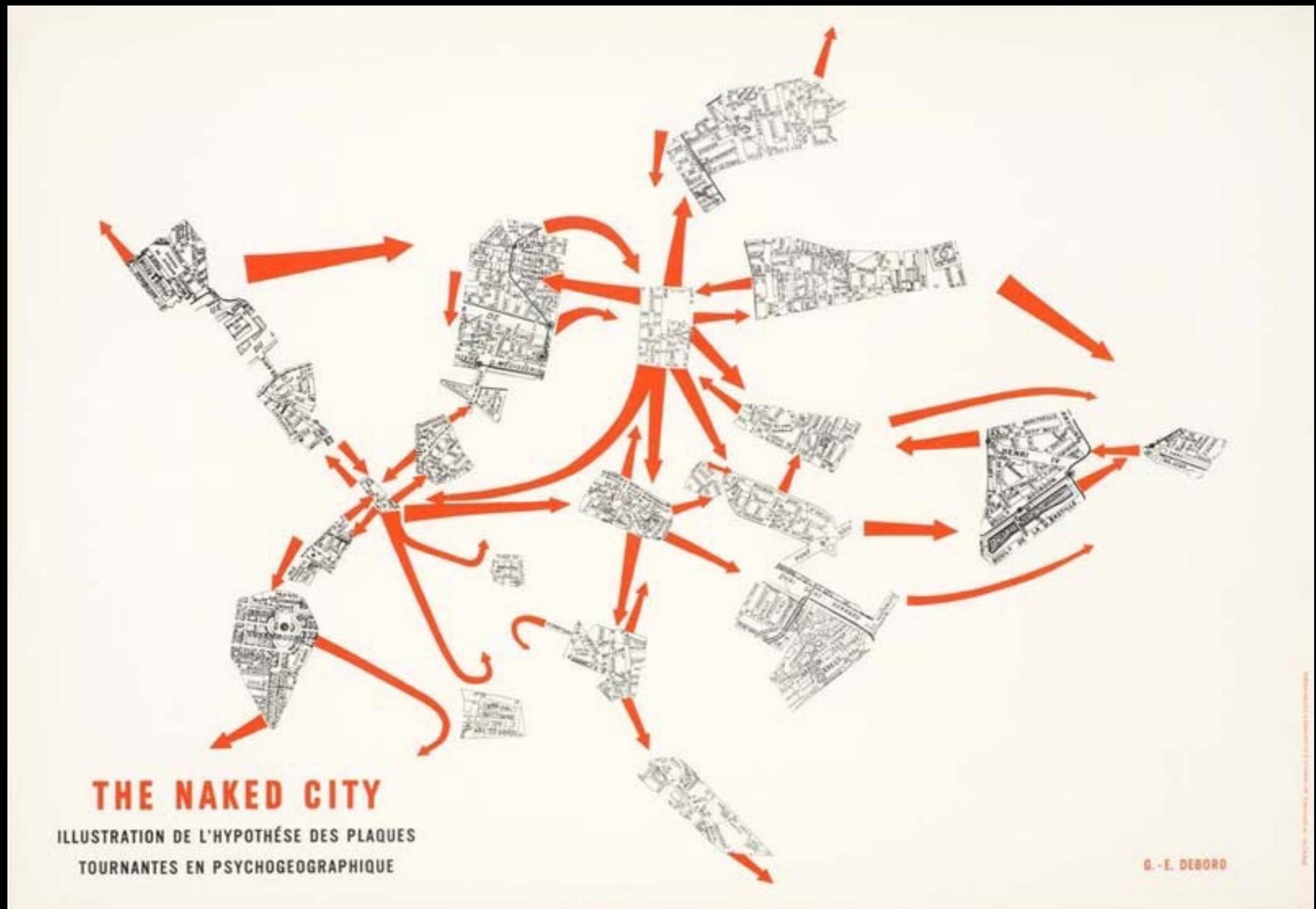
John Snow, 1854 cholera outbreak  
in London's Broad Street region

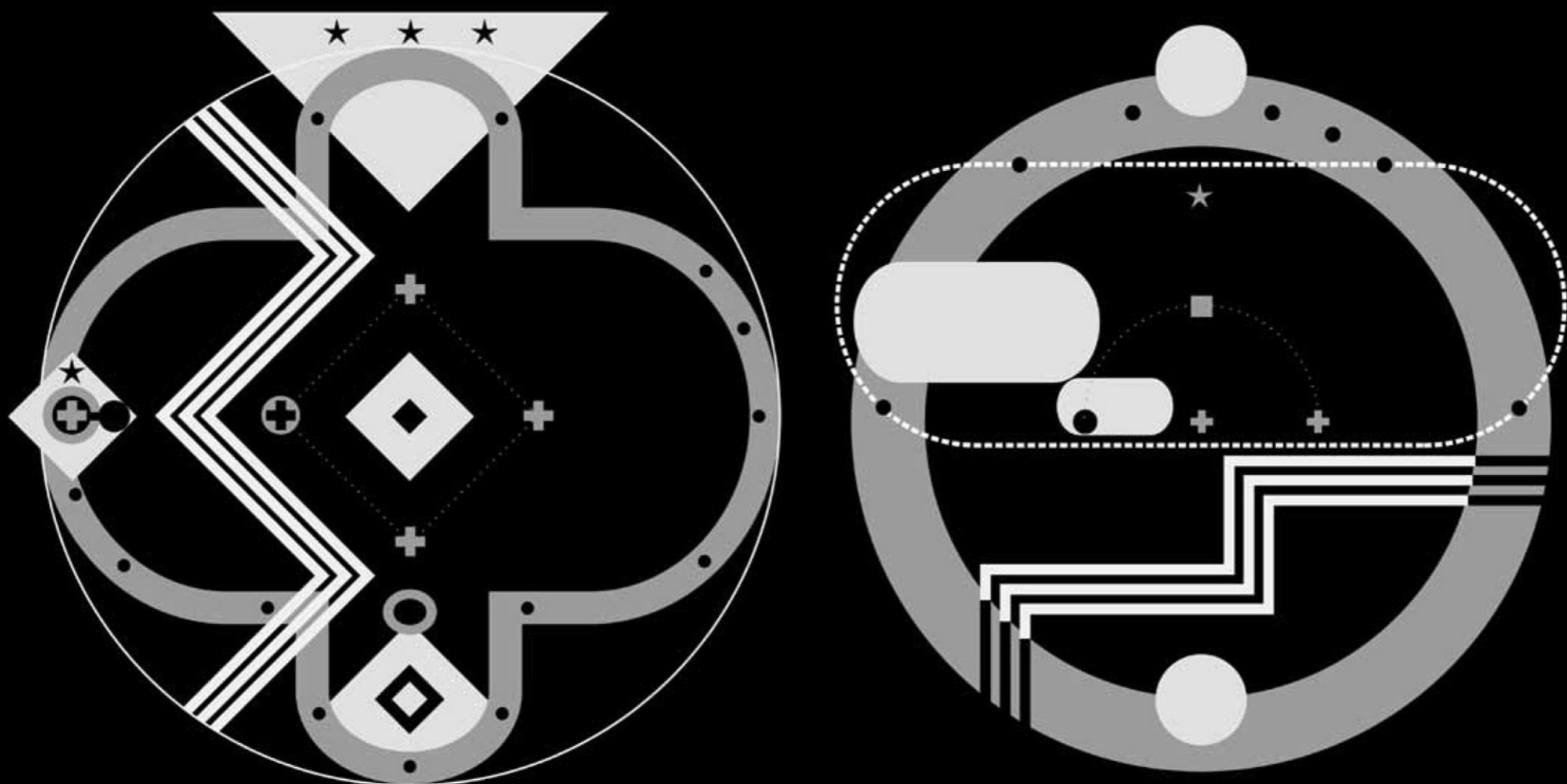
# Space-making



Massimo Vignelli, Subway Map, 1972

# Psychogeography





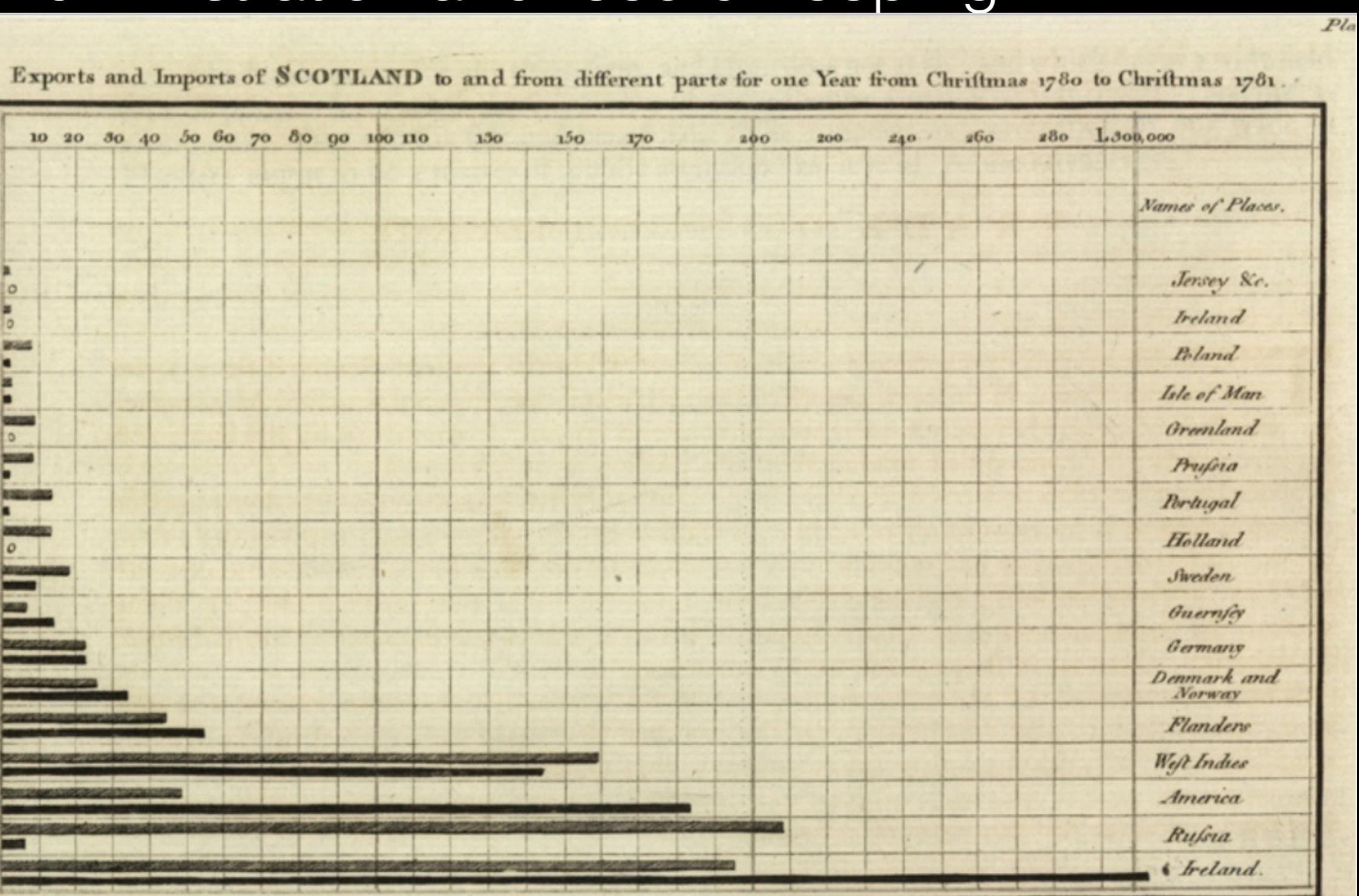
Joel Katz, maps of Rome and London

# Administration and record-keeping

<i>The Diseases and Casualties this Week,</i>		
		Impotheume — 11
A	Bortive — 5	Infants — 16
Aged — 43	Killed by a fall from the Bell-frey at Alhallowes the Great — 1	
Ague — 2	Kingsevil — 2	
Apoplexic — 1	Lethargy — 1	
Bleeding — 2	Pallic — 1	
Burnt in his Bed by a Candle at St. Giles Cripplegate — 1	Plague — 7165	
Canker — 1	Rickets — 17	
Childbed — 42	Rising of the Lights — 11	
Chrisomes — 18	Scowring — 5	
Consumption — 134	Scurvy — 2	
Convulsion — 64	Spleen — 1	
Cough — 2	Spotted Feaver — 101	
Dropie — 33	Stillborn — 17	
Feaver — 309	Stone — 2	
Flox and Small-pox — 5	Stopping of the stomach — 9	
Frighted — 3	Strangury — 1	
Gout — 1	Suddenly — 1	
Grief — 3	Surfeit — 49	
Griping in the Guts — 51	Teeth — 121	
Jaundies — 5	Thrush — 5	
	Timpamy — 1	
	Tiffick — 11	
	Vomiting — 3	
	Winde — 3	
	Wormes — 15	
Males — 95      Females — 81      In all — 176		
Buried Males — 4095      Females — 4202      In all — 8297		
Plague — 7165      Increased in the Burials this Week — 607		
Parishes clear of the Plague — 4      Parishes Infected — 126		
<i>The Asize of Bread set forth by Order of the Lord Maior and Court of Aldermen, A penny Wheaten Loaf to contain Nine Ounces and a half, and three half-penny White Loaves the like weight.</i>		

Bill of mortality during the Great Plague, 1665

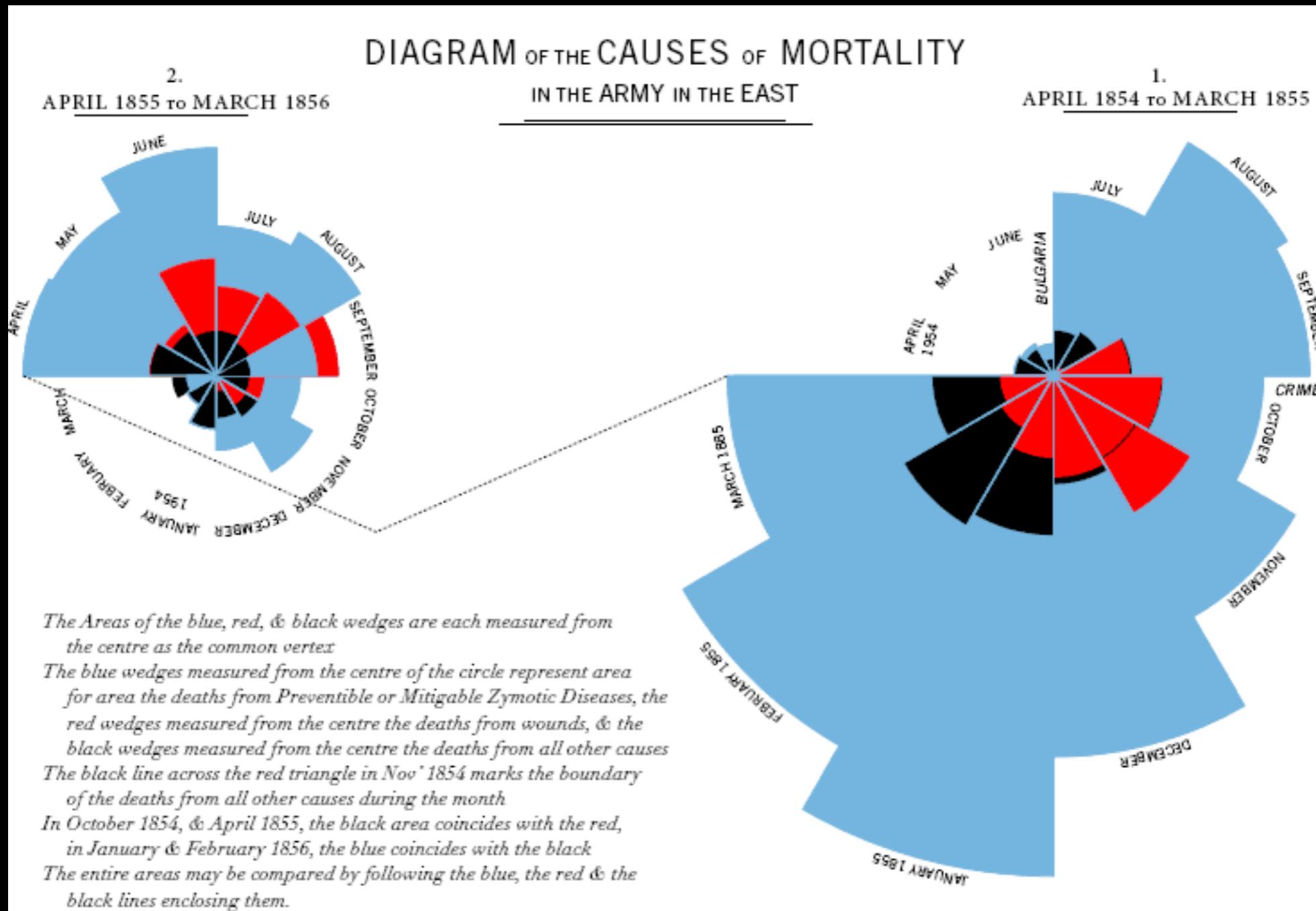
# Administration and record-keeping



The Upright divisions are Ten Thousand Pounds each. The Black Lines are Exports the Ribbed lines Imports.

William Playfair, 1780

# Administration and record-keeping



Florence Nightingale, *Causes of Mortality, 1858*

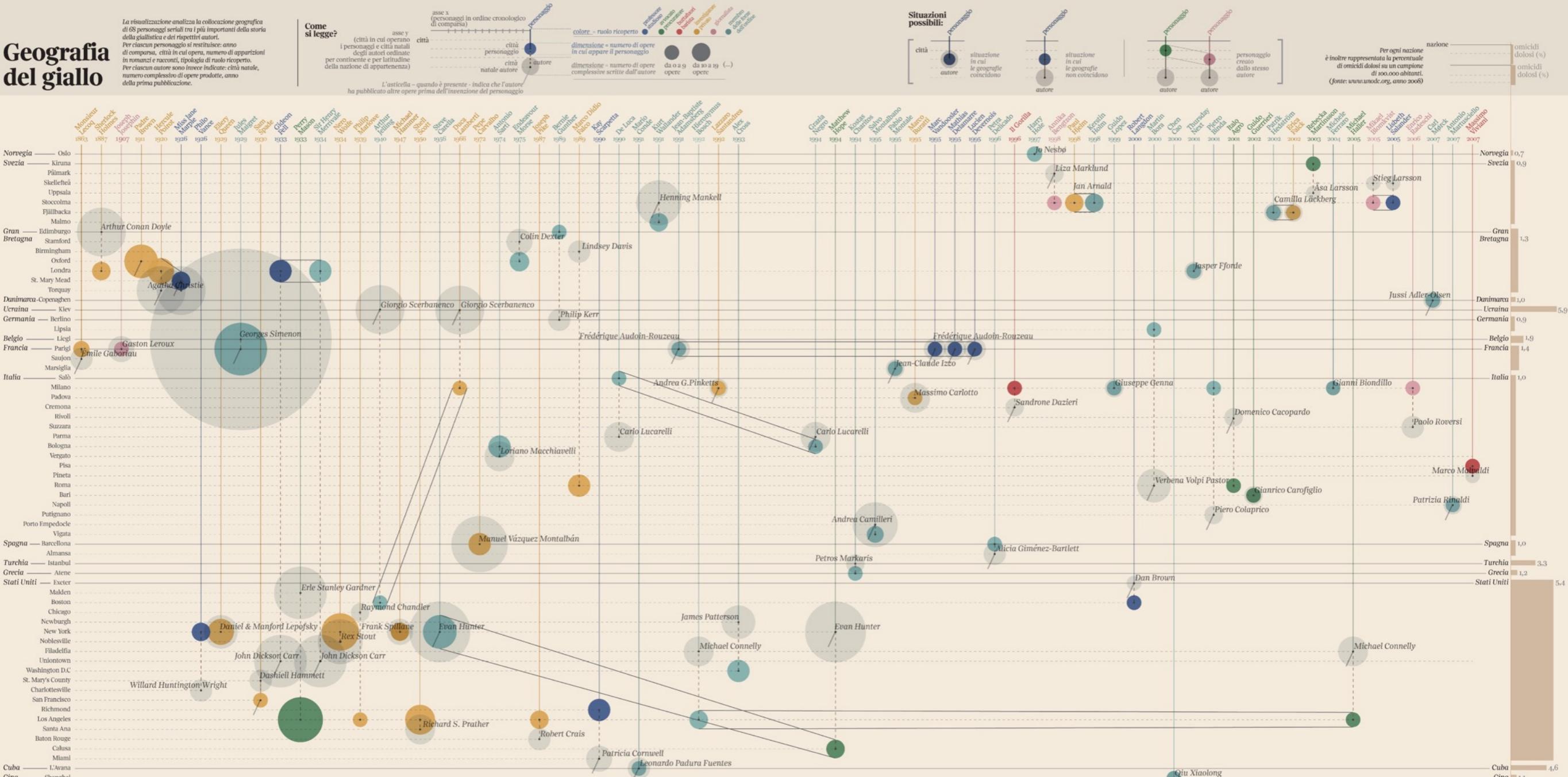
# Geografia del giallo

*La visualizzazione analizza la collocazione geografica di 68 personaggi seriali tra i più importanti della storia della giallistica e dei rispettivi autori.*  
*Per ciascun personaggio si restituisce: anno di comparsa, città in cui opera, numero di apparizioni in romanzi e racconti, tipologia di ruolo ricoperto.*  
*Per ciascun autore sono invece indicate: città natale, numero complessivo di opere prodotte, anno della prima pubblicazione.*

Come  
si legge?

(città in cui operano i personaggi e città natali degli autori ordinate per continente e per latitudine della nazione di appartenenza)

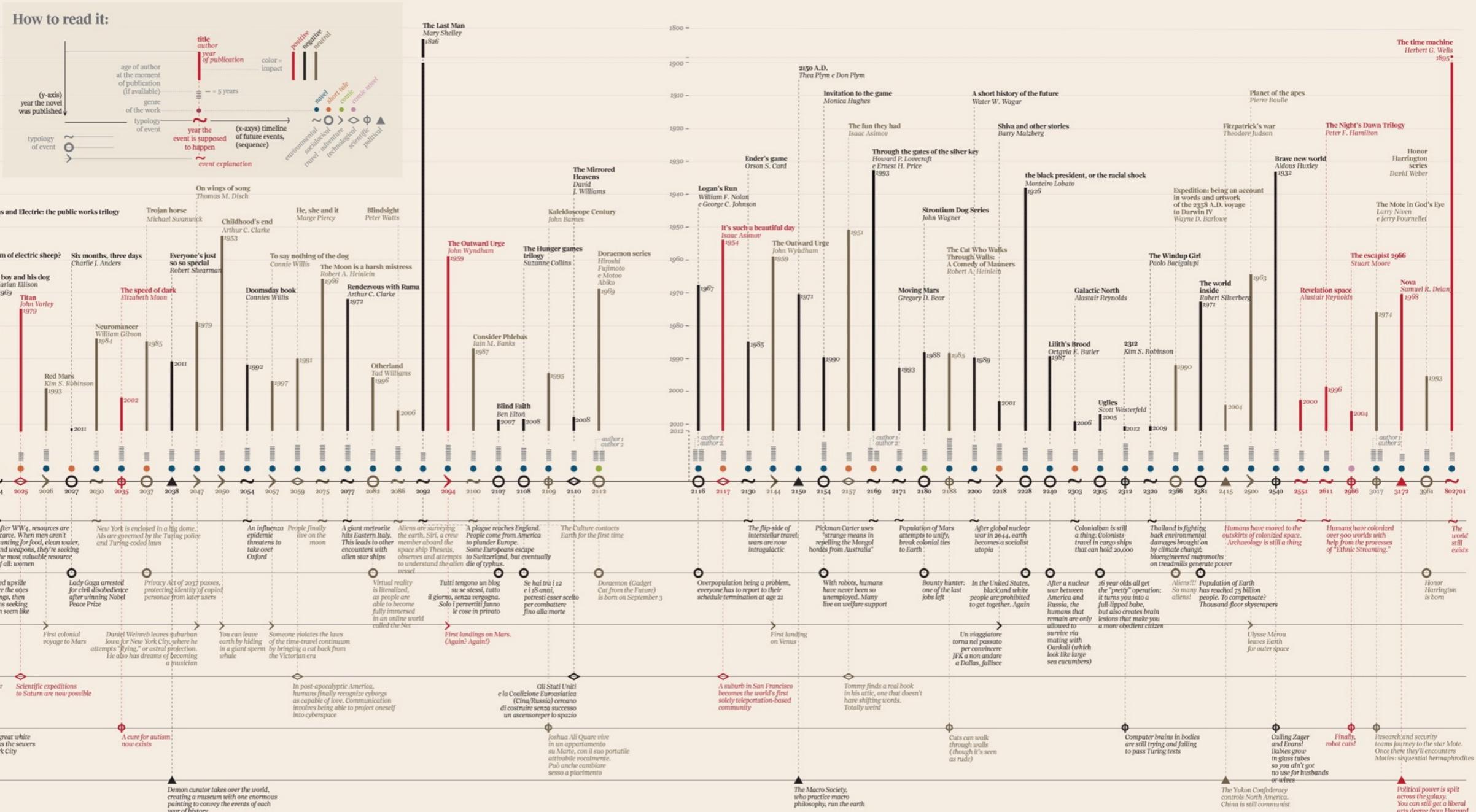
L'asticella - quando è presente - indica che l'autore ha pubblicato altre opere prima dell'invenzione del personaggio



## Geography of crime novels: hometown of author vs hometown of detective

# Administration and record-keeping

## the future, as foretold in the past



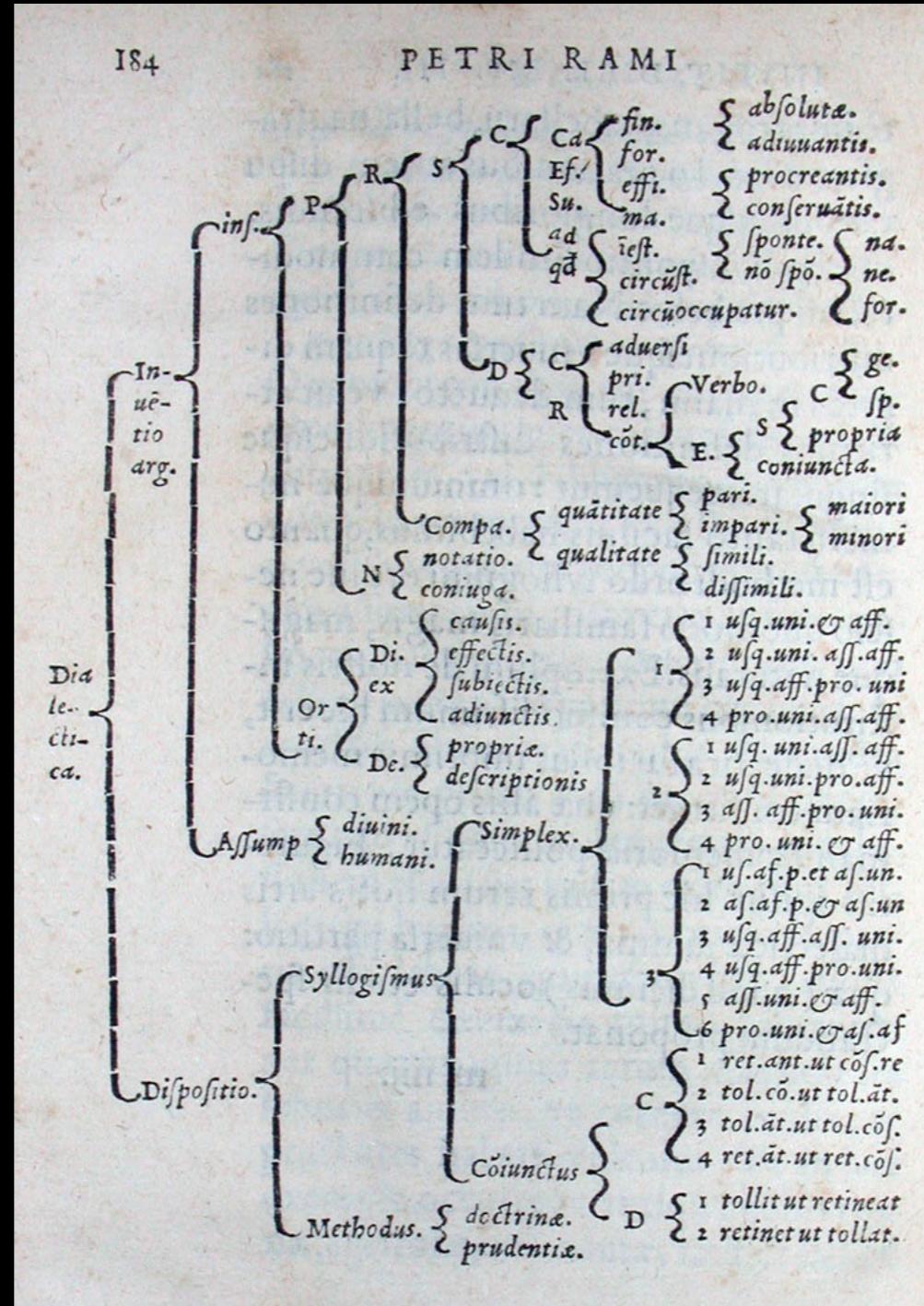
Giorgia Lupi, visualization of science fiction novels

# Trees of knowledge



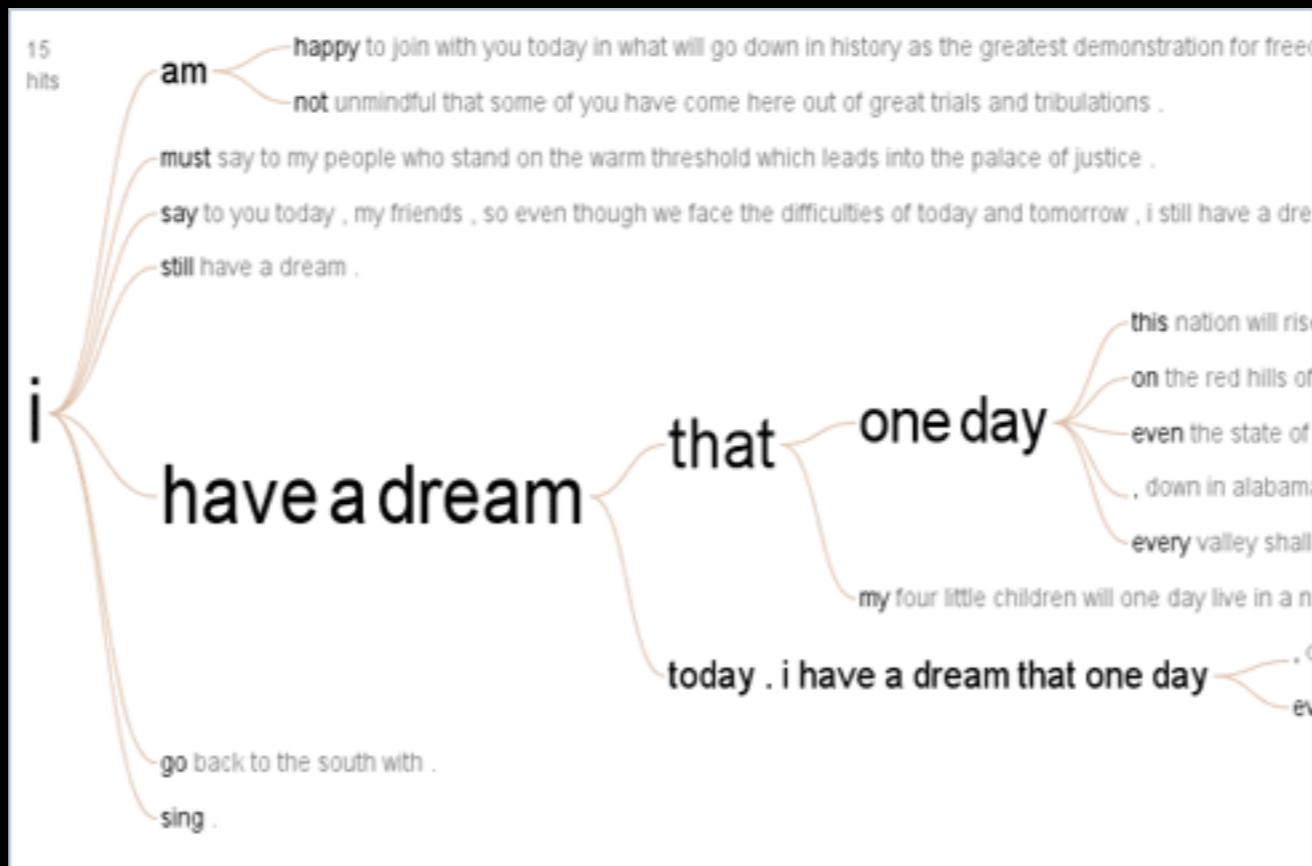
# *Tree of Wisdom*, Ramon Llull, 1505

# Trees of knowledge



Petrus Ramus, from *Dialectique*, 1555

# Trees of knowledge



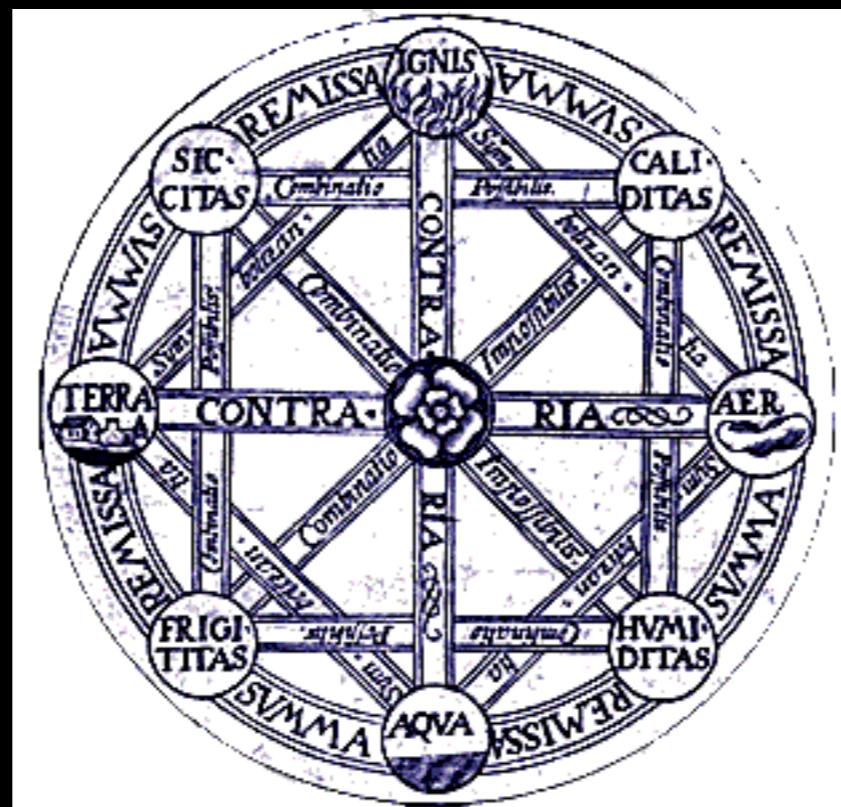
Martin Wattenberg and Fernanda Viégas, Word Tree, 2007

# Knowledge generators



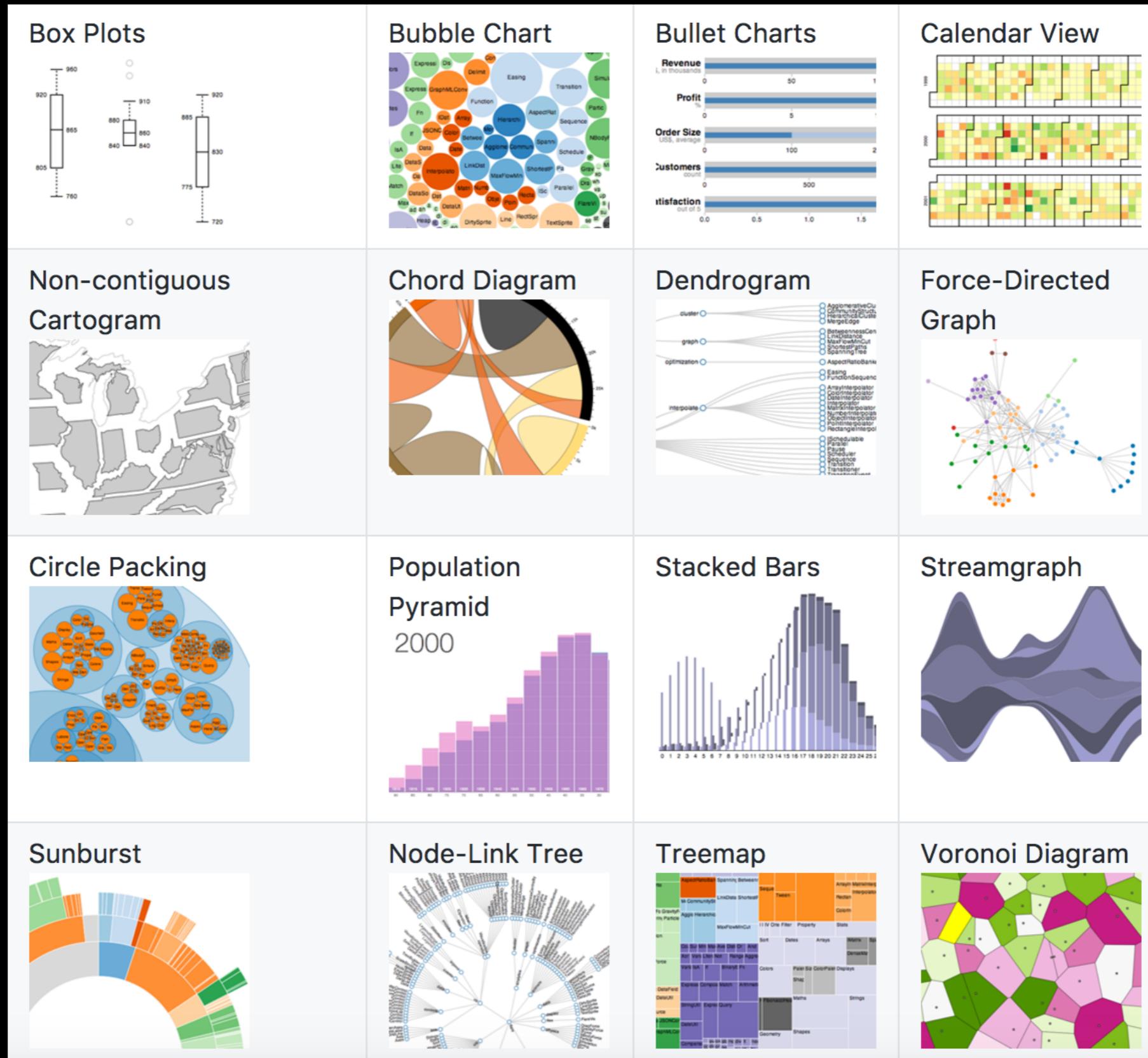
*Astronomical Vovelle*, from Astronomical and Medical Miscellany, 1386  
<http://blogs.getty.edu/iris/decoding-the-medieval-vovelle/>

# Knowledge generators: Mathesis



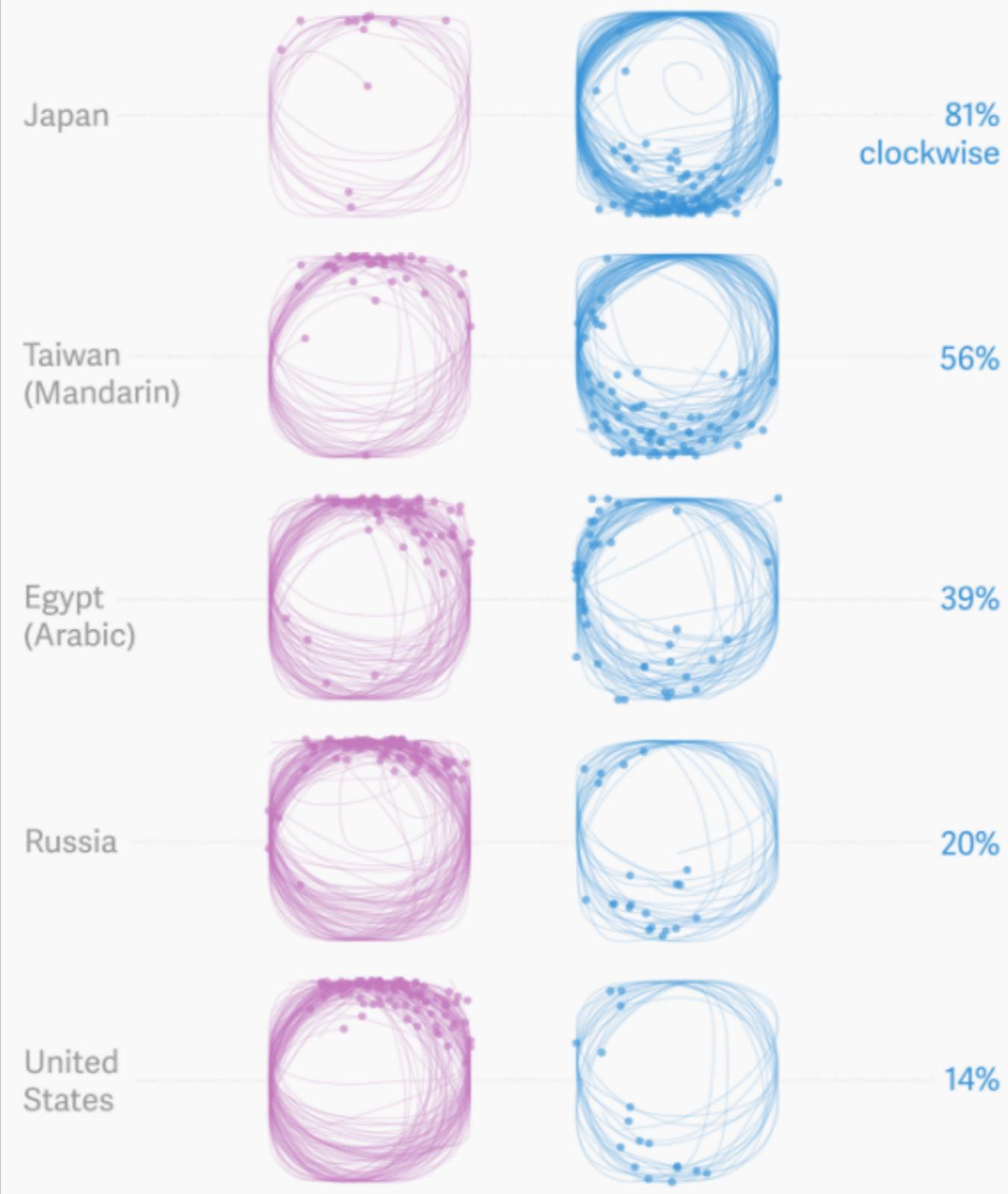
# Gottfried Leibniz, *Characteristica universalis*, 1666

# Knowledge generators



D3

Random samples of circles from major language groups



The circle itself

<https://qz.com/994486/the-way-you-draw-circles-says-a-lot-about-you/>

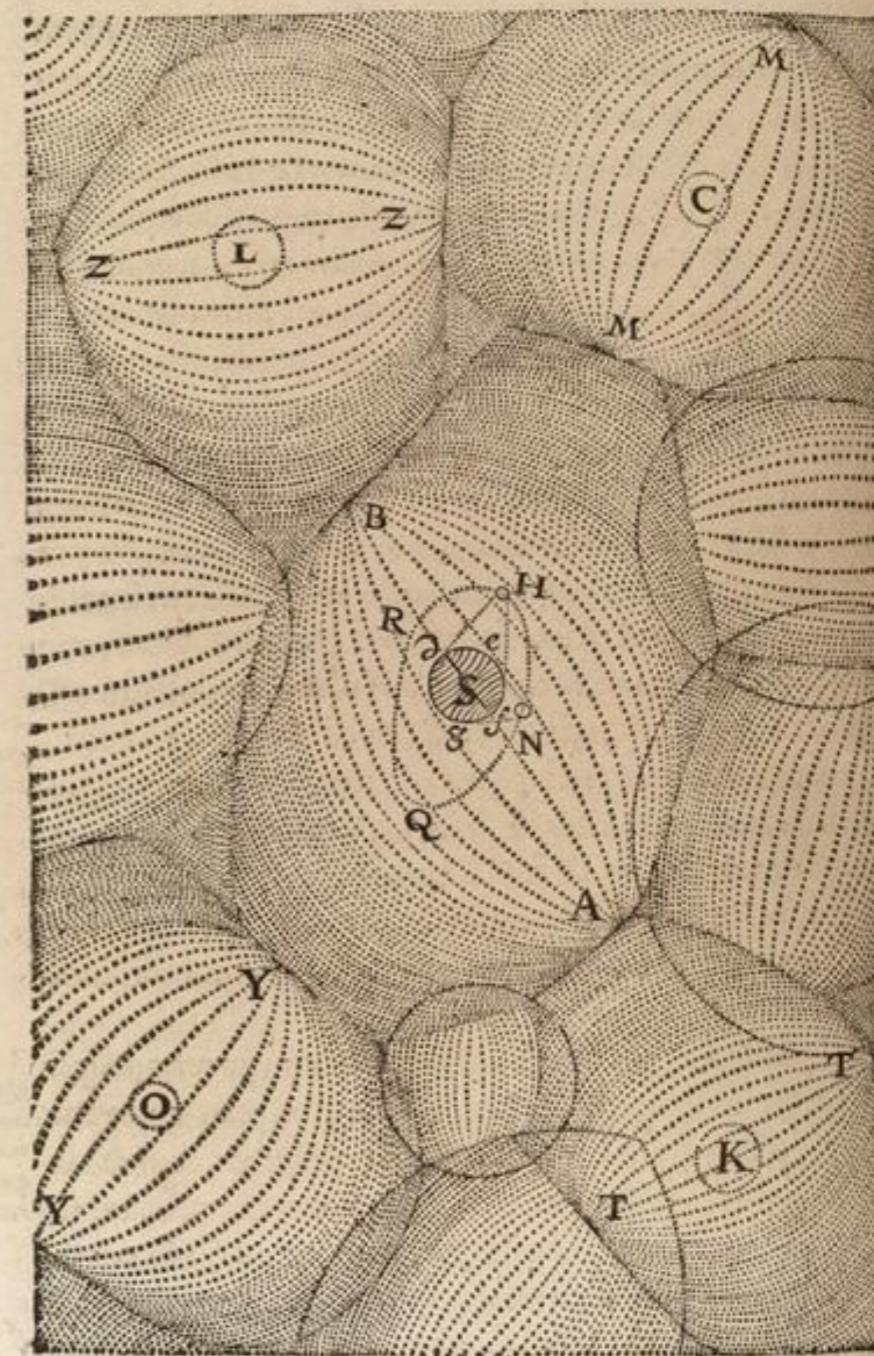
Knowledge generators (circle diagrams)

# Knowledge

GROUP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			
PERIOD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18			
	2 H hydrogen 1.0079																	2 He helium 4.0026			
1																					
2	3 Li lithium 6.941	4 Be beryllium 9.0122																10 Ne fluorine 20.180			
3	11 Na sodium 22.990	12 Mg magnesium 24.305																			
4	19 K potassium 39.098	20 Ca calcium 40.078	21 Sc scandium 44.956	22 Ti titanium 47.867	23 V vanadium 50.942	24 Cr chromium 51.996	25 Mn manganese 54.938	26 Fe iron 55.845	27 Co cobalt 58.933	28 Ni nickel 58.693	29 Cu copper 63.546	30 Zn zinc 65.39	31 Ga gallium 69.732	32 Ge germanium 72.64	33 As arsenic 74.922	34 Se selenium 78.96	35 Br bromine 79.904	36 Kr krypton 83.80			
5	37 Rb rubidium 85.468	38 Sr strontium 87.62	39 Y yttrium 88.906	40 Zr zirconium 91.224	41 Nb niobium 92.906	42 Mo molybdenum 95.94	43 Tc technetium (98)	44 Ru ruthenium 101.07	45 Rh rhodium 102.91	46 Pd palladium 106.42	47 Ag silver 107.87	48 Cd cadmium 112.41	49 In indium 114.82	50 Sn tin 118.71	51 Sb antimony 121.760	52 Te tellurium 127.8	53 I iodine 126.904	37 Xe xenon 131.29			
6	55 Cs caesium 132.91	56 Ba barium 137.33	57-71   	72 Hf hafnium 178.49	73 Ta tantalum 180.95	74 W tungsten 183.84	75 Re rhenium 186.21	76 Os osmium 190.23	77 Ir iridium 192.22	78 Pt platinum 195.08	79 Au gold 196.97	80 Hg mercury 200.59	81 Tl thallium 204.38	82 Pb lead 207.2	83 Bi bismuth 208.98	84 Po polonium (208.98)	85 At astatine 209.987	86 Rn radon 222.018			
7	87 Fr francium (223)	88 Ra radium (226)	89-103   	104 Rf rutherfordium (261)	105 Db dubnium (262)	106 Sg seaborgium (266)	107 Bh bohrium (264)	108 Hs hassium (269)	109 Mt meitnerium (268)	110 Ds darmstadtium (269)	111 Rg roentgenium (272)	112 Cn copernicium (277)	113 Uut ununtrium (unknown)	114 Uuq ununquadium (289)	115 Uup ununpentium (298)	116 Uuh ununhexium (unknown)	117 Uus ununseptium (unknown)	118 Uuo ununoctium (unknown)			
			NATURE OF OCCURANCE																		
			PRIMORDIAL																		
			FROM DECAY																		
			SYNTHETIC																		
				57 La lathanum 138.91	58 Ce cerium 140.12	59 Pr praseodymium 140.91	60 Nd neodymium 144.24	61 Pm promethium (145)	62 Sm samarium 150.36	63 Eu europium 151.96	64 Gd gadolinium 157.25	65 Tb terbium 158.93	66 Dy dysprosium 162.50	67 Ho holmium 164.93	68 Er erbium 167.26	69 Tm thulium 168.93	70 Yb ytterbium 173.04	71 Lu lutetium 174.97			
				89 Ac actinium (227)	90 Th thorium 232.04	91 Pa protactinium 231.04	92 U uranium 238.03	93 Np neptunium (237)	94 Pu plutonium (244)	95 Am americium (243)	96 Cm curium (247)	97 Bk berkelium (247)	98 Cf californium (251)	99 Es einsteinium (252)	100 Fm fermium (257)	101 Md mendelevium (258)	102 No nobelium (259)	103 Lr lawrencium (262)			

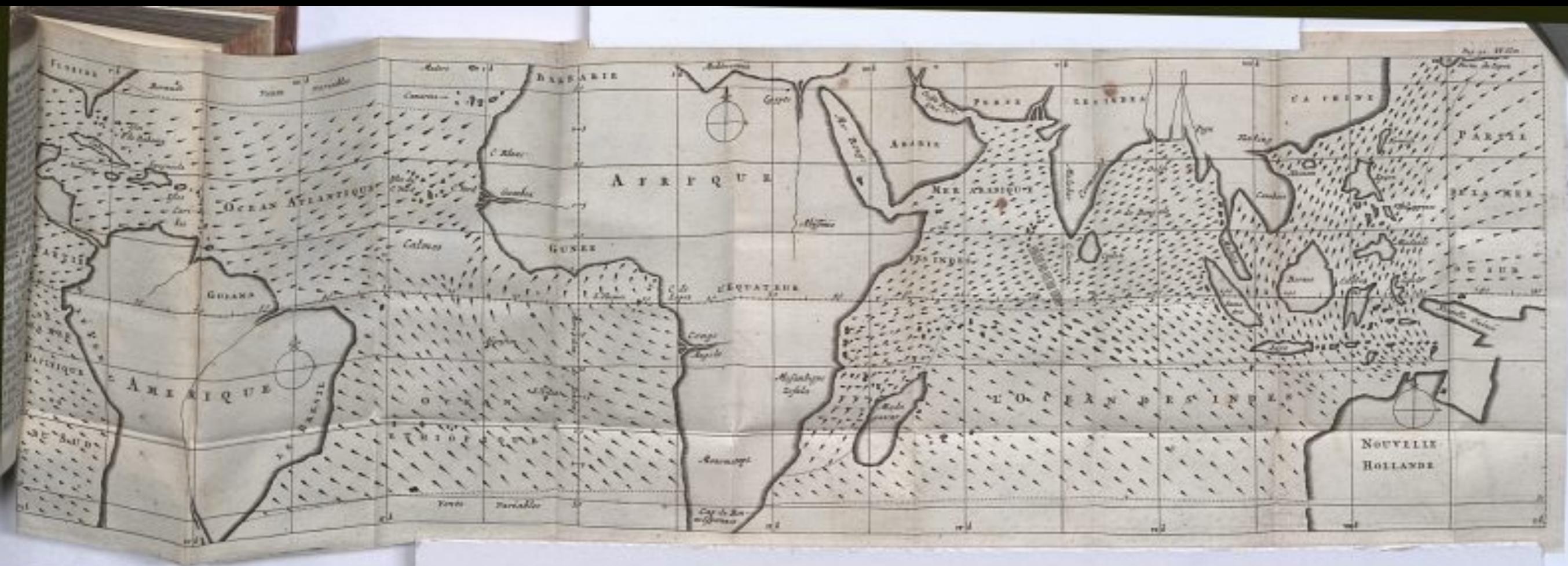
Kanny Yeung, redesign of Mendeleev's Periodic Table

# Dynamic systems



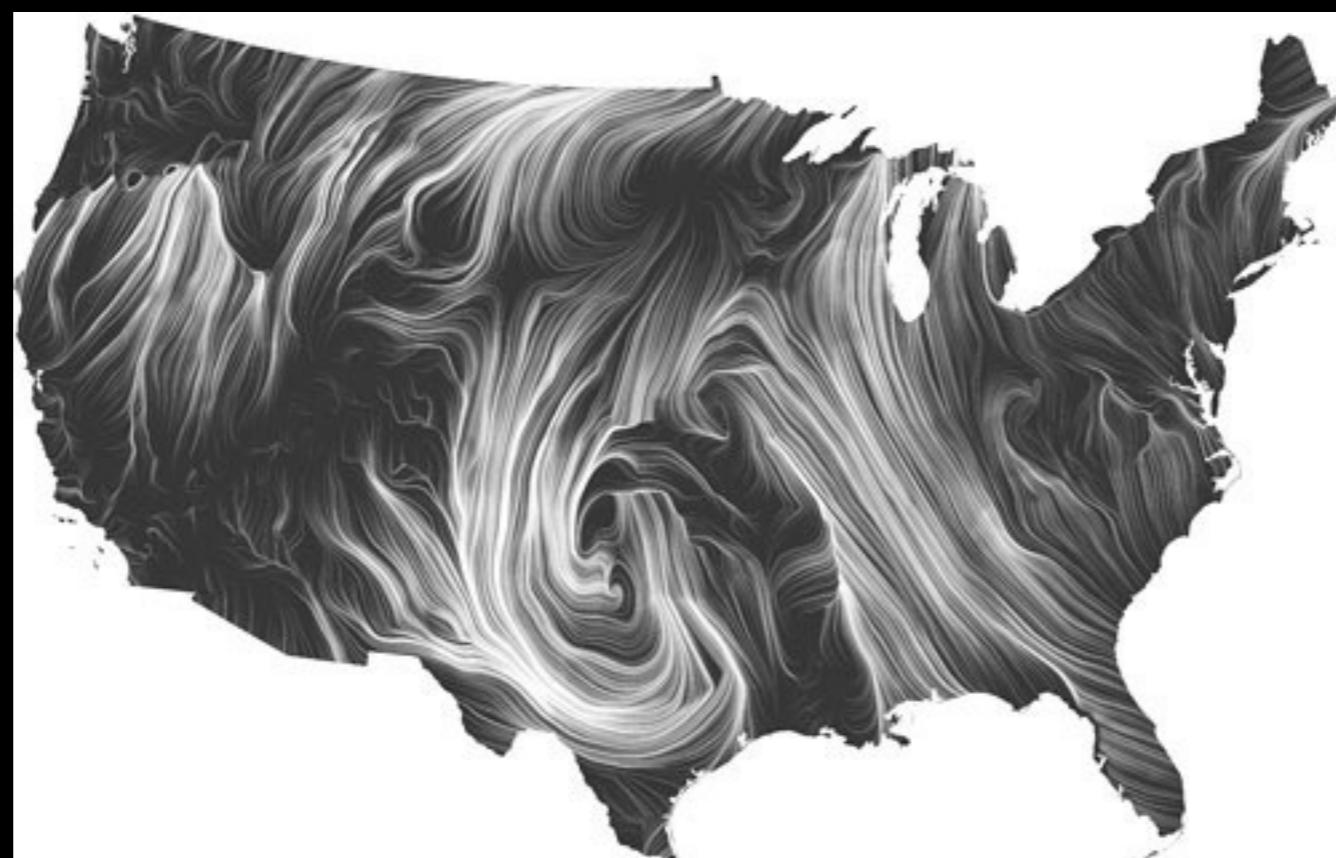
Rene Descartes, *Discourse on Method:  
Dioptrics, Meteorology and Geometry*, 1637

# Dynamic systems

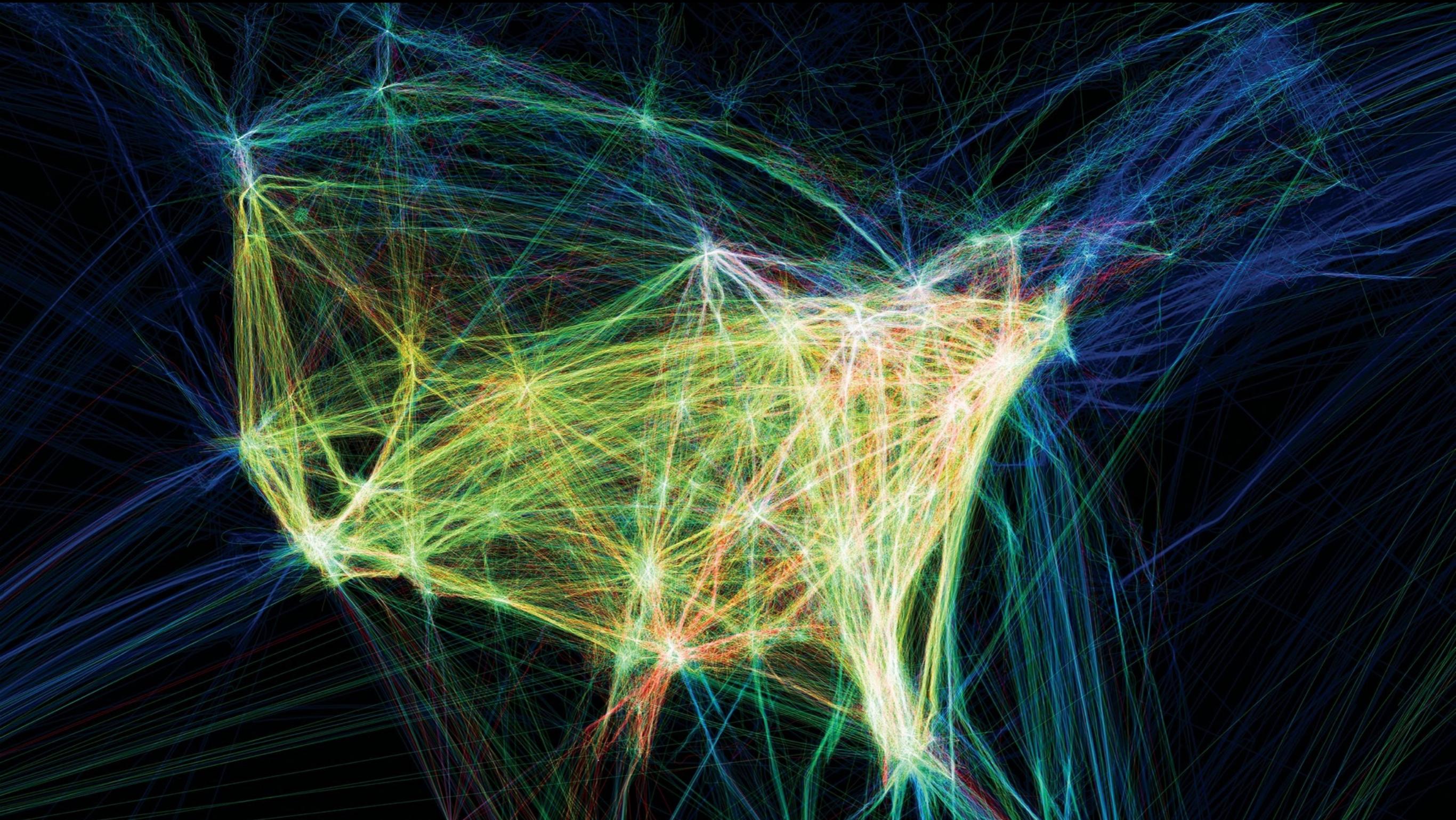


Edmond Halley, *map of the winds* 1686

# Dynamic systems

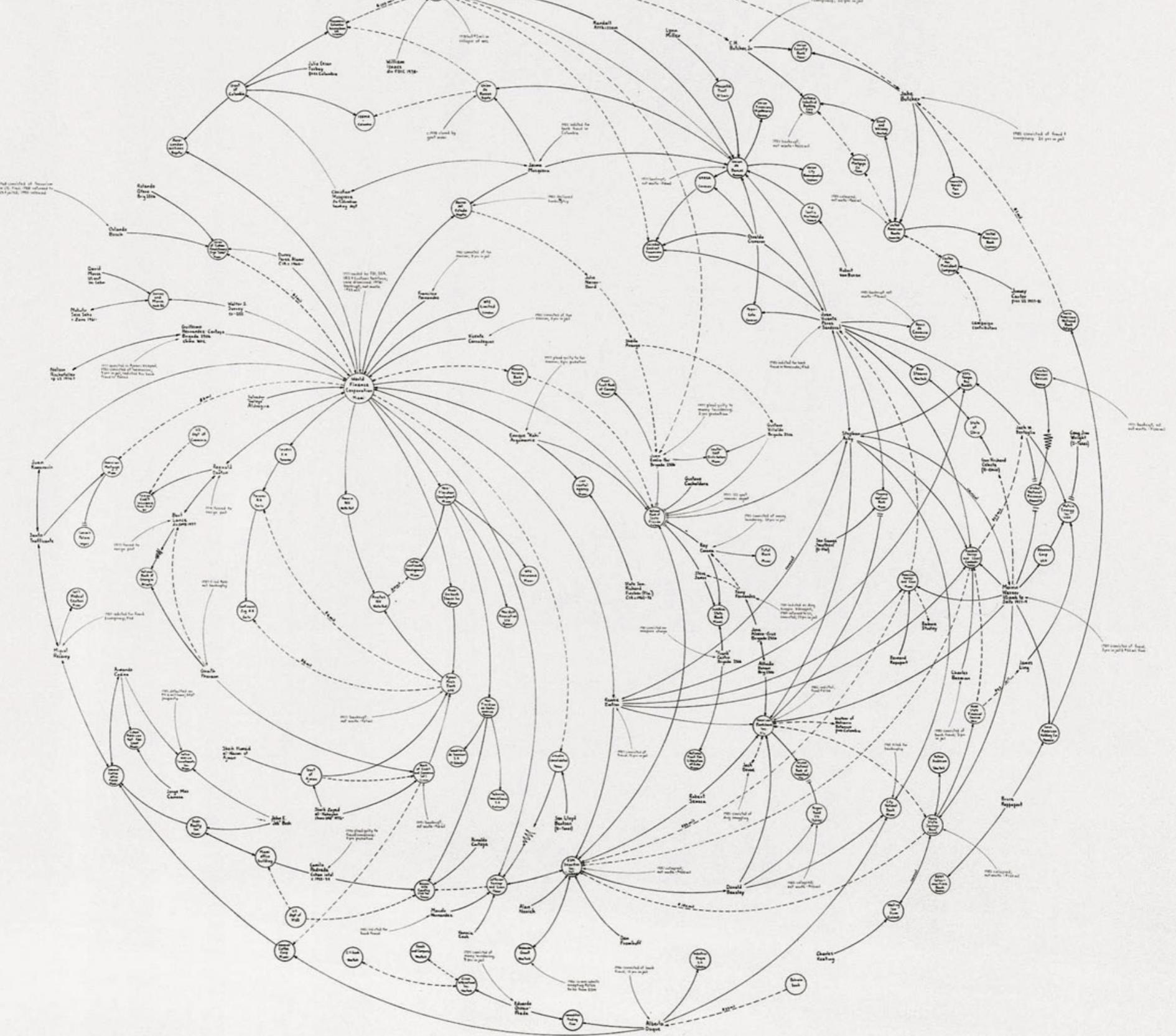


Martin Wattenberg and Fernanda Viégas' JavaScript update of  
Halley's wind map: <http://hint.fm/wind/>



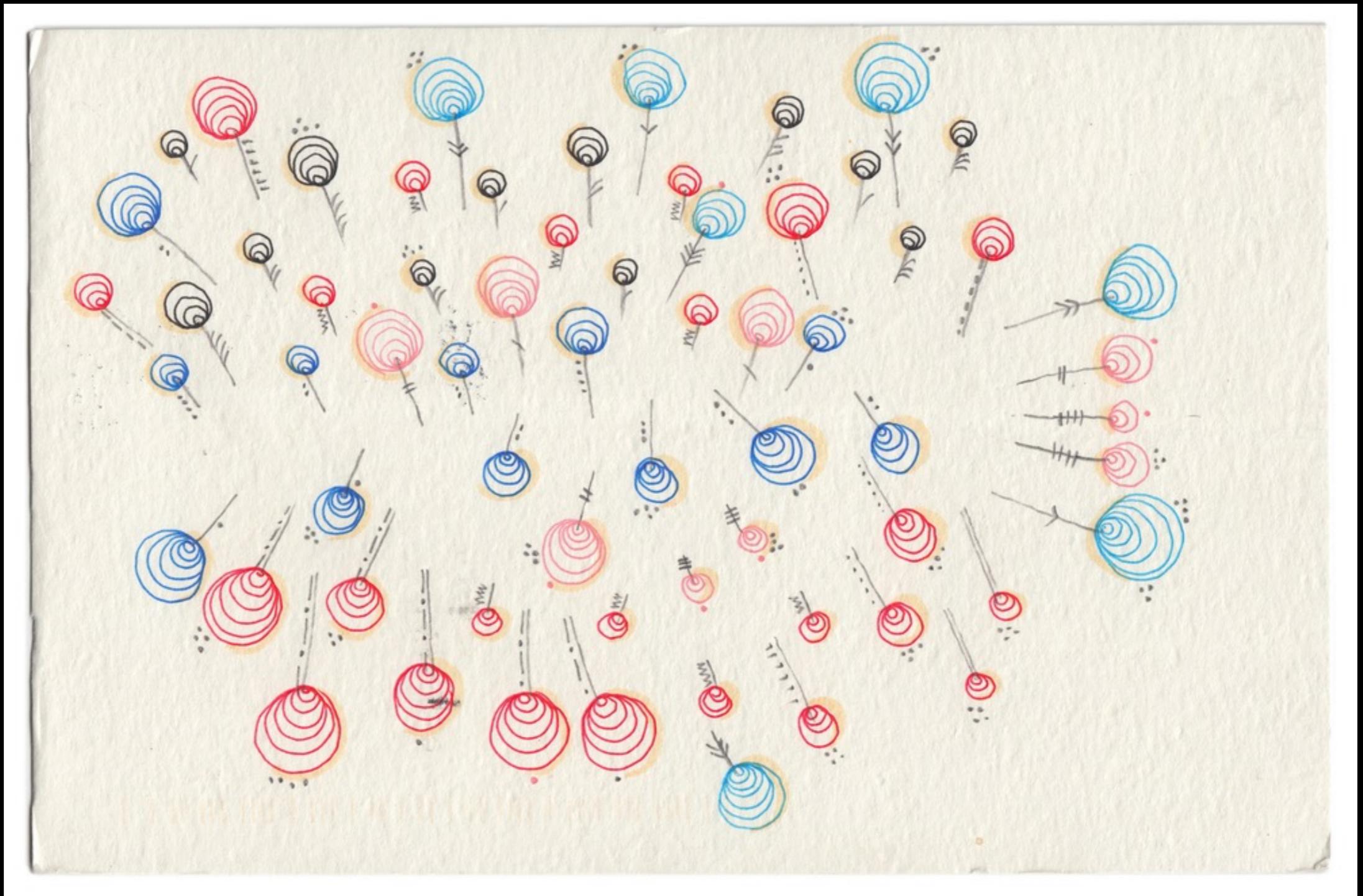
Aaron Koblin

<http://www.aaronkoblin.com/project/flight-patterns/>



# Mark Lombardi, Chicago Outfit and Satellite Regimes

# Dynamic systems



Lipi, *Dear Data*  
<http://www.dear-data.com/the-project>

# Digital Poetics: Data humanism

Humanistic knowledge: interpretive  
rather than quantitative

# Digital Poetics: Data humanism

Humanistic knowledge: interpretive  
rather than quantitative

Data as capta

# Digital Poetics: Data humanism

Humanistic knowledge: interpretive  
rather than quantitative

Data as capita

Dots = people

# Digital Poetics: Data humanism

Humanistic knowledge: interpretive  
rather than quantitative

Data as capita

Dots = people

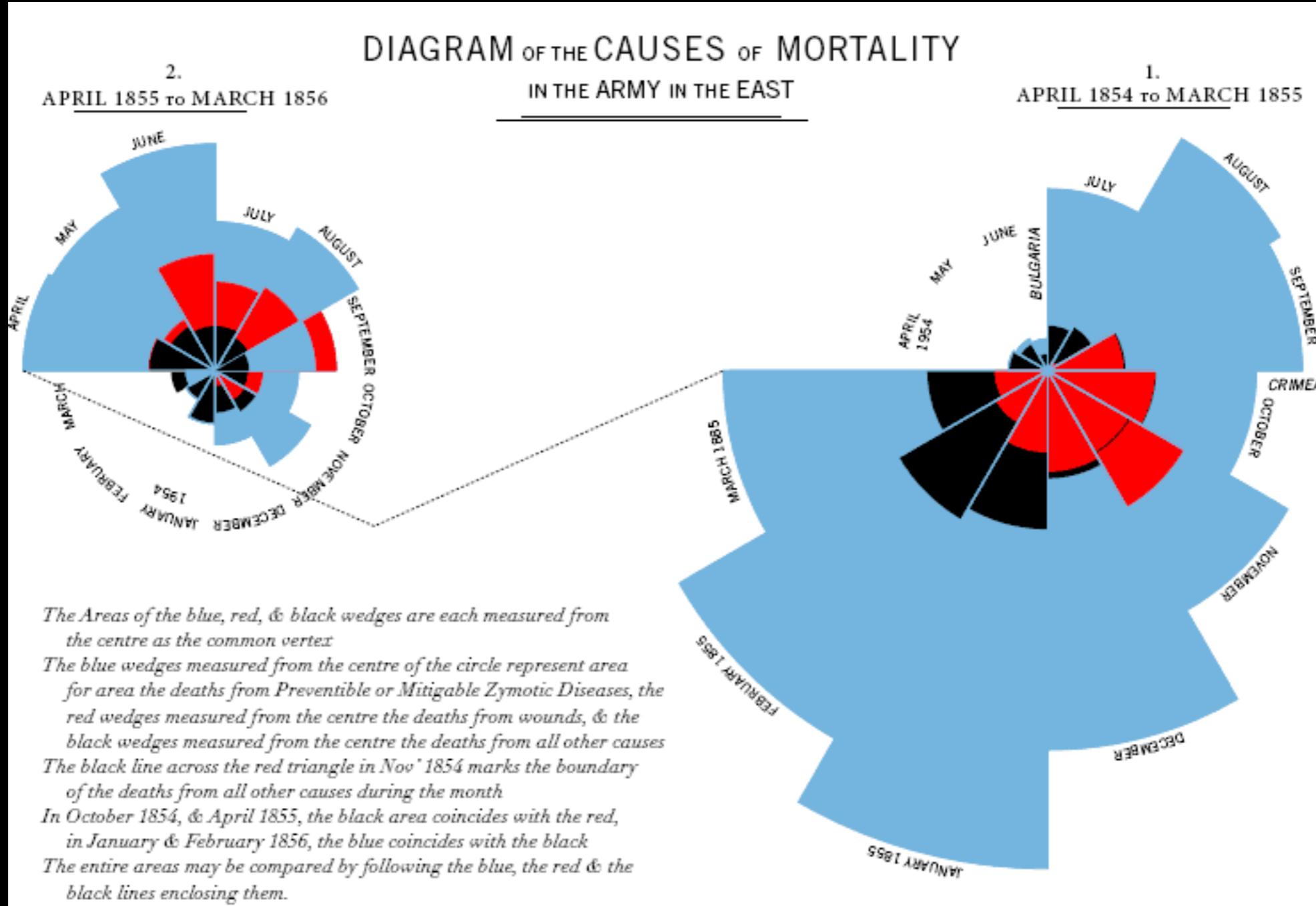
Dear data

Mapping the self / identity

# Digital Poetics: Data humanism



Figure 16. Dr. John Snow's famous chart tracing the source of an epidemic using graphical methods that plotted frequency of outbreaks and geographical location. But each outbreak was an individual, and their degrees of vulnerability, impact of their illness, effect on the family and loved ones, was specific and particular in ways that a single dot cannot express. Seen from the point of view of an individual participant in these tragic events, some of these individuals loom much larger than others when depicted from within the gaze of someone actually seeing them occur. Graphic credit Xárene Eskandar.



# The causes of mortality in the army in the east by Florence Nightingale.

# Digital Poetics: Metaphor

how does visual language express...

# Digital Poetics: Metaphor

how does visual language express...

## Abstractions & Variables

Semiology of Graphics  
and Graphic Variables for use  
in Cartography by Jacques Bertin, 1967

	Points	Lines	Areas	Best to show
Shape		<i>possible, but too weird to show</i>	<i>cartogram</i>	<i>qualitative differences</i>
Size			<i>cartogram</i>	<i>quantitative differences</i>
Color Hue				<i>qualitative differences</i>
Color Value				<i>quantitative differences</i>
Color Intensity				<i>qualitative differences</i>
Texture				<i>qualitative &amp; quantitative differences</i>

# Variables / Metaphor / Abstraction

The construction/deconstruction of meaning

# Variables / Metaphor / Abstraction

The construction/deconstruction of meaning

Metaphor: transfer/bearing

What is metaphor?

# Variables / Metaphor / Abstraction

The construction/deconstruction of meaning

Metaphor: transfer/bearing

What is metaphor?

Carries meaning/feeling

# Variables / Metaphor / Abstraction

The construction/deconstruction of meaning

Metaphor: transfer/bearing

What is metaphor?

Carries meaning/feeling

Represents...

# Variables / Metaphor / Abstraction

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Abstract graphical shapes lie on the border of

Metaphorical reading:

# Variables / Metaphor / Abstraction

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Metaphor: transfer/bearing

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Metaphorical reading: when does the circle  
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What is the main activity in visual processing?

# Variables / Metaphor / Abstraction

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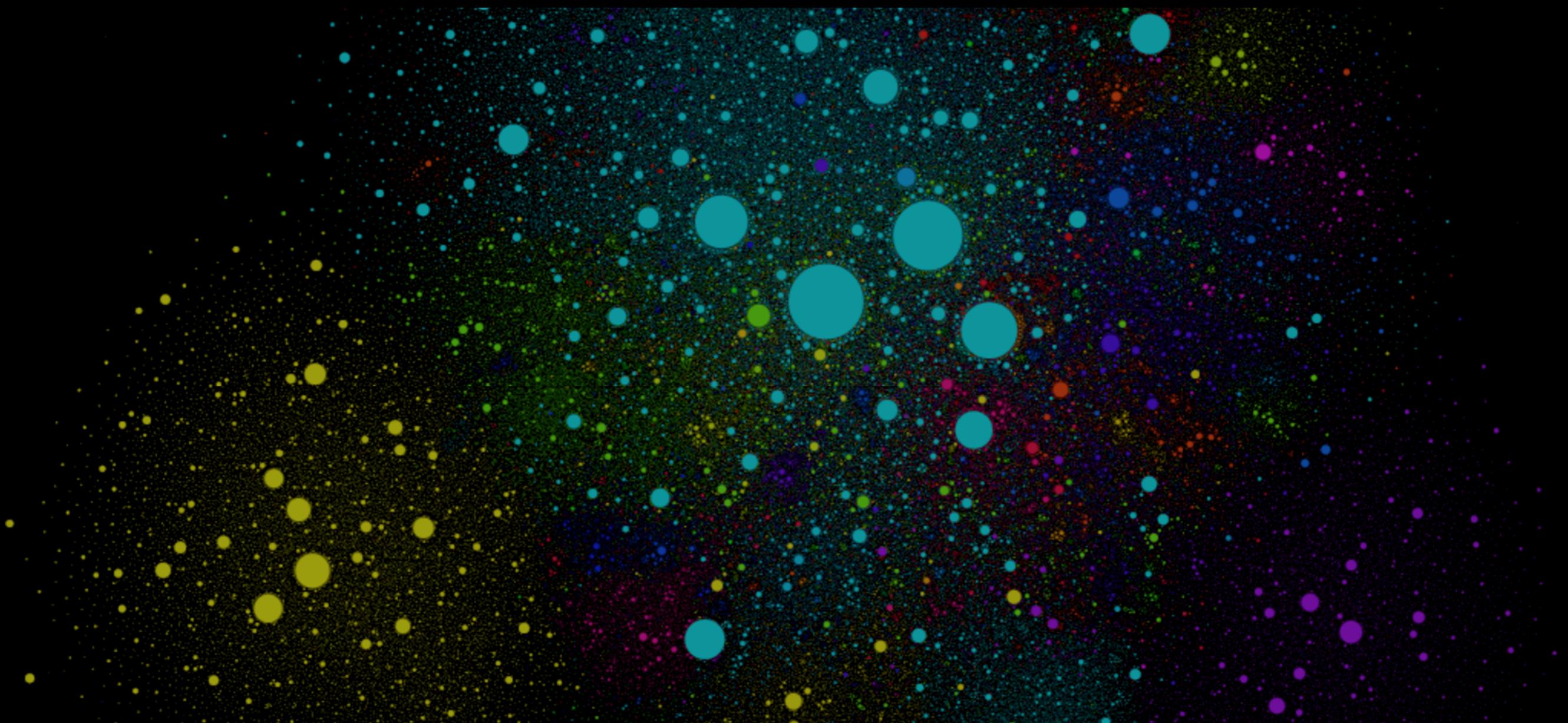
Seeing difference?

# Variables / Metaphor / Abstraction

Some cautionary examples

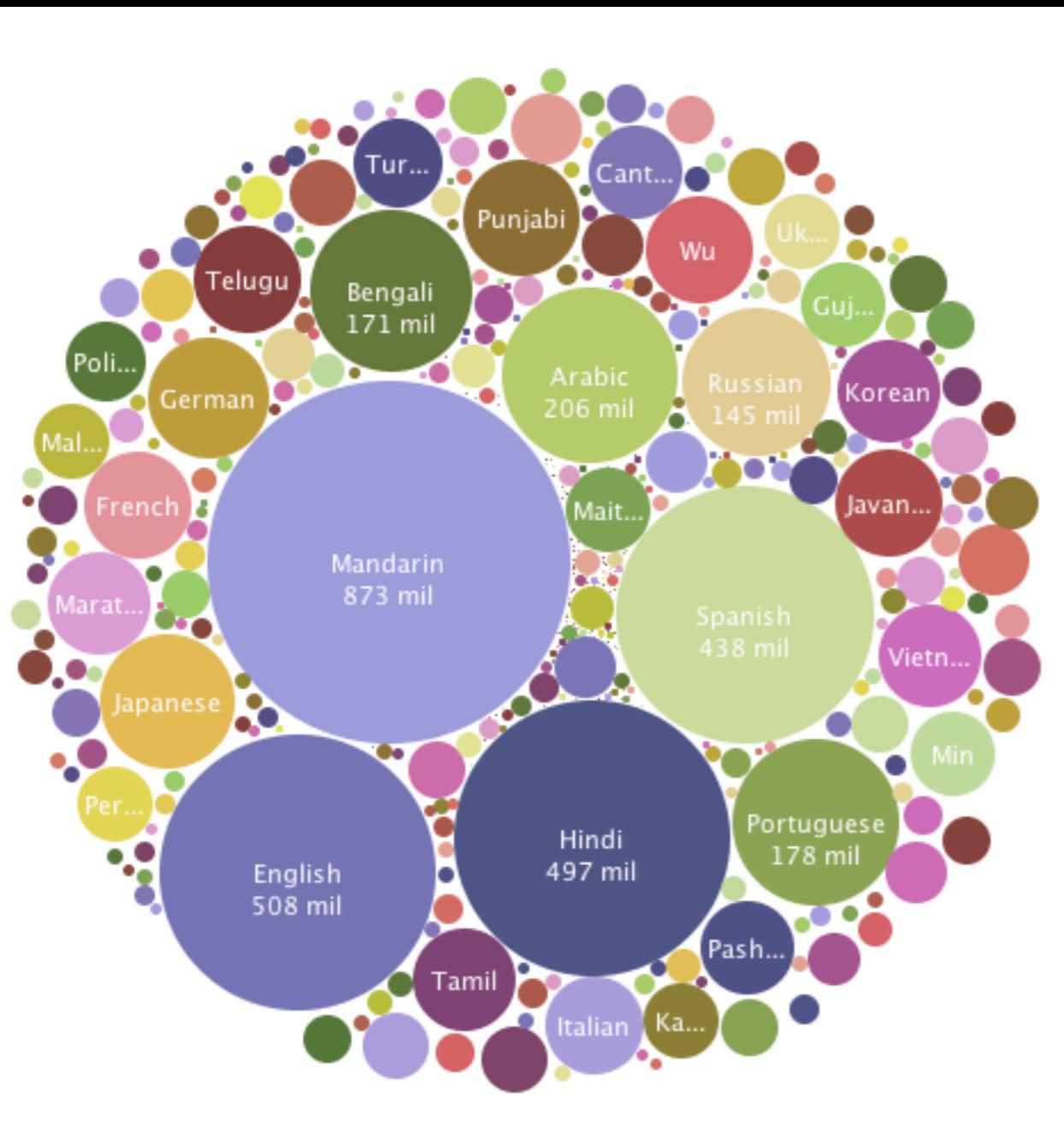
# Variables / Metaphor / Abstraction

Circles



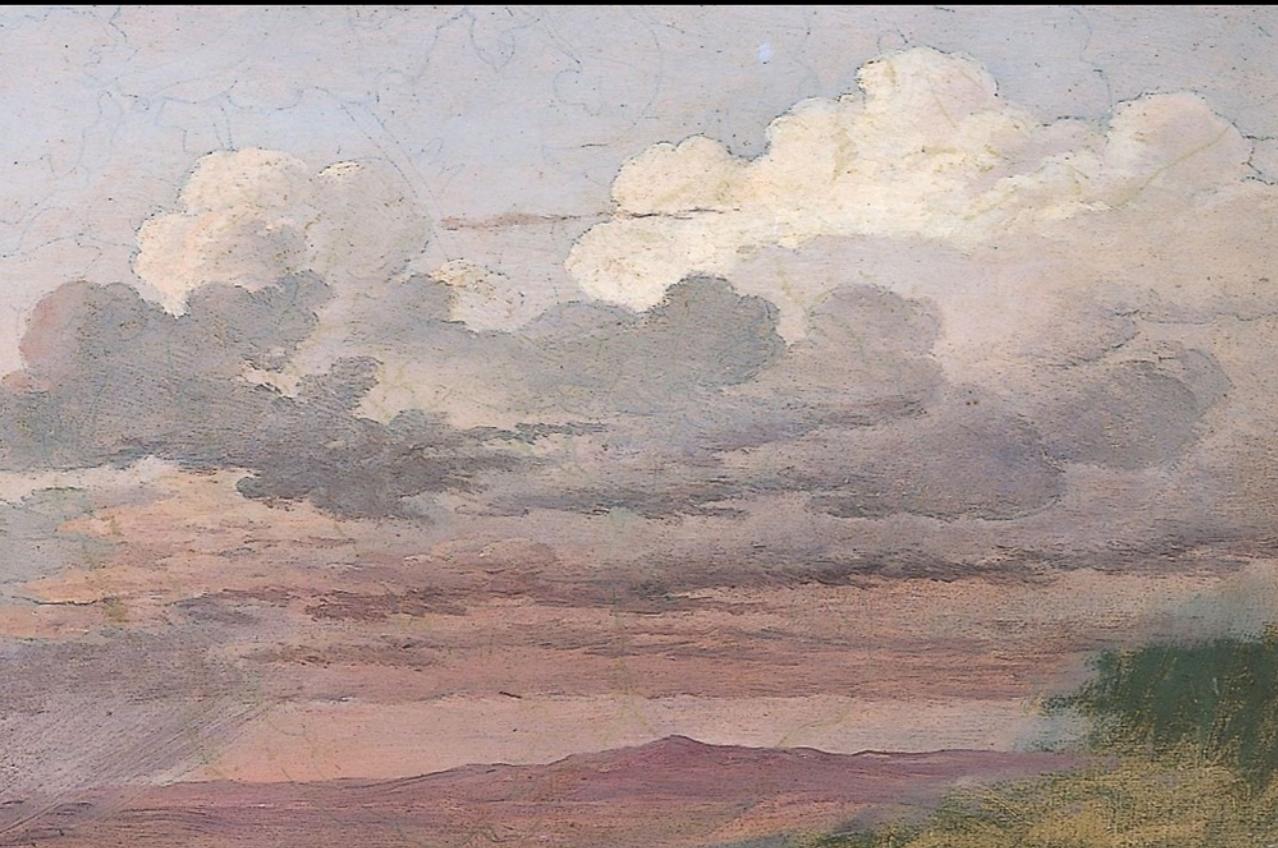
# Variables / Metaphor / Abstraction

Bubbles



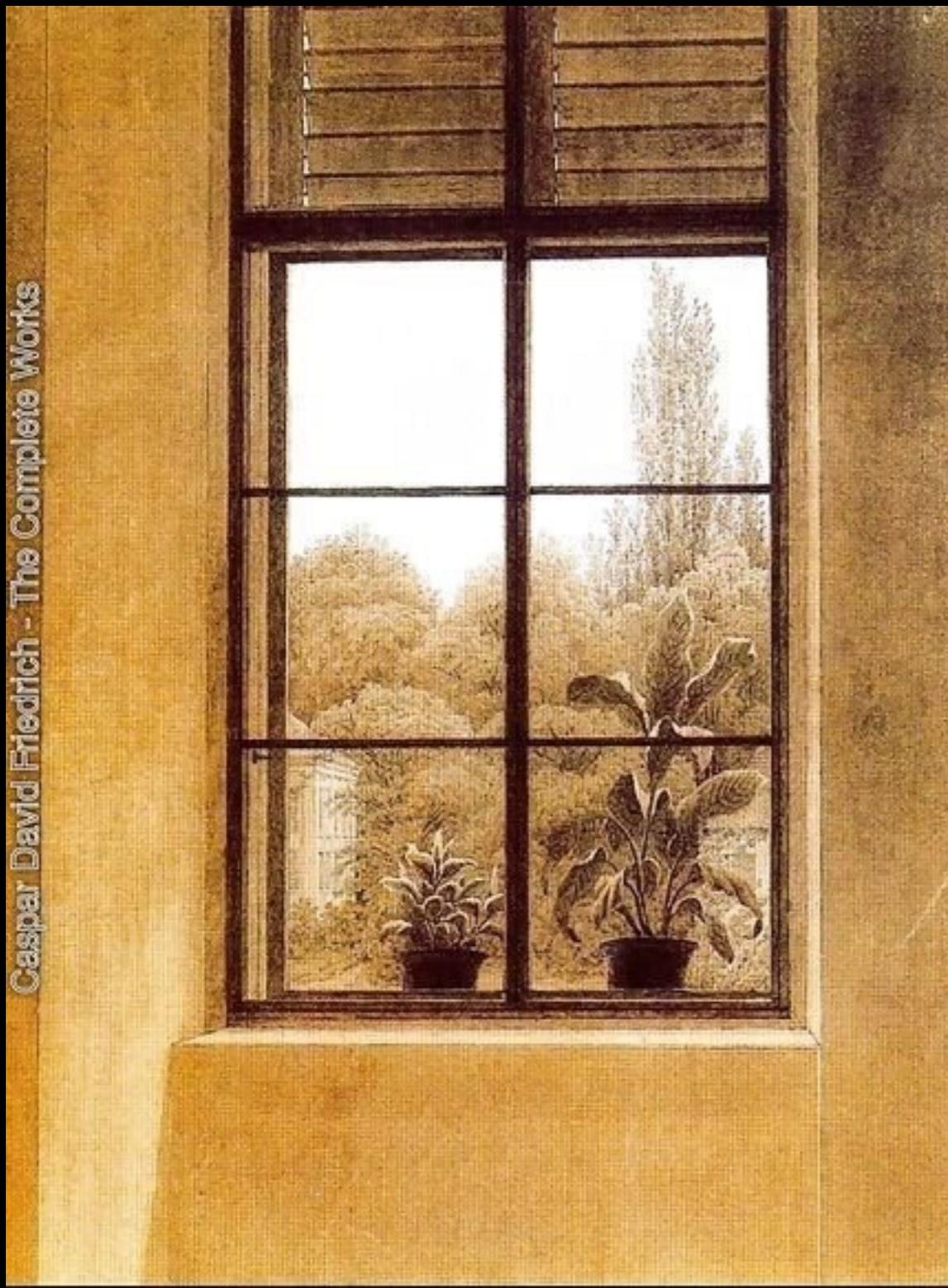
# Variables / Metaphor / Abstraction

Clouds



# Variables / Metaphor / Abstraction

Windows

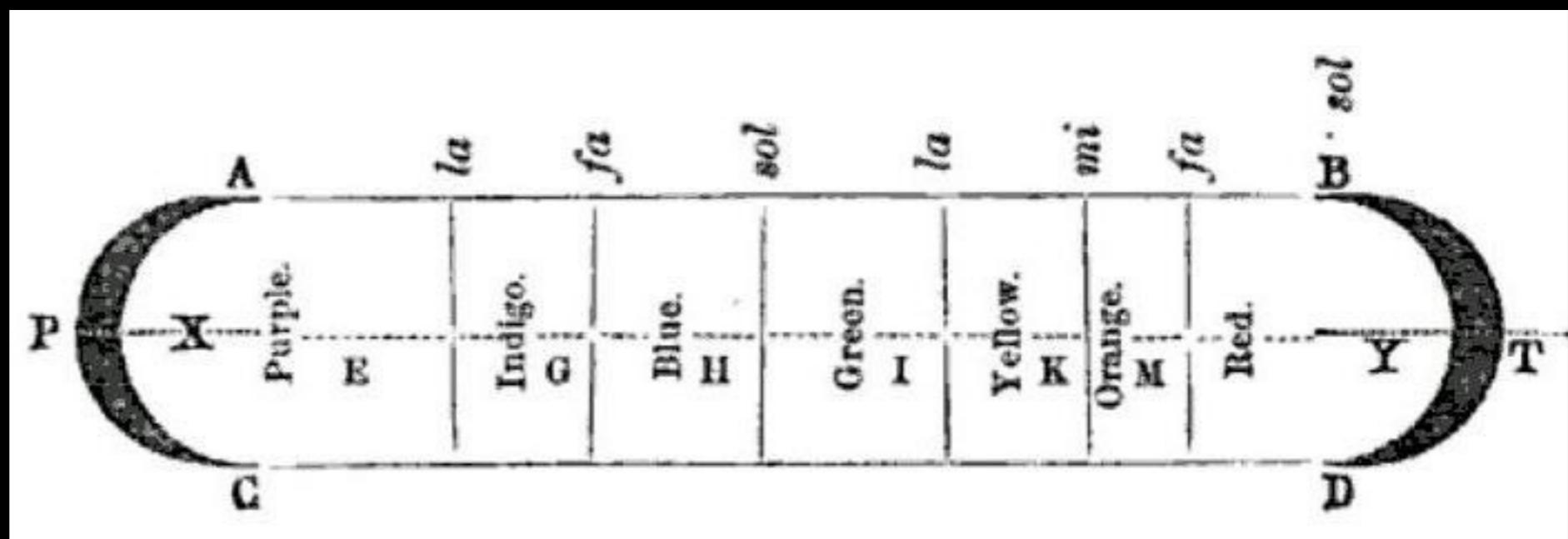


Casper David Friedrich - The Complete Works



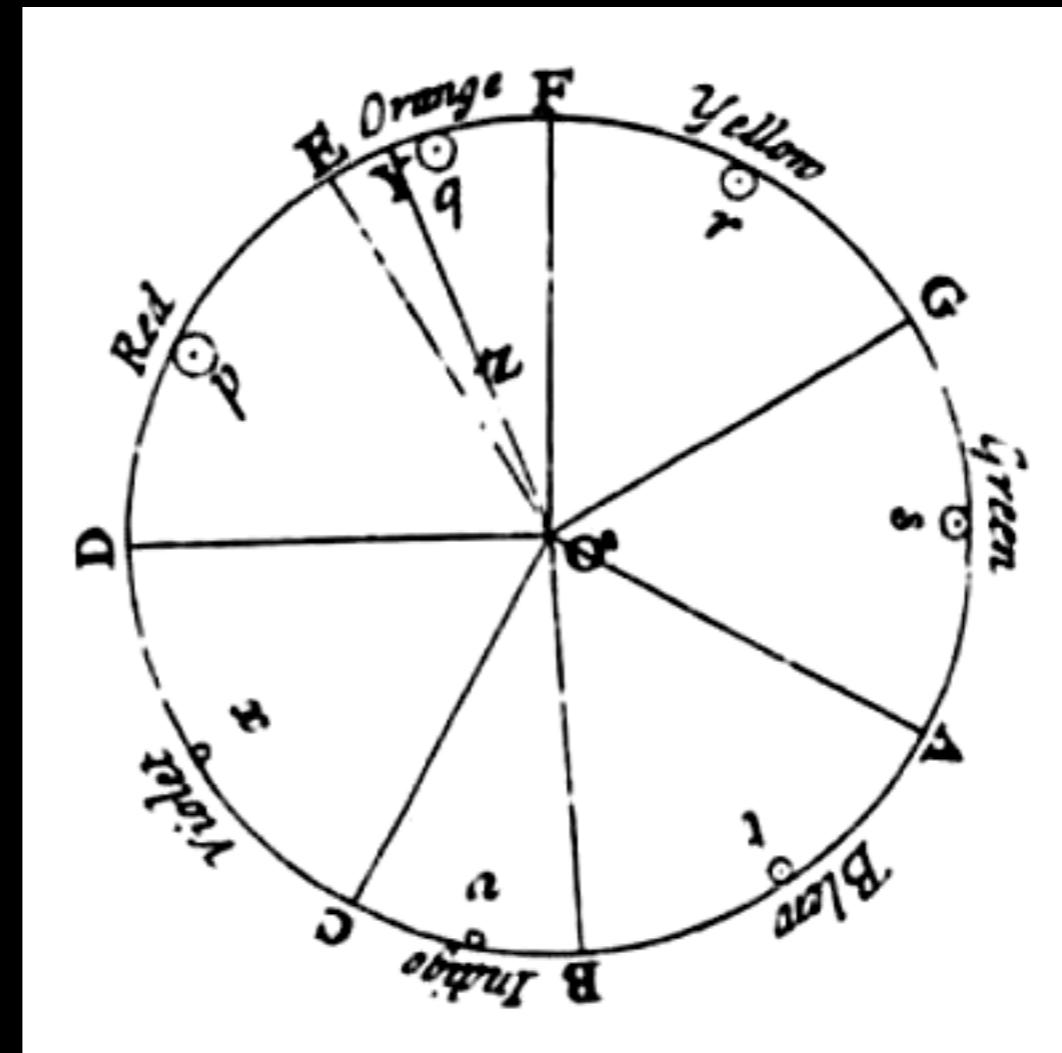
# Color — Wheel Metaphor

Newton  
Color in a prism



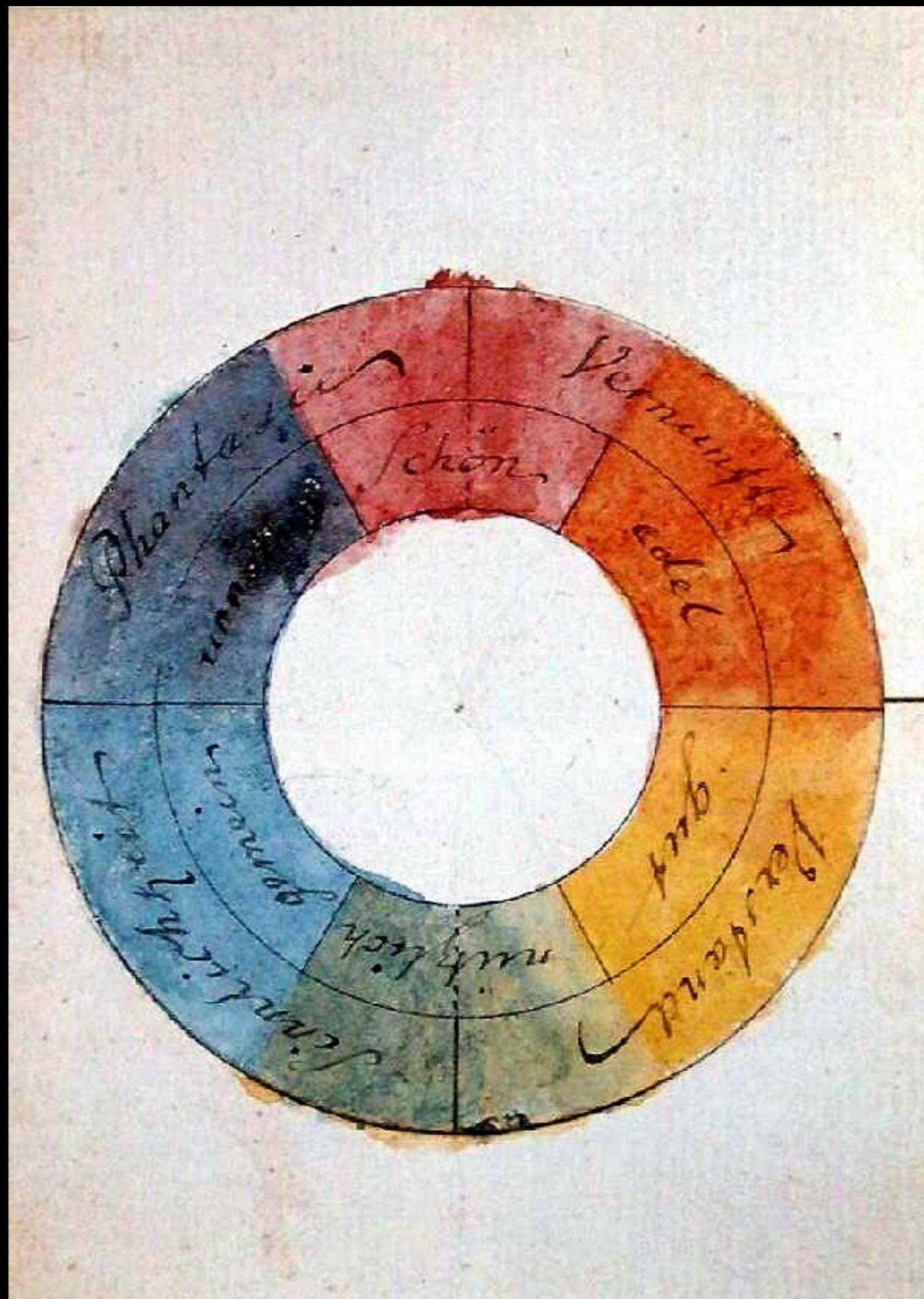
# Color Wheel

Newton  
Color in wheel—  
Artificial Continuum



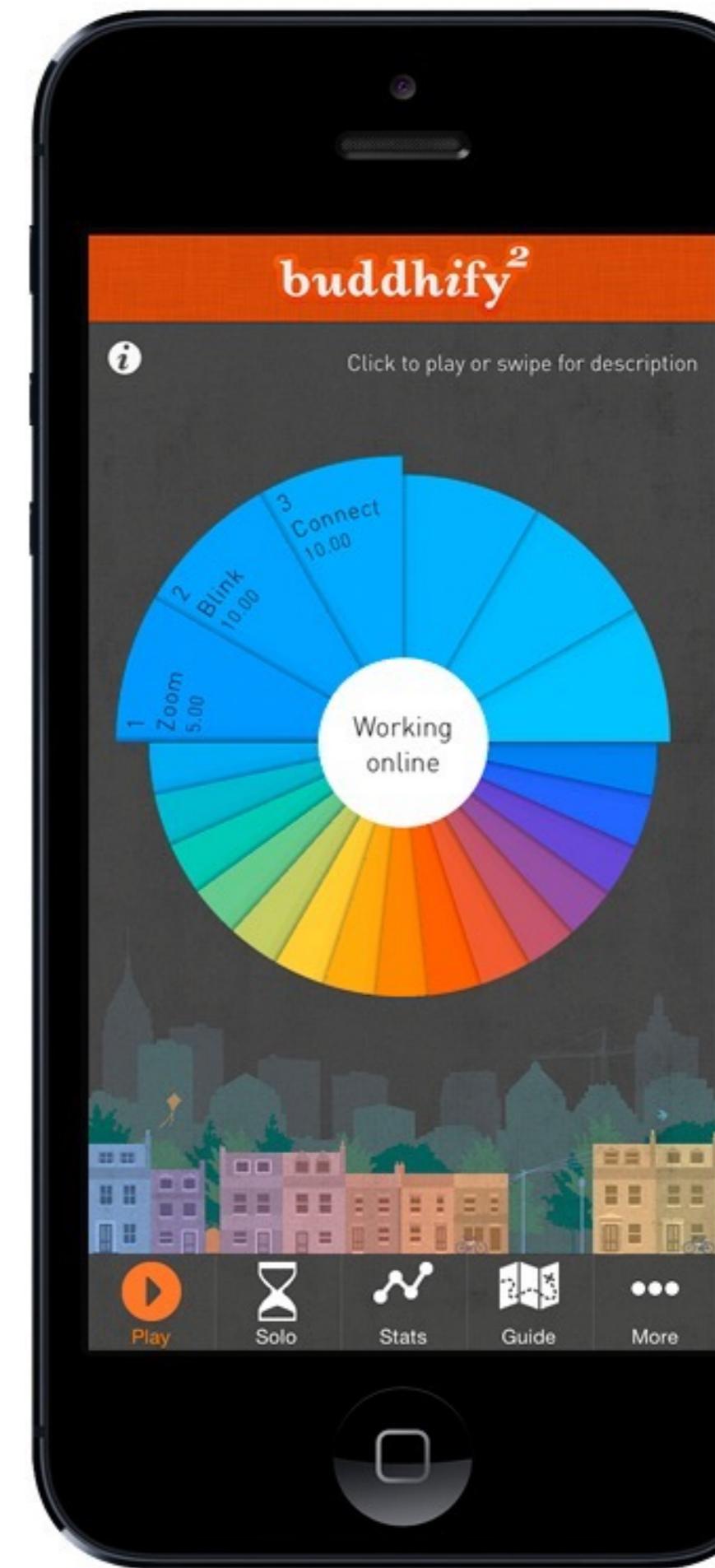
# Color Wheel

Goethe,  
Theory of Colors  
Even color wheel,



# Color Wheel

Stefanie Posavec  
Mediation App



# Metaphor

## Apple Human Interface Guidelines

People learn more quickly when an app’s virtual objects and actions are metaphors for familiar experiences—whether rooted in the real or digital world. Metaphors work well in iOS because people physically interact with the screen. They move views out of the way to expose content beneath. They drag and swipe content. They toggle switches, move sliders, and scroll through picker values. They even flick through pages of books and magazines.

## **Metaphor**

<https://developer.apple.com/ios/human-interface-guidelines/overview/themes/>

# The Rules of Interface

Apple Human Interface Guidelines

Themes:

- Clarity
- Deference
- Depth

Design Principles:

- Aesthetic integrity
- Consistency
- Direct manipulation
- Feedback
- Metaphor**
- User control



<https://developer.apple.com/ios/human-interface-guidelines/overview/themes/>

# Digital Poetics: Language of Interface

What is an Interface?

????

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What is an Interface?

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Interface is not a thing, but a zone of affordances  
organized to support and provoke activities and  
behaviors probabilistically rather than mechanically.

—Drucker

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—Drucker

An interface expresses the internal structure of the  
document (its heads and subheads, tables and lists)  
as well as the framework of menus, buttons, and links  
that guides users through it.

—Ellen Lupton, *Type on Screen*

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—Ellen Lupton, *Type on Screen*

# An Interface is a Theater



## RAINFOREST

The story of palm oil starts in the rainforest, home to more than half of the world's estimated 10m species of plants, animals and insects and seen as a potential source of cures for a range of diseases. Known as the 'lungs of the planet', rainforests recycle carbon dioxide into oxygen. They also store water, prevent soil erosion and protect biodiversity. But they're under serious threat.

the guardian



In the 00:21 minutes you've been here, 0.2 football pitches of rainforest have been cut down\*

Sponsored by



<https://www.theguardian.com/sustainable-business/ng-interactive/2014/nov/10/palm-oil-rainforest-cupboard-interactive>

# An Interface is a Theater

there is a backstage/trapdoors/audience



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<https://www.theguardian.com/sustainable-business/ng-interactive/2014/nov/10/palm-oil-rainforest-cupboard-interactive>

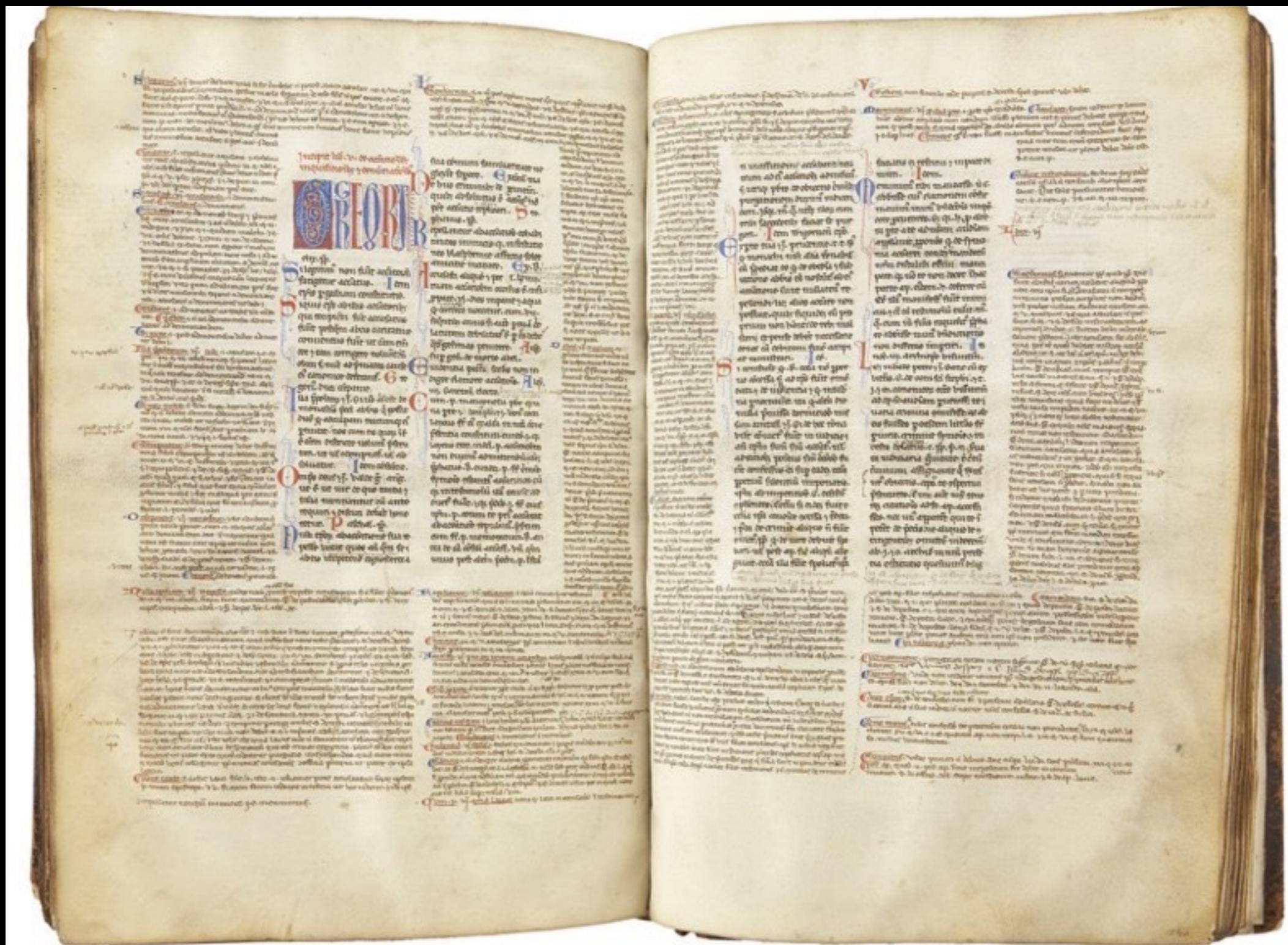
# Digital Poetics: Language of Interface

there is a backstage/trapdoors/audience

who is the director?

who is the user/reader/human?

# Digital Poetics: Reading and Interface



Decretals of Pope Gregory IX with Gloss of Bernard of Parma, 13th Century

# Interface as Book

Models of reading: how do you want the reader to read/experience the subject?

Scroll vs page: Linear/selective/consultative/informative

Navigation: swipes/click/scroll

Flow of content: Spine/scroll/grid/slides

Type of information: novel/poetry/news slides

Organization: Table of contents/index/hypertext/library

Dimensionality/Depth: Borges, text as interactive (shapes can be to)

# The History of Interface

To make computers accessible:

Ivan Sutherland, Sketchpad

[https://www.youtube.com/watch?v=USyoTHa\\_bA](https://www.youtube.com/watch?v=USyoTHa_bA)



Ivan Sutherland : Sketchpad Demo (1/2)

195,815 views

1K

18

SHARE

...

# The Theory of Interface

Donald Hoffman “Interface Theory of Perception”

A goal of perception is to estimate true properties of the world. A goal of categorization is to classify its structure. Aeons of evolution have shaped our senses to this end. These three assumptions motivate much work on human perception. I here argue, on evolutionary grounds, that all three are false. Instead, our perceptions constitute a species-specific user interface that guides behavior in a niche. Just as the icons of a PC’s interface hide the complexity of the computer, so our perceptions usefully hide the complexity of the world, and guide adaptive behavior. This interface theory of perception offers a framework, motivated by evolution, to guide research in object categorization. This framework informs a new class of evolutionary games, called interface games, in which pithy perceptions often drive true perceptions to extinction.

<http://www.cogsci.uci.edu/~ddhoff/interface.pdf>

# Reading and Interface

Nielsen Norman Group “F shaped pattern for reading web content”

<https://www.nngroup.com/articles/f-shaped-pattern-reading-web-content/>



# “The Rules of Interface”

Ben Shneiderman's "Eight Golden Rules of Interface Design"

- 1 Strive for consistency.
- 2 Enable frequent users to use shortcuts.
- 3 Offer informative feedback.
- 4 Design dialog to yield closure.
- 5 Offer simple error handling.
- 6 Permit easy reversal of actions.
- 7 Support internal locus of control.
- 8 Reduce short-term memory load.

<https://www.cs.umd.edu/users/ben/goldenrules.html>

Read these critically!

# Digital Poetics: Reading and Interface

## **Text vs Visual Language**

### **The process of interpretation—**

- 1) Text has more potential difficulty
- 2) Potential for empathy with text is much greater because the reader goes to the process of rebuilding the world from the words
- 3) Reactions to visual cues entail a much more instant and unconscious processing
- 4) The possibility of changing someone's mind through vision seems much less likely
- 5) The first glance which is the most reactive and identity/bias-confirming (xenophobia)

# Digital Poetics: Reading and Interface

## **Considerations**

Information (you) > Knowledge (reader)

Empathy with Reader

How will the Reader Imagine/Feel?

Why will the reader explores this?

Imagining how others see

Statistics and Empathy

Design for Empathy

Managing Scale/Layers: Global to human to...

Balance of Scale/Vision/Assets

Point-of-View: Earth/Person as Object

Framing an Argument/Storytelling...

Assets: Photos/Text/Map/etc...

Being a Reader of words and visual language

Reading >> turning pictures to words

Reading images >> ??? what kind of process?

# Speculative Taxonomy of Assets/Content

## **Content:**

Text  
Data  
Photography  
Satellite Images  
Maps  
Graphical Primitives/shapes  
Cartesian Systems/Math

Ornament

Symbols

Illustration

## **Expressive qualities:**

Objectivity/Reification  
Empathy/Scale (1 person/1 million)  
Linear/Associative Reading  
Hide and reveal  
...

## **Stylistic qualities:**

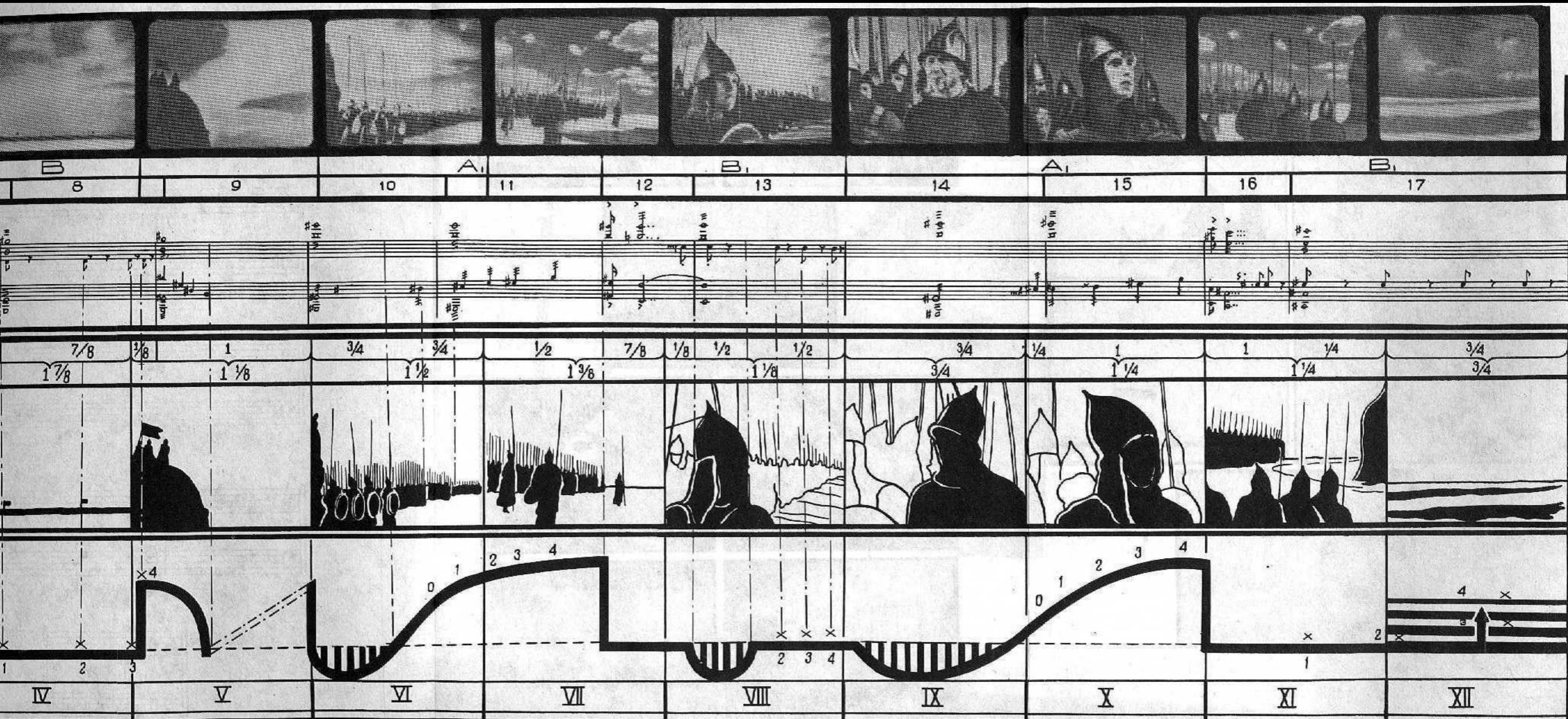
Digital/Analog (rendered/drawn)  
Static/In motion  
Style itself  
Creation/Sourcing of the assets (data collection,  
stock photos)

# Digital Poetics: Visual Narrative

The story is set up geographically, and its map is open to the space lived in and to its evolution. It is a table that organizes movements as change. That which begins to move in the emotional map of a novel is the plan of a topographical unconsciousness, in which emotions are organized as in an arc.

—Francesco Franchi

# Sergei Eisenstein, Film Form



SHOT I

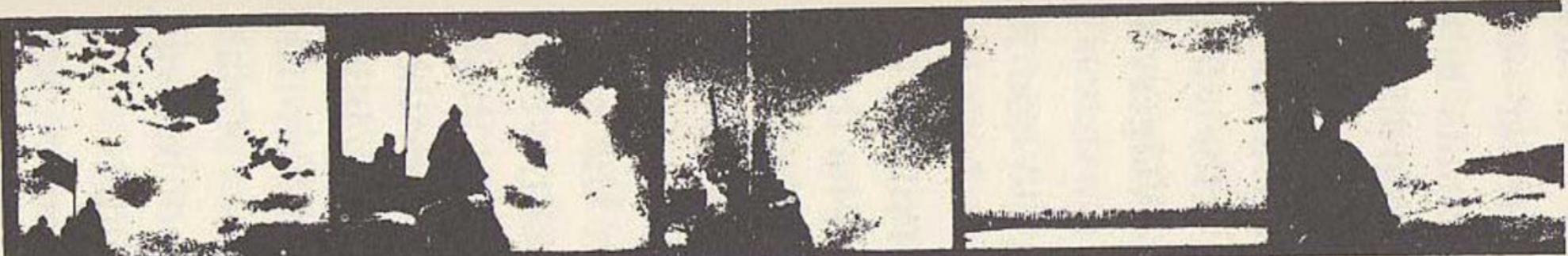
SHOT II

SHOT III

SHOT IV

SHOT V

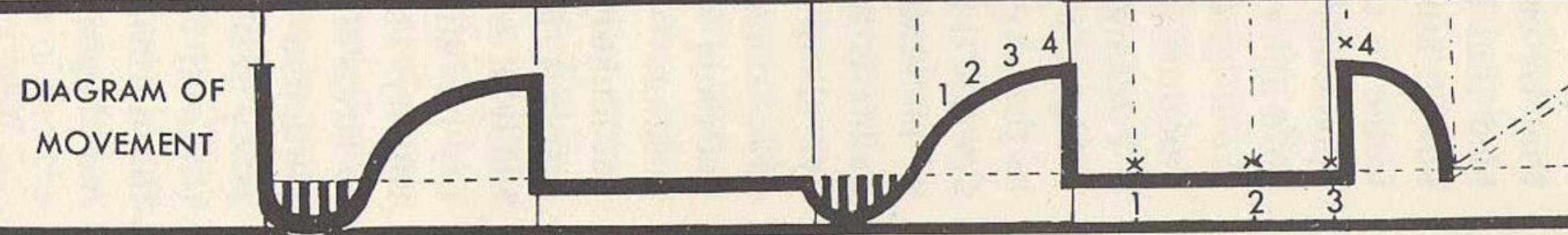
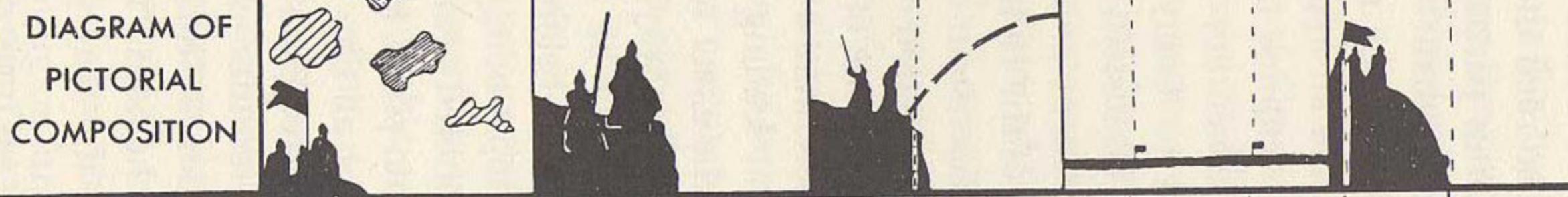
## PICTURE FRAMES



MUSIC PHRASES	A		B		A		B		C
	1	2	3	4	5	6	7	8	9



LENGTH (in measures)	1	1	1	1	1	1	$\frac{7}{8}$	$\frac{1}{8}$	1
	2		2		2		$1\frac{1}{8}$		$1\frac{1}{8}$



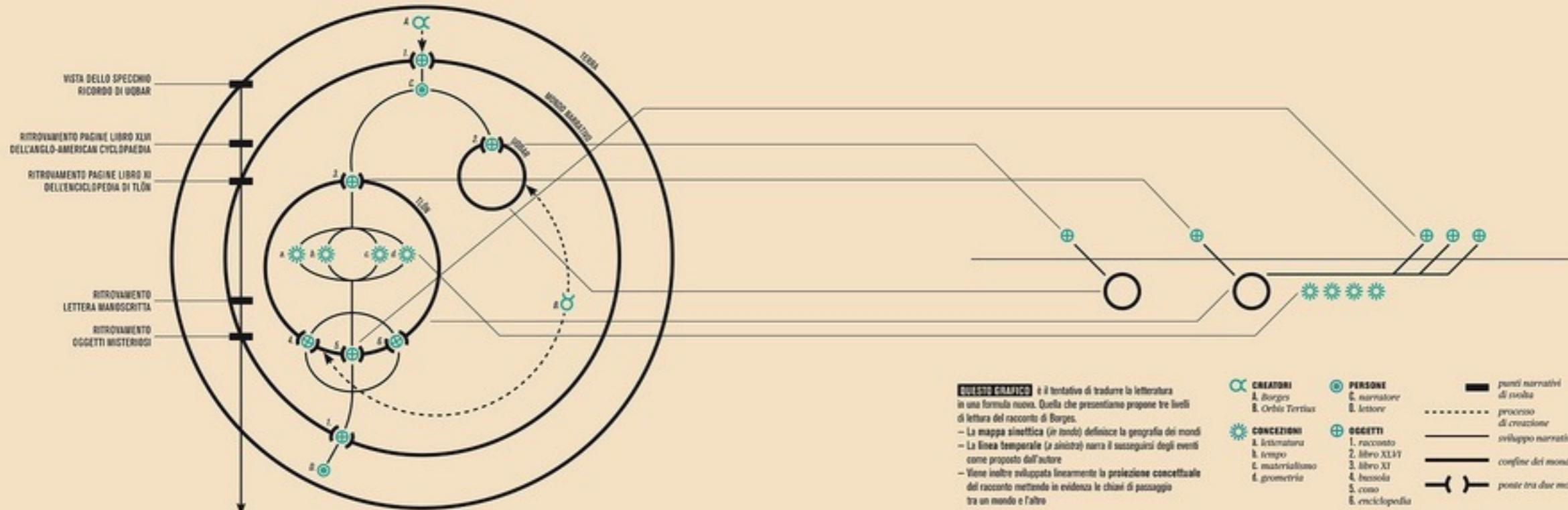
# Francesco Franchi, Letteratura Grafica

GLOBAL AGENDA

## Letteratura grafica

– Traduzioni bidimensionali di classici

IDEAZIONE E REALIZZAZIONE – Francesco Franchi



Jorge Luis Borges

**"TLÖN,  
UQBAR,  
ORBIS  
TERTIUS"  
(1940)**

Il testo completo del racconto (tratta da Tutte le opere, Mondadori 1984, Vol. I, traduzione di Franca Lucentini) è sul sito del Sole 24 Ore [issuu.com/lmagazine](http://issuu.com/lmagazine)

**D**ebbo la scoperta di Uqbar alla congiunta di uno specchio e di un'encyclopaedia. Lo specchio inquietava il fondo d'un corridoio in una villa di via Gaona, a Ramos Mejía; l'encyclopaedia s'intitolava ingannevolmente *The Anglo-American Cyclopædia* (New York 1917), ed è una ristampa non meno letterale che noiosa dell'*Encyclopaedia Britannica* del 1902. Il fatto accadde di un cinque anni fa. Bioy Casares, che quella sera aveva cenato da noi, stava parlando d'un suo progetto di romanzo in prima persona, in cui il narratore, omettendo o deformando alcuni fatti, sarebbe inciso in varie contraddizioni, che avrebbero permesso ad alcuni lettori - a pochissimi lettori - di indovinare una realtà atroce o banale. Dal fondo remoto del corridoio lo specchio ci spia. Scoprimmo (a notte alta questa scoperta è inevitabile) che gli specchi hanno qualcosa di mostruoso. Bioy

Casares ricordò allora che uno degli eresiarchi di Uqbar aveva giudicato che gli specchi e la copula sono abominevoli, poiché moltiplicano il numero degli uomini. Interrogato sull'origine di questo detto memorabile, rispose che *The Anglo-American Cyclopædia* lo registrava nell'articolo su Uqbar. Nella villa (che avevamo presa in affitto ammobbiata) c'era un esemplare di quest'opera. Nelle ultime pagine del volume XLVI trovammo un articolo su Upsala; nelle prime del XLVII, uno su *Unvaldo Languages*; ma nemmeno una parola su Uqbar. Bioy, tra deluso e stupito, interrogò i nomi dell'indice: provò invano tutte le lezioni possibili: Ulkbar, Ucbar, Ooqbar, Qokbar, Oukbah... Prima di andarsene, mi disse che si trattava di una regione dell'Irak, o dell'Asia Minore. Confessò che assentì con un certo imbarazzo. Congetturali che quel paese non documentato, quell'eresiarcha anomalo,

fossero una finzione improvvisata dalla modestia di Bioy per giustificare una frase. L'esame, affatto sterile, d'uno degli atlanti di Justus Perthes, mi confermò in questo dubbio.

Il giorno dopo, Bioy mi chiamò da Buenos Aires. Mi disse che aveva sotlocchio l'articolo su Uqbar, nel volume XLVI dell'*Anglo-American Cyclopædia*. Il nome dell'eresiarcha non c'era, ma c'era bene notizia della sua dottrina, e in parole quasi identiche a quelle citate da lui, sebbene - forse - letterariamente inferiori. Lui aveva citato, a memoria: «Copulation and mirrors are abominable».

Il testo dell'*Encyclopaedia* diceva: «Per uno di questi gnostici l'universo visibile è illusione, o - più precisamente - sofisma; gli specchi e la paternità sono abominevoli (*mirrors and fatherhood are abominable*) perché lo moltiplicano e lo divulcano». Gli dissi, senza mancare alla verità, che mi sarebbe piaciuto di vedere

codesto articolo. Pochi giorni dopo me lo portò. Il che mi sorprese, perché gli scrupolosi indici cartografici della *Erdkunde* di Ritter ignorano completamente l'esistenza di Uqbar.

Il volume portato da Bioy era effettivamente il XLVI dell'*Anglo-American Cyclopædia*. L'indicazione alfabetica sul frontespizio e sulla costola era la stessa che nel nostro esemplare (Tor-Ups), ma il volume, invece che di 917 pagine, era di 921. Queste quattro pagine supplementari contenevano l'articolo su Uqbar: non previsto (come il lettore avrà notato) dall'indicazione alfabetica. Accertammo poi che tra i due volumi non c'era, a parte questa, altra differenza; entrambi (come credo di aver indicato) erano ristampe della decima *Encyclopaedia Britannica*. Bioy aveva comprato il suo esemplare in una qualsiasi vendita all'asta.

Leggemono l'articolo con una certa attenzione. Il solo passo sorpre-

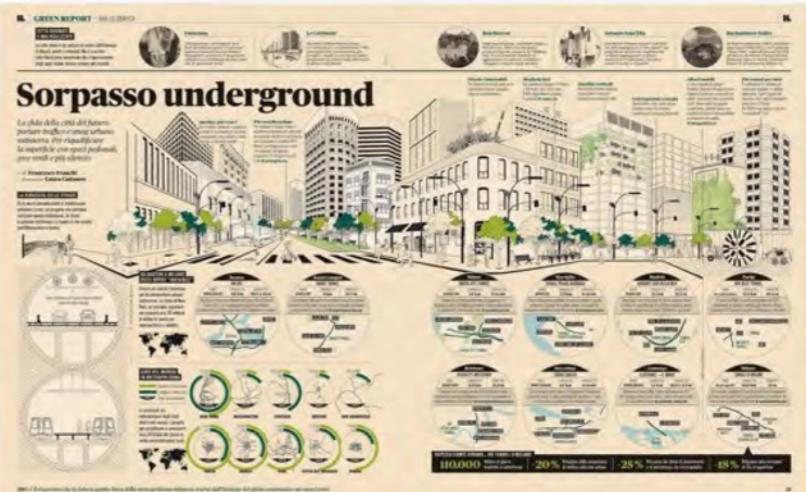
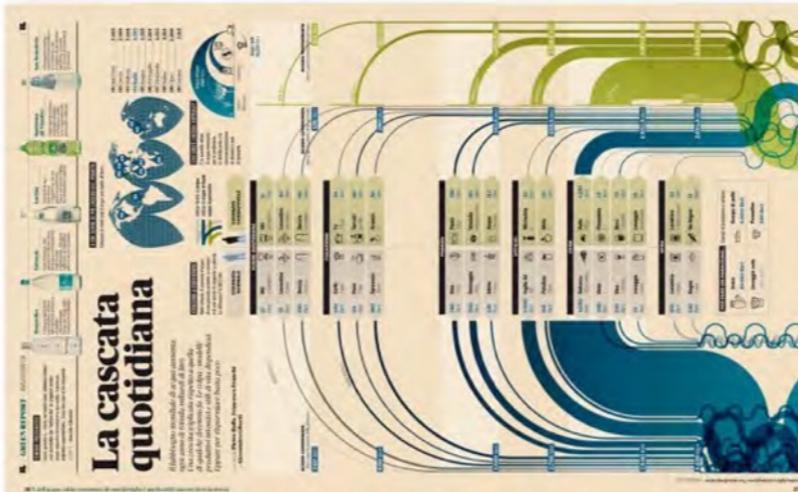
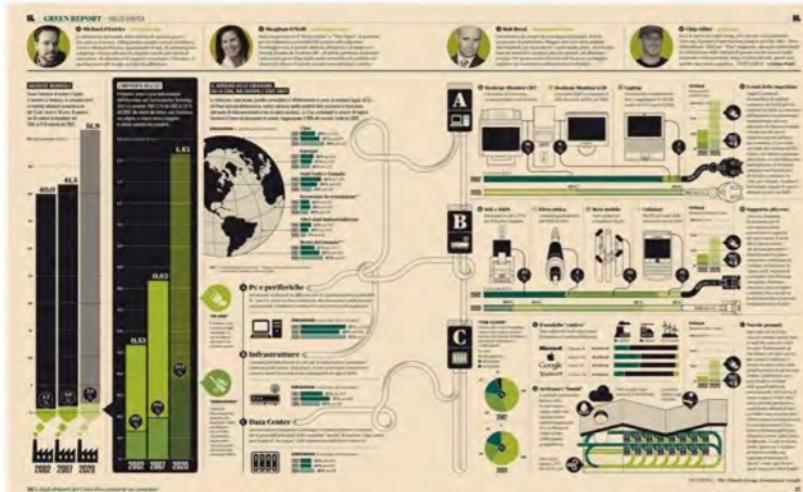
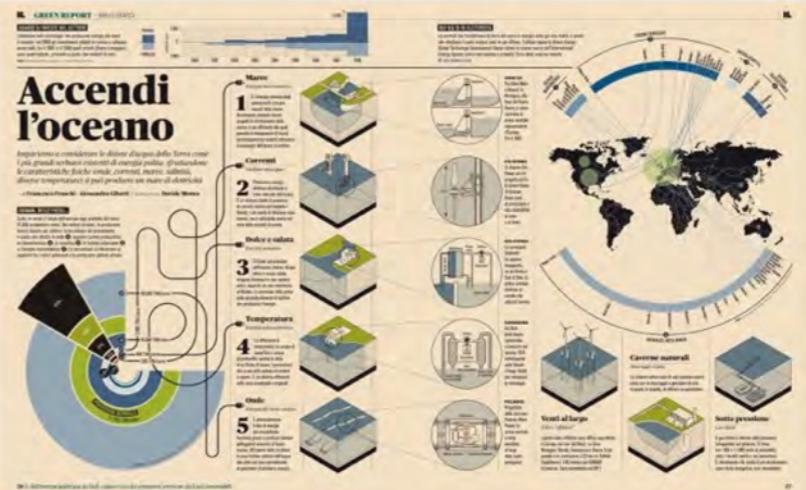
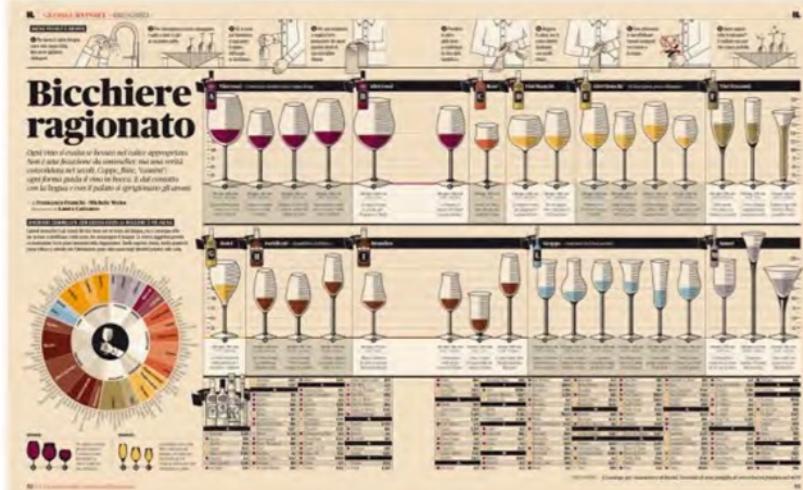
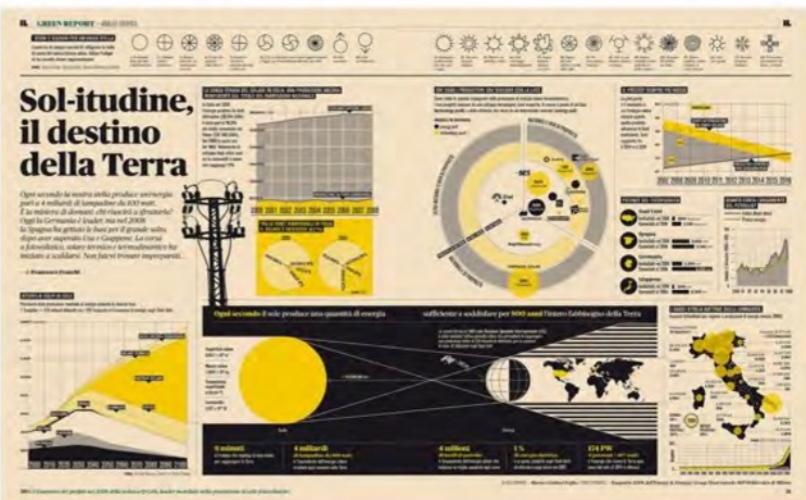
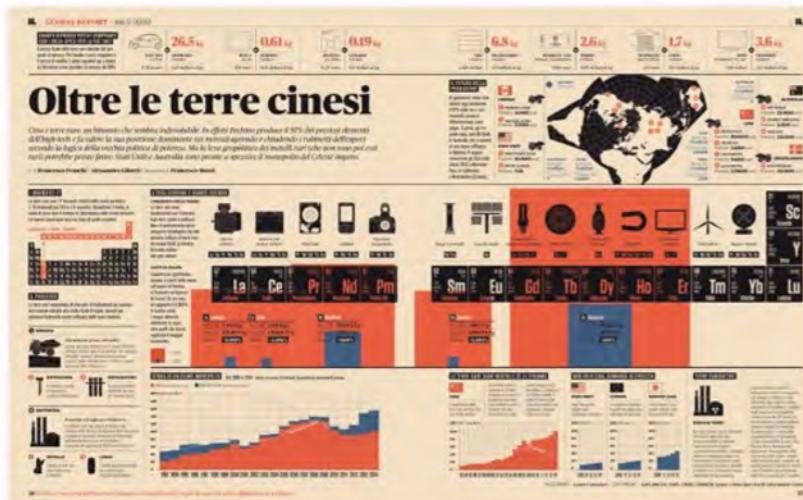
dente era quello citato da Bioy; il resto pareva molto verosimile, molto conforme all'intonazione generale dell'opera e (com'è naturale) un po' noioso. Rileggendolo, scoprimmo sotto la sua rigorosa scrittura una fondamentale indeterminazione. Dei quattordici nomi della sezione geografica ne riconoscemmo solo tre (Khorassan, Armenia, Erzrum), interpolati nel testo in modo ambiguo; dei nomi storici, uno solo: quello dell'impostore Esmeril il Mago, che però era citato solo per confronto. L'articolo sembrava precisare le frontiere di Uqbar, ma i suoi nebulosi luoghi di riferimento erano fiumi, crateri e montagne di quello stesso paese. Leggemono, per esempio, che il confine meridionale è formato dai bassopiani di Tsai Chaldun e dal delta dell'Axa, e che nelle isole di questo delta abbondano i cavalli selvatici. Questo, al principio della pagina 918. Dalla sezione storica

(pagina 920) apprendemmo che, in seguito alle persecuzioni religiose del XIII secolo, gli ortodossi cercavano rifugio in quelle isole, dove s'iniziarono ancora i loro obelischi e dove non è raro, scavando, di ritrovare i loro specchi di pietra. La sezione «Lingua e Letteratura», assai breve, conteneva un solo luogo notabile, in cui si diceva che la letteratura di Uqbar era di carattere fantastico, e che le sue epopee come le sue leggende non si riferivano mai alla realtà, ma alle due regioni immaginarie di Mlejnias e di Tlön... La bibliografia comprendeva quattro volumi che finora non c'è riuscito di trovare, sebbene il terzo - Silas Haslam, *History of the Land Called Uqbar*, 1874 - figurò nei cataloghi di libreria di Bernard Quaritch. Il primo, *Lesbare und leserwerthe Bemerkungen über das Land Ukkbar in Klein-Asien*, avrebbe la data del 1641 e sarebbe opera di Johannes Valentinus Andrei. La

cosa è significativa: un paio d'anni dopo ritrovai inaspettatamente questo nome in certe pagine di De Quincey (*Writing*, volume XIII), e seppi che era quello di un teologo tedesco il quale, al principio del secolo XVII, descrisse la comunità immaginaria della Rosacroce; comunità che altri, poi, fondò realmente sull'esempio di ciò che colui aveva immaginato.

Quella stessa sera fummo alla Biblioteca Nazionale; ma invano disturbammo atlanti, cataloghi, annuari di società geografiche, memorie di viaggiatori e di storici. Nessuno era mai stato a Uqbar. Neppure l'indice generale dell'encyclopaedia di Bioy registrava questo nome. Il giorno dopo, Carlos Mastromardi (ciò avrei riferito il caso) adocchiò in una libreria le costole in nero e oro della *Anglo-American Cyclopædia*. Entrò e consultò il volume XLVI. Naturalmente, non trovò la minima traccia di Uqbar...

continua su [www.sole24ore.com/lmagazine](http://www.sole24ore.com/lmagazine)



# Francesco Franchi

GREEN REPORT - ANALISI GRAFICA

## L'ELenco delle specie a rischio

Il consumo di pesce per capite è quasi doppicato negli ultimi cinquant'anni. Se continuassimo a pescare e a mangiare pesce al ritmo attuale rischieremmo di svuotare gli oceani. Greenpeace ha compilato un elenco delle specie a rischio: il tonno piatto giallo è il sorvegliato specie più famosa. Ecco altri



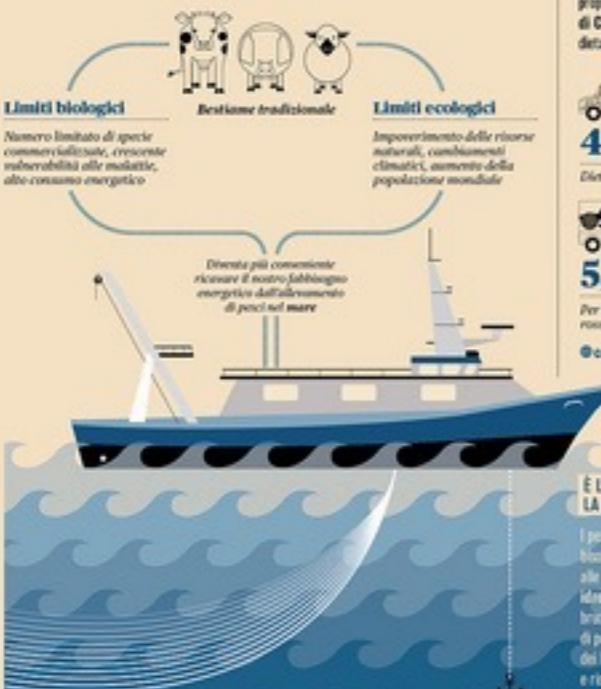
# La fattoria dei pesci

Mentre la domanda continua a crescere, le scorte di pescato diminuiscono e i mari si svuotano. Ormai quasi il 50 per cento dei consumi mondiali viene coperto da prodotti allevati. Ma l'acquacoltura è davvero una soluzione sostenibile? Tra fautori del cambiamento e ambientalisti, il dibattito è iniziato

di Francesco Franchi  
Illustrazioni Laura Cattaneo

## AGGIORNAMENTO MANDRIE E BISTECCE

L'allevamento tradizionale di terraferma è destinato a finire. Lo sostiene Paul Roberts nel libro *La fine del cibo* (Codice Edizioni, 2008, pagg. 460, euro 28). Secondo il giornalista inglese doveremo dunque ricavare le nostre proteine dal mare, mettendo in alto una "rivelazione blu".



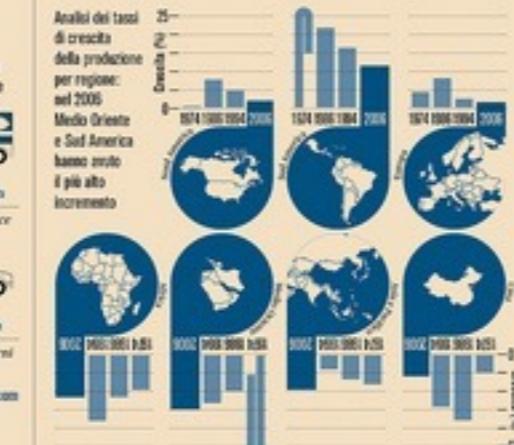
## CON LA CARNE INQUINI DI PIÙ

Tra i vari parametri per calcolare la propria impronta di CO<sub>2</sub> (annuale) lo dieta è determinante



Per chi mangia carne rosso tutti i giorni  
© carbonfootprint.com

## L'ONDA LUNGA DELL'ACQUACOLTURA NELLE DIVERSE REGIONI



## È L'OSTRICA GIGANTE LA PIÙ RICHIESTA IN CATTIVITÀ

I pesci consumano meno. Pur vivere hanno bisogno di un apporto calorico minore rispetto alle specie di terra. Essendo a sangue freddo e idrotermici, per far funzionare il proprio organismo bruciano poche calorie e utilizzano le riserve per crescere di peso. Inoltre si prestano all'industrializzazione meglio dei loro concorrenti terrestri: si possono allevare in massa e rispondono bene alla selezione. Ecco, nel disegno a destra, le maggiori specie allevate in acquacoltura.

## 01 Ostrica Gigante Crassostrea Gigas

02 Carpa Argentata Hypophthalmichthys Molitrix

## GIRO DEL MONDO SUBACQUICO IN VENTI PRODUTTORI

La mappa dell'acquacoltura mondiale. Sotto: le 20 Paesi produttori. A destra, le aree di allevamento. Il mercato è dominato dall'Asia, con la Cina in prima linea. Il continente orientale produce da solo l'89% del pesce del mondo (corrispondente al 77% del fatturato complessivo del settore). Sono invece in Africa i Paesi con i maggiori tassi di crescita. Record all'Uganda: dal 2004 al 2006 ha registrato un aumento della produzione del 140%. Cioè aquacoltura, secondo gli esperti, ha ancora ampi margini di crescita visto che al momento viene praticata solo vicino alla costa. L'allevamento in acque aperte ha tuttavia bisogno di tecnologie adeguate.



01	Cina	34,4 milioni	26 milioni
02	Egitto	8,1 mila	6,8 mila
03	Myanmar	3,1 mila	3,4 mila
04	Vietnam	1,6 mila	3,3 mila
05	Corea del Sud	0,5 mila	1,4 mila
06	Thailandia	0,3 mila	2,2 mila
07	Stati Uniti	0,4 mila	0,9 mila
08	Indonesia	0,3 mila	2,2 mila
09	Ruanda	0,1 mila	1,2 mila
10	Taiwan	0,3 mila	0,9 mila
11	Spagna	0,3 mila	0,4 mila
12	Grecia	0,2 mila	4,4 mila
13	Bolivia	0,2 mila	0,3 mila
14	Giappone	0,2 mila	3,0 mila
15	Francia	0,2 mila	0,6 mila
16	Norvegia	0,2 mila	22 mila
17	Italia	0,1 mila	0,6 mila
18	Gran Bretagna	0,1 mila	0,2 mila
19			
20			

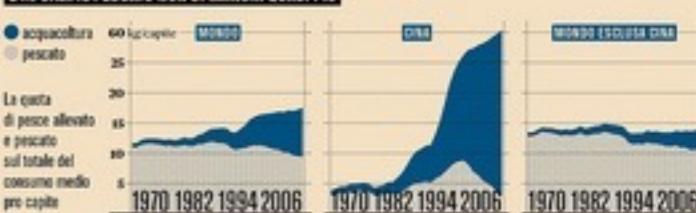
## PAESE CHE VAI PESCE CHE TROVI

2-5 kg/anno    5-10 kg/anno    10-20 kg/anno  
20-30 kg/anno    30-80 kg/anno    >80 kg/anno

Non tutti mangiano pesce allo stesso modo. Vari i motivi, oltre a quelli di cultura e tradizione culinaria: disponibilità, prezzo, stagionalità. I Paesi con il consumo di pesce per capite annuo più alto nel mondo (più di 80 kg) sono Groenlandia e Giappone.



## SEMPRE PIÙ PESCE D'ALLEVAMENTO SULLE TAVOLE GLOBALI E IN CINA IL PESCATO NON SI MANGIA QUASI PIÙ



## 01 Ostrica Gigante Crassostrea Gigas

02 Carpa Argentata Hypophthalmichthys Molitrix

## 03 Carpa Erbivora Cyprinus Carpio

04 Vongole Filippine Ruditapes philippinarum

## 05 Gambero Bianco del Pacifico Penaeus Vannamei

06 Tilapia del Nilo Oreochromis niloticus niloticus

## 07 Carassio Carassius carassius

08 Caposanta orientale Parapristipomao jessiae

# Digital Poetics: Data Visualization

# The Visual Display of Quantitative Information

Edward Tufte, 1983

Statistics/presentation

Many numbers-small space

Data maps

Timeseries

Information visualization:  
graphics and the service  
of quantitative methods a  
subset of business  
economic statistics

—Drucker

Excellence in statistical graphics consists of complex ideas communicated with clarity, precision, and efficiency. Graphical displays should

- show the data
- induce the viewer to think about the substance rather than about methodology, graphic design, the technology of graphic production, or something else
- avoid distorting what the data have to say
- present many numbers in a small space
- make large data sets coherent
- encourage the eye to compare different pieces of data
- reveal the data at several levels of detail, from a broad overview to the fine structure
- serve a reasonably clear purpose: description, exploration, tabulation, or decoration
- be closely integrated with the statistical and verbal descriptions of a data set.

# The Visual Display of Quantitative Information

Edward Tufte, 1983

Graphics *reveal* data. Indeed graphics can be more precise and revealing than conventional statistical computations. Consider Anscombe's quartet: all four of these data sets are described by exactly the same linear model (at least until the residuals are examined).

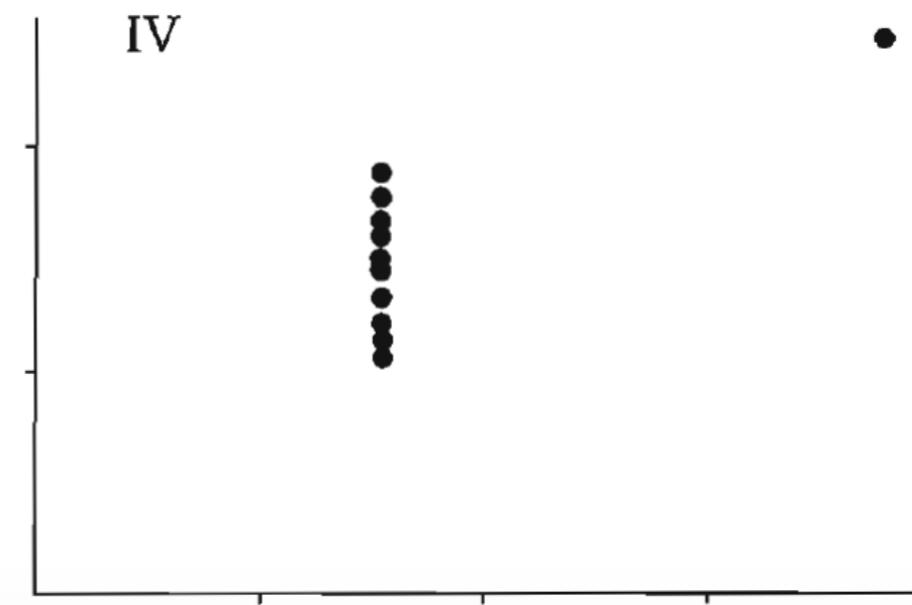
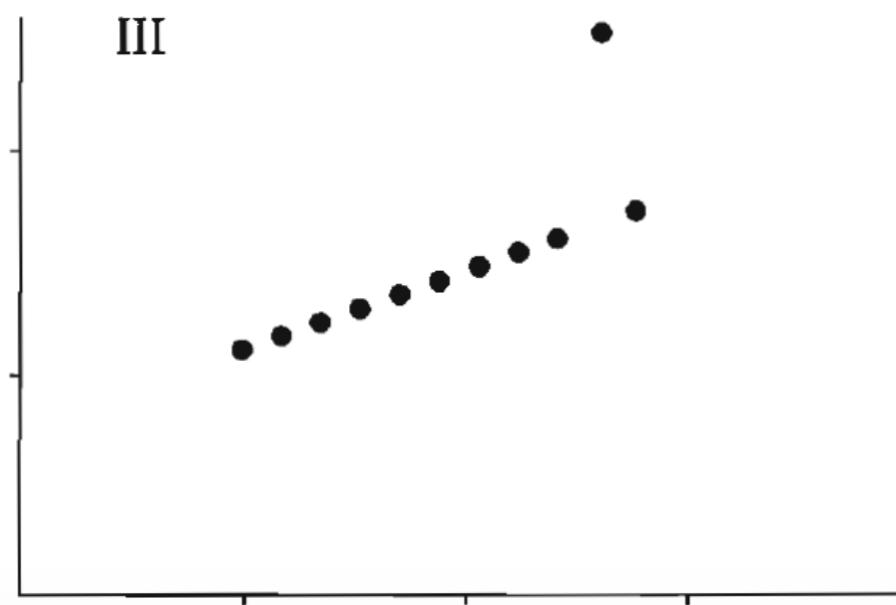
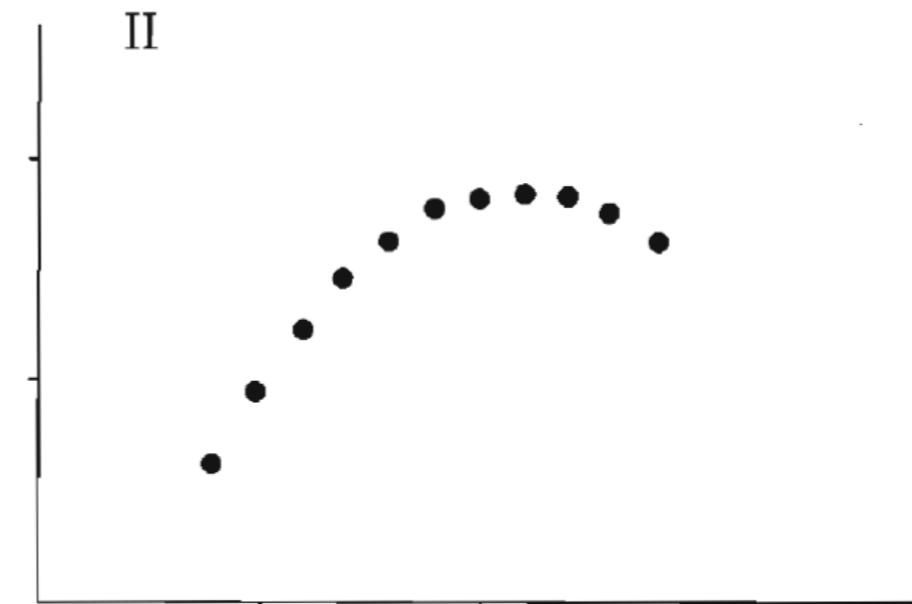
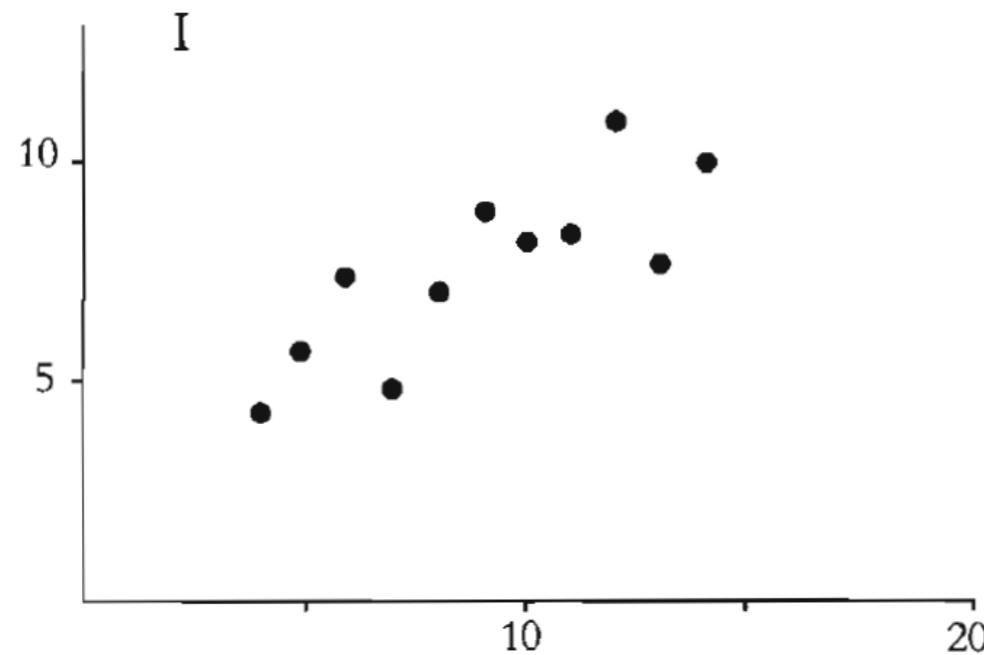
I		II		III		IV	
X	Y	X	Y	X	Y	X	Y
10.0	8.04	10.0	9.14	10.0	7.46	8.0	6.58
8.0	6.95	8.0	8.14	8.0	6.77	8.0	5.76
13.0	7.58	13.0	8.74	13.0	12.74	8.0	7.71
9.0	8.81	9.0	8.77	9.0	7.11	8.0	8.84
11.0	8.33	11.0	9.26	11.0	7.81	8.0	8.47
14.0	9.96	14.0	8.10	14.0	8.84	8.0	7.04
6.0	7.24	6.0	6.13	6.0	6.08	8.0	5.25
4.0	4.26	4.0	3.10	4.0	5.39	19.0	12.50
12.0	10.84	12.0	9.13	12.0	8.15	8.0	5.56
7.0	4.82	7.0	7.26	7.0	6.42	8.0	7.91
5.0	5.68	5.0	4.74	5.0	5.73	8.0	6.89

N = 11  
mean of X's = 9.0  
mean of Y's = 7.5  
equation of regression line:  $Y = 3 + 0.5X$   
standard error of estimate of slope = 0.118  
 $t = 4.24$   
sum of squares  $\sum (X - \bar{X})^2 = 110.0$   
regression sum of squares = 27.50  
residual sum of squares of Y = 13.75  
correlation coefficient = .82  
 $r^2 = .67$

# The Visual Display of Quantitative Information

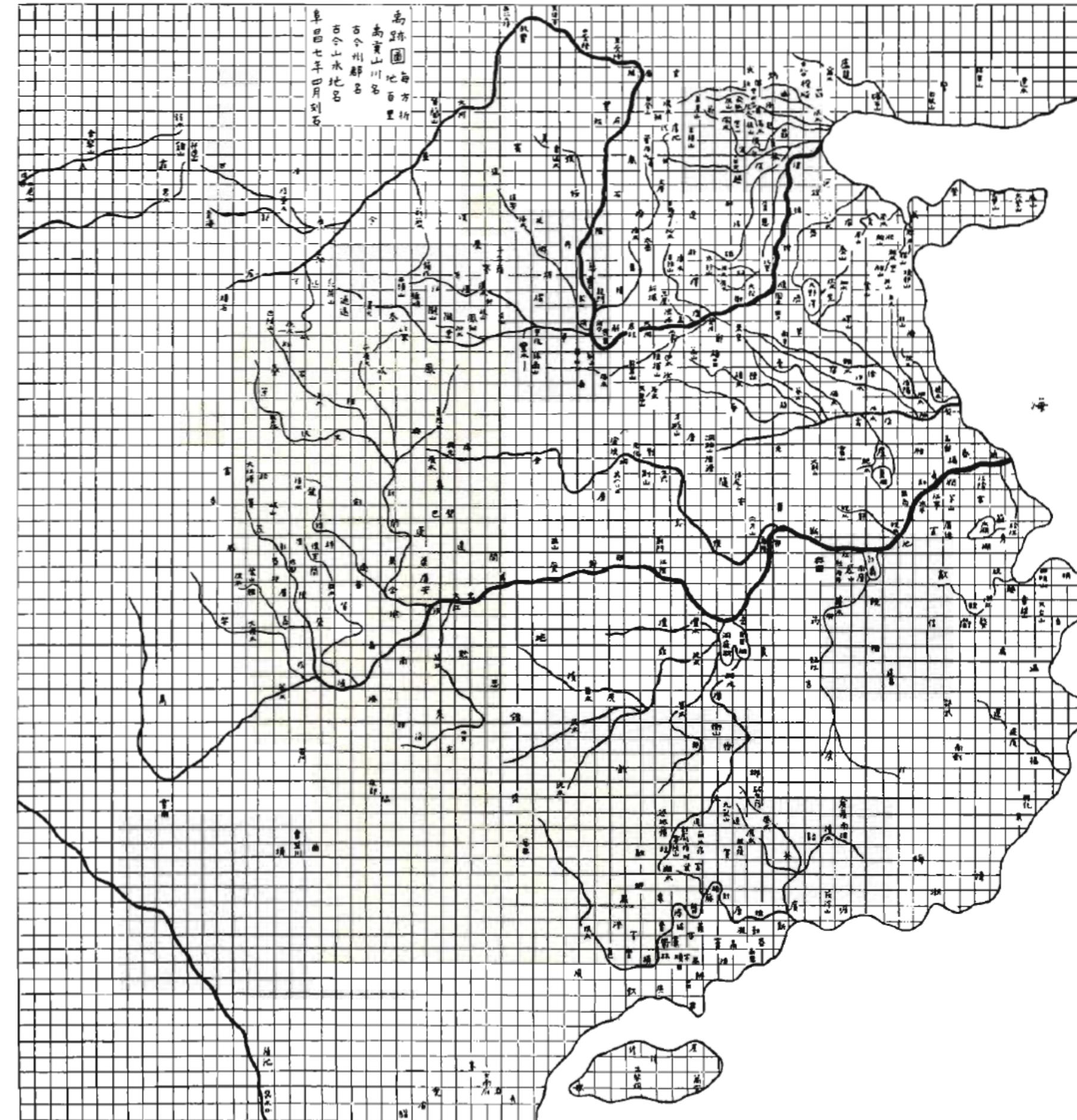
And yet how they differ, as the graphical display of the data makes vividly clear:

F. J. Anscombe, "Graphs in Statistical Analysis," *American Statistician*, 27 (February 1973), 17–21.



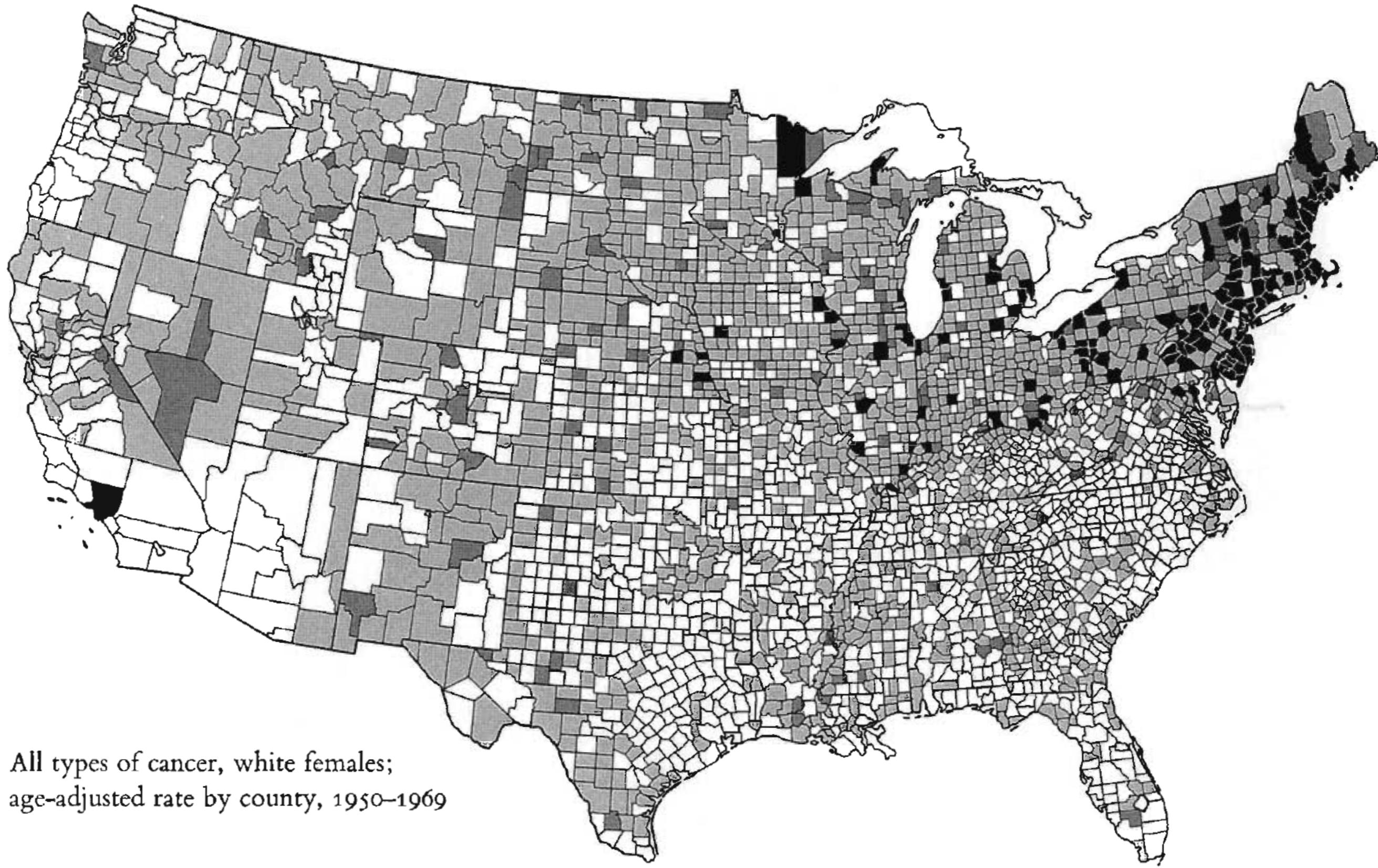
# The Visual

Edward Tufte, 1983

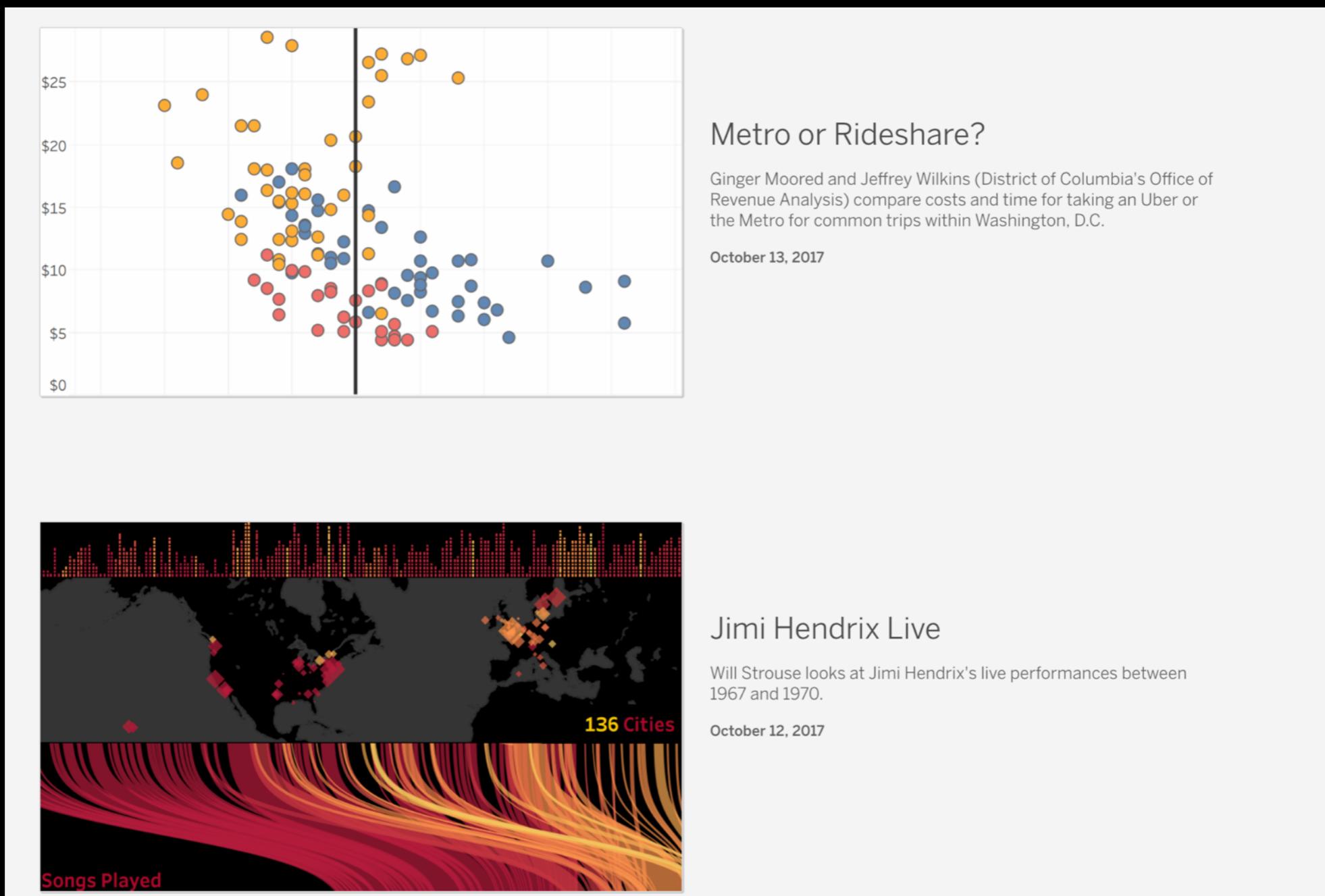


E. Chavannes, "Les Deux Plus Anciens Spécimens de la Cartographie Chinoise," *Bulletin de l'École Française de l'Extrême*

# The Visual Display of Quantitative Information

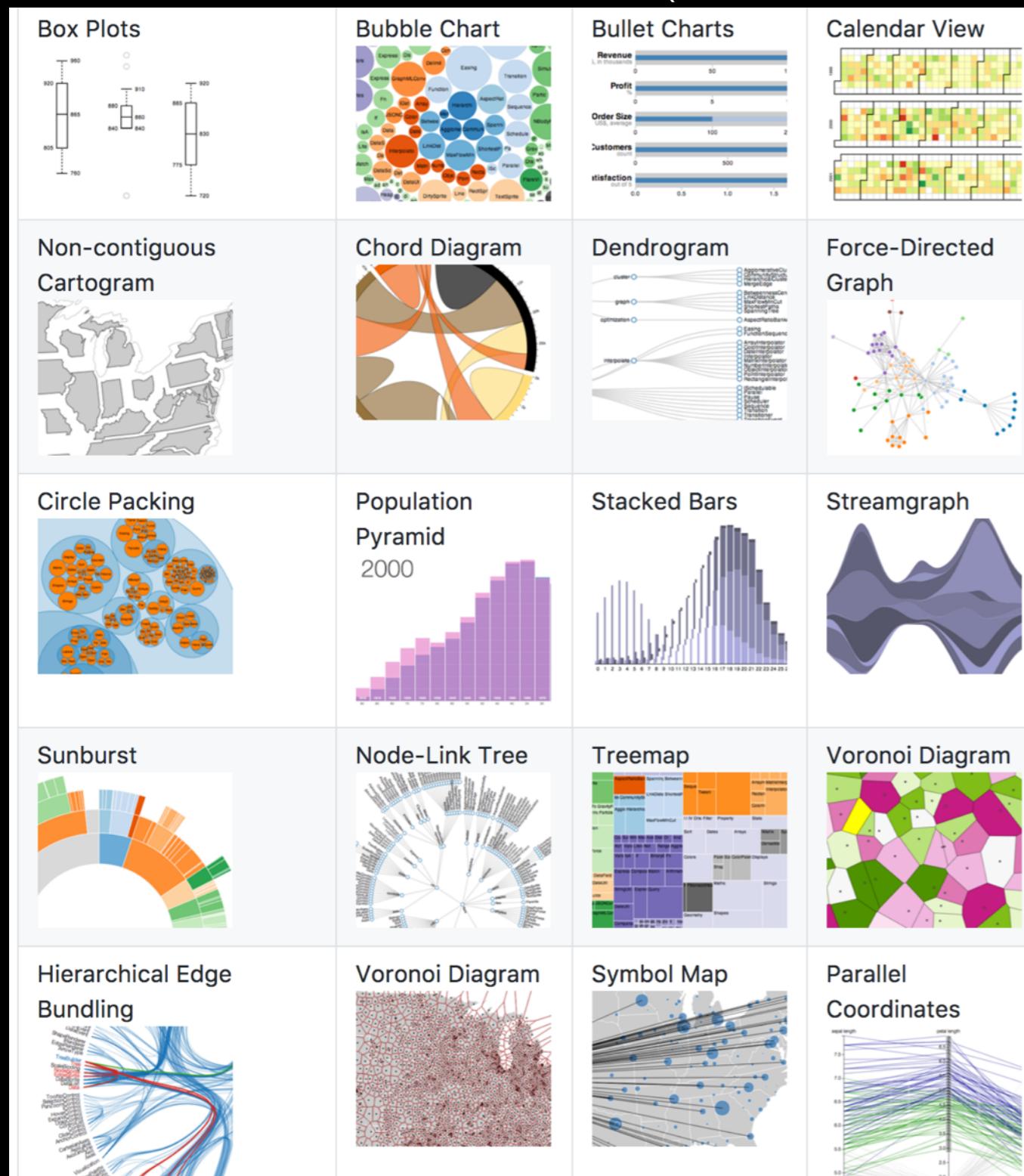


## Data Viz Libraries: Tableau



<https://public.tableau.com/en-us/s/gallery>

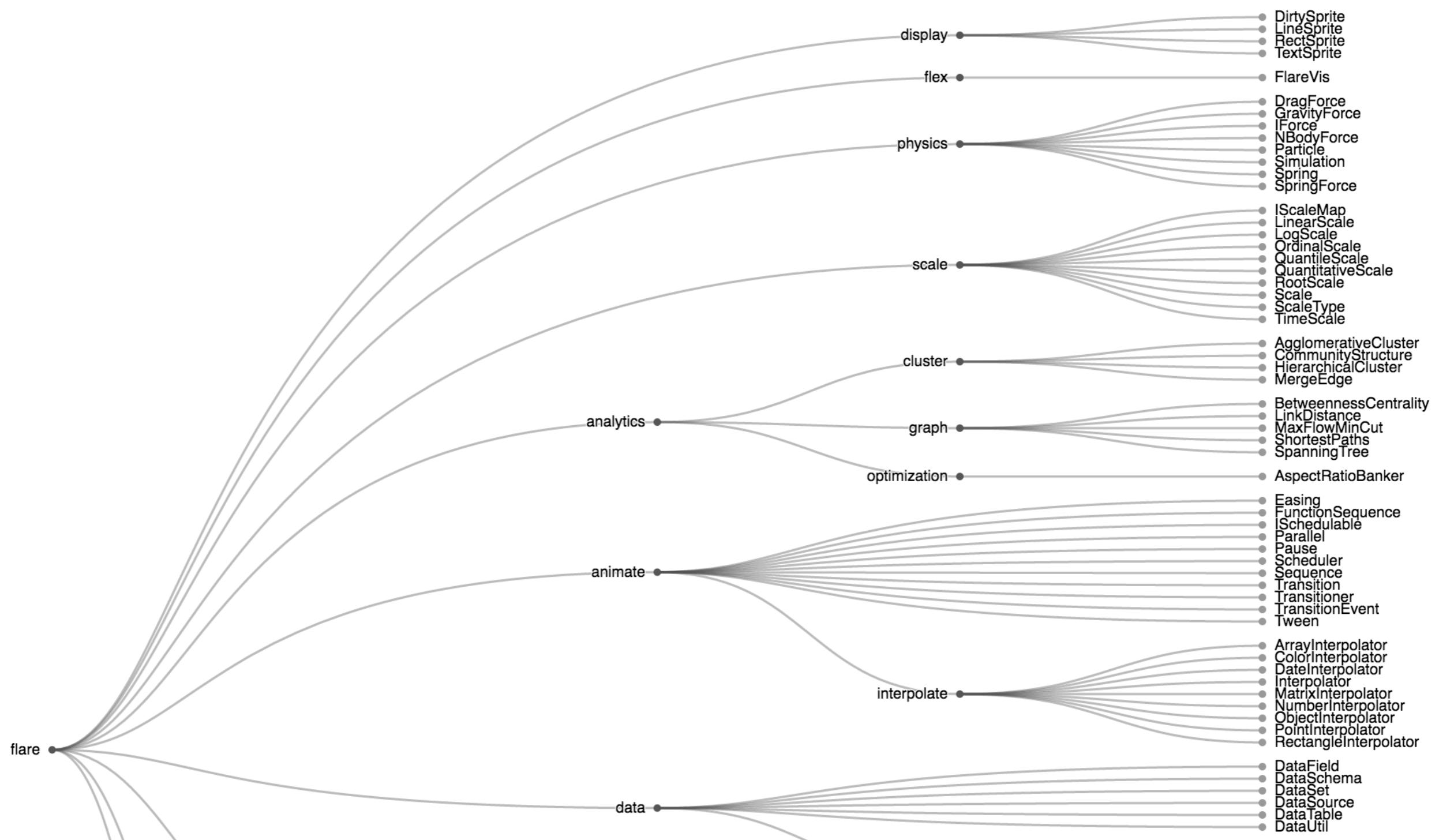
# Data Viz Libraries: D3 (Data Driven Documents )



<https://github.com/d3/d3/wiki/Gallery>

# JavaScript Libraries: D3

## Cluster Dendrogram



<https://github.com/d3/d3/wiki/Gallery>

# JavaScript Libraries: P5js

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Libraries

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Examples

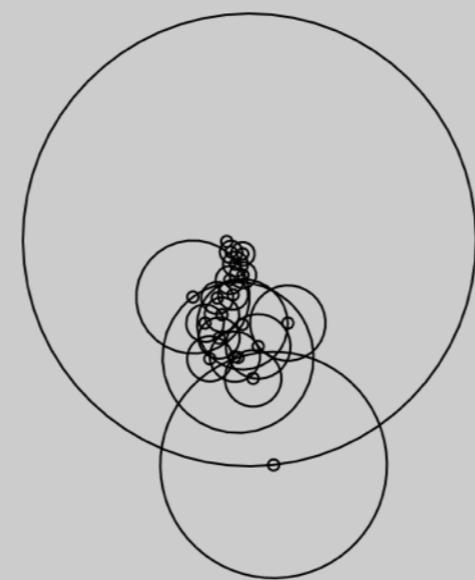
Books

Community

Forum

GitHub

Twitter



[run](#) [reset](#) [copy](#)

```
var NUMSINES = 20; // how many of these things can we do at once?  
var sines = new Array(NUMSINES); // an array to hold all the current  
var rad; // an initial radius value for the central sine  
var i; // a counter variable  
  
// play with these to get a sense of what's going on:  
var fund = 0.005; // the speed of the central sine  
var ratio = 1; // what multiplier for speed is each additional sine?  
var alpha = 50; // how opaque is the tracing system
```

<https://p5js.org/examples/simulate-spirograph.html>

# Screen Graphics: **Canvas** vs. SVG vs. WebGL

```
var canvas = document.getElementById('myCanvas');
var context = canvas.getContext('2d');
context.fillStyle = '#c00';
context.fillRect(10, 10, 100, 100);
```

You can take advantage of the HTML5 Canvas API methods and properties by getting a reference to the 2D context object. In the example above, I have drawn a simple red square, 100 x 100 pixels in size, placed 10px from the left and 10px from the top of the <canvas> **drawing surface**.



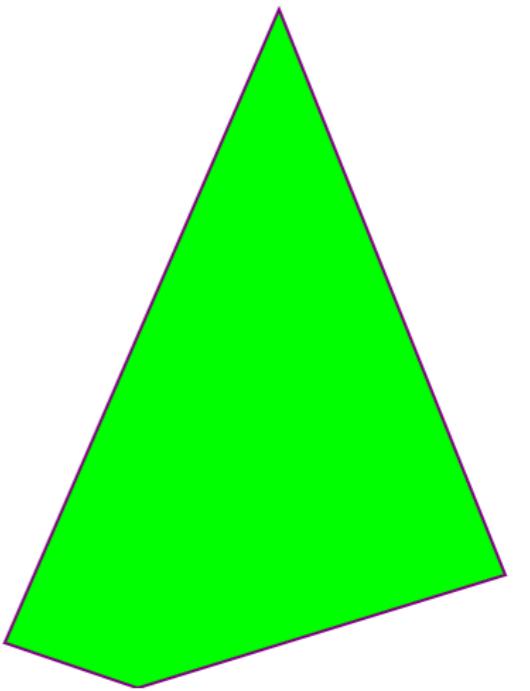
Being **resolution-dependent**, images you create on <canvas> may lose quality when enlarged or displayed on retina screens.

# Screen Graphics: Canvas vs. **SVG** vs. WebGL

```
<!DOCTYPE html>
<html>
<body>

<svg height="250" width="500">
  <polygon points="220,10 300,210 170,250 123,234"
style="fill:lime;stroke:purple;stroke-width:1" />
  Sorry, your browser does not support inline SVG.
</svg>

</body>
</html>
```



# Screen Graphics: Canvas vs. SVG vs. WebGL

```
gl.useProgram(shaderProgram);

shaderProgram.vertexPositionAttribute = gl.getAttribLocation(shaderProgram, "aVertexPosition");
gl.enableVertexAttribArray(shaderProgram.vertexPositionAttribute);

shaderProgram.pMatrixUniform = gl.getUniformLocation(shaderProgram, "uPMatrix");
shaderProgram.mvMatrixUniform = gl.getUniformLocation(shaderProgram, "uMVMatrix");
}

var mvMatrix = mat4.create();
var pMatrix = mat4.create();

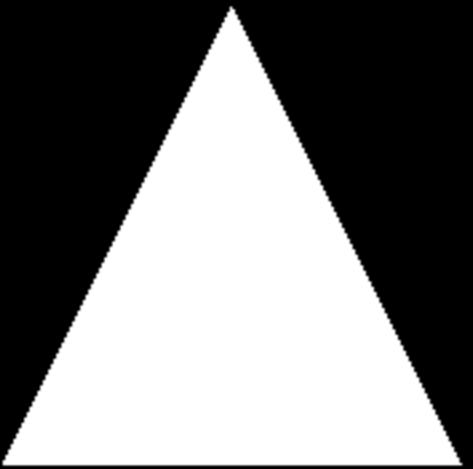
function setMatrixUniforms() {
    gl.uniformMatrix4fv(shaderProgram.pMatrixUniform, false, pMatrix);
    gl.uniformMatrix4fv(shaderProgram.mvMatrixUniform, false, mvMatrix);
}

var triangleVertexPositionBuffer;
var squareVertexPositionBuffer;

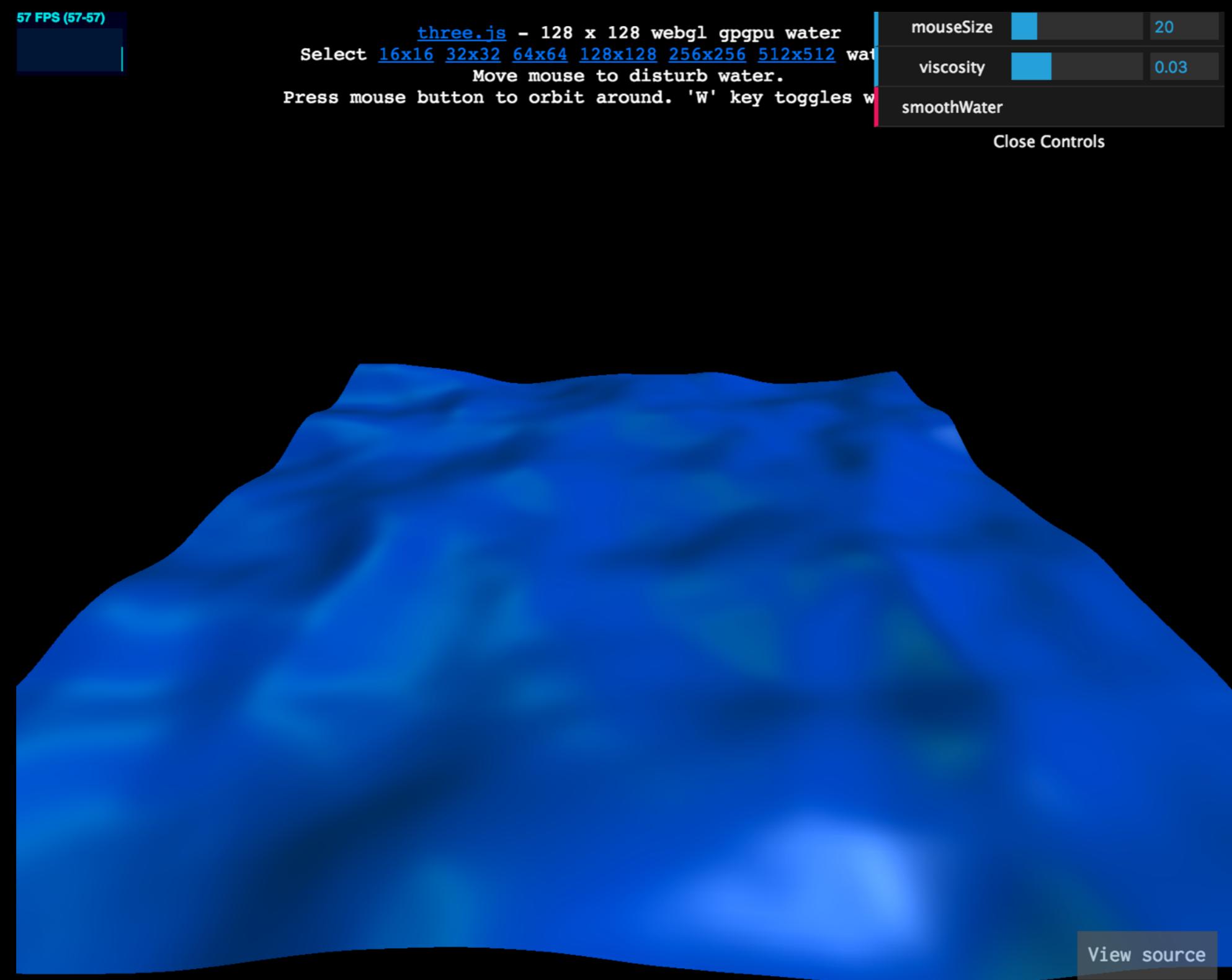
function initBuffers() {
    triangleVertexPositionBuffer = gl.createBuffer();
    gl.bindBuffer(gl.ARRAY_BUFFER, triangleVertexPositionBuffer);
    var vertices = [
        0.0, 1.0, 0.0,
        -1.0, -1.0, 0.0,
        1.0, -1.0, 0.0
    ];
    gl.bufferData(gl.ARRAY_BUFFER, new Float32Array(vertices), gl.STATIC_DRAW);
    triangleVertexPositionBuffer.itemSize = 3;
    triangleVertexPositionBuffer.numItems = 3;

    squareVertexPositionBuffer = gl.createBuffer();
    gl.bindBuffer(gl.ARRAY_BUFFER, squareVertexPositionBuffer);
    vertices = [
        1.0, 1.0, 0.0,
        -1.0, 1.0, 0.0,
        1.0, -1.0, 0.0,
        -1.0, -1.0, 0.0
    ];
    gl.bufferData(gl.ARRAY_BUFFER, new Float32Array(vertices), gl.STATIC_DRAW);
```

# Screen Graphics: Canvas vs. SVG vs. **WebGL**



# JavaScript Libraries: ThreeJS



<https://threejs.org/examples/>

# JavaScript Libraries: JQuery

```
<html>
<head>
<script
src="https://ajax.googleapis.com/ajax/libs/jquery/3.1.1/jquery.min.js"></script>
<script>
$(document).ready(function() {
    $("button").click(function() {
        $("#div1").fadeIn();
        $("#div2").fadeIn("slow");
        $("#div3").fadeIn(3000);
    });
})
</script>
</head>
<body>

<p>Demonstrate fadeIn() with different parameters.</p>

<button>Click to fade in boxes</button><br><br>

<div id="div1"
style="width:80px;height:80px;display:none;background-color:red;"></div><br>
<div id="div2"
style="width:80px;height:80px;display:none;background-color:green;"></div><br>
<div id="div3"
style="width:80px;height:80px;display:none;background-color:blue;"></div>

</body>
```

Demonstrate fadeIn() with different parameters.

Click to fade in boxes



# Data Visualization: Examples

# Fathom (Ben Fry)

<http://povertytracker.robinhood.org/#fall2016>

<http://www.noceilings.org/>

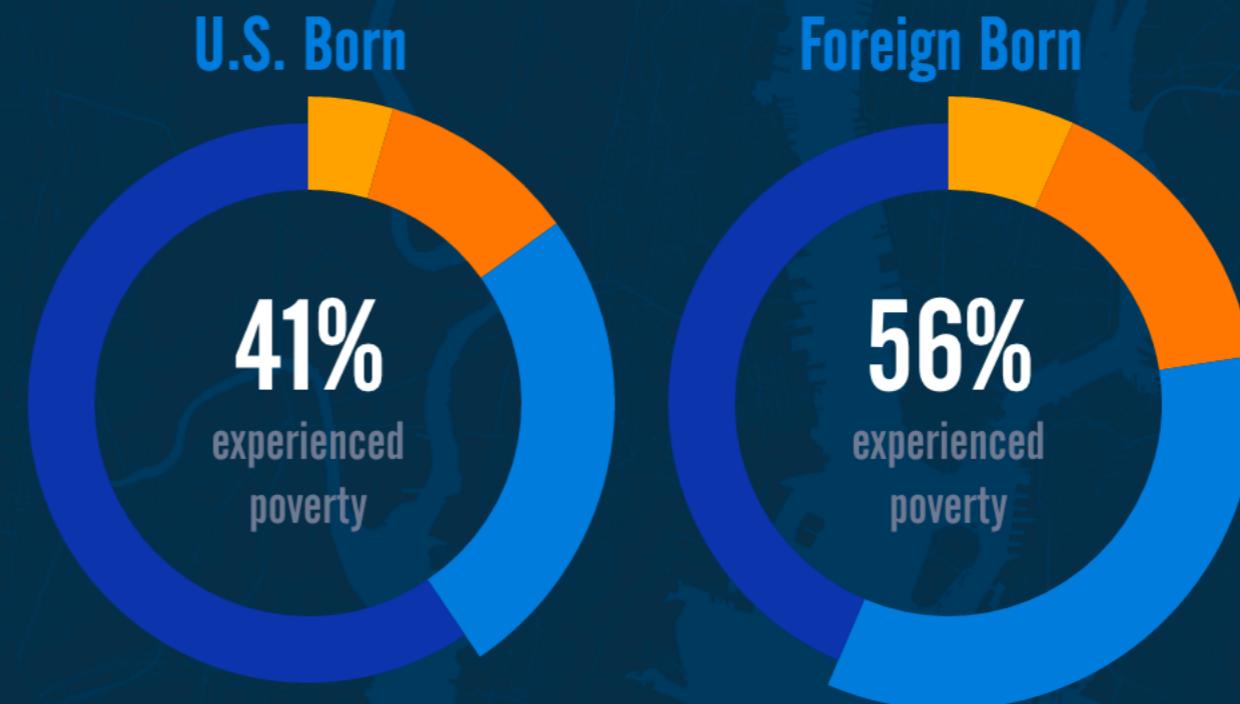
<http://www.nationalgeographic.com/what-the-world-eats/>

**Foreign-born** New Yorkers were more often in poverty than those born in the U.S.

## Persistence of poverty

While annual snapshots suggest that only a minority of New Yorkers experience individual disadvantages, the Poverty Tracker's multi-year study reveals that a much larger number of New Yorkers ever experience poverty or other disadvantages.

## Persistence of hardship

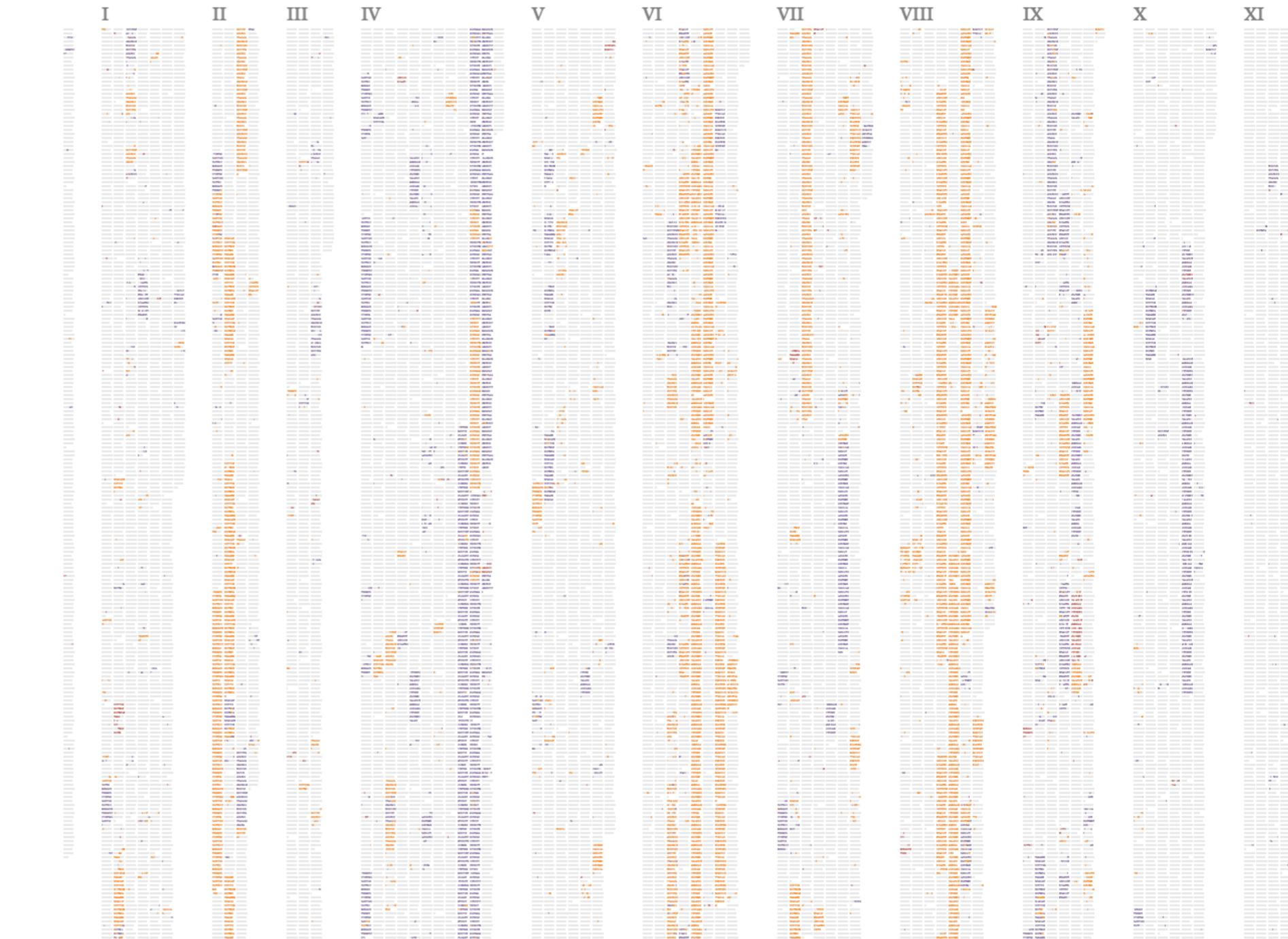


ON THE ORIGIN OF SPECIES *The Preservation of Favoured Traces*

Reset

[https://fathom.info/  
traces/](https://fathom.info/traces/)

Ben Fry, Origin of the  
Species



First Edition (1859)

Second Edition (1860)

Third Edition (1861)

Fourth Edition (1866)

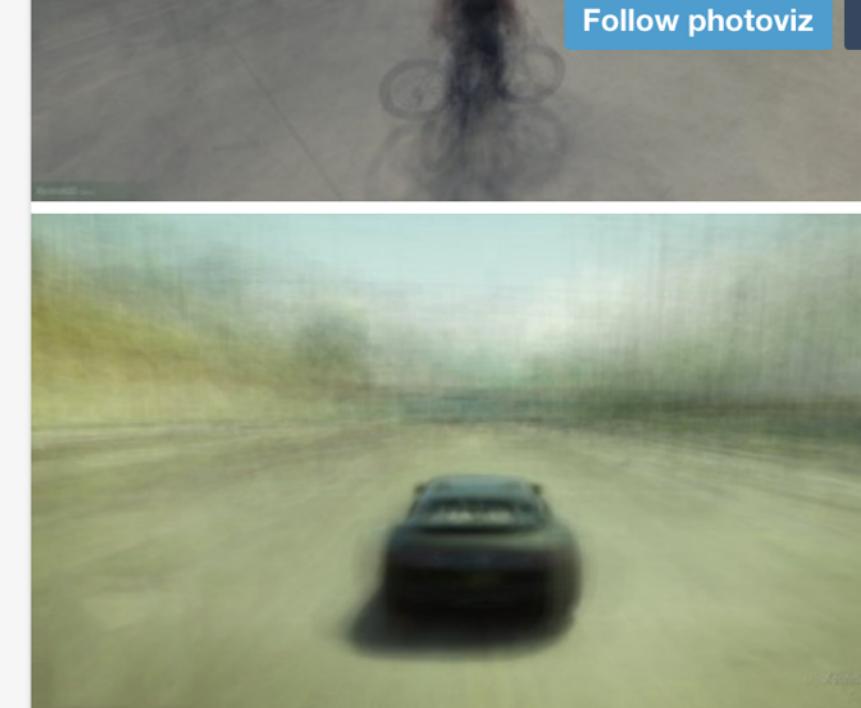
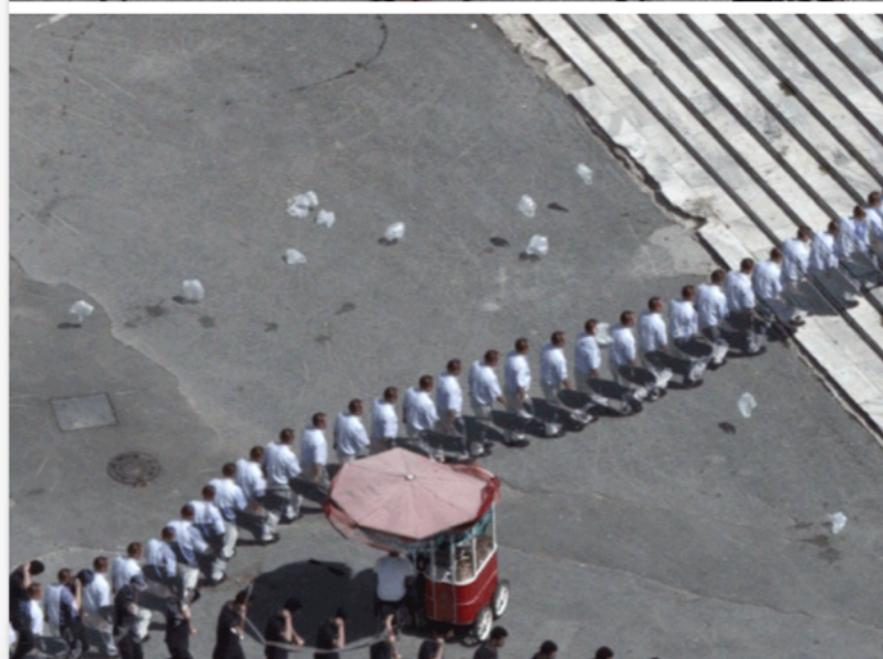
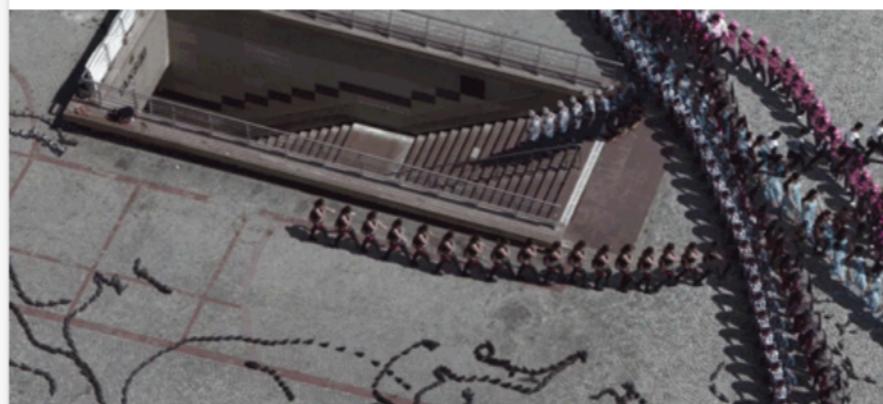
Fifth

# Nicolas Felton

<http://photoviz.tumblr.com/>

<http://feltron.com/>

<http://feltron.com/PhotoViz.html>

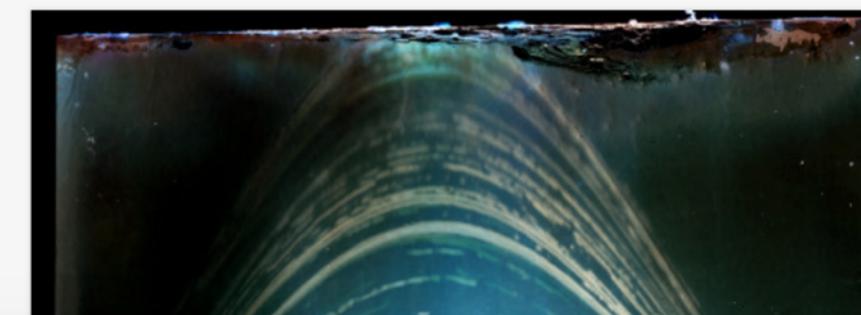


Claire Hentschker - Averages from videos of Grand Theft Auto

#photoviz

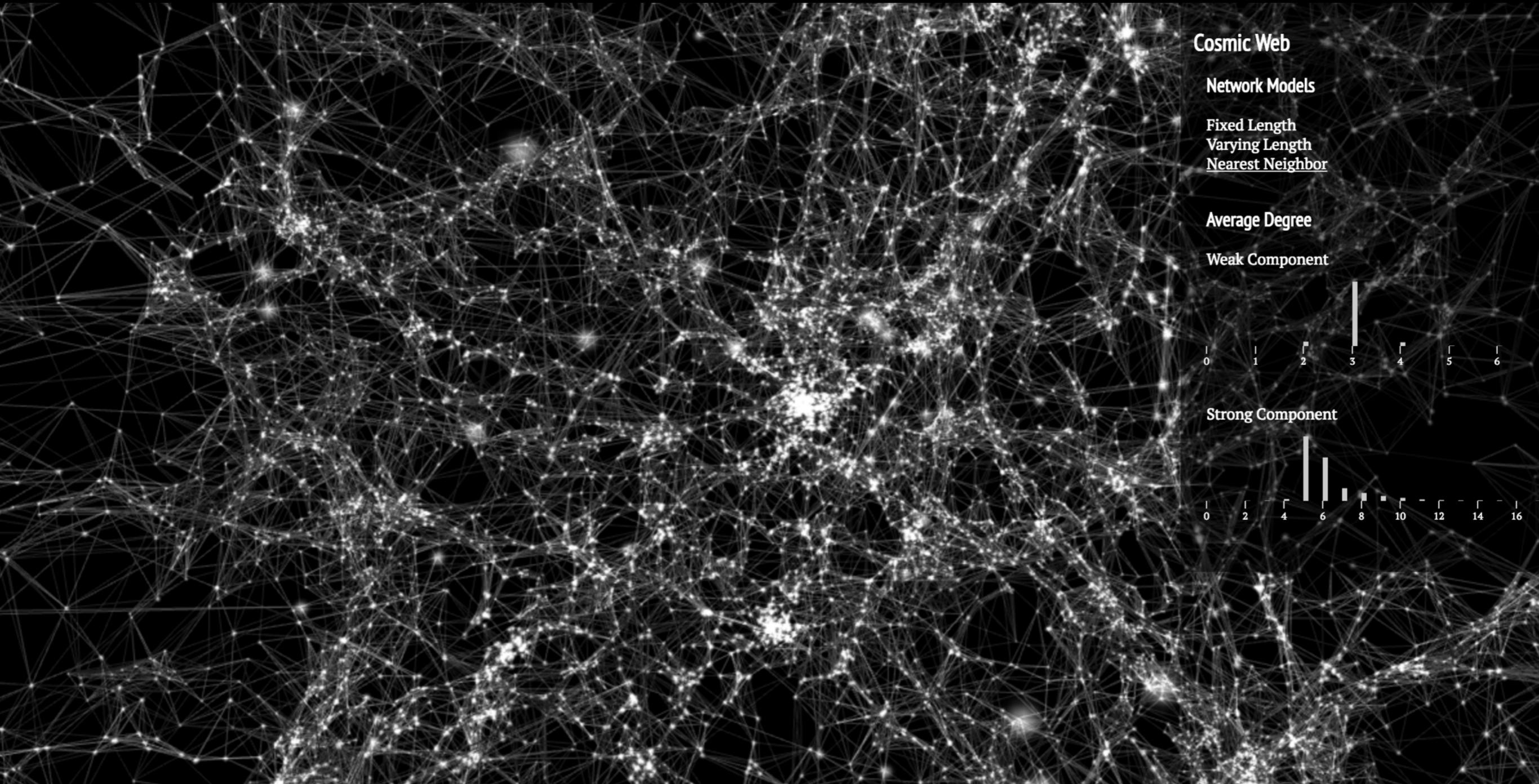


Mar 26, 2011



# Kim Albrecht

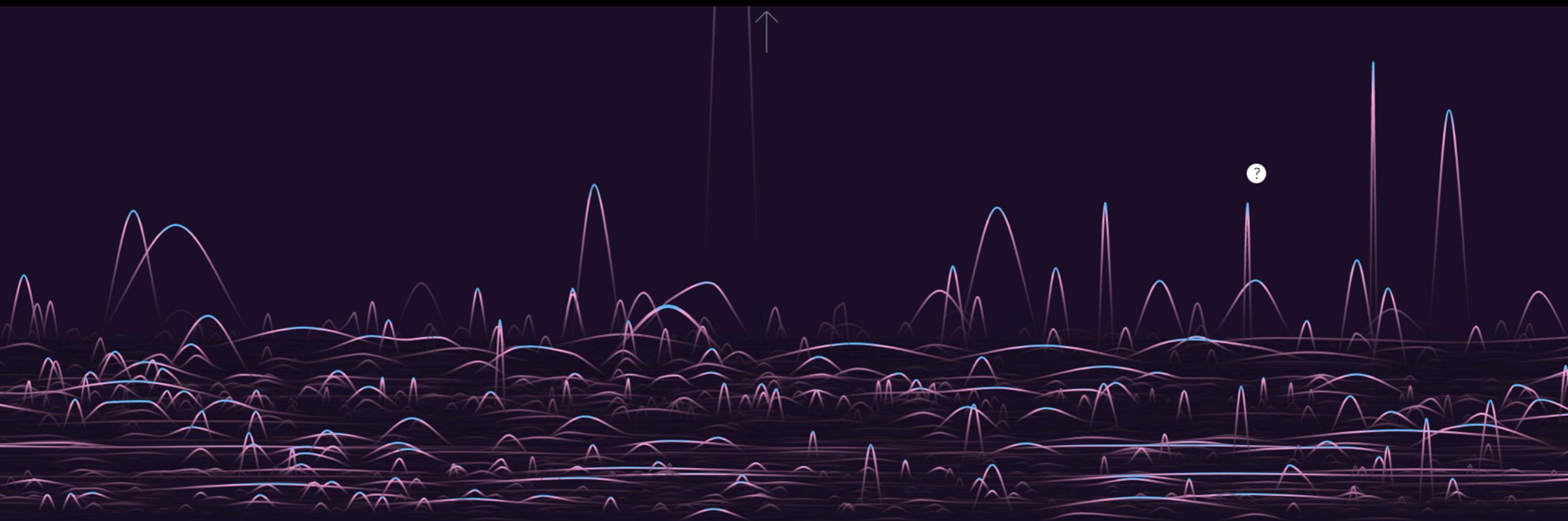
<http://cosmicweb.kimalbrecht.com/>



# Navigation: Through Space

## Hide and Reveal

How will the user **move through the space** of your display via menus, nodes, swiping, scrolling, clicking, rotating, following lines, etc?



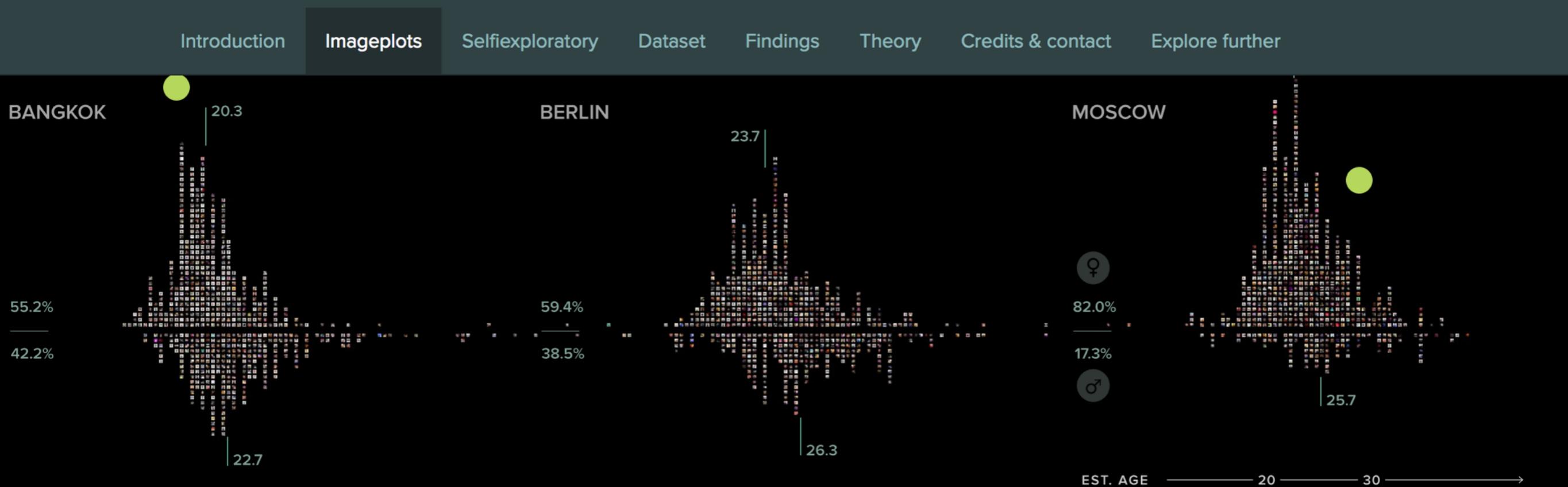
# Moritz Stefaner

<http://truth-and-beauty.net/projects/the-rhythm-of-food>

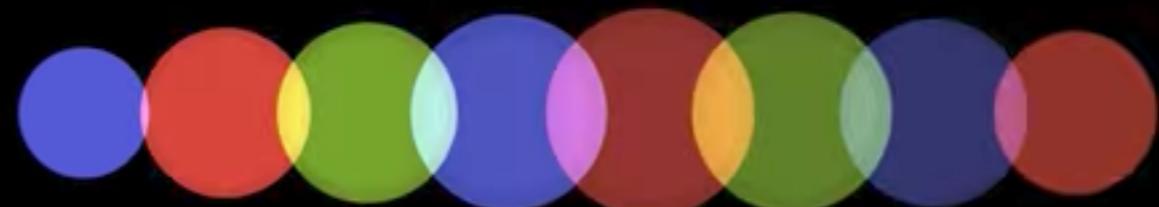
<http://www.oecdbetterlifeindex.org/>

<http://selfiecity.net/>

SELFIECITY



Music



Alexander Chen (<http://www.chenalexander.com/>)  
<https://vimeo.com/31179423>  
[https://www.youtube.com/watch?v=i7gL9H3\\_BQA](https://www.youtube.com/watch?v=i7gL9H3_BQA)

# Wattenberg & Viegas

<http://hint.fm/seer/#left=i%20am&right=are%20you>

<http://hint.fm/>

<http://www.bewitched.com/song.html>



# Digital Poetics: Data Journalism

# Approach to Storytelling

Writing, mapping, play, community, exploration, investigation, tracking

The New York Times

1155

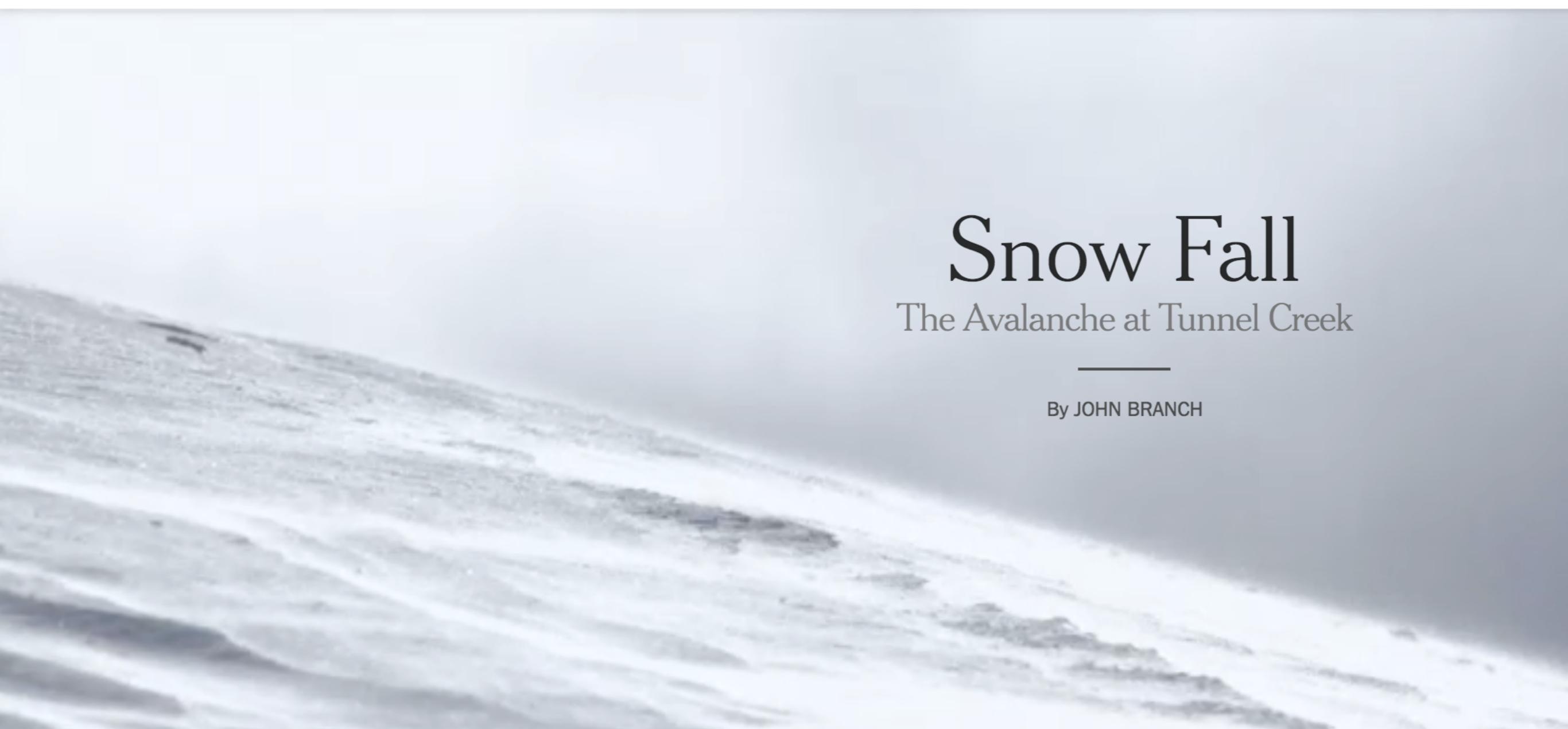


## Snow Fall

The Avalanche at Tunnel Creek

---

By JOHN BRANCH



The snow burst through the trees with no warning but a last-second whoosh of sound, a two-story wall of white and Chris Rudolph's piercing cry: "Avalanche! Elyse!"

# Approach to Storytelling

Writing, mapping, play, community, exploration, investigation, tracking

REUTERS GRAPHICS



## North Korea visualised

A selection of data-driven stories from Reuters.

JULY 21, 2017

### A new dawn

A Reuters analysis of communication between North and South

JUNE 30, 2017

### Rocket science

A deep dive into the recent advances in the North's missile programme

MAY 26, 2017

### North Korea's other threat

Assessing the capability of North Korean Cold War-era artillery

MAY 4, 2017

### China's grip on North Korea

A look at the impact of China's coal ban on North Korea

APRIL 21, 2017

### A show of force

Weapons on display at North Korea's major recent military parades

Storytelling = Navigation

<http://fingfx.thomsonreuters.com/gfx/rngs/NORTHKOREA-POLITICS/0100421N4FR/index.html>

Academics - MyNewSchool Topic: Week 4: Visual Narrative Francesco Franchi – Graphic Literature Non-Verbal Club / New Website on Be... The Stories Behind a Line +

# The Stories Behind a Line

«The Stories Behind a Line» is a visual narrative of six asylum seekers' routes. They travelled from their hometown to Italy. This project wants to tell their stories through the data that shaped their personal travelling line. [more](#)

A project by Federica Fragapane  
with Alex Piacentini

Paths  
Map  
Data

Distances

Home Legend  
About

M.B.  
Abidjan  
Costa d'avorio

S.S.  
Timbuktou  
Mali

M.D.  
Touba  
Guinea

A.L.  
Labe  
Guinea

S.W.G.  
Peshawar  
Pakistan

T.K.  
Mohmand Agency  
Pakistan

Interaction/Metaphor



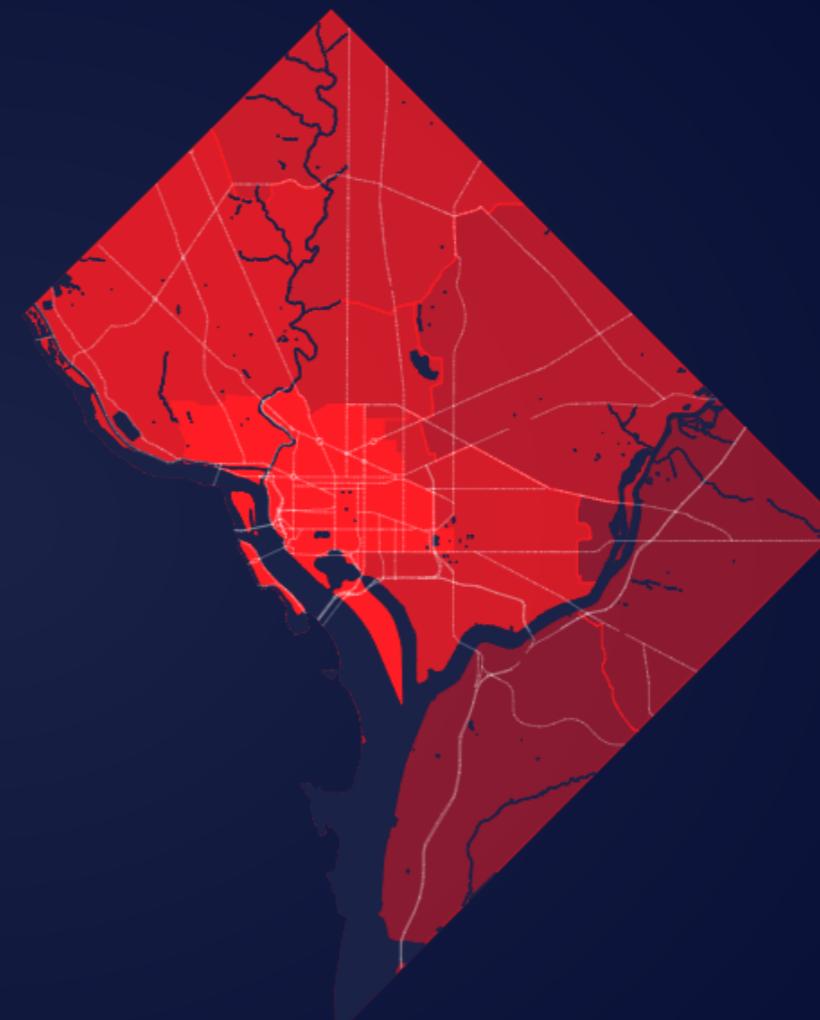
Scroll/Interaction

## Where our residents live

To understand congestion in the District we must first understand where people live, where commuters live, and how that has changed over time. The population of the District continues to grow steadily, so these patterns will continue to evolve. This page shows where District residents live and how District demographics vary by ward.

### RESIDENCY

- + Total population
- Race - White
- Race - Black or African American
- Race - American Indian and Alaska Native
- Race - Asian
- Race - Native Hawaiian and Other Pacific Islander
- Race - Some other race



# More Journalism

<https://www.theatlantic.com/video/index/404890/prison-inherited-trait/>

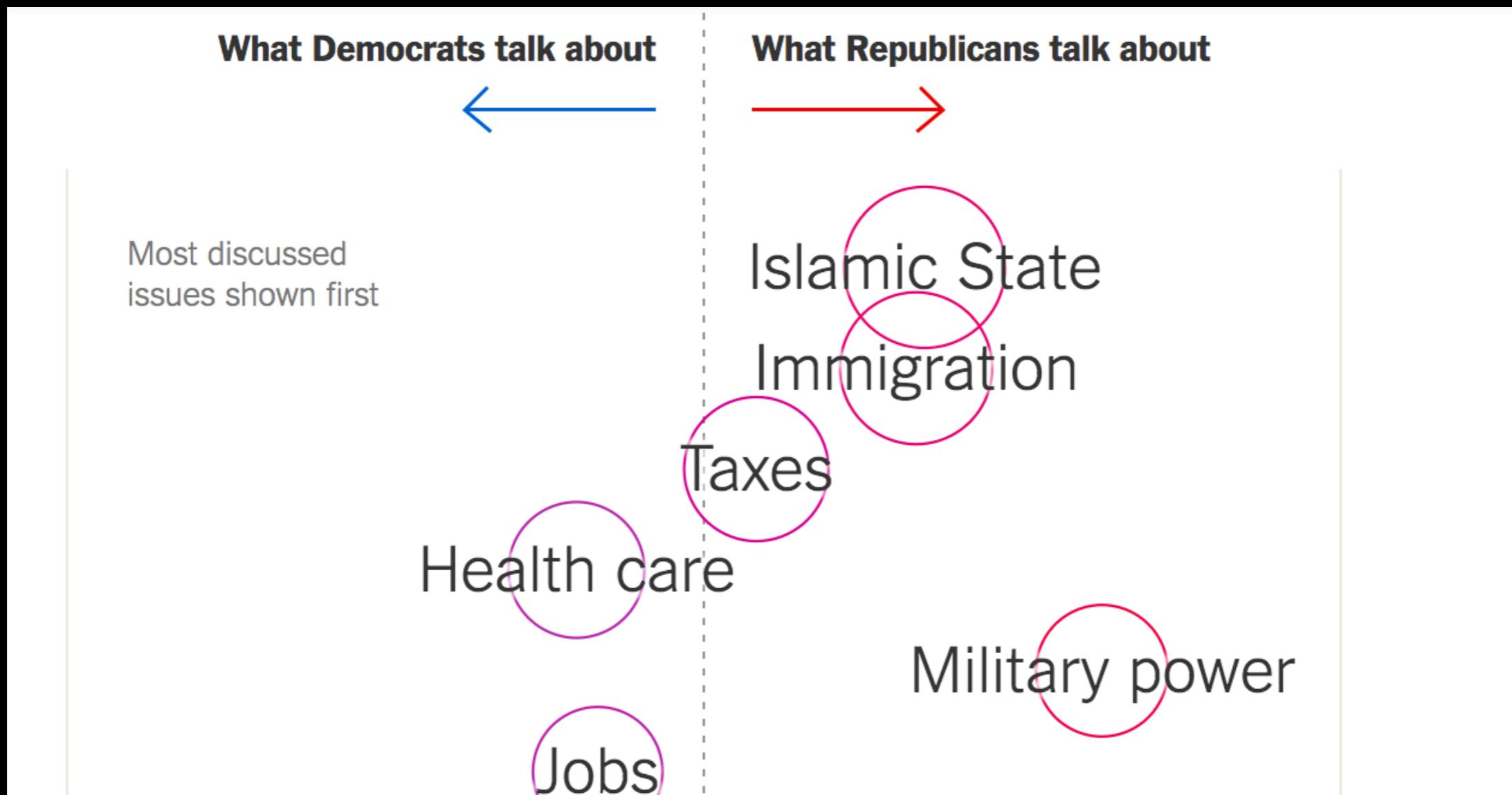
<https://www.nytimes.com/interactive/2016/07/12/us/looking-for-accountability-in-police-involved-deaths-of-blacks.html>

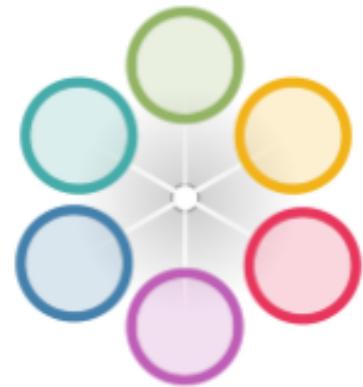
<https://www.washingtonpost.com/graphics/national/how-diverse-is-america/>

<https://www.nytimes.com/interactive/2016/12/28/us/year-in-interactive-graphics.html>

<https://www.nytimes.com/interactive/2016/09/08/us/us-murder-rates.html>

<https://www.nytimes.com/interactive/2016/03/11/us/elections/what-parties-debate-or-ignore.html>





Happier than anybody  
across all categories



Sadder than anybody  
across all categories



Things are great,  
except when it  
comes to **money**



Life is rough;  
love those  
**leaders** though



**Moderate income**  
**Lack of trust**  
**Pretty good health**  
**Great friends + family**  
**Little liberty**  
**Minor charitable giving**

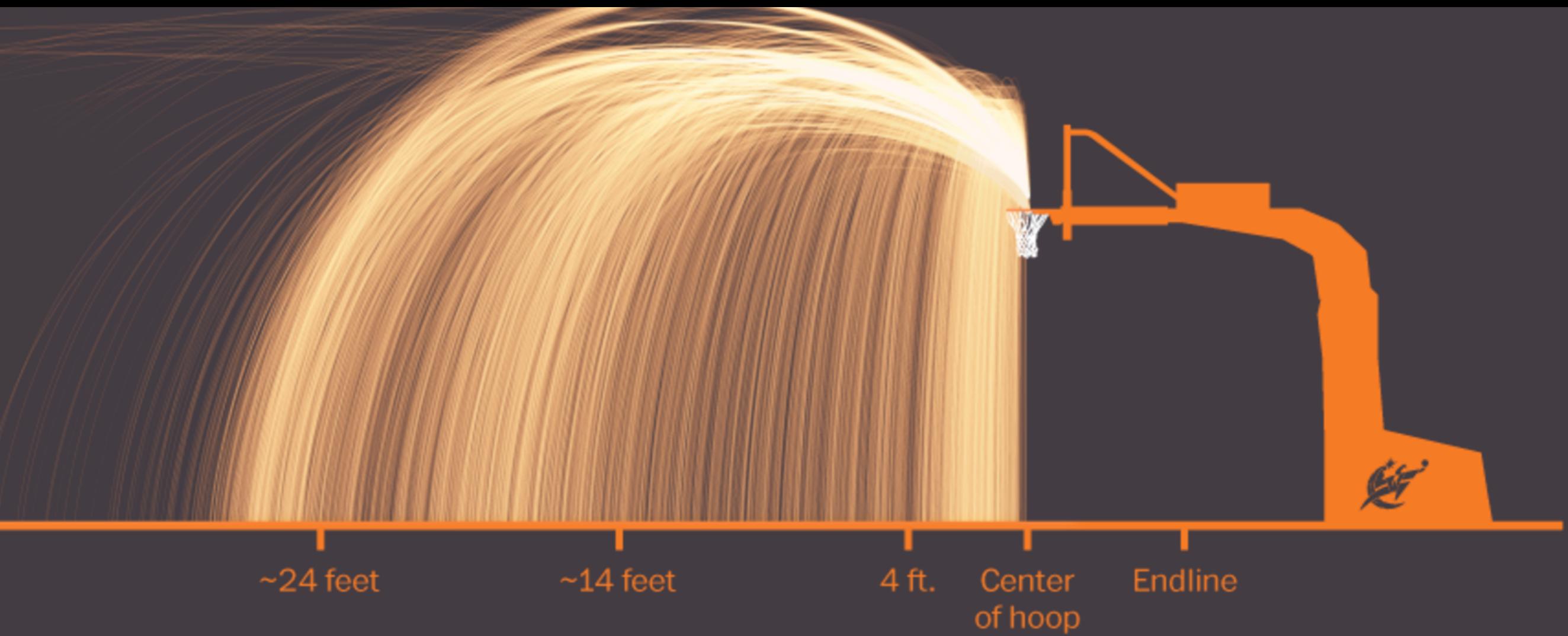
World happiness  
[https://nation.maps.arcgis.com/apps/Cascade/index.html?  
appid=5a333512e79c4c5ab9052c9d0ff8f55b](https://nation.maps.arcgis.com/apps/Cascade/index.html?appid=5a333512e79c4c5ab9052c9d0ff8f55b)

Storytelling by color

# Basketball

<http://www.washingtonpost.com/wp-srv/special/sports/wizards-shooting-stars/>

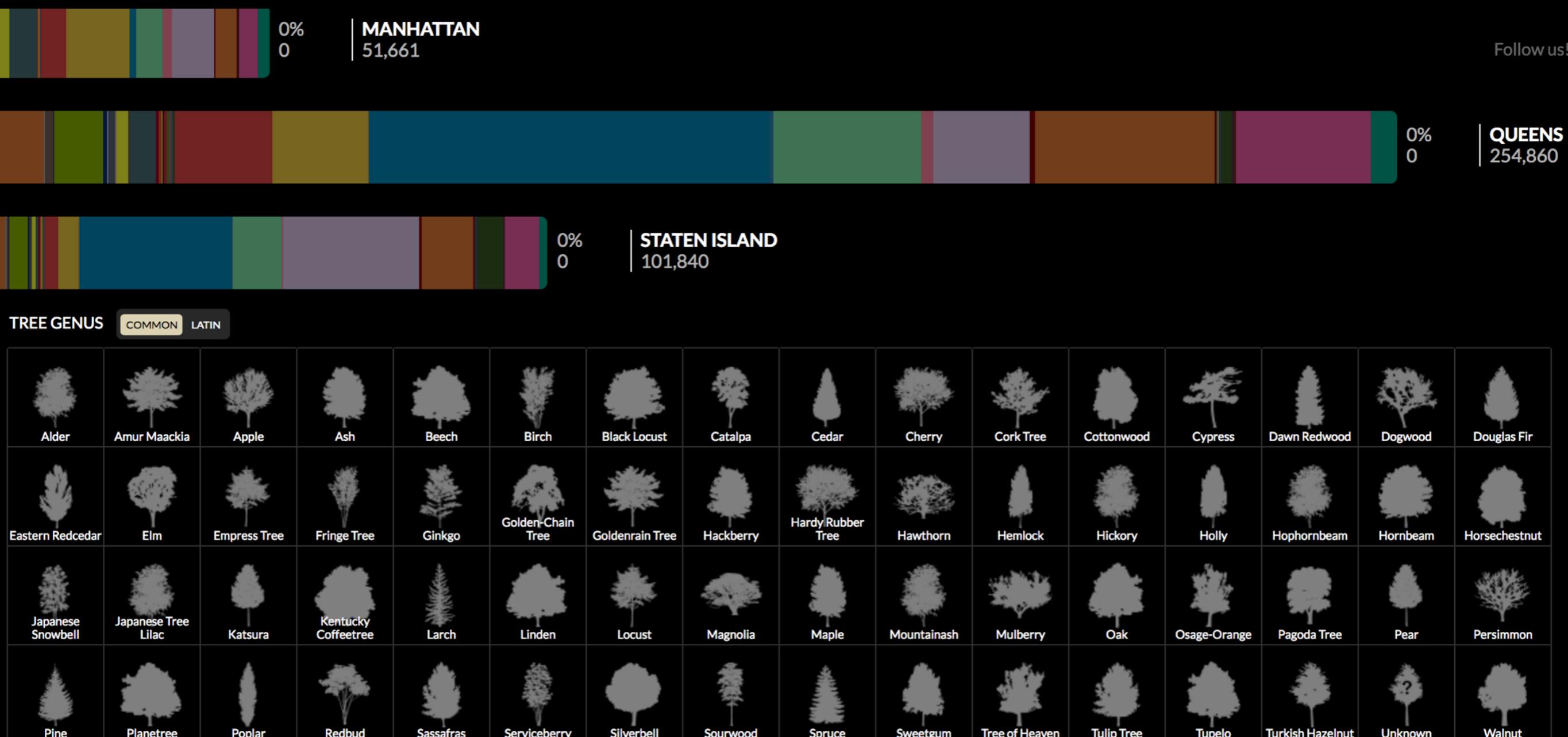
<https://www.nytimes.com/interactive/2016/04/16/upshot/stephen-curry-golden-state-warriors-3-pointers.html>



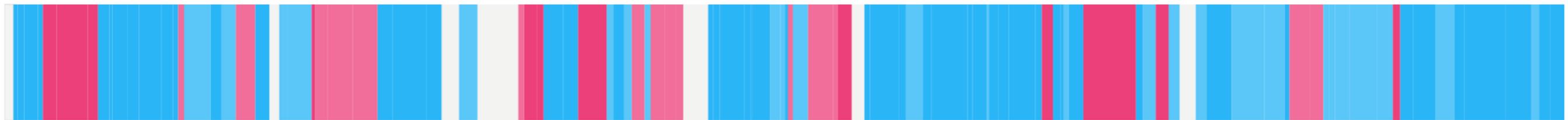
# Environment

<https://www.theguardian.com/environment/ng-interactive/2014/dec/01/carbon-emissions-past-present-and-future-interactive>

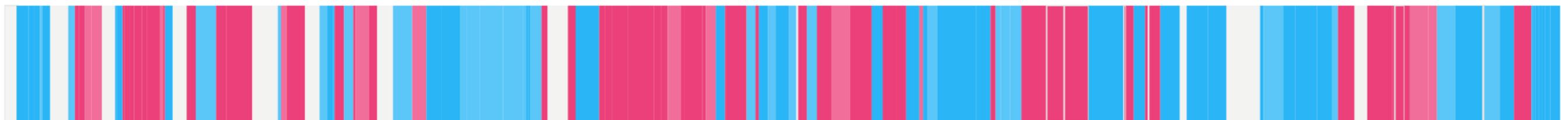
Trees (NYC open data: <https://opendata.cityofnewyork.us/>)  
<https://www.cloudred.com/labprojects/nyctrees/>



**72.6%** Hidden Figures (2016)



**51.5%** Hacksaw Ridge (2016)



**91.4%** The Big Short (2016)



Interaction



IN

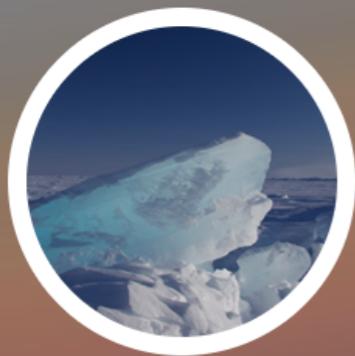
SKIP TO 30 SPECIES, 30 PIECES

Exploratory/Immersion

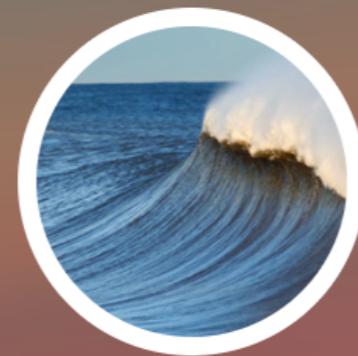
# Climate Time Machine

This series of visualizations shows how some of Earth's key climate indicators are changing over time.

SELECT A TOPIC



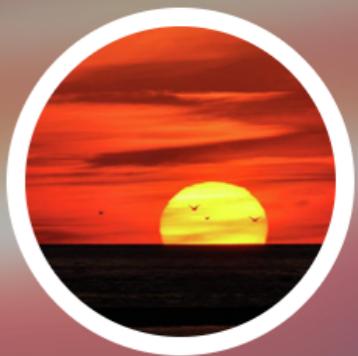
Sea Ice



Sea Level



Carbon Dioxide



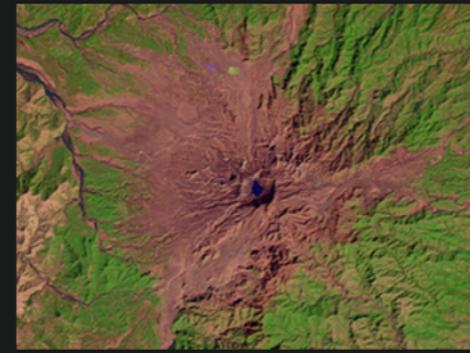
Global  
Temperature



Hurricane Irma  
VIRGIN ISLANDS



Catastrophic floods  
SOUTH ASIA



Mount Pinatubo erupts  
PHILIPPINES



Restored snowpack  
SIERRA NEVADA, CALIFORNIA



Deforestation near  
Pucallpa  
PERUVIAN AMAZON



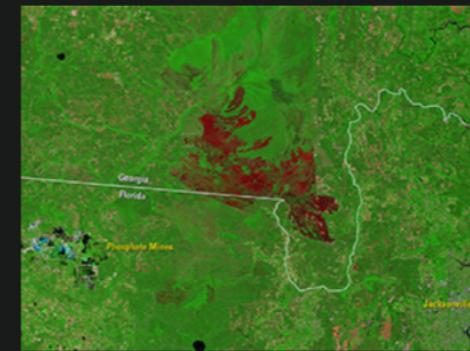
Shrinking sea-ice  
coverage  
ARCTIC OCEAN



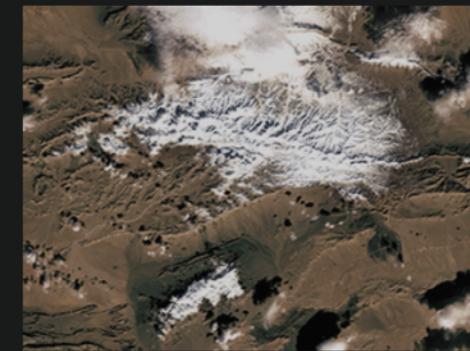
Landslide  
KYRGYZSTAN



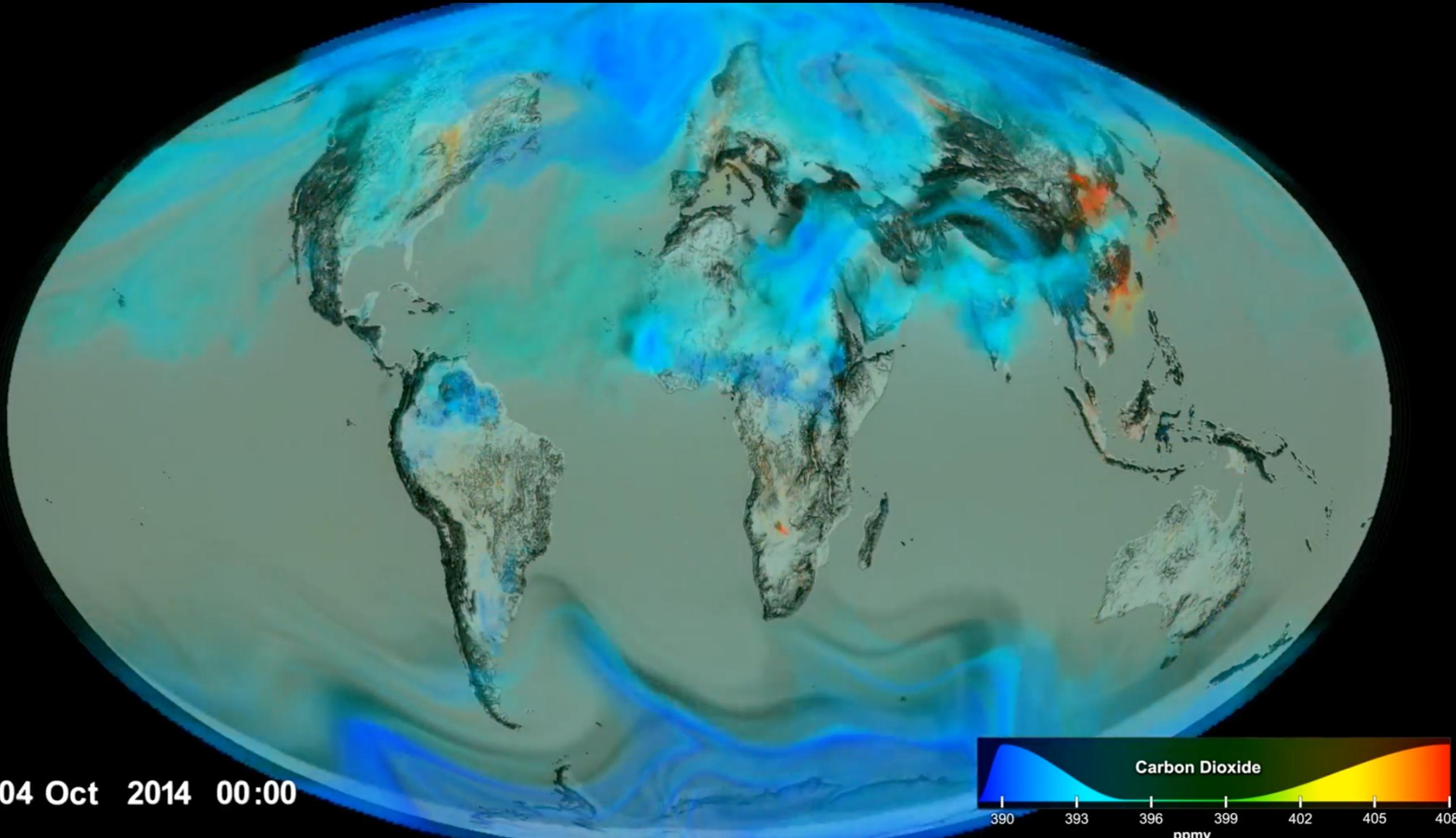
Flooding  
SRI LANKA



West Mims Fire continues  
FLORIDA/GEORGIA BORDER

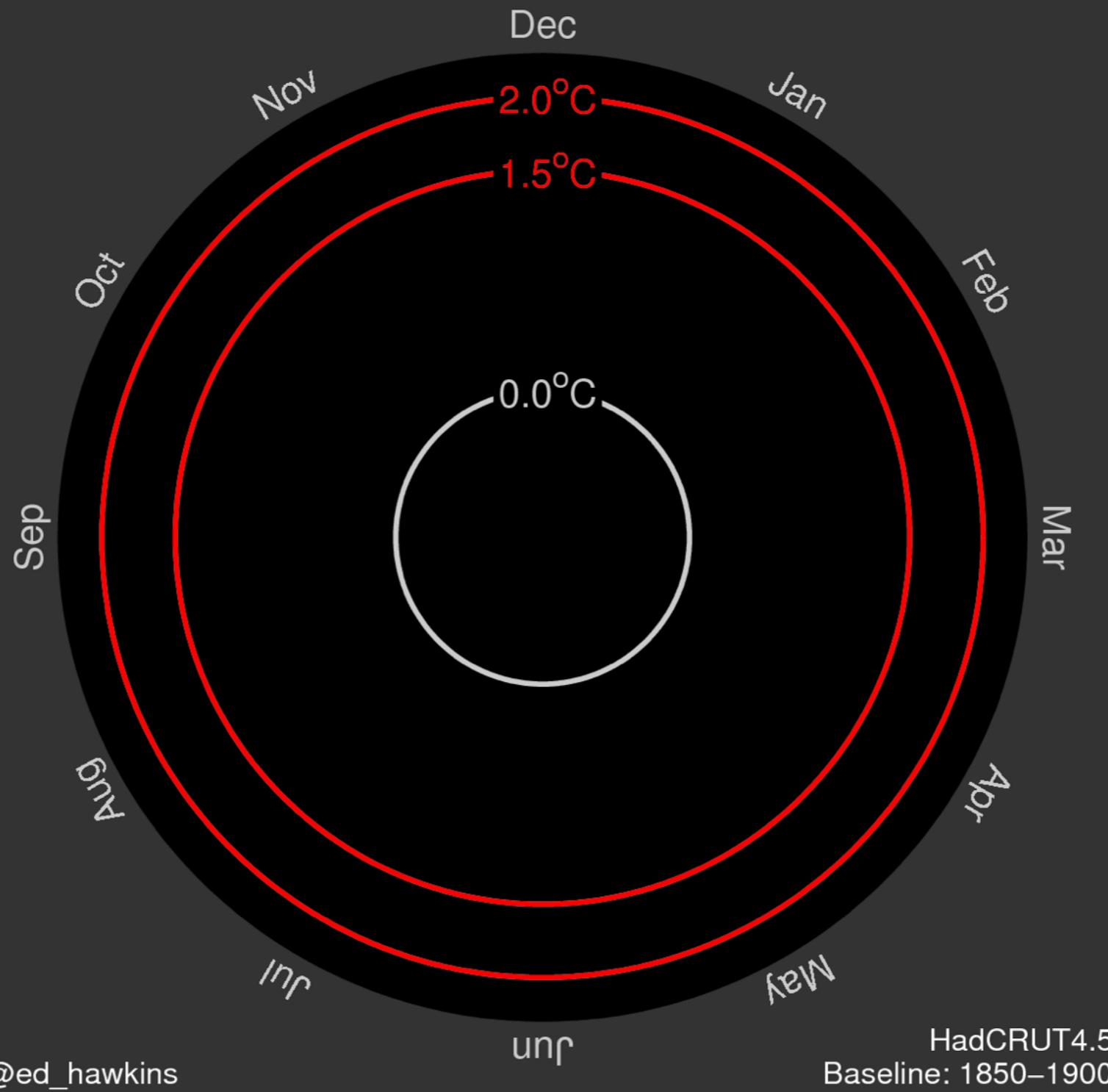


Rare snowfall  
SAHARA DESERT



<https://www.nytimes.com/2016/12/16/science/carbon-dioxide-satellite.html>

# Global temperature change (1850–2017)



## CHARTS

[View All](#)

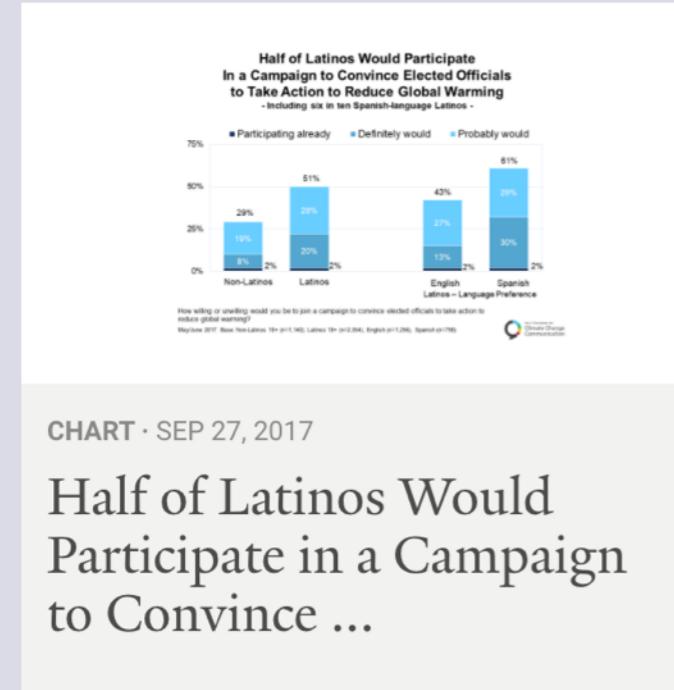


CHART · SEP 27, 2017

Half of Latinos Would Participate in a Campaign to Convince ...



CHART · SEP 27, 2017

Three in Four Latinos Are Worried About Global Warming

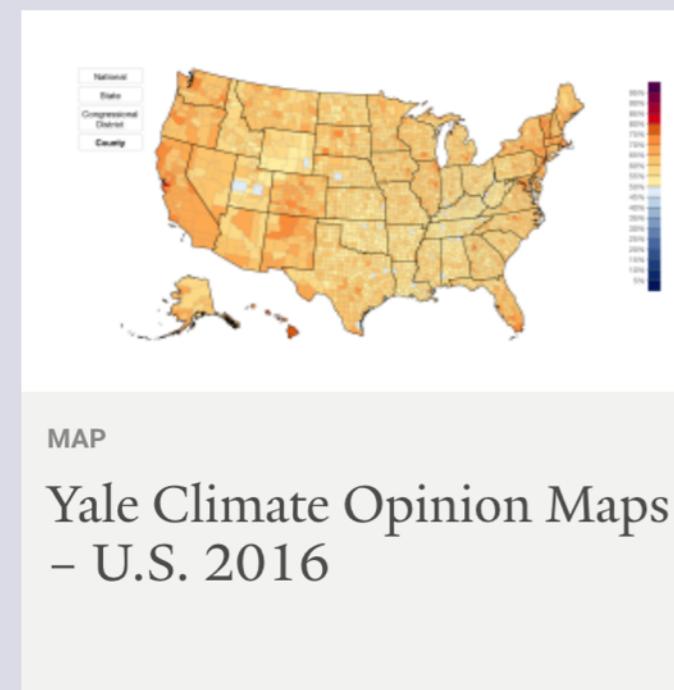


CHART · AUG 2, 2017

A Majority of Registered Voters Want More Action on Global W...

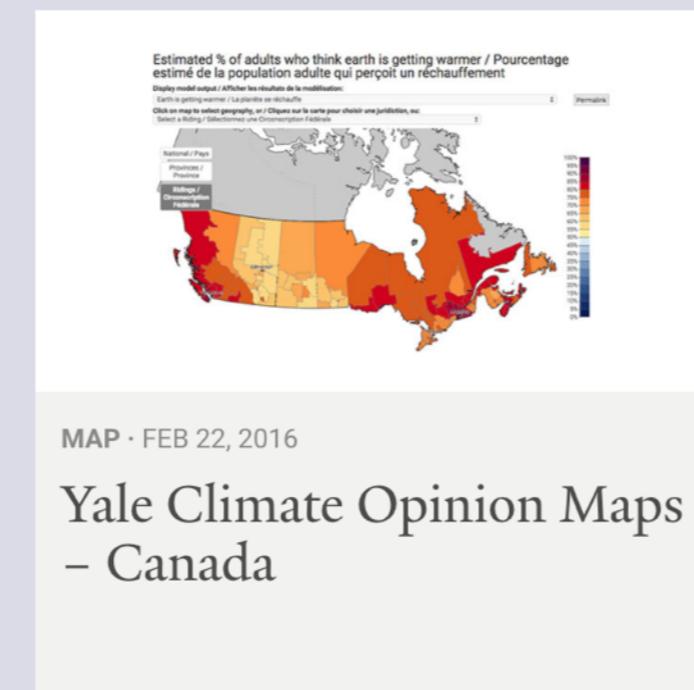
## MAPS

[View All](#)



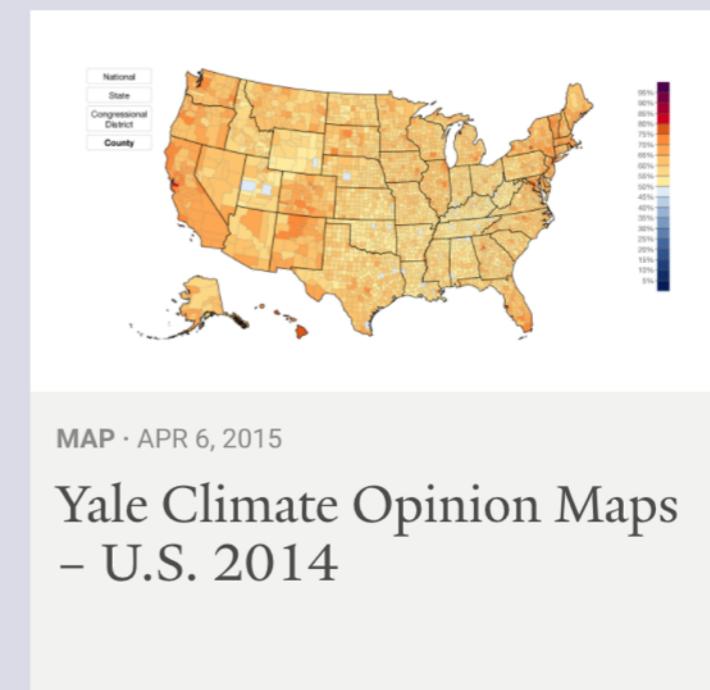
MAP

Yale Climate Opinion Maps – U.S. 2016



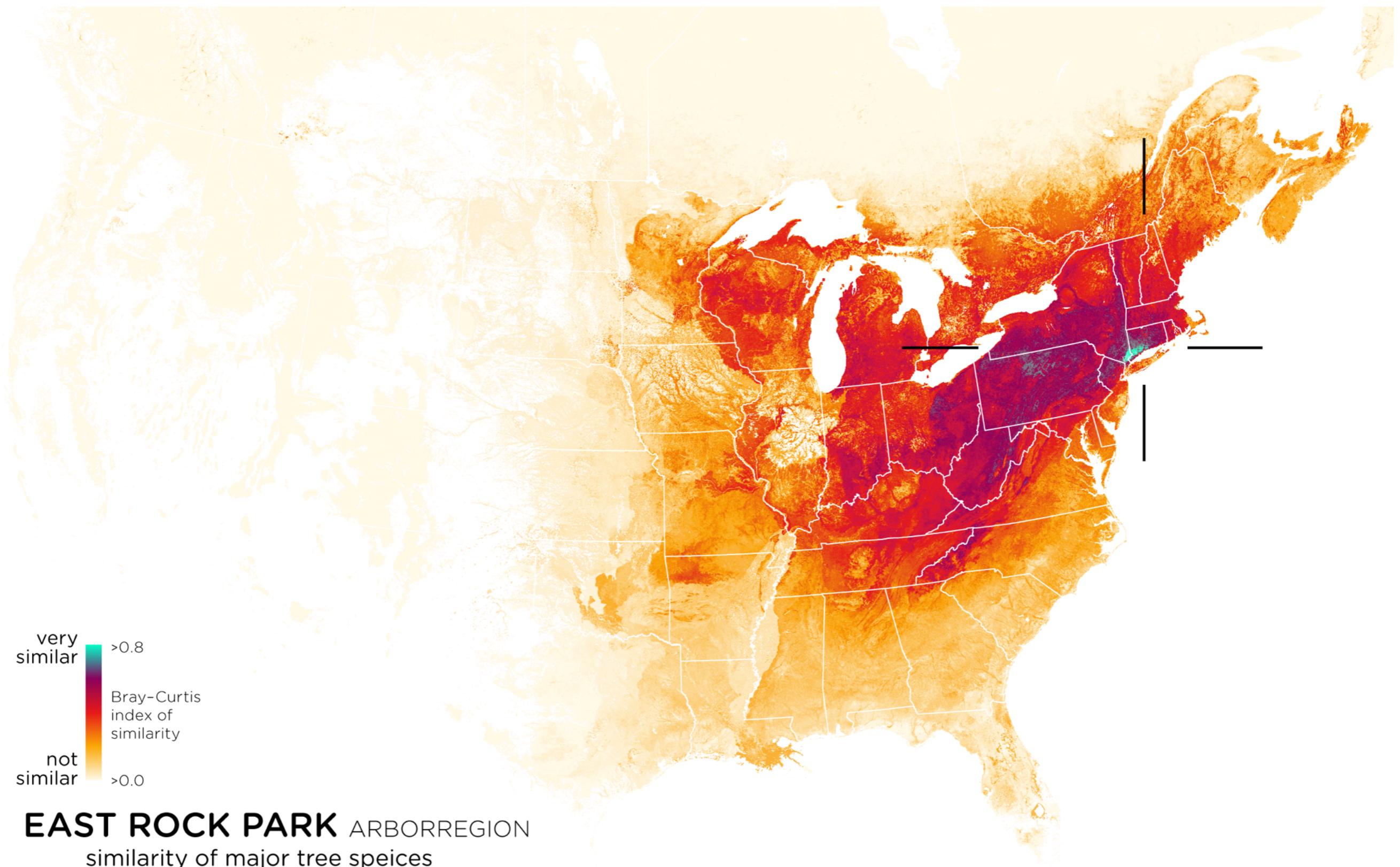
MAP · FEB 22, 2016

Yale Climate Opinion Maps – Canada



MAP · APR 6, 2015

Yale Climate Opinion Maps – U.S. 2014



based on cross-sectional trunk area ("basal area") for 285 species/subspecies, 34 genus-level "other," and 3 general "other" categories  
data from the US Forest Service (2013) and the Canadian Forest Service (2014, 2016) :: map by Bill Rankin, www.radicalcartography.net :: CC BY-NC-SA 2016 :: the trees will outlive us

Maps

<https://www.informationisbeautifulawards.com/showcase/2405-arborregions>

# Maps

[http://www.slate.com/articles/life/the\\_history\\_of\\_american\\_slavery/2015/06/animated\\_interactive\\_of\\_the\\_history\\_of\\_the\\_atlantic\\_slave\\_trade.html](http://www.slate.com/articles/life/the_history_of_american_slavery/2015/06/animated_interactive_of_the_history_of_the_atlantic_slave_trade.html)

[http://metrocosm.com/global-immigration-map/?utm\\_content=buffer113b2&utm\\_medium=social&utm\\_source=twitter.com&utm\\_campaign=buffer](http://metrocosm.com/global-immigration-map/?utm_content=buffer113b2&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer)

<http://metrocosm.com/us-immigration-history-map.html?ref=producthunt>

