

Semana 2

HCI y Visualización

IIC1005

2018

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PLAN SEMESTRAL

A	B	C	D	G	H	J	K
Week	Fecha semana	Clase Martes	Clase Jueves	Ayudantía	Control	Tarea Chica	Tarea Grande
I	6 - 8 Mar	Introducción+terminal	GitHub+Jupyter				
II	13 - 15 Mar	Leng. Prog + Jupyter 2	Visualización + HCI	Jupyter Pandas			
III	20 - 22 Mar	Tecn Web HTML + CSS	Tecn Web JS	Jupyter Plots		TC1 Git+Shell	
IV	27 - 29 Mar	Arquitectura	SO+Redes	Web			
V	3 - 5 Abr	BD	BD	Web			TG1 Jupyter + Web
VI	10 - 12 Abr	Algoritmos	Ingeniería de Software		I1: 12Abr Web/HCI		
VII	17 - 19 Abr	ML	ML			TC2 BD (SQL+Mongo)	
VIII	24 - 26 Abr	ML	ML				
IX	3 may.	FERIADO	Guest: DL				TG2 ML
X	8 - 10 May	Computabilidad	Complejidad				
XI	15 - 17 May	Prog Logica	Prog Logica		I2: 16May IngSoft		
XII	22 - 24 Ma	BPM	BPM			TC3 Maq de Turing	
XIII	29 - 31 Ma	Guest: Criptomonedas	Guest: VR/AR				
XIV	5 - 7 Jun	Guest: CSCW	Guest: MOOC			TC4 BPM	
XV	12 -14 Jun	Guest: Miguel Nussb.	Guest: TBA		I3: 14Jun ML+IA		
XVI	19 - 21 Jun	Resumen Final					

Ayudantía de ayer

- Jupyter Notebooks + git
- ¿Comentarios?
- Yo: Pasar lista

HCI y Visualización

“ *What Information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention.* ”

Carnegie Mellon University Professor Herbert A. Simon (1978), *Nobel Laureate and Turing Award winner*

HCI

- Algunos lo traducen como
 - Human-Computer Interface y otros como
 - Human-Computer Interaction
- Interfaz de Usuario (machine-user interface)
 << El medio por el cual el usuario y una máquina/sistema computacional interactúan (implícitamente con dispositivos de entrada y salida, software) >>
- Interfaz Computacional
 << El punto de Interacción entre elementos de hardware y/o software del computador >>

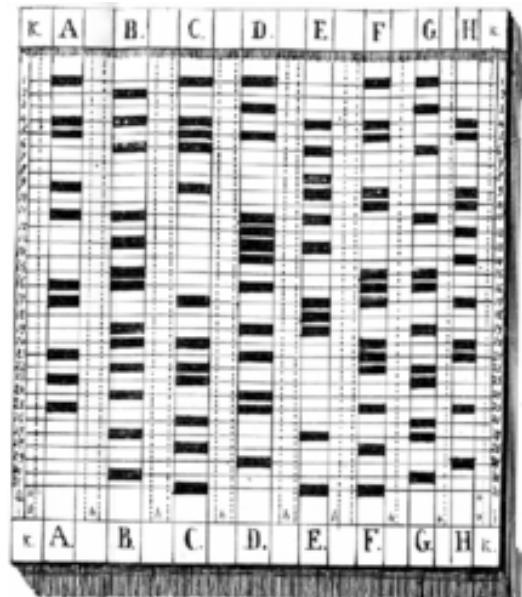
HCI en su edad temprana y moderna

Primeros Computadores	Computadores Actuales
<ul style="list-style-type: none">• Máquinas Caras• Uso limitado y bien definido• Uso para algunas etapas del proceso de trabajo• Usadas por especialistas, ingenieros y técnicos en computación• Casi nula necesidad de ajustar la interfaz a necesidades y limitaciones humanas	<ul style="list-style-type: none">• Relativamente económicos• Usados en todos los ámbitos• Herramienta primaria para virtualmente todas las áreas y sectores de negocio• Usados por cualquier persona, con o sin conocimientos técnicos• Gran necesidad de adaptación y personalización

Tarjetas perforadas (Punch Cards)



1725: Basile Bouchon y Jean-Baptiste Falcon (FR), uso para controlar Telares Mecánicos

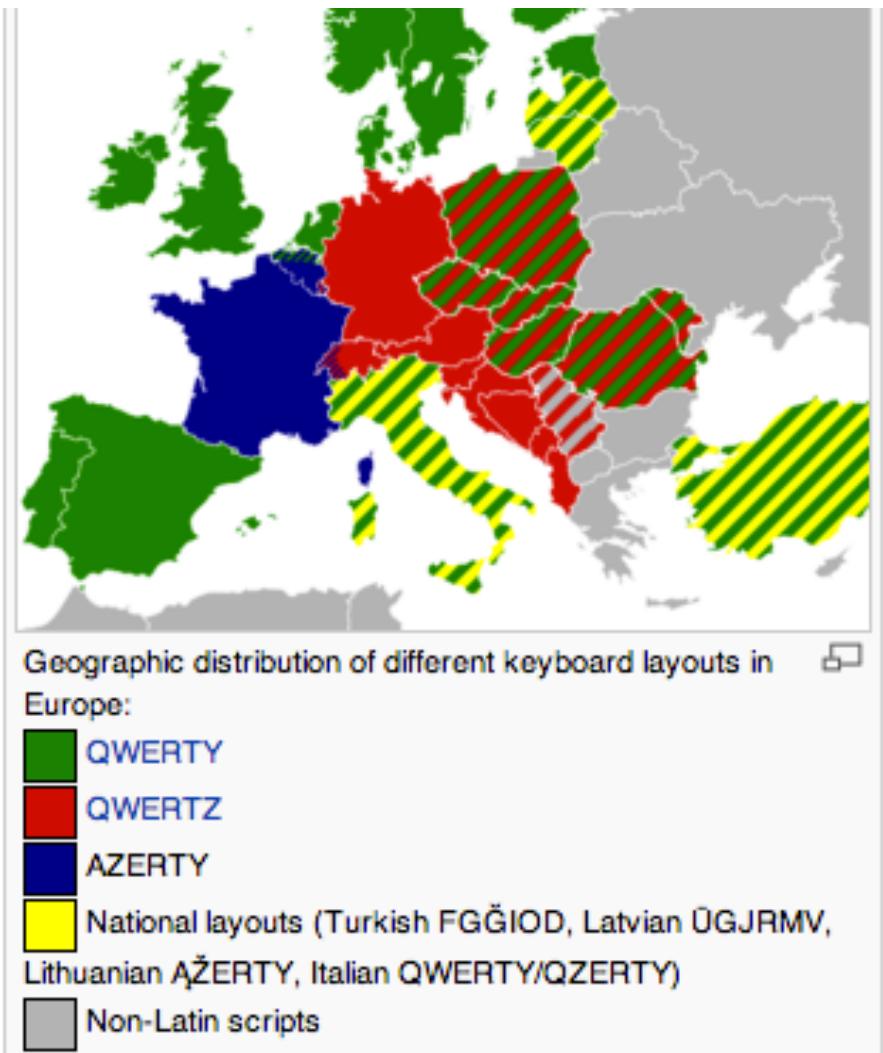


1832: Semen Korsakov el primero en usar tarjetas perforadas para almacenar y buscar información.



Programación FORTRAN en 1970, Alemania
http://en.wikipedia.org/wiki/File:Bundesarchiv_B_145_Bild-F031434-0006,_Aachen,_Technische_Hochschule,_Rechenzentrum.jpg

QWERTY/ AZERTY



Revisión Histórica (1940-1998)

- Brad A. Myers. 1998. A brief history of human-computer interaction technology. *interactions* 5, 2 (March 1998), 44-54.
DOI=10.1145/274430.274436
- <http://doi.acm.org/10.1145/274430.274436>

A brief history of human-computer interaction technology (1998)

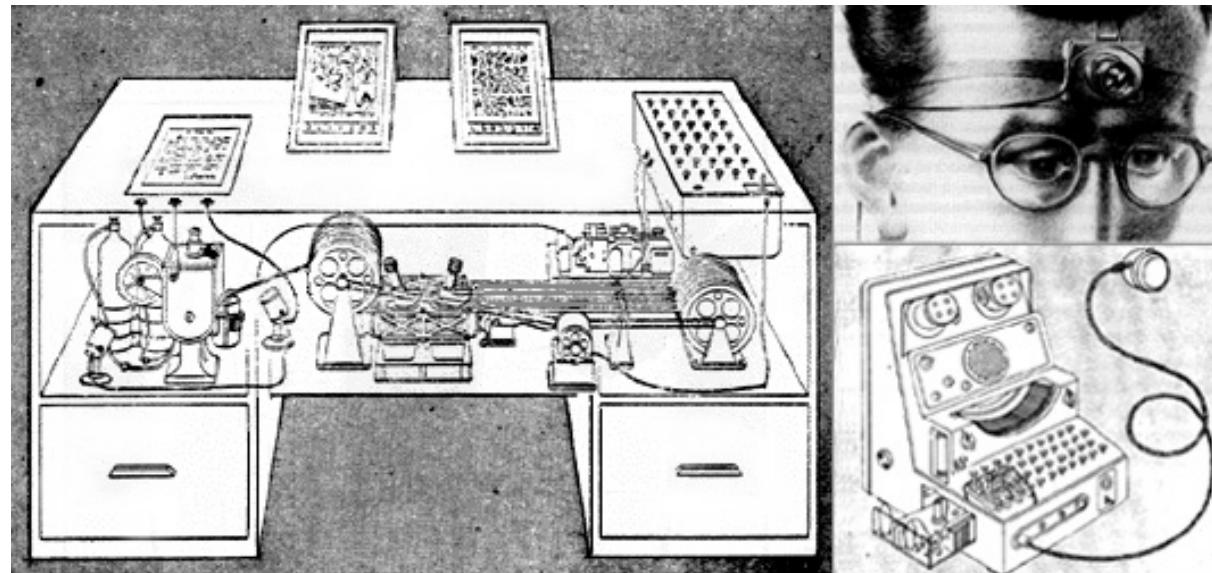
1. Interacciones Básicas
2. Tipos de Aplicaciones
3. Áreas en Desarollo (para 1998)
4. Arquitecturas y Herramientas de Software

=====

- Interfaces Cerebro-Máquina
- Ambientes Ciber-Físicos (término HCI : obsoleto)

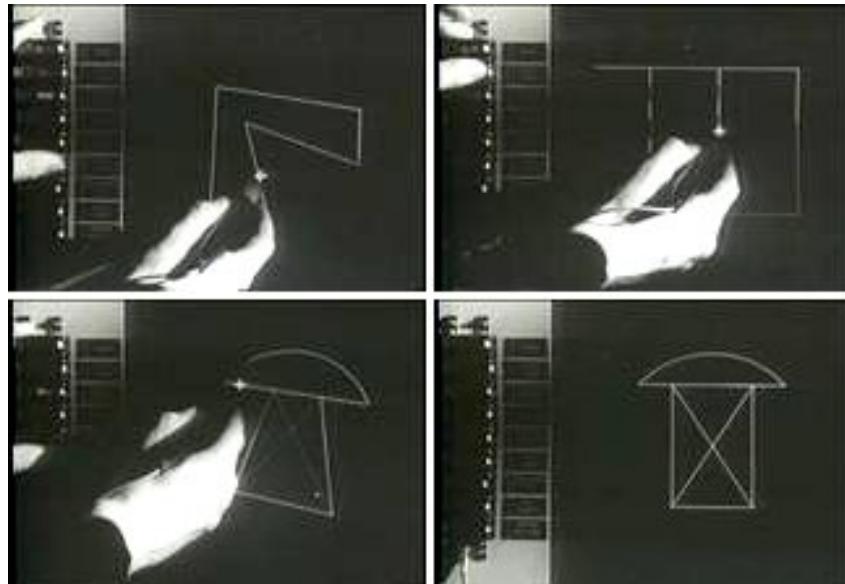
Vannebar Bush

- Dirigió I+D en USA durante la 2da Guerra. Su paper *As We May Think* predecía “nuevos tipos de enciclopedias ... con una malla de caminos asociativos a través de ellas...”
- Su más recordada visión: El Memex (1945)



1. Interacciones Básicas

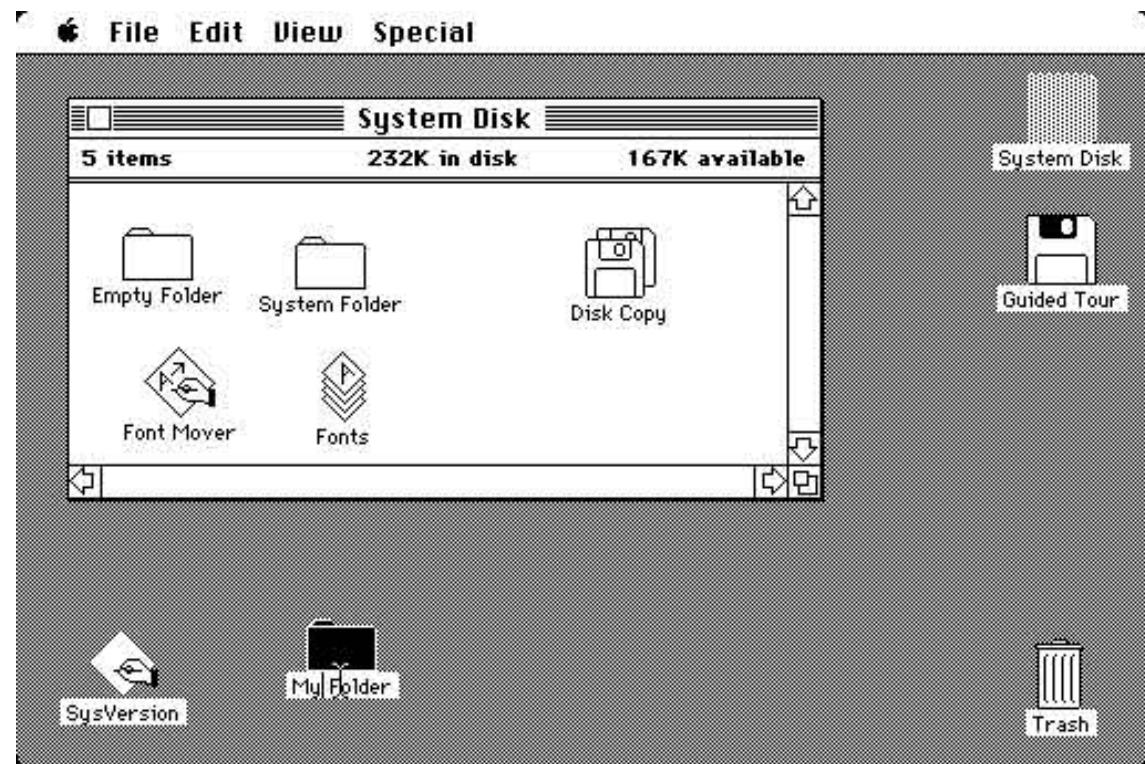
- Manipulación Directa de Objetos Gráficos
 - Ivan Sutherland crea el SketchPad, MIT (1963)
- El Mouse
 - Douglas Engelbart en SRI (1967)



Metáfora de Escritorio (GUI)

- ENCUESTA: En qué empresa se creó la interfaz tipo desktop que conocemos actualmente (bonus point: cuándo) ?

- Microsoft
- Apple
- Xerox
- IBM



Metáfora de Escritorio

- ENCUESTA: Quién creo la interfaz tipo desktop que conocemos actualmente ?
 - Microsoft
 - Apple
 - Xerox: Xerox Alto, 1973!!
 - Sun



Puedes ver más GUIs en
<http://toastytech.com/guis/index.html>

Xerox PARC

- Objetivo: Crear la Oficina del Futuro
- En los 60-70, un selecto grupo de investigadores lograron DECENAS de importantes invenciones

MILESTONES: Xerox PARC history



Otros Avances de Xeroc PARC

- Impresora Laser
- Smalltalk (desarrollo de interfaces)
- Programación Orientada a Objetos
- Cortar/Copiar/Pegar
- Procesamiento de Lenguaje Natural
- Filtrado Colaborativo (Sistemas Recomendadores)
- Etc., etc., etc.

3. Áreas en Desarrollo

- Reconocimiento de Gestos: Comenzando por Sketchpad (1963), Sistemas CAD comerciales (70s) y el Apple Newton (1992)
- Multimedia: Multiples ventanas con texto y gráficos
- Realidad Virtual y Aumentada: Trabajo original por Ivan Sutherland (1965-68), Brooks y Fuck en UNC (1971)
- CSCW: Sistemas Colaborativos apoyados por computador. Ver la “madre de todas las demo” (1968)

<http://www.youtube.com/watch?v=JflgzSoTMOs>

Ejercicio

- Siéntense de a dos.
- (10 mins) Discutan dos tecnologías de HCI que creen que van a revolucionar nuestras vidas en los siguientes 2 años. ¿cuáles estarán funcionando en los nuevos edificios de Ingeniería?
- (5 mins) aleatoriamente les preguntaré (7 grupos)

Skin buttons



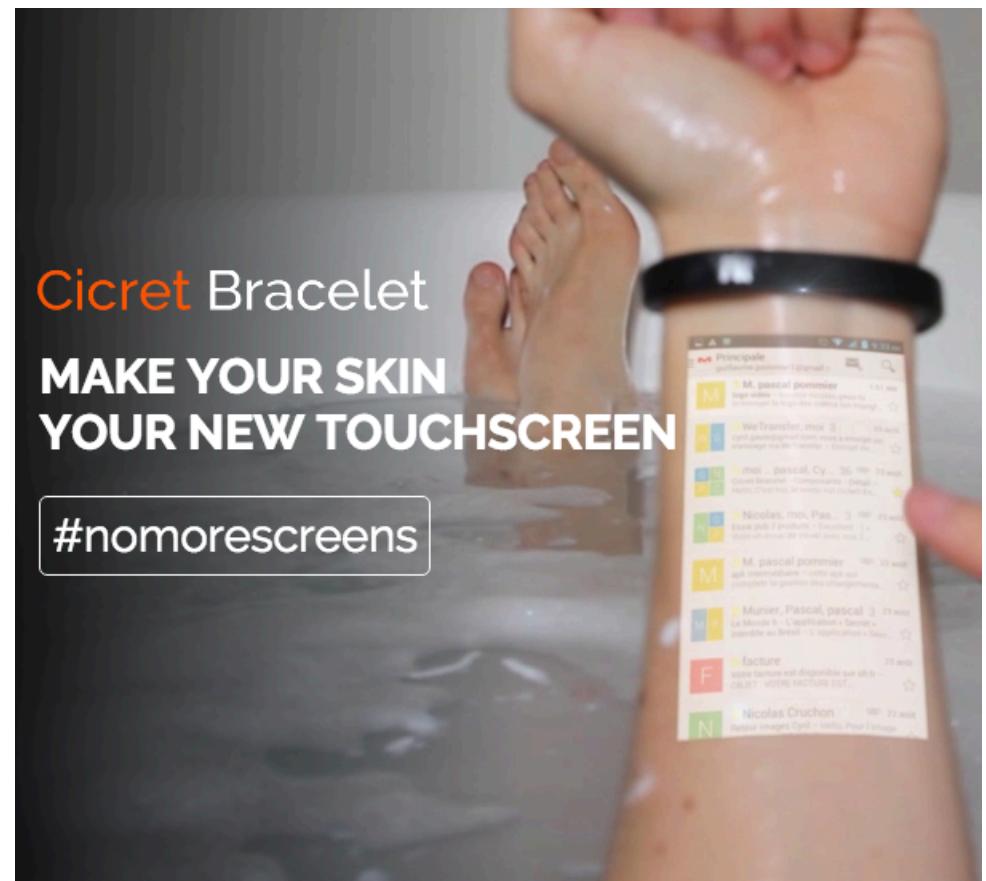
Cheap, Small, Low-Power and Clickable Fixed-Icon Laser Projectors

Computational form factor, made possible in miniaturization and battery. Our fingers are relatively obtrusive. Touchscreen smartwatches allow a wide range of interfaces, providing flexibility. However, from lack of tactile feedback and being partially mitigated if we could simply make smartwatches more obtrusive. Thus one surface area around the watch for

very small projectors that can render a message at a specific angle. These properties make them useful, where they can extend the screen. For example, a notification icon can be projected to show new messages. Infrared proximity sensors to enable touch sensitivity. For example, a message icon could allow users to quickly provide a projection surface, the skin



Skin Buttons: Cheap, Small, Low-Power and Clickable Fixed-Icon Laser Projectors



Cicret Bracelet

MAKE YOUR SKIN
YOUR NEW TOUCHSCREEN

#nomorescreens

Eye-gaze technology

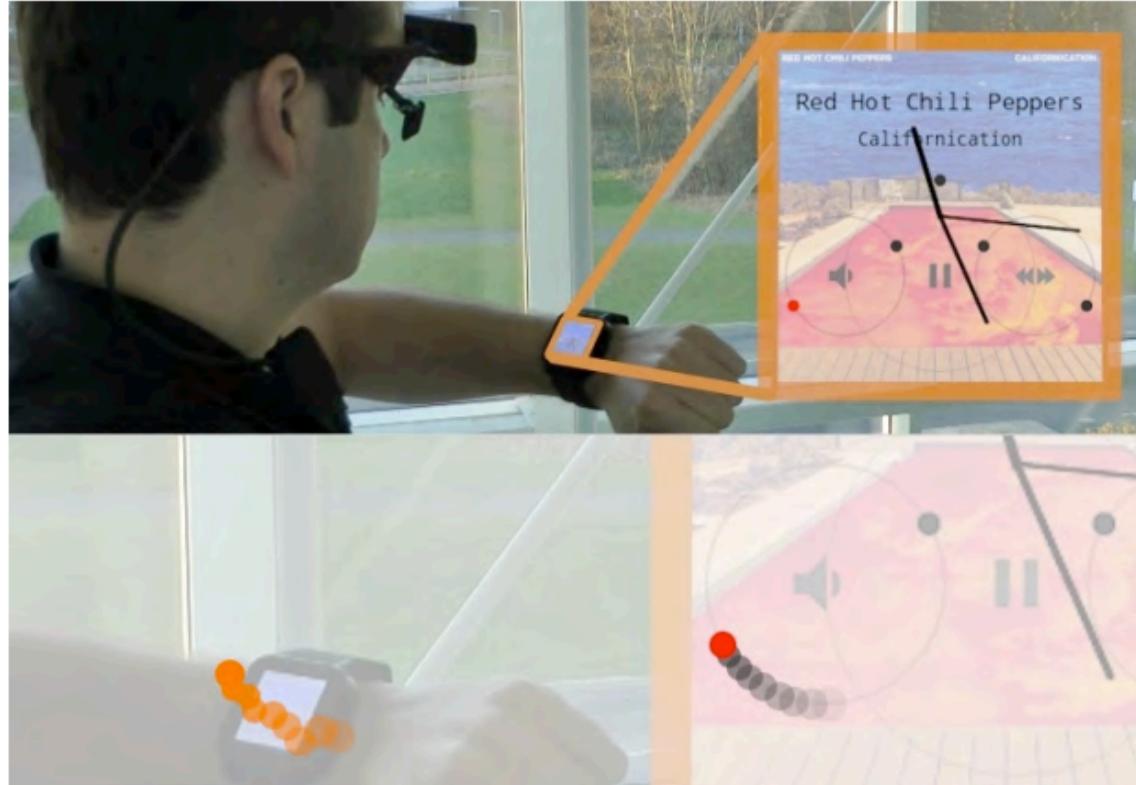
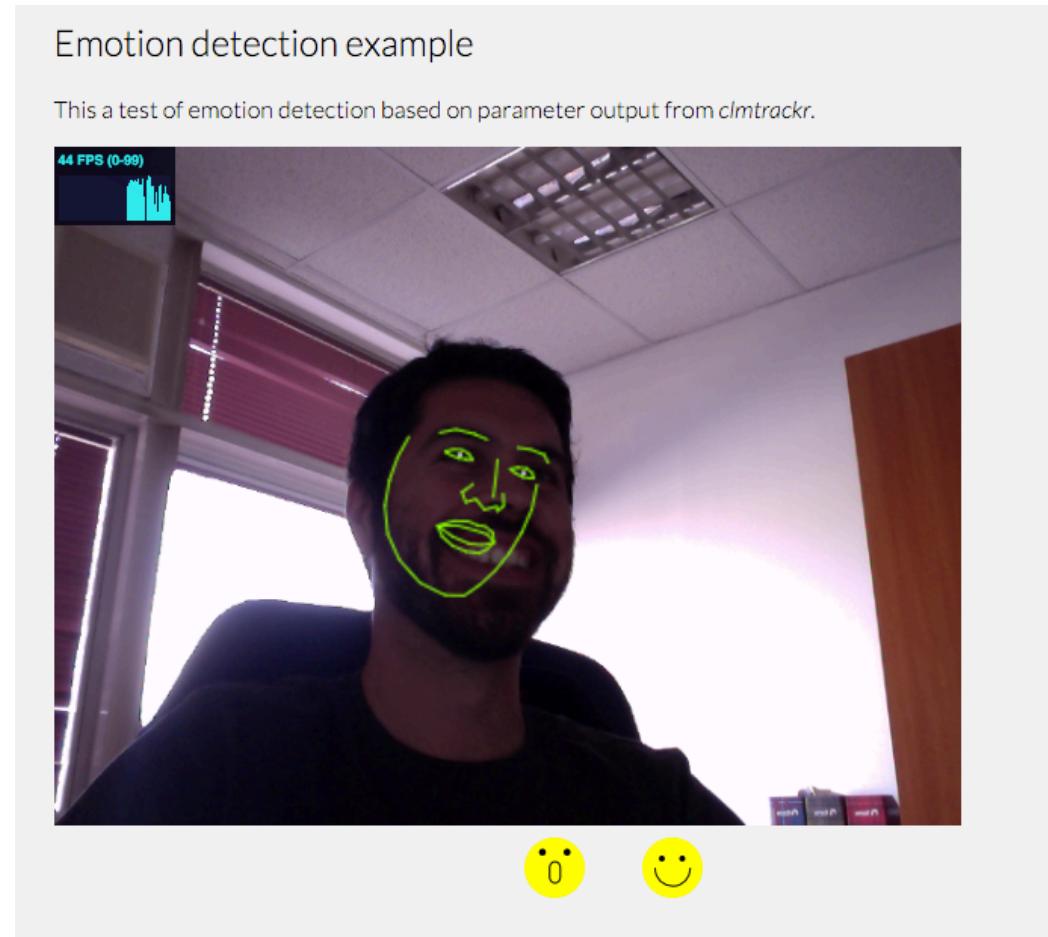


Figure 1. Top: a user raises the volume of his smart watch music player using Orbit's gaze input controls. The UI shows the volume, pause/play and previous/next controls with orbiting targets for gaze selection. **Bottom:** how Orbit's enables gaze input on smart watches. The technique can robustly detect which of the controls is actively being followed by correlating each Orbit's target with the user's gaze.

Emotion Detection

- [https://auduno.github.io/clmtrackr/examples/
clm_emotiondetection.html](https://auduno.github.io/clmtrackr/examples/clm_emotiondetection.html)



Ok, y el presente-futuro?

- Las siguientes diapositivas son tomadas de la Keynote presentada por Wolfgang Wahlster en IUI 2014, Haifa, Israel.

Multiadaptive Interfaces to Cyber-Physical
Environments

<http://www.dfki.de/~wahlster/IUI2014/>

Wolfgang Wahlster, DFKI

Conclusion: 6 Megatrends in IUI



1. From Unimodal
to Multimodal Dialogs
2. From Single Task
to Multitask Dialogs
3. From Dyadic Dialogs
to Multiparty Conversations
4. From Uniscale
to Multiscale Interaction
5. From Monolingual
to Multilingual Systems
6. From Adaptive Human-Computer Interaction
to Multiadaptive Human-Environment Interaction

**Massive Extension
of the Coverage of
IUI Platforms**

SOURCE: http://www.dfki.de/~wahlster/IUI2014/Multiadaptive_Interfaces_to_Cyber-Physical_Environments_final.pdf

Combining all Senses - Getting Rid of Keyboard and Mouse



Speech



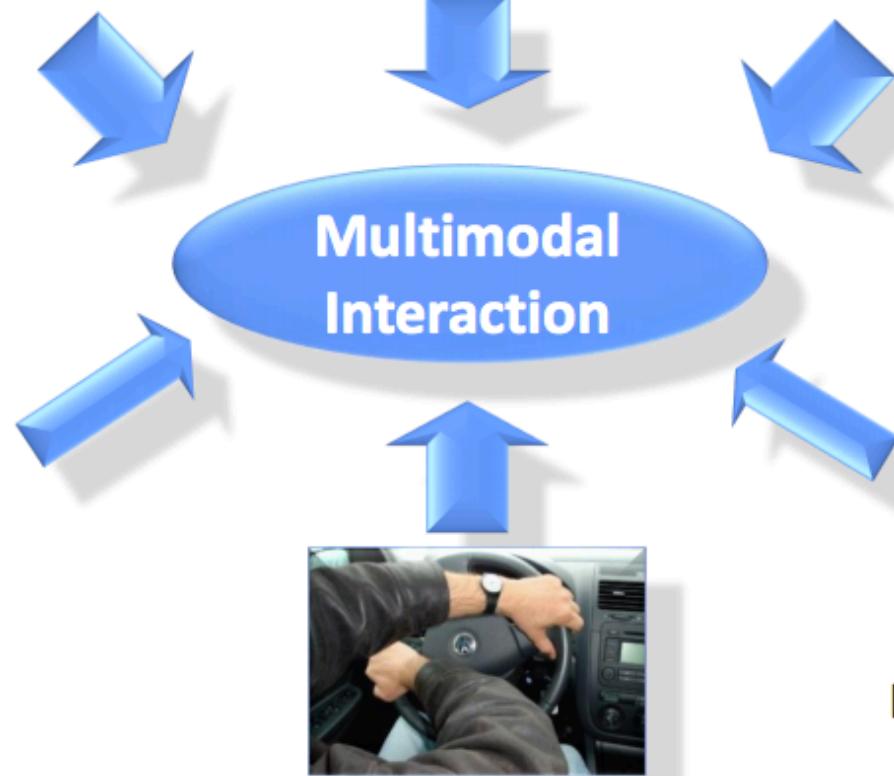
Graphics



Gesture



Biometrics



Physical Action



Facial Expression Body
Language

Wearables for Multiadaptive CPE Interaction

iu 2014



Simvalley AW 414



Samsung Gear



I'm Watch



Fitbit



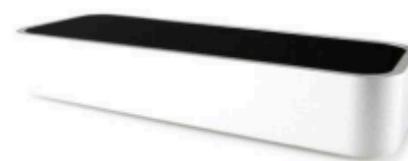
Fuelband



Jawbone Up

Multiscale Gesture and Speech Interaction

IUI 2014

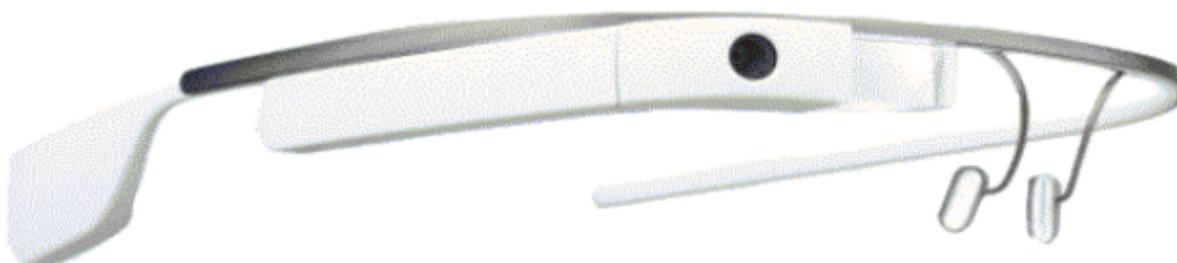


**Kinect2: Multiparty Distant Speech
and Distant Gesture**

**Leap Motion: Multifinger
Nearfield Non-Touch Gesture**

Glasses with Mobile Eyetracking for Multiadaptive CPE Interaction

UI 2014



Multiparty Interaction within Small Groups

IUI 2014

Challenging research areas: **attention tracking** and the **identification of individual group members** for multiparty interaction.

Speech Input



Gesture and Multitouch Input



Smart Glasses



Who is speaking now to whom
or to which CPS?

Whose hand or fingers are
pointing to which CPE object?

Who looks at whom or
at what?

**Online Speaker Diarization
Task**

**Non-intrusive Deictic
Agent Identification Task**

**Mobile Eye-
tracking Task**

Physical Interaction with Connected Artifacts

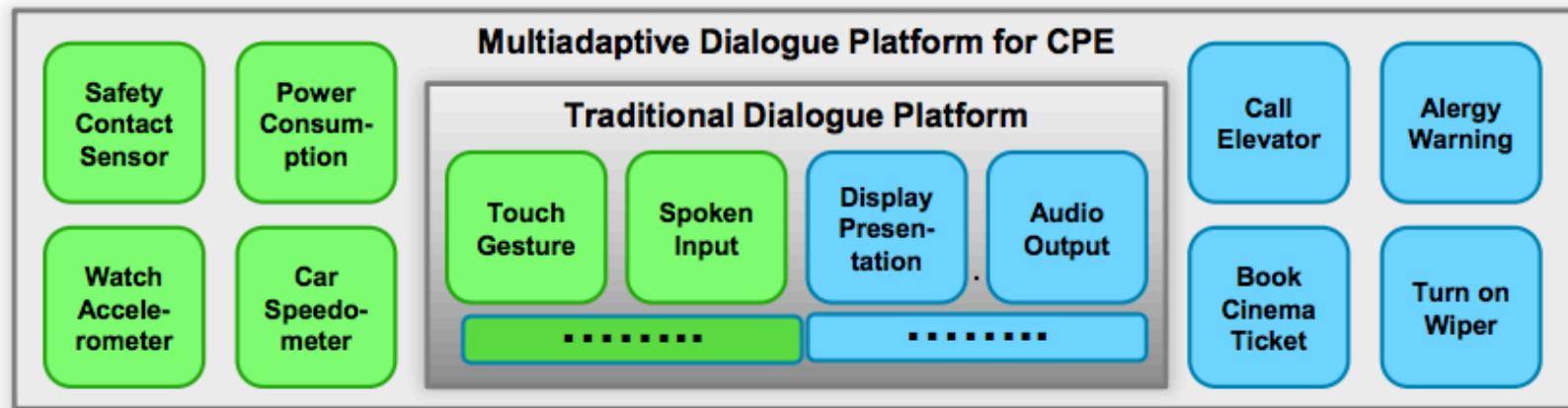
IUI 2014

in instrumented environments as key situational factor for dialogue understanding and events generated by the Cyber-Physical Environment (CPE) as an integral part of the output rendering



Multimodal Input Processing + Activity Recognition in CPE

Multimodal Output Processing + CPE Operation



Personalizacion en Masa

Semantic Technologies for Mass Customization  2014



Connecting the Smart Retail Shop IRL with the Smart Factory
of DFKI: Batch Size 1 Production and 3D Printing

Wolfgang Wahlster, DKI

Conclusion: 6 Megatrends in IUI



1. From **Unimodal**
to **Multimodal Dialogs**
2. From **Single Task**
to **Multitask Dialogs**
3. From **Dyadic Dialogs**
to **Multiparty Conversations**
4. From **Uniscale**
to **Multiscale Interaction**
5. From **Monolingual**
to **Multilingual Systems**
6. From **Adaptive Human-Computer Interaction**
to **Multiadaptive Human-Environment Interaction**

**Massive Extension
of the Coverage of
IUI Platforms**

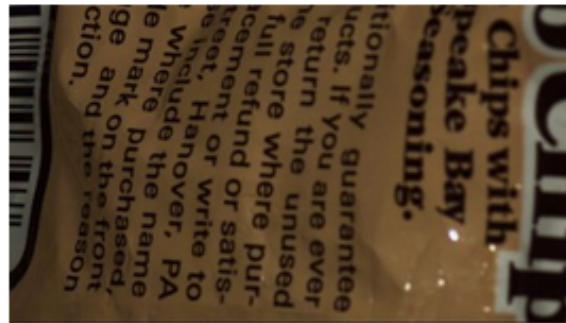
SOURCE: http://www.dfki.de/~wahlster/IUI2014/Multiadaptive_Interfaces_to_Cyber-Physical_Environments_final.pdf

Aplicaciones Recientes

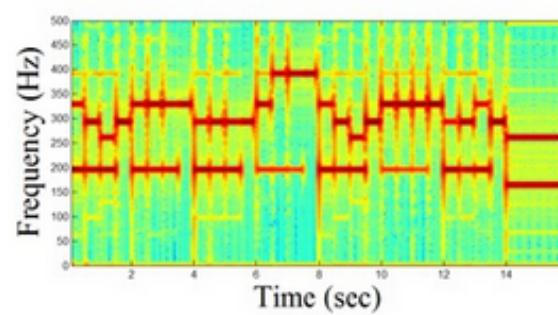
Percibir sonido desde vibraciones de Video

The Visual Microphone: Passive Recovery of Sound from Video

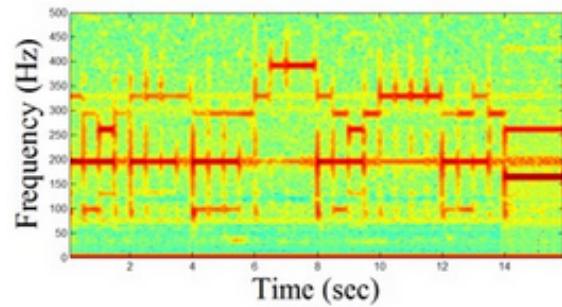
<http://people.csail.mit.edu/mrub/VisualMic/>



700 x 400, 2200 Hz



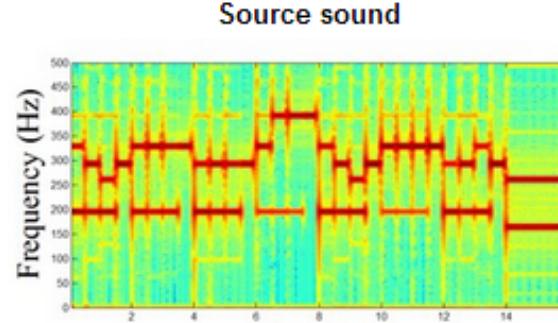
0:16



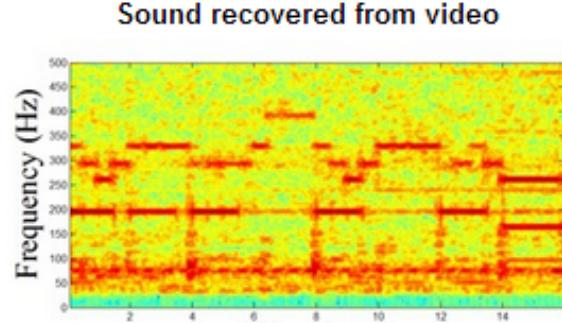
0:16



Video (representative frame)



Source sound



Sound recovered from video

Manipular objetos 3D – desde imágenes en 2D

**3D Object Manipulation in a Single Photograph
using Stock 3D Models**

<http://www.cs.cmu.edu/~om3d/>



Referencias y Material Adicional

- Vannebar Bush article: As We May Think

<http://sloan.stanford.edu/mousesite/Secondary/Bush.html>

- Tesis de Ivan Sutherland sobre el Sketchpad

http://images.designworldonline.com.s3.amazonaws.com/CAHistory/Sketchpad_A_Man-Machine_Graphical_Communication_System_Jan63.pdf

- Video de Adele Goldberg presentando las innovaciones de XeroxParc

<http://www.youtube.com/watch?v=6KAPUc3aJIE>

- <http://www.csc.ncsu.edu/faculty/healey/PP/>
- http://ir.exp.sis.pitt.edu/ebooks/reader.php?bookid=dix&docno=dix-0004&page=7&page_nav=47&usr=&grp=
- [http://ir.exp.sis.pitt.edu/textbooks/hci-books/Human Computer%20Inter/](http://ir.exp.sis.pitt.edu/textbooks/hci-books/Human%20Computer%20Inter/)

Y la “H” en HCl ?

Bases Teóricas en HCI

- El Ser Humano
 - Canales de Entrada-Salida:
 - Percepción
 - Memoria (Sensorial, Corto y Largo Plazo)
 - Pensamiento y Emoción
 - Diferencias Individuales
 - Psicología y el diseño de Sistemas Interactivos

Percepción

- Proceso que nos permite experimentar el mundo a través de nuestro sentidos.
- Es nuestra experiencia sensorial que envuelve el reconocimiento de estímulos ambientales y las acciones en respuesta a esos estímulos.

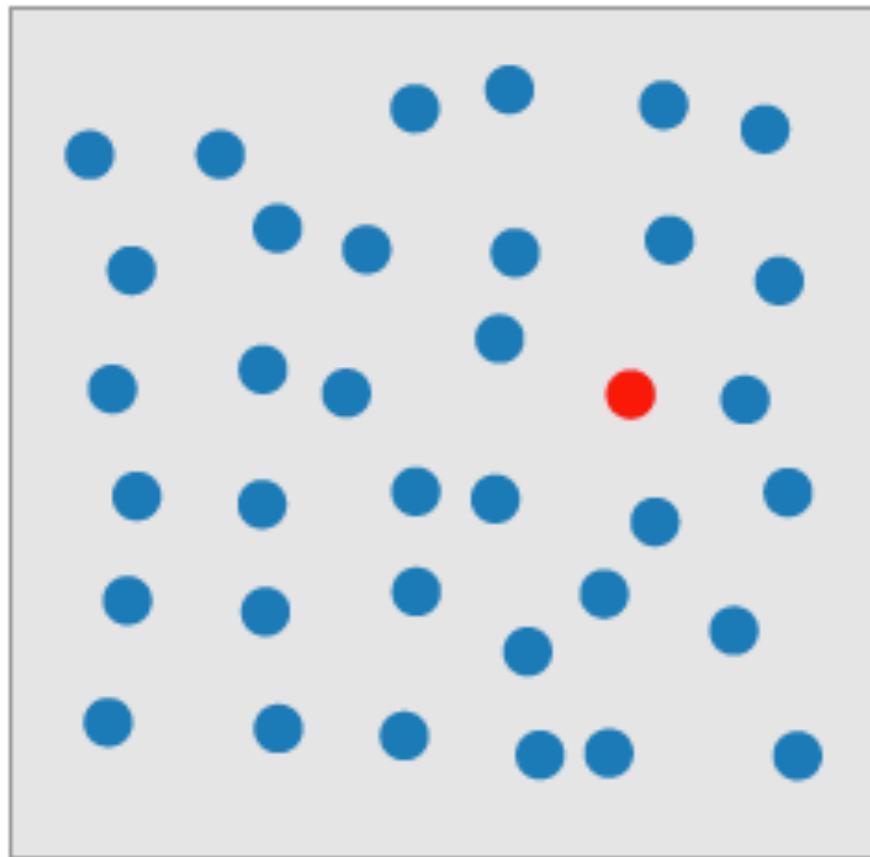
b

A B C

1234

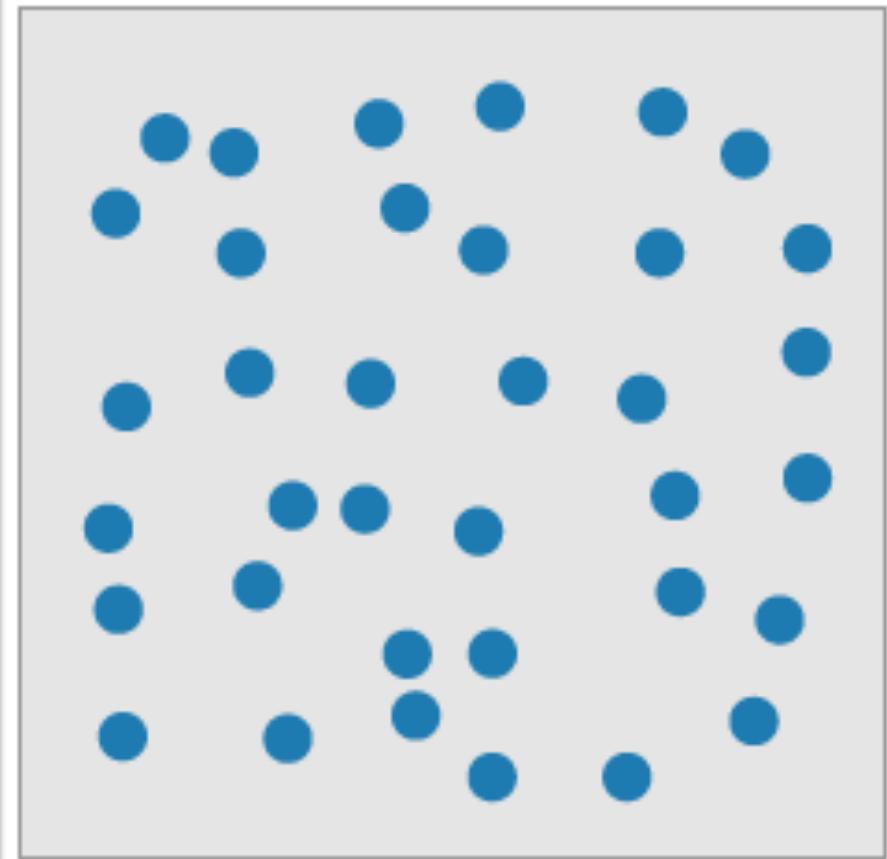
Figure 1.5 12 13 14

Busca el Circulo



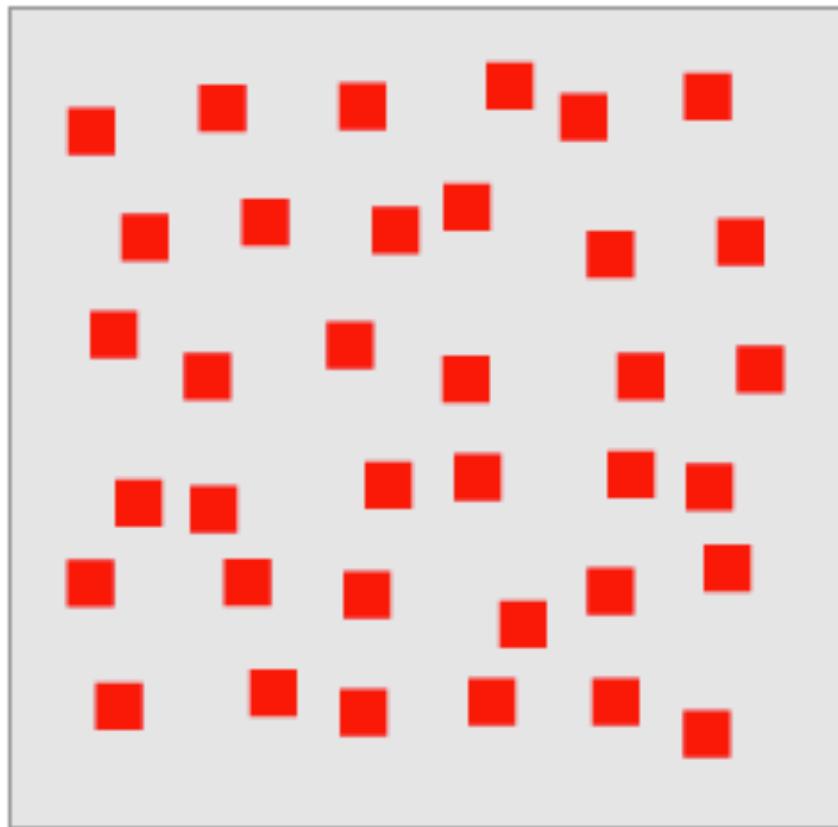
(a)

Busca el Circulo

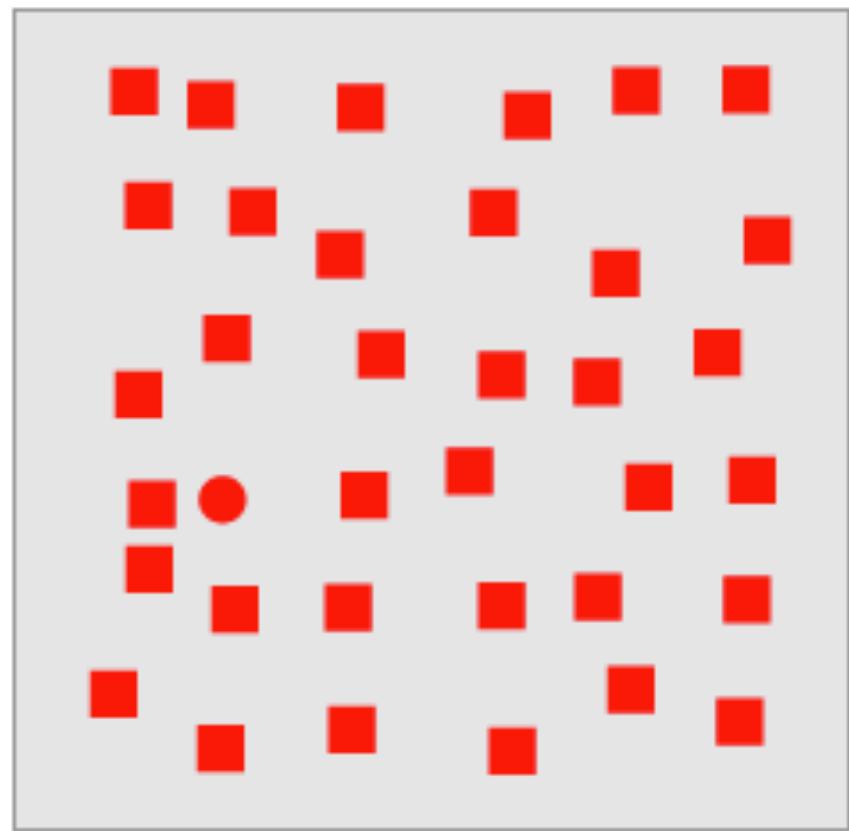


(b)

Busqueda - 2

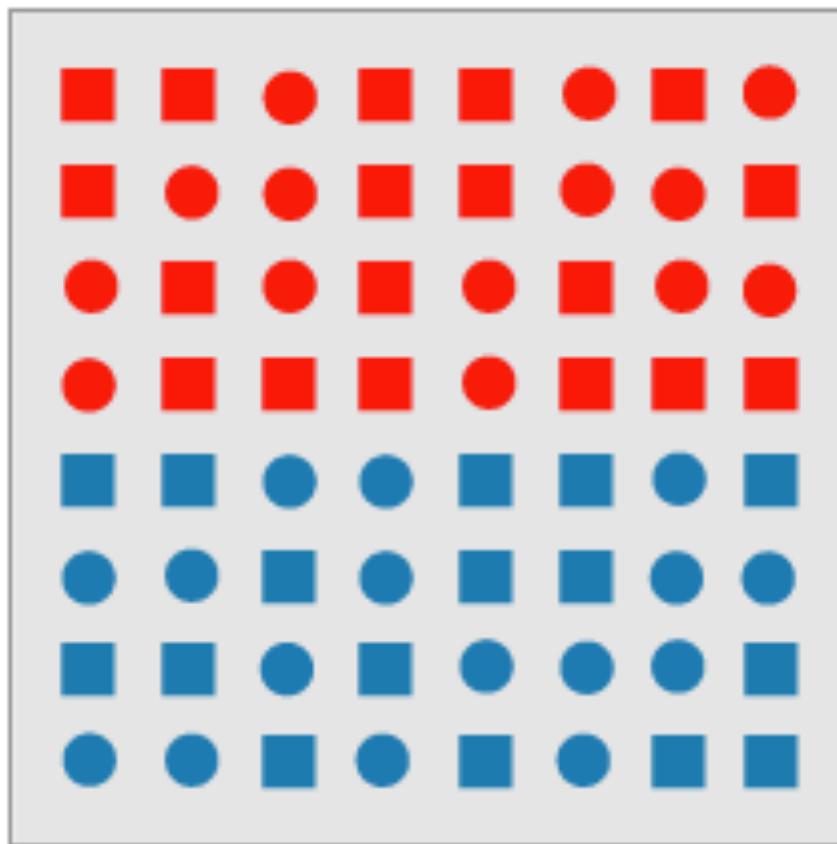


(a)



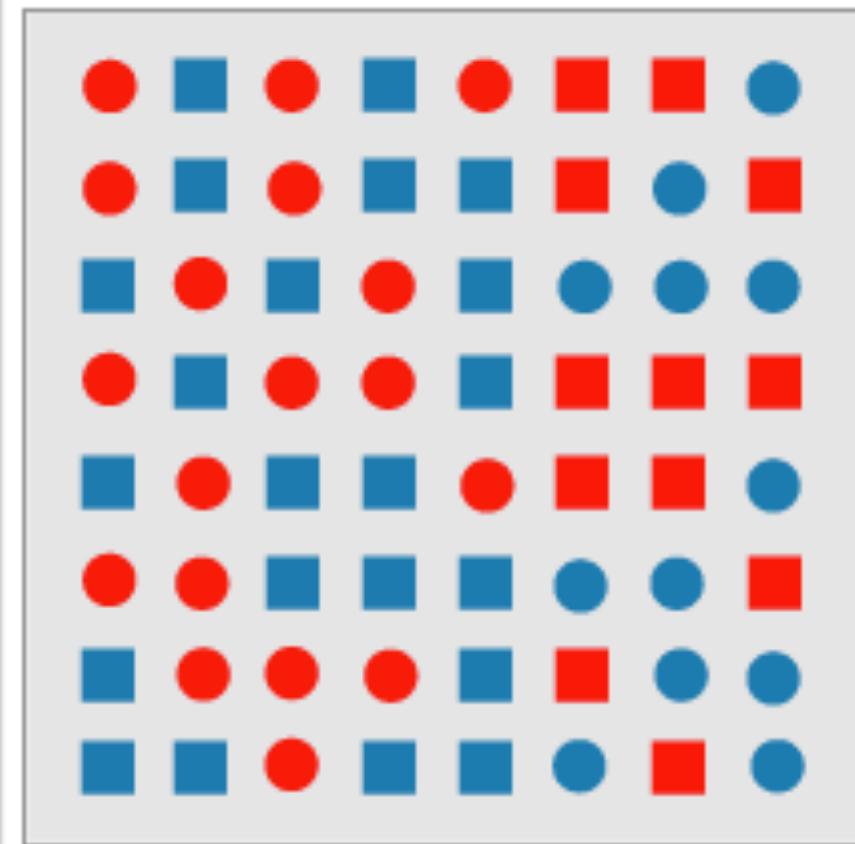
(b)

Procesamiento Pre-Atencion



(a)

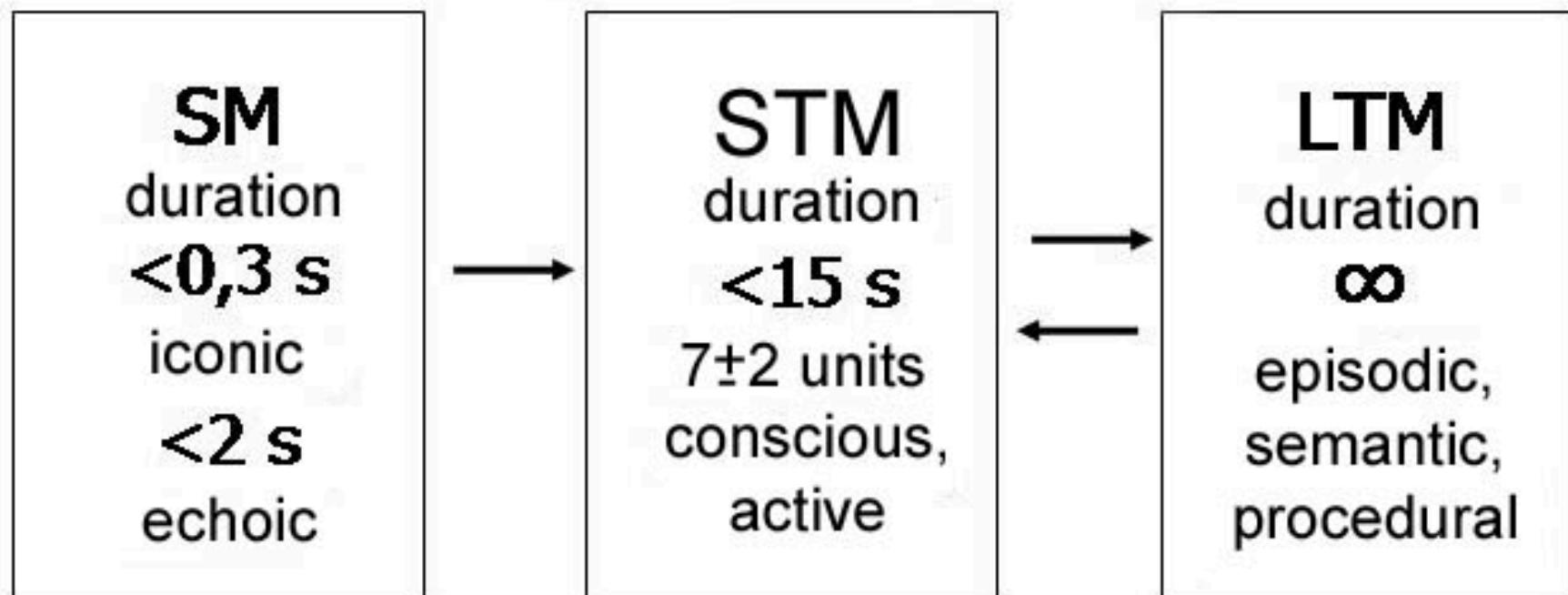
Procesamiento Pre-Atencion



(b)

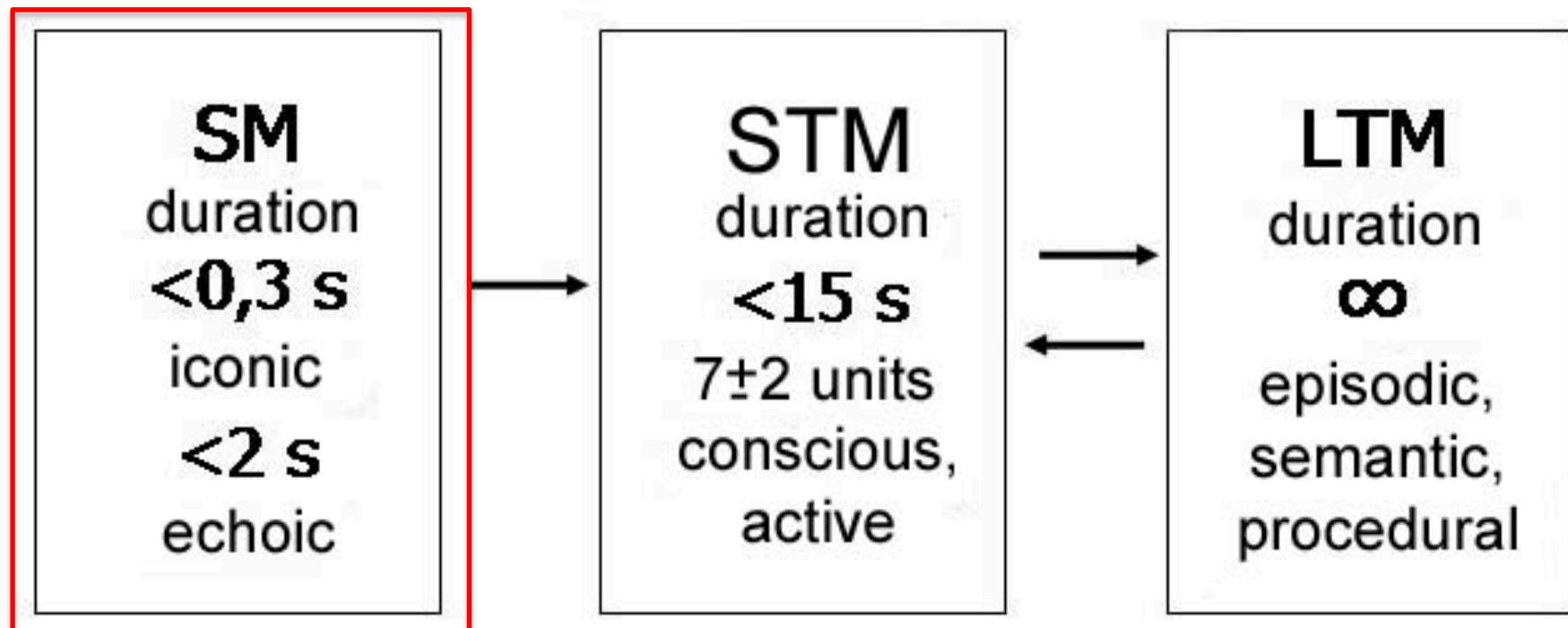
Memoria

Memory structure and processes



Memoria

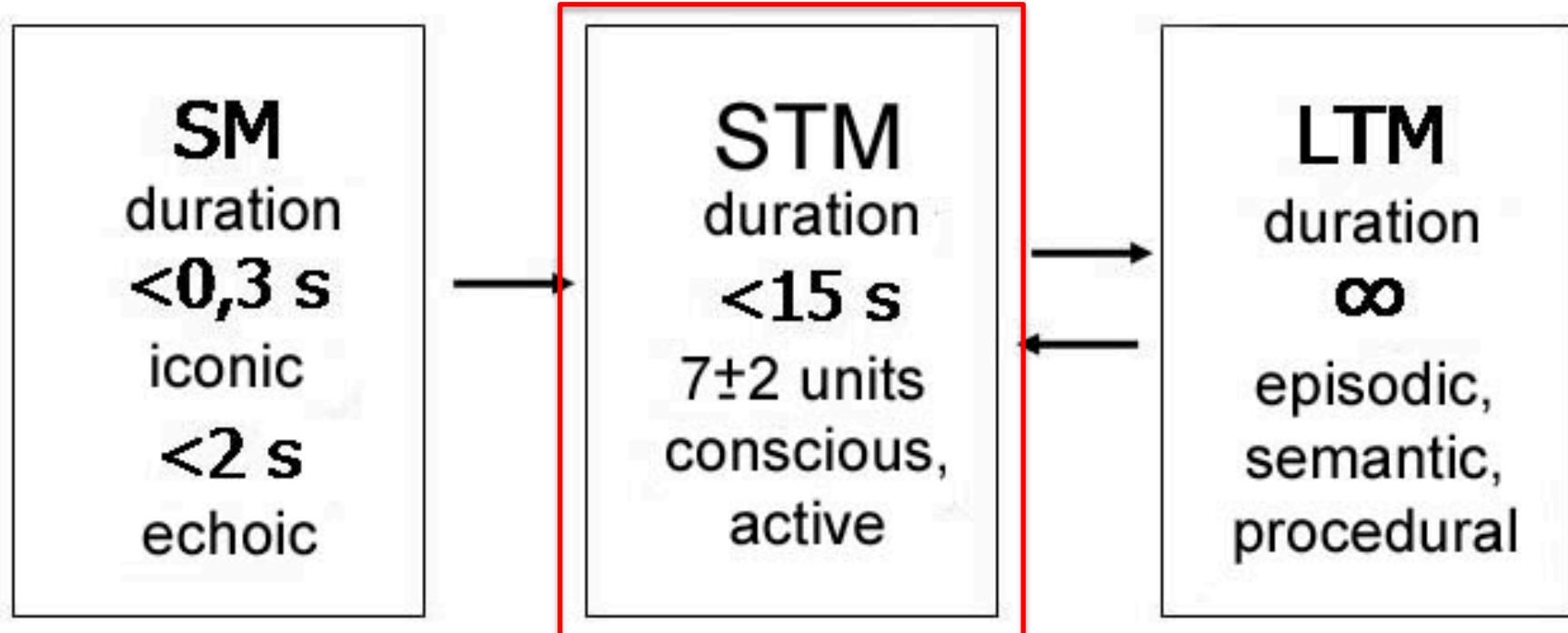
Memory structure and processes



Memoria Sensorial (Pre-atentiva)

Memoria

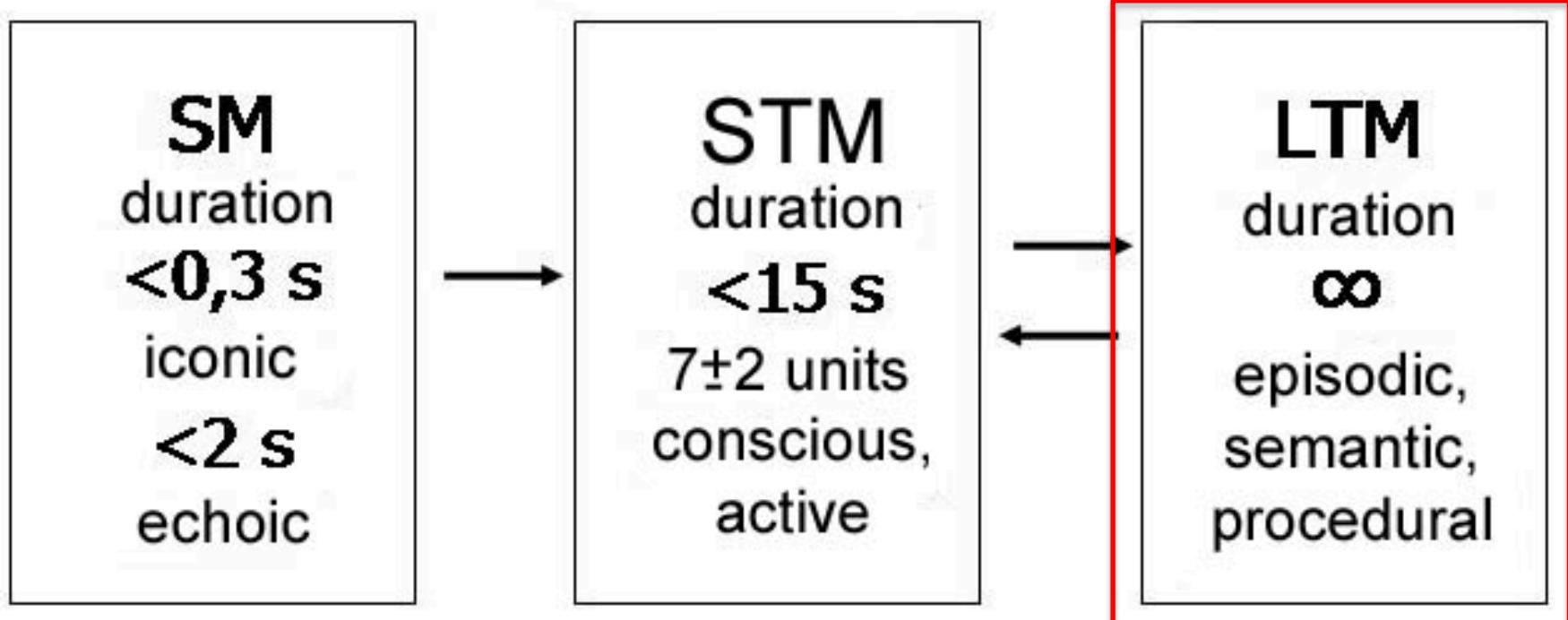
Memory structure and processes



M. de corto alcance: Atención / Habilidad para recordar y procesar información

Memoria

Memory structure and processes



LTM: Memoria de largo alcance. Consolidación por práctica y asociación semántica

Memoria Corto-Alcance: Chunks

1. L E B P M O W A S T A I A F B

Memoria Corto-Alcance: Chunks

Memoria Corto-Alcance: Chunks

1. L E B P M O W A S T A I A F B

2. F I A T O P E L B M W S A A B

Memoria Corto-Alcance: Chunks

1. L E B P M O W A S T A I A F B

Memoria Corto-Alcance: Chunks

1. L E B P M O W A S T A I A F B

2. F I A T O P E L B M W S A A B

3. FIAT OPEL BMW SAAB

Memoria Corto-Alcance: Chunks

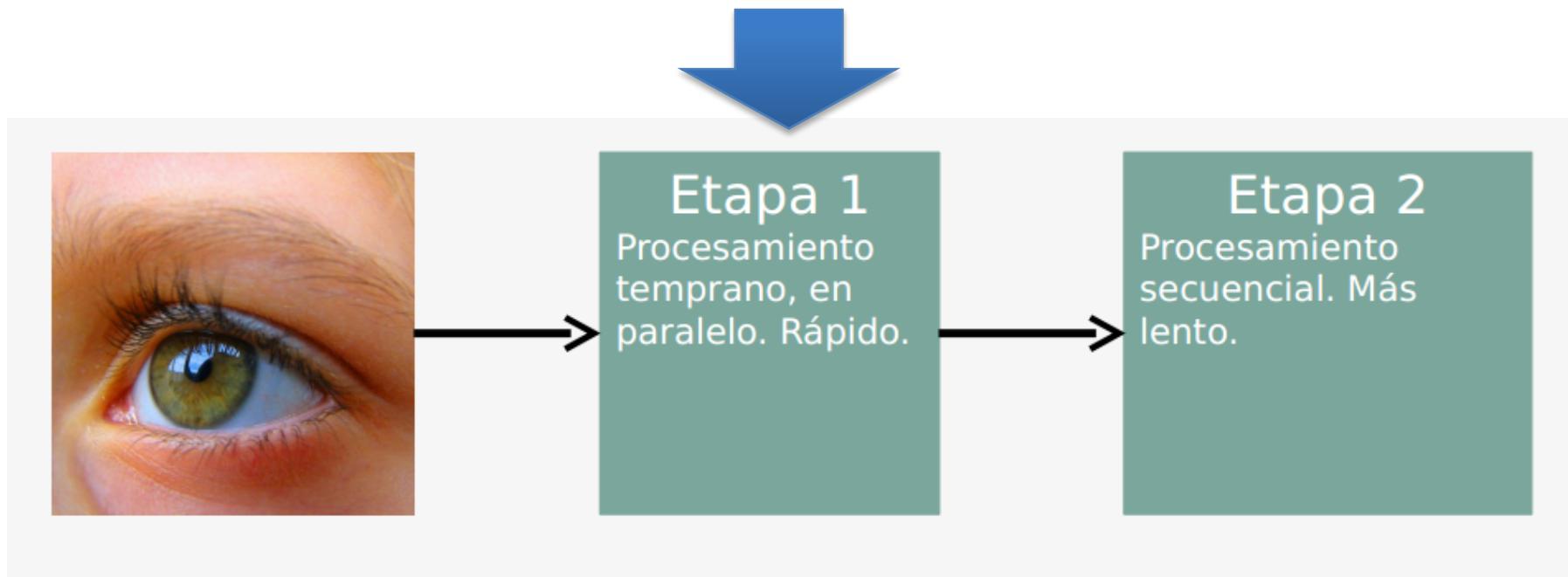
1. L E B P M O W A S T A I A F B

2. F I A T O P E L B M W S A A B

Puntos pendientes de la clase anterior

1. Procesamiento Preatentivo (pre-attentive)
2. Principios de la Psicología Gestalt

Procesamiento Preatentivo



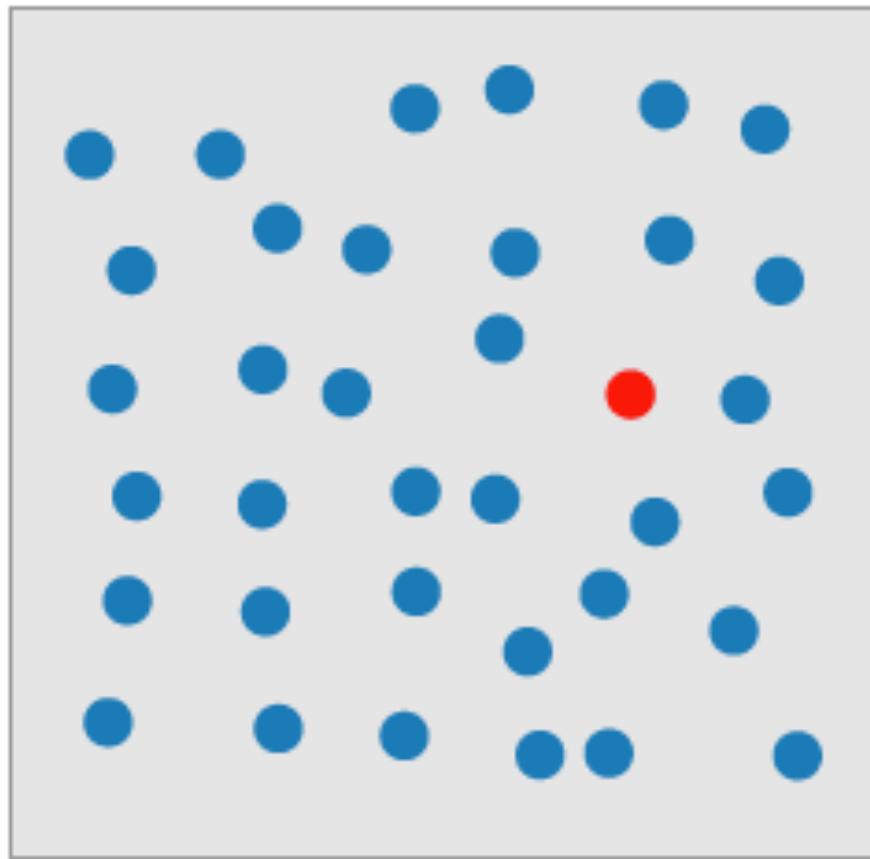
- Existen propiedades visuales que pueden ser procesadas en forma pre-atentiva.
- En el diseño de interfaces estas propiedades pueden aprovecharse para reducir los tiempos de procesamiento del usuario.

Procesamiento preatentivo

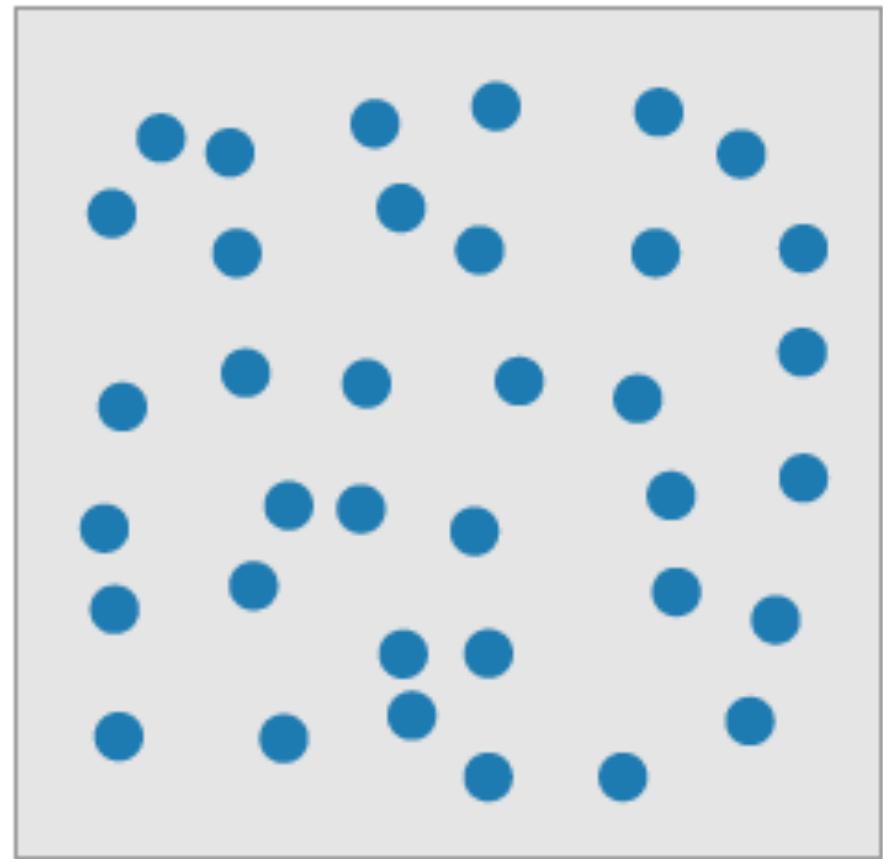
"An understanding of what is processed pre-attentively is probably the most important contribution that visual science can make to data visualization" (Ware, 2004, p. 19)

Taken from: <http://www.slideshare.net/kverbert/information-visualization-perception-and-principles>

Color

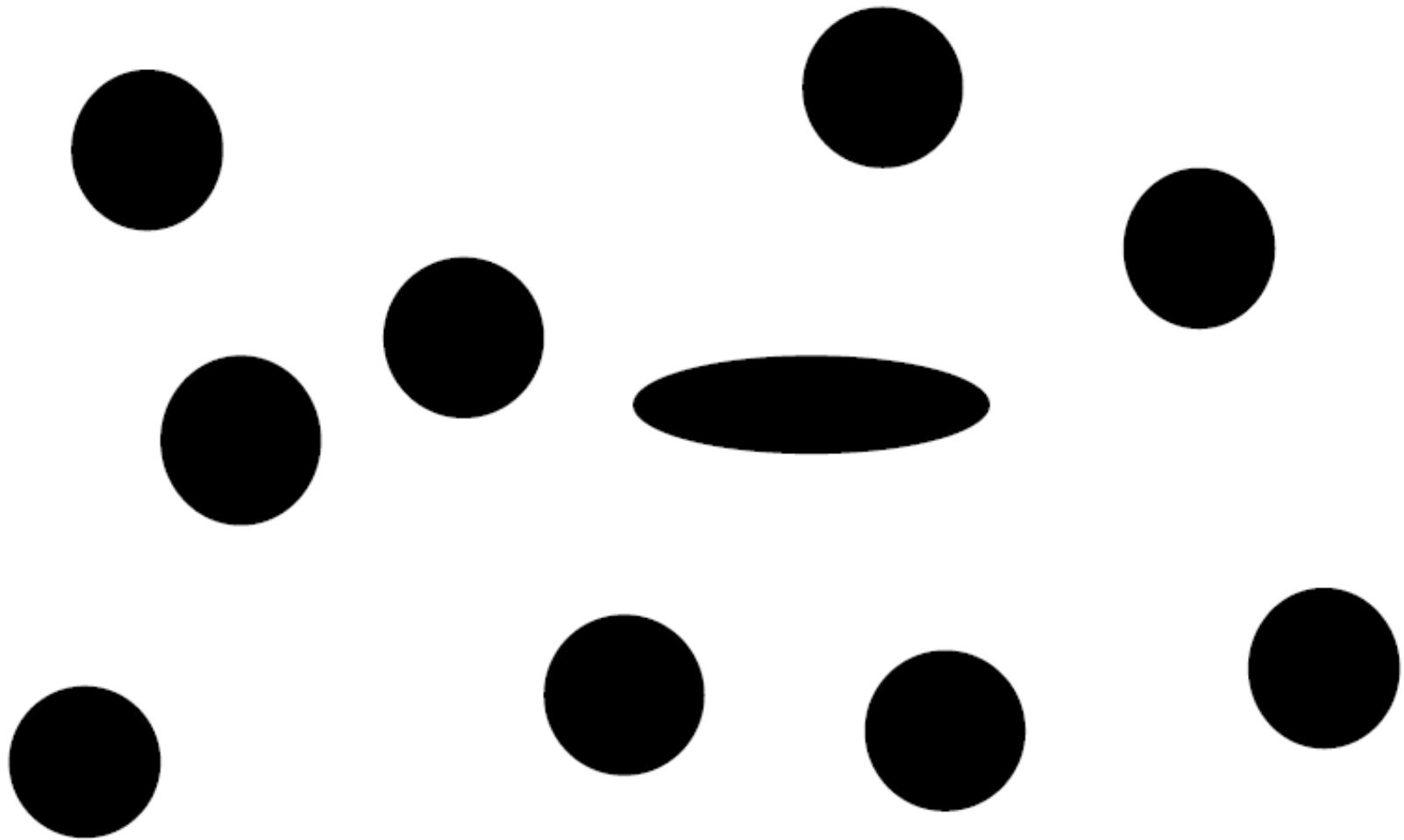


(a)

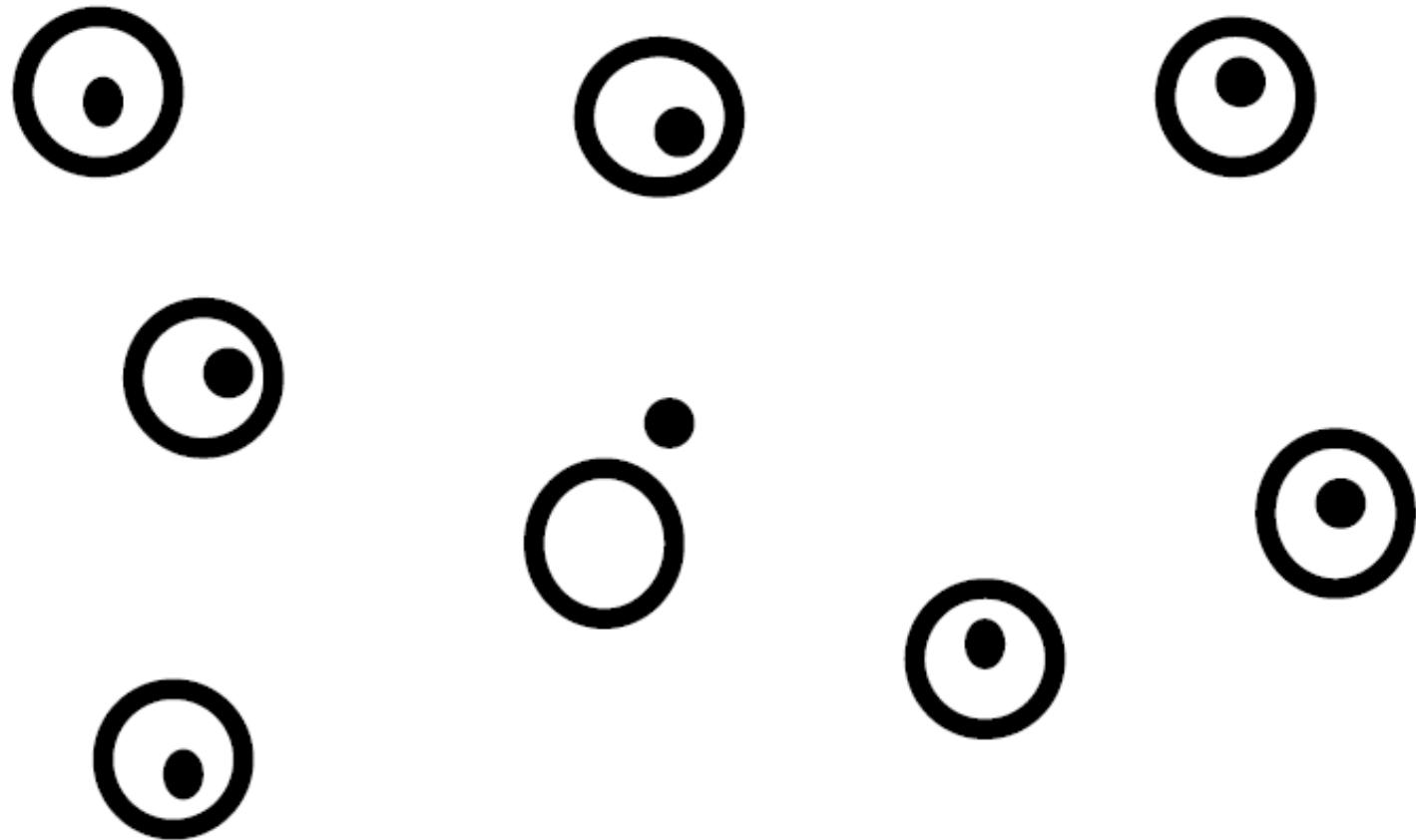


(b)

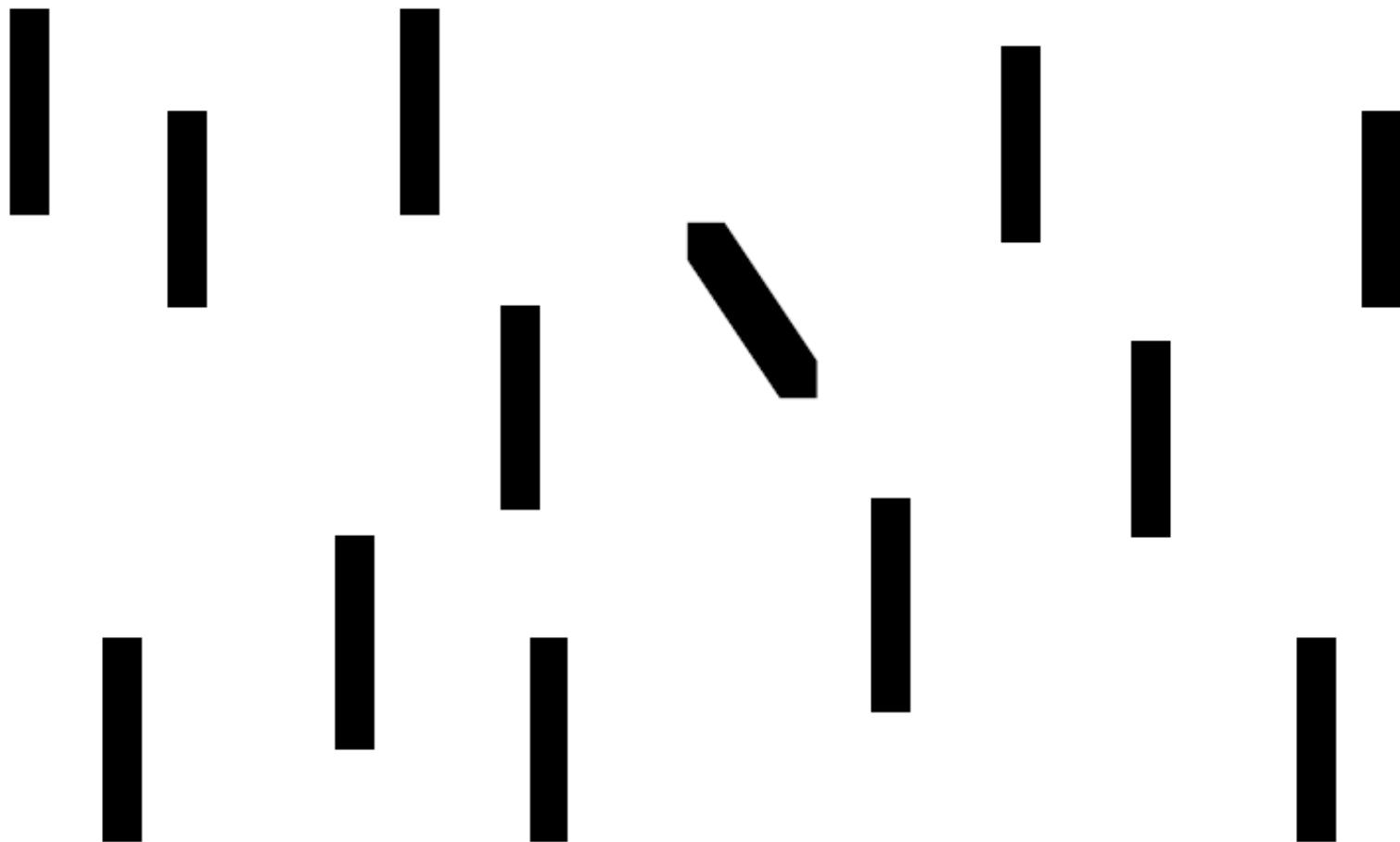
Forma



Encierro/Clausura

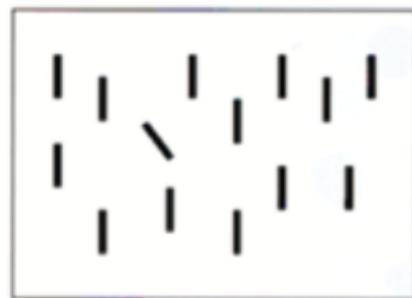


Orientación

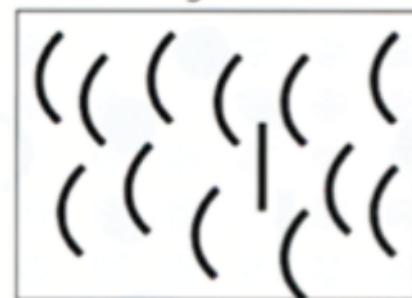


Resumen de Características Preattentivas

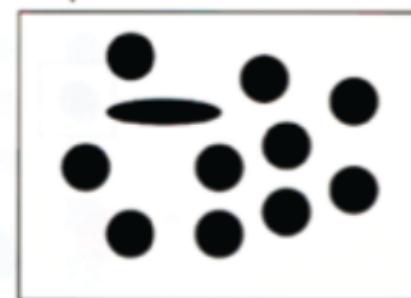
Orientation



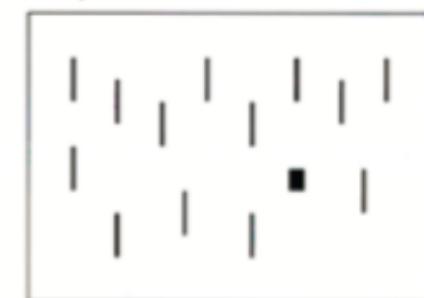
Curved/straight



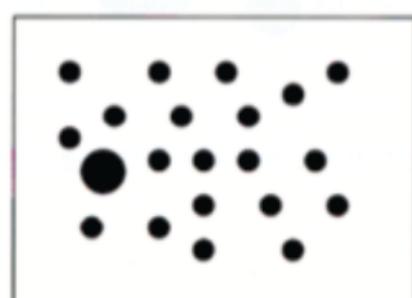
Shape



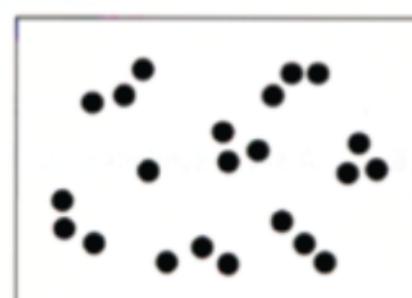
Shape



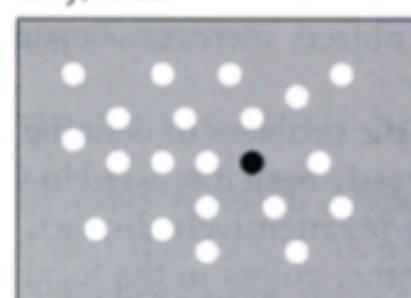
Size



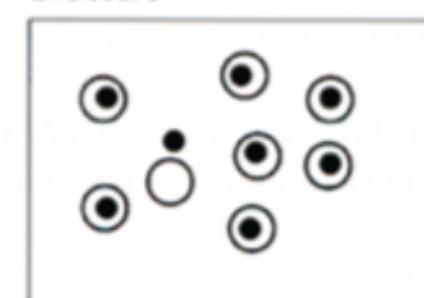
Number



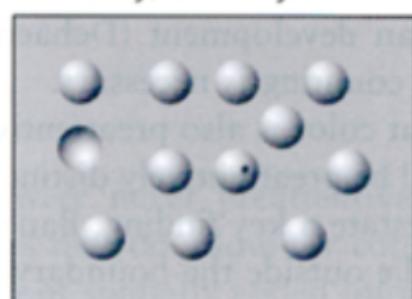
Gray/value



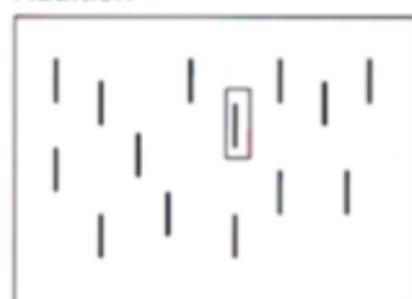
Enclosure



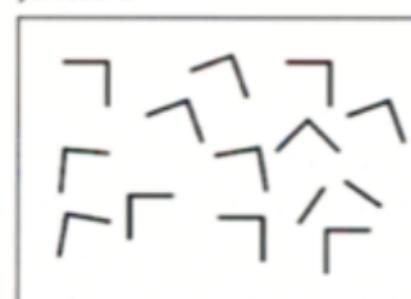
Convexity/concavity



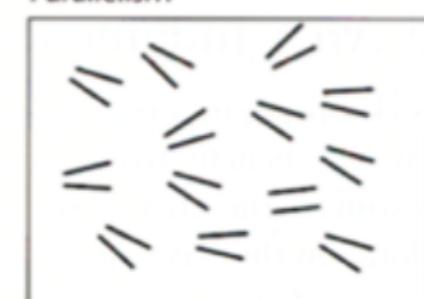
Addition



Juncture

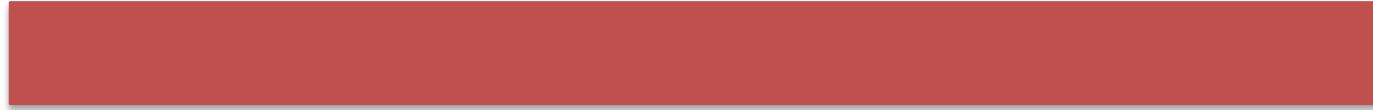
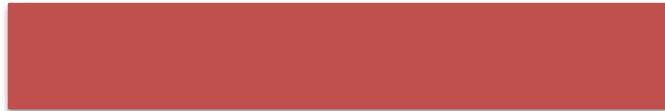


Parallelism



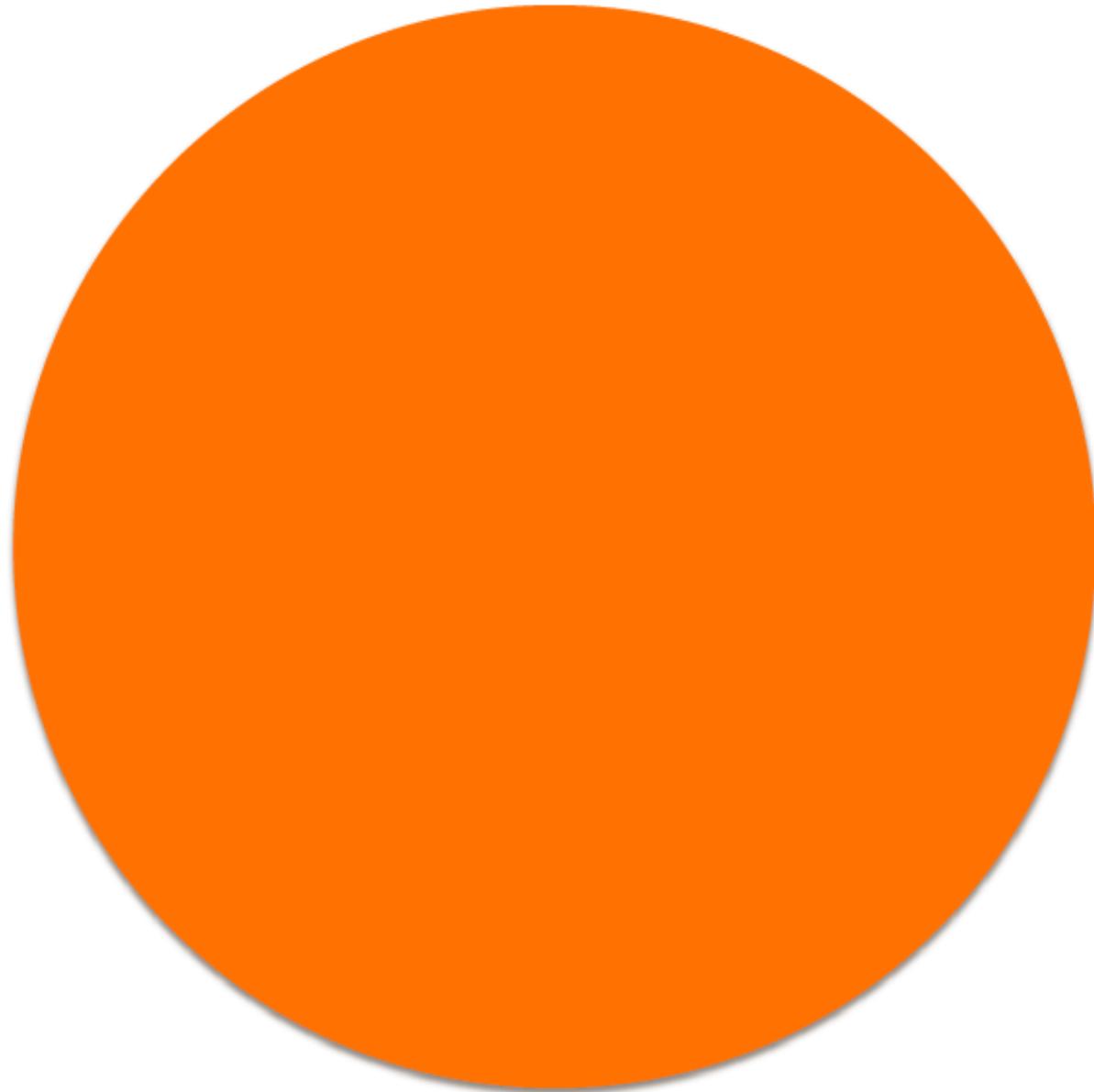
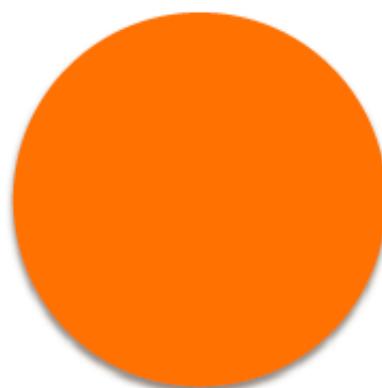
Métodos de Codificación

- ¿Qué barra es más corta?



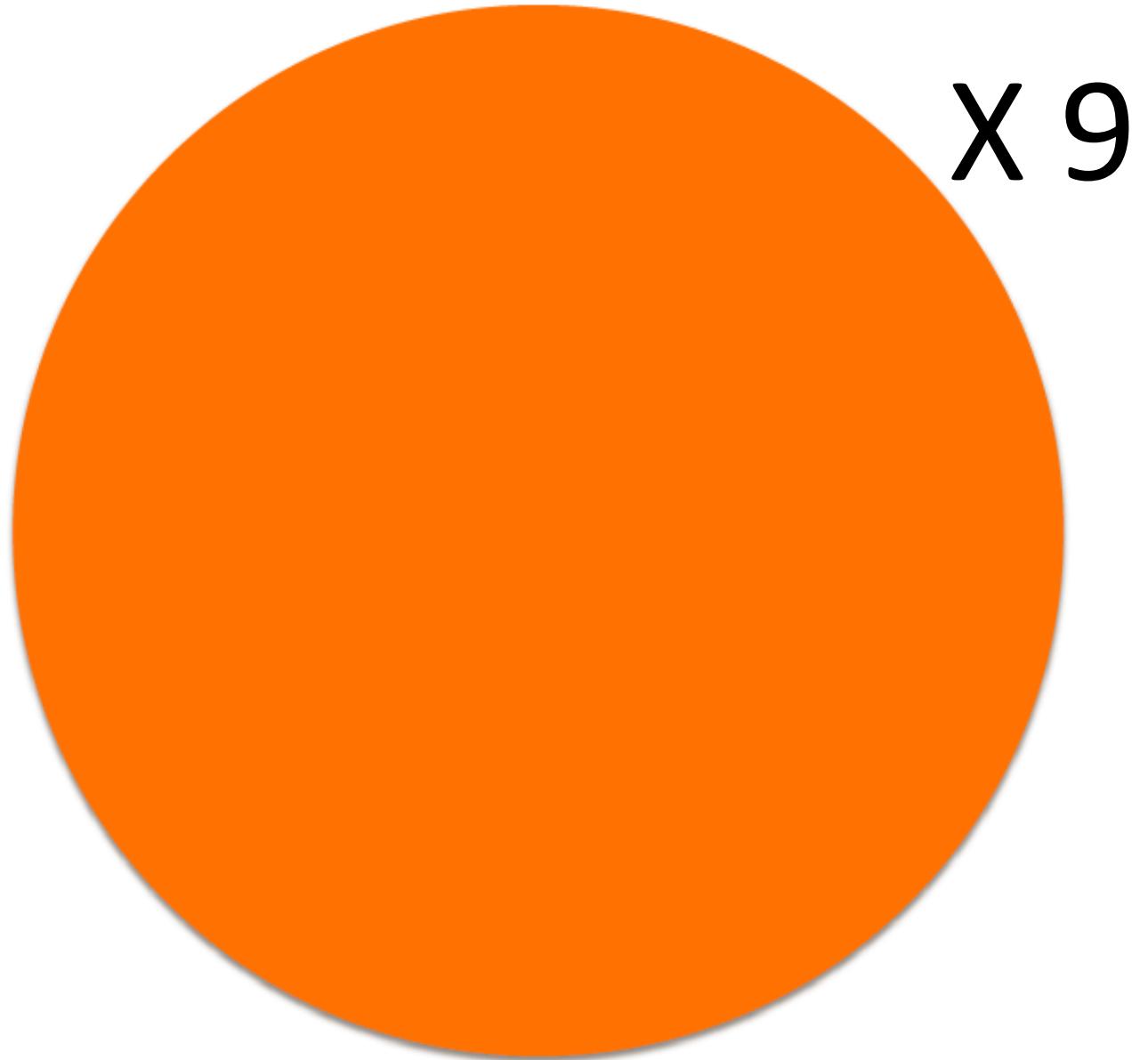
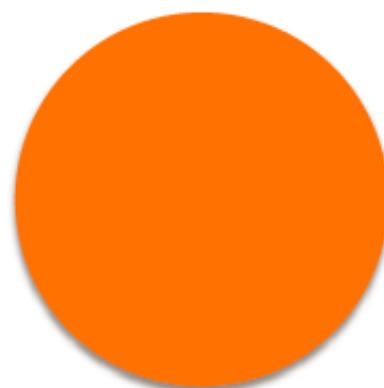
Estimación de magnitud

- ¿ Cuánto más grande es el círculo de la derecha ?



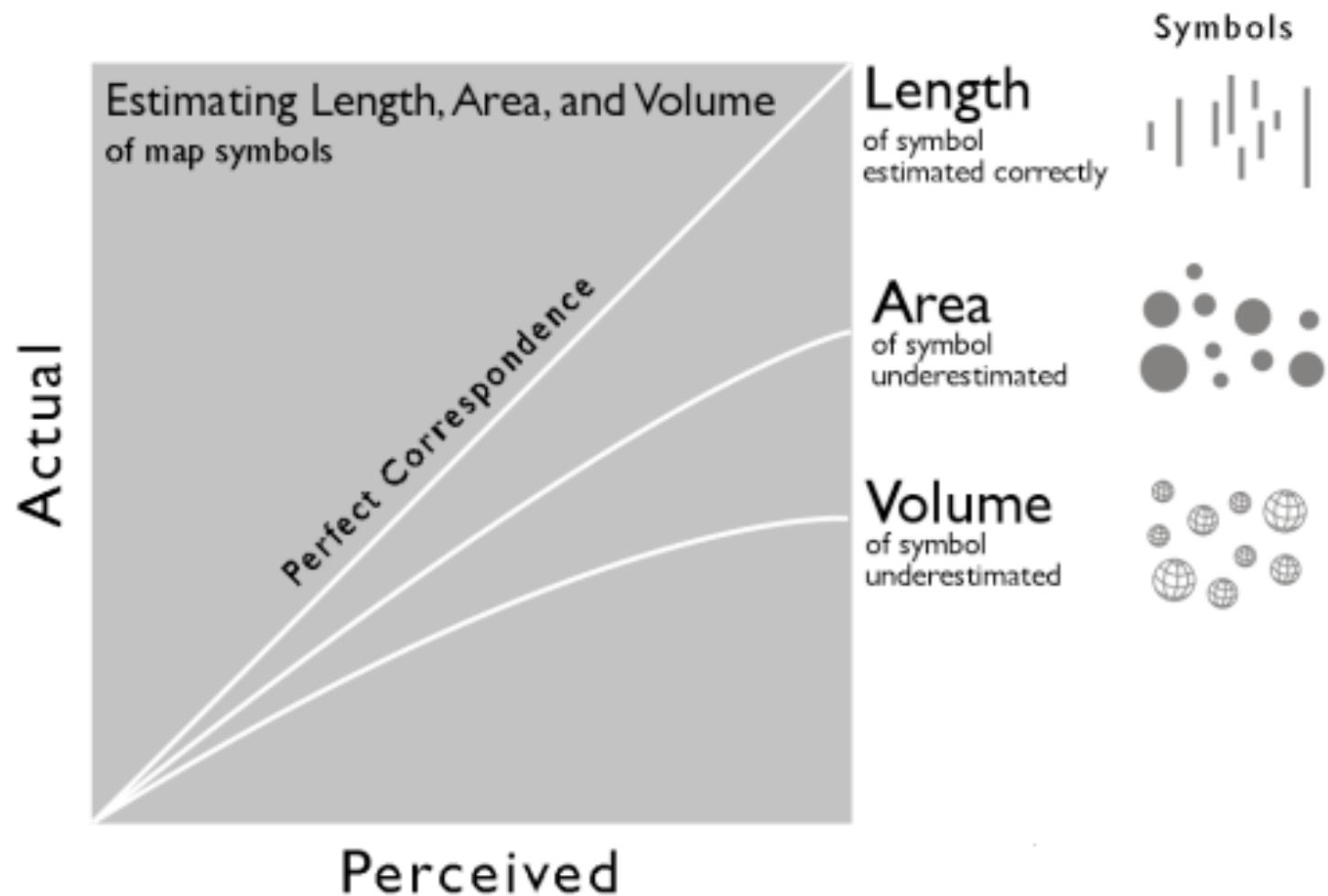
Estimación de magnitud

- ¿ Cuánto más grande es el círculo de la derecha ?

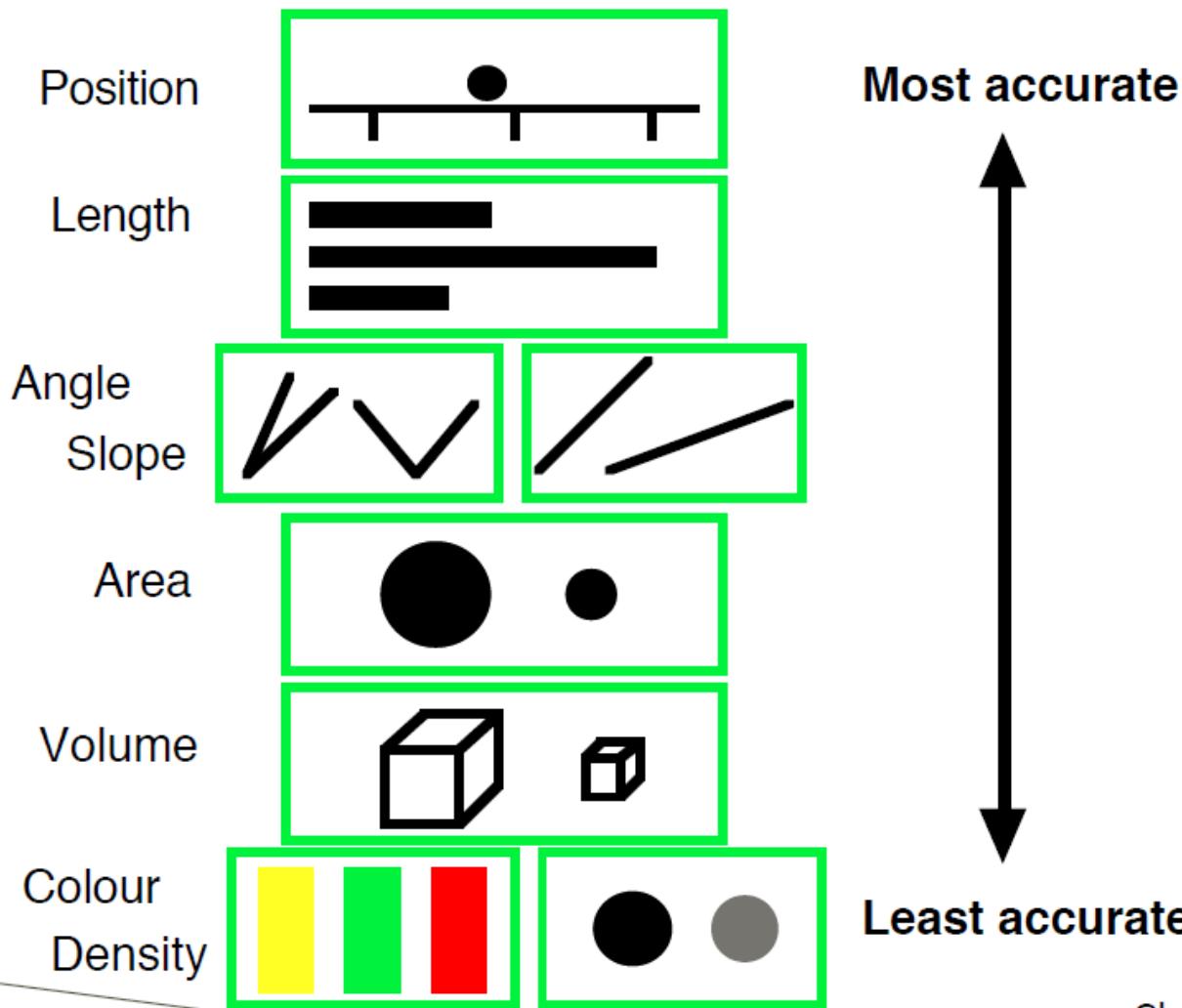


Curvas de magnitud aparente

Se tiende a subestimar el area y volumen de los cuerpos



Precisión en estimación de Datos Cuantitativos

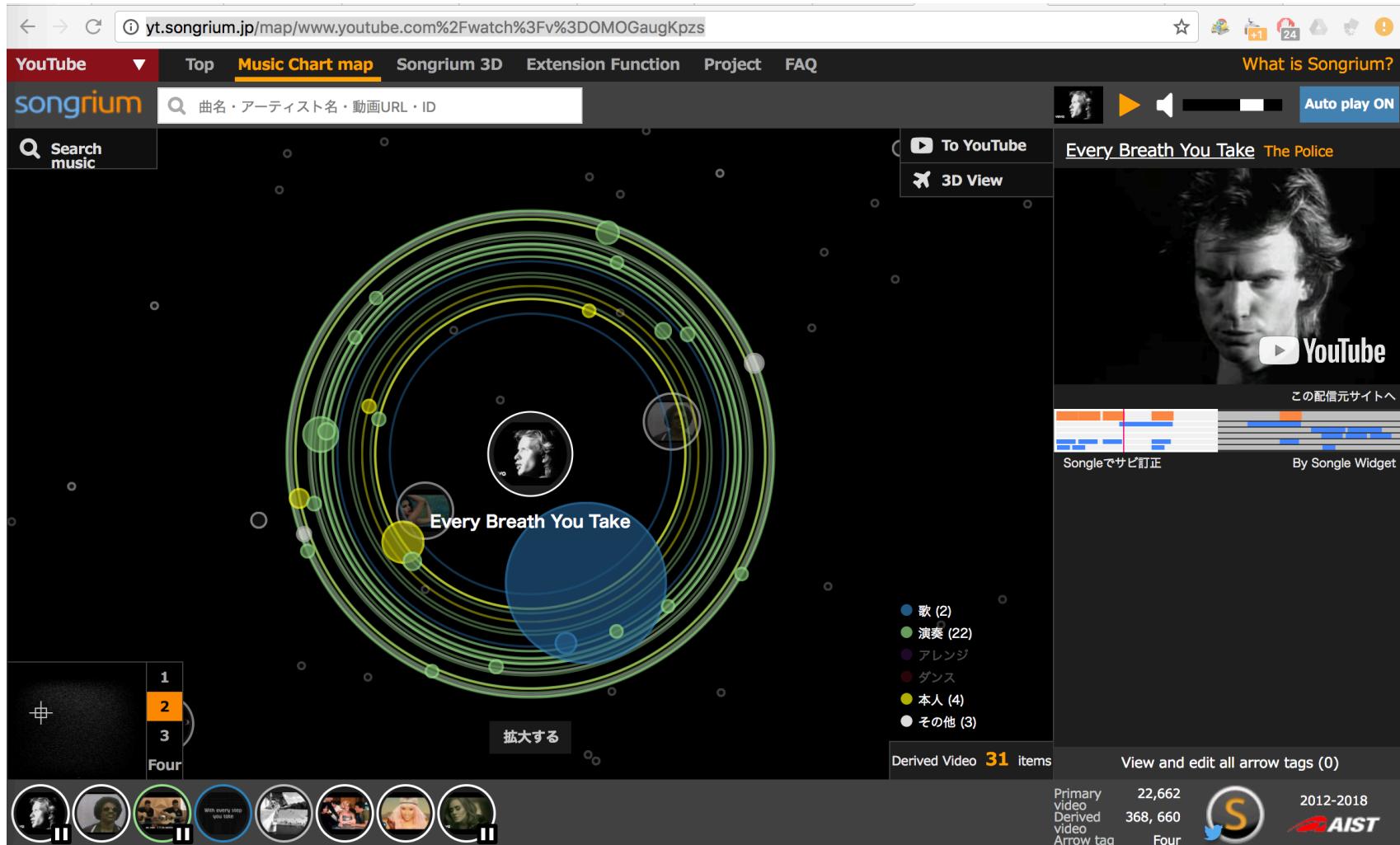


Cleveland and McGill (1984)

Ejemplos de Visualización

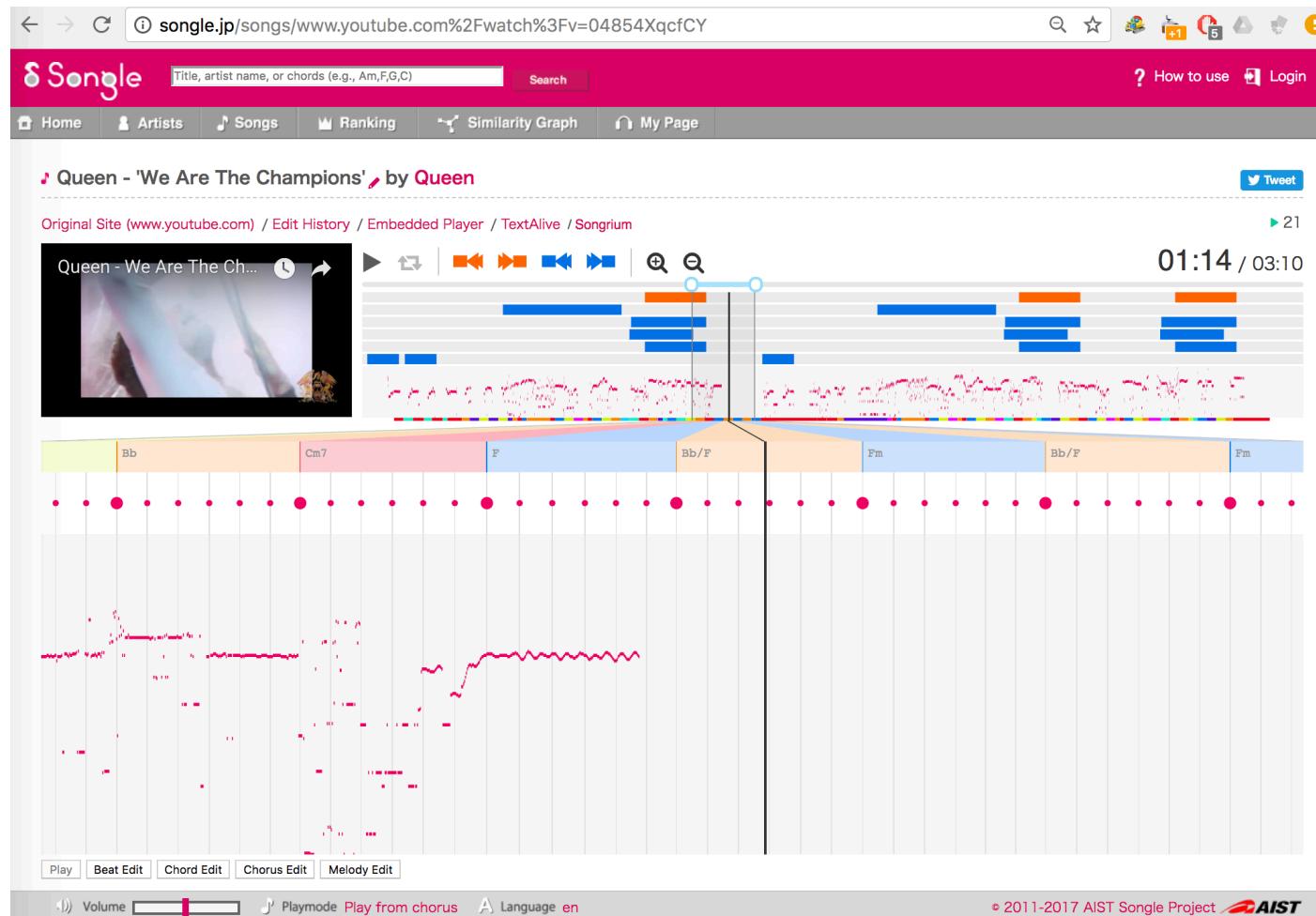
Songrium

- <http://yt.songrium.jp/map/www.youtube.com%2Fwatch%3Fv%3DOMOGaugKpzs>



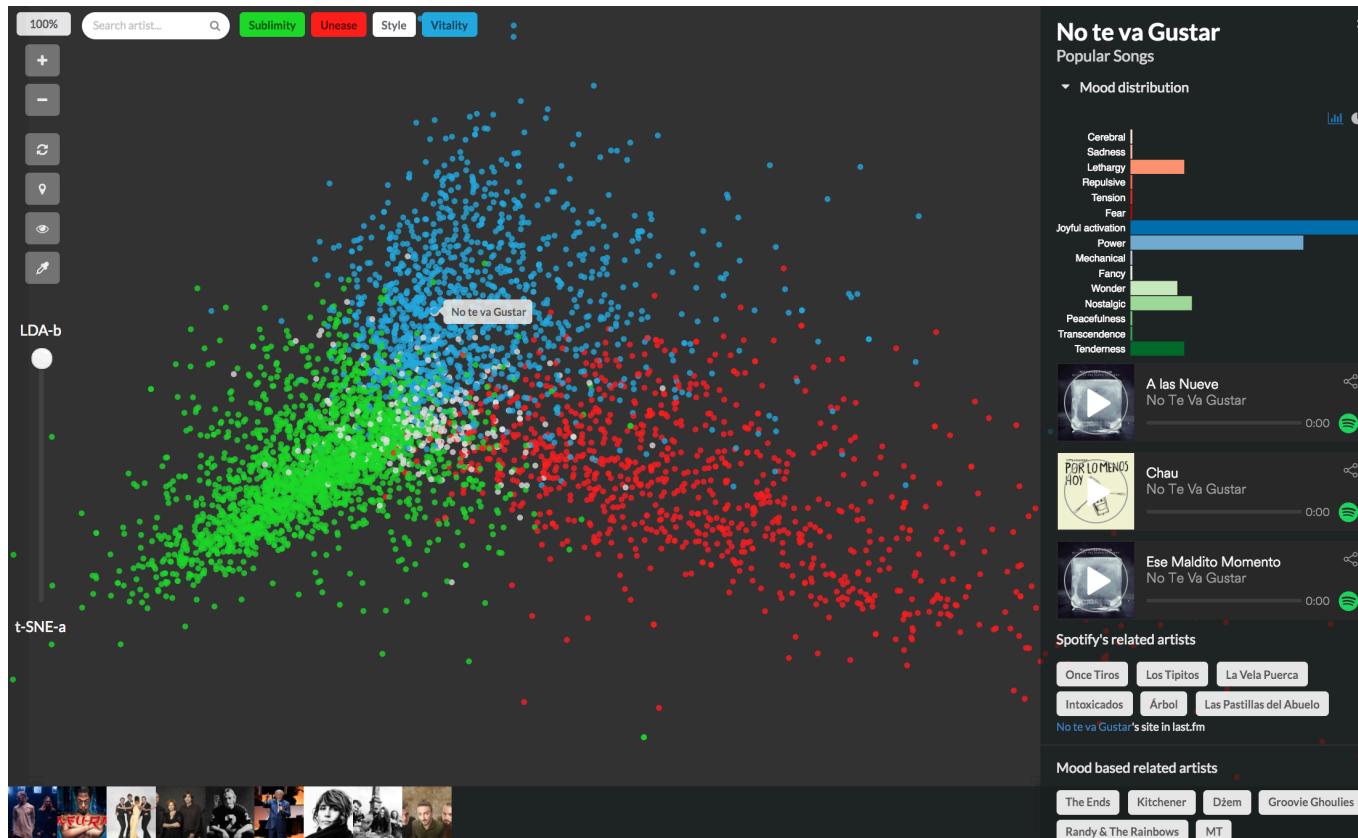
Songle

<http://songle.jp/songs/www.youtube.com%2Fwatch%3Fv=04854XqcfCY>



Moodplay - 2017

- <http://moodplay.pythonanywhere.com/>



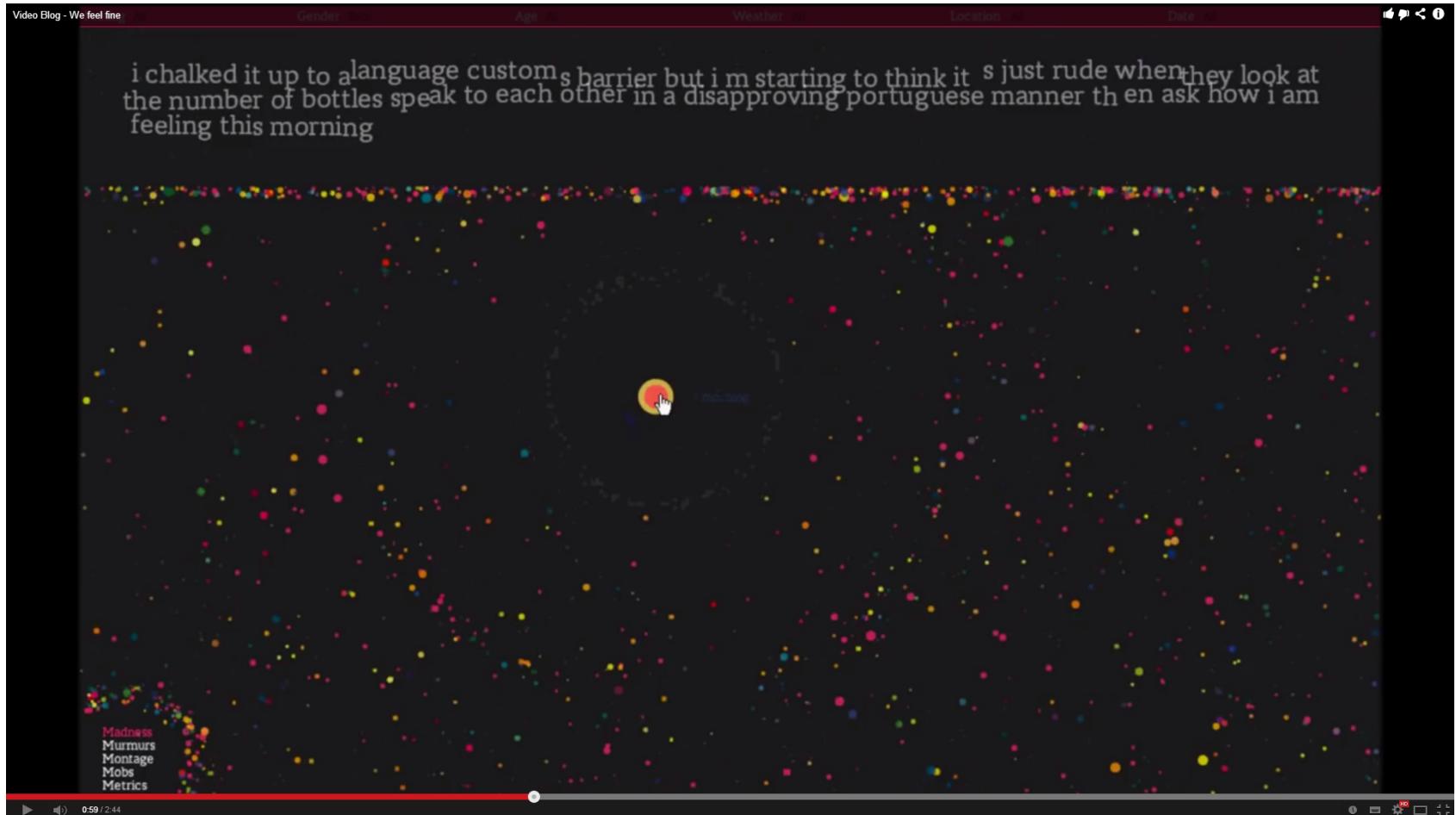
FB – Diciembre 2010



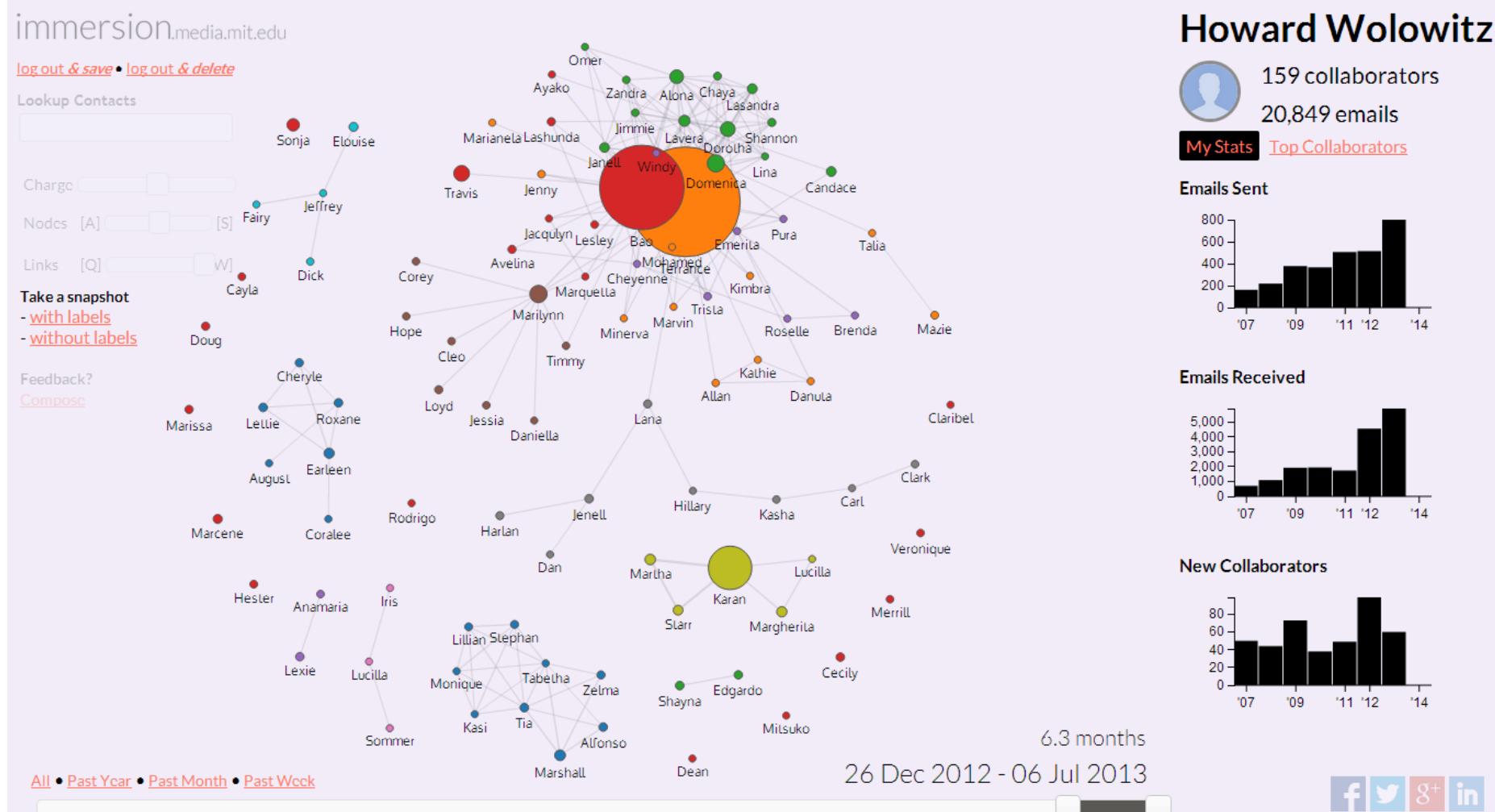
<http://makingmaps.net/2007/08/28/perceptual-scaling-of-map-symbols/>

We Feel Fine

<https://www.youtube.com/watch?v=Lotjo64R-eo>



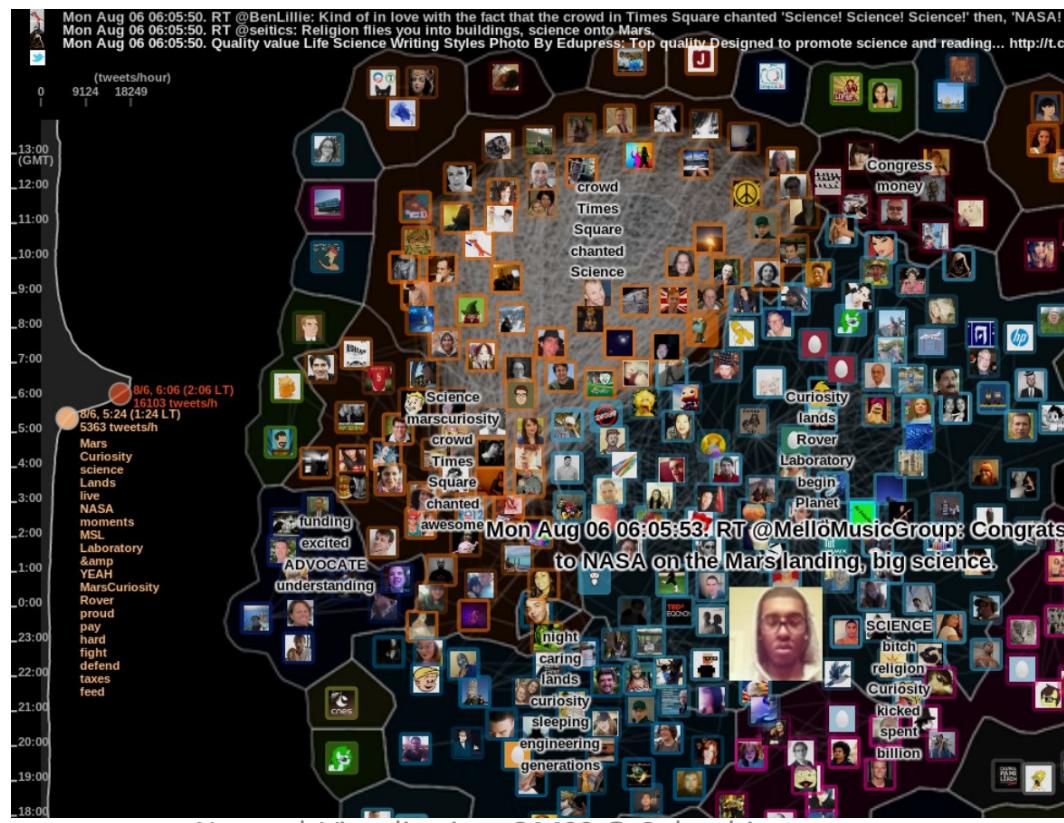
Immersion



<https://immersion.media.mit.edu/demo#>

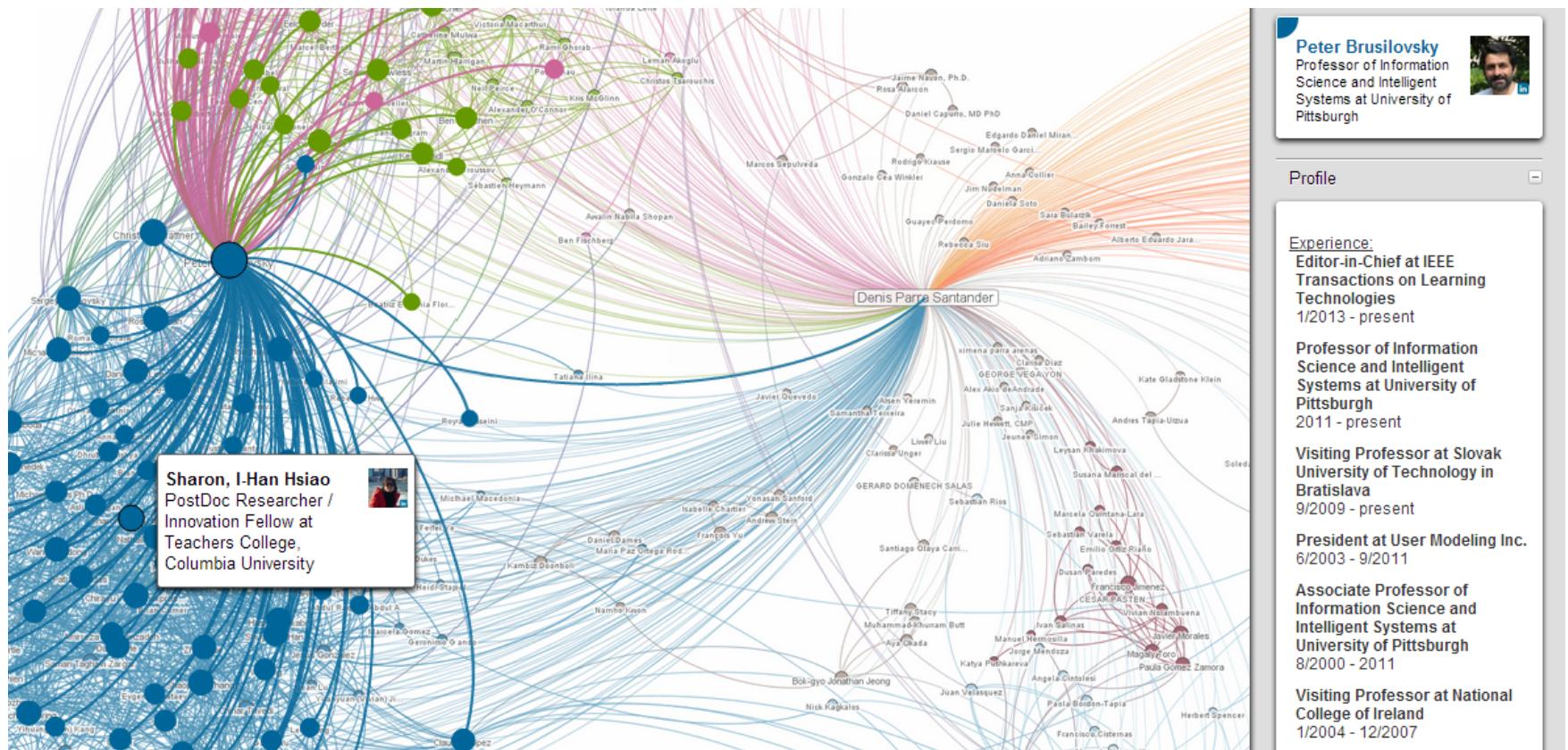
TwitterScope

- A visual monitor of tweets in real time. This is an enhanced graph model.
- <http://tibesti.research.att.com/twitterscope/>



LinkedIn Maps

- Explore your LinkedIn contact network
- <http://inmaps.linkedinlabs.com/network>



Algo de Historia

La Ruta de Napoleón por Minard

(1781-1870)

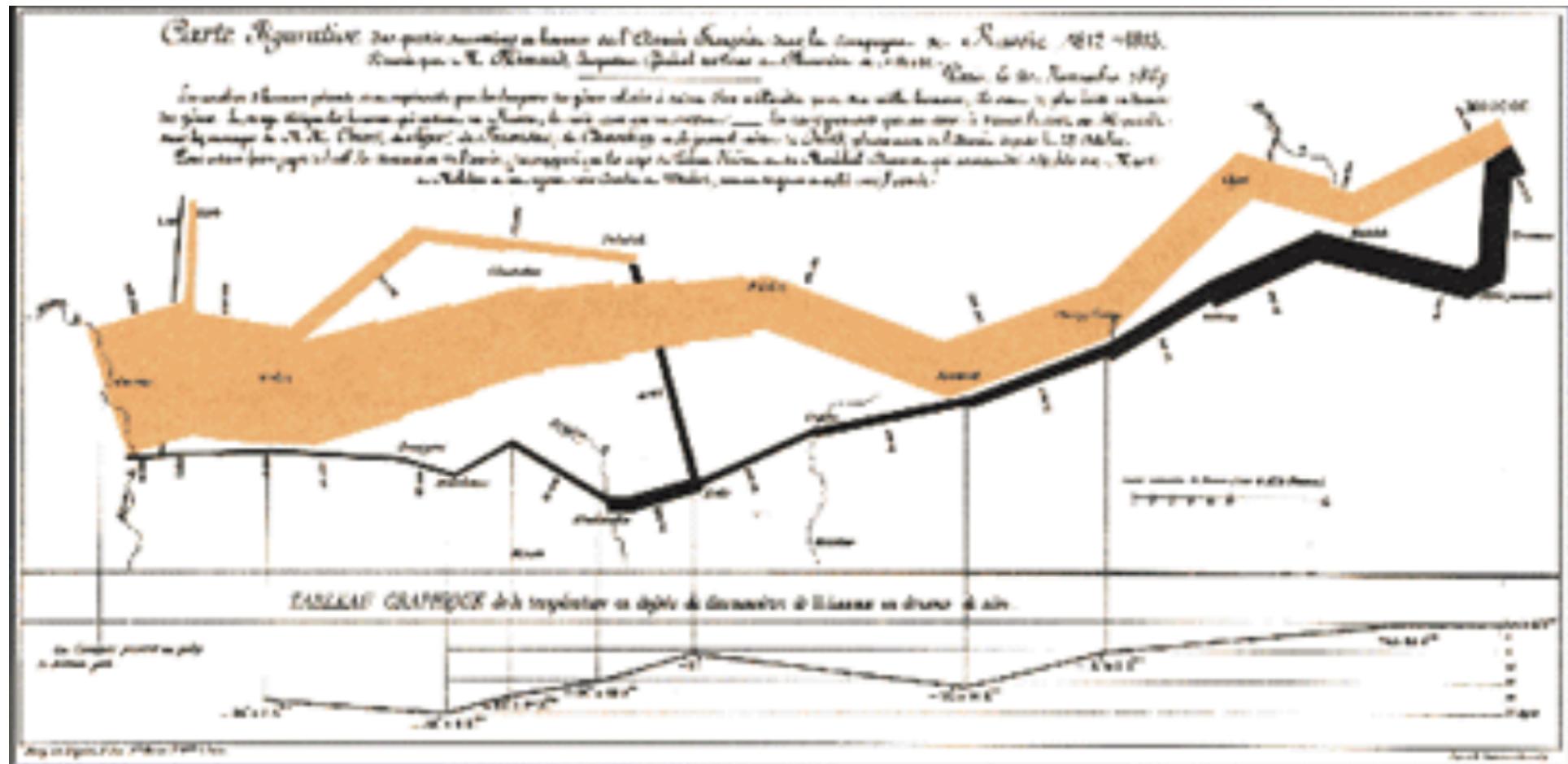
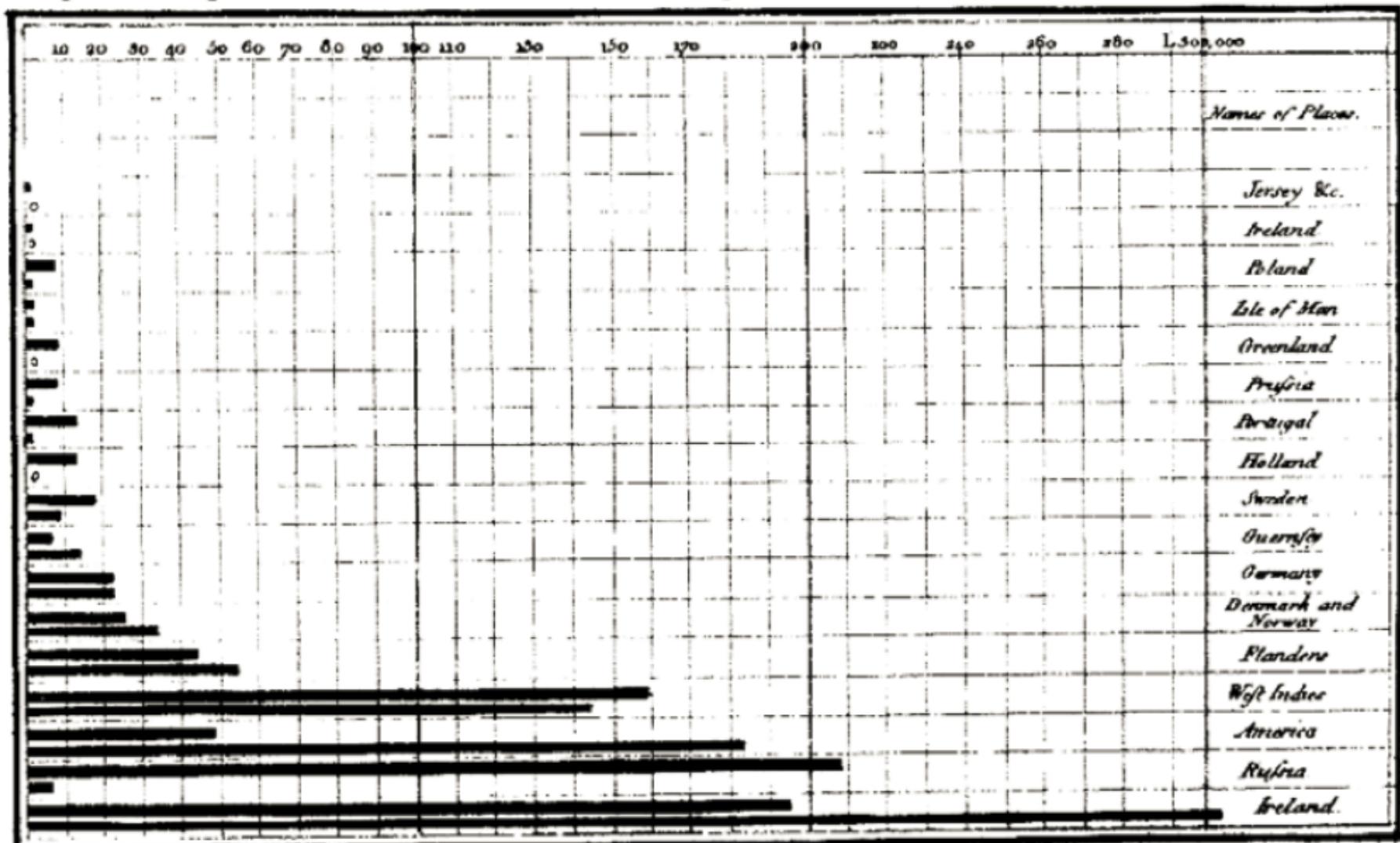


Gráfico de barras: W. Playfair

Exports and imports of SCOTLAND to and from different parts for one Year from Christmas 1780 to Christmas 1781.



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

Published in the Act of Assembly January 7th 1782 by W^m Playfair

No 100 High Street, Strand, London.

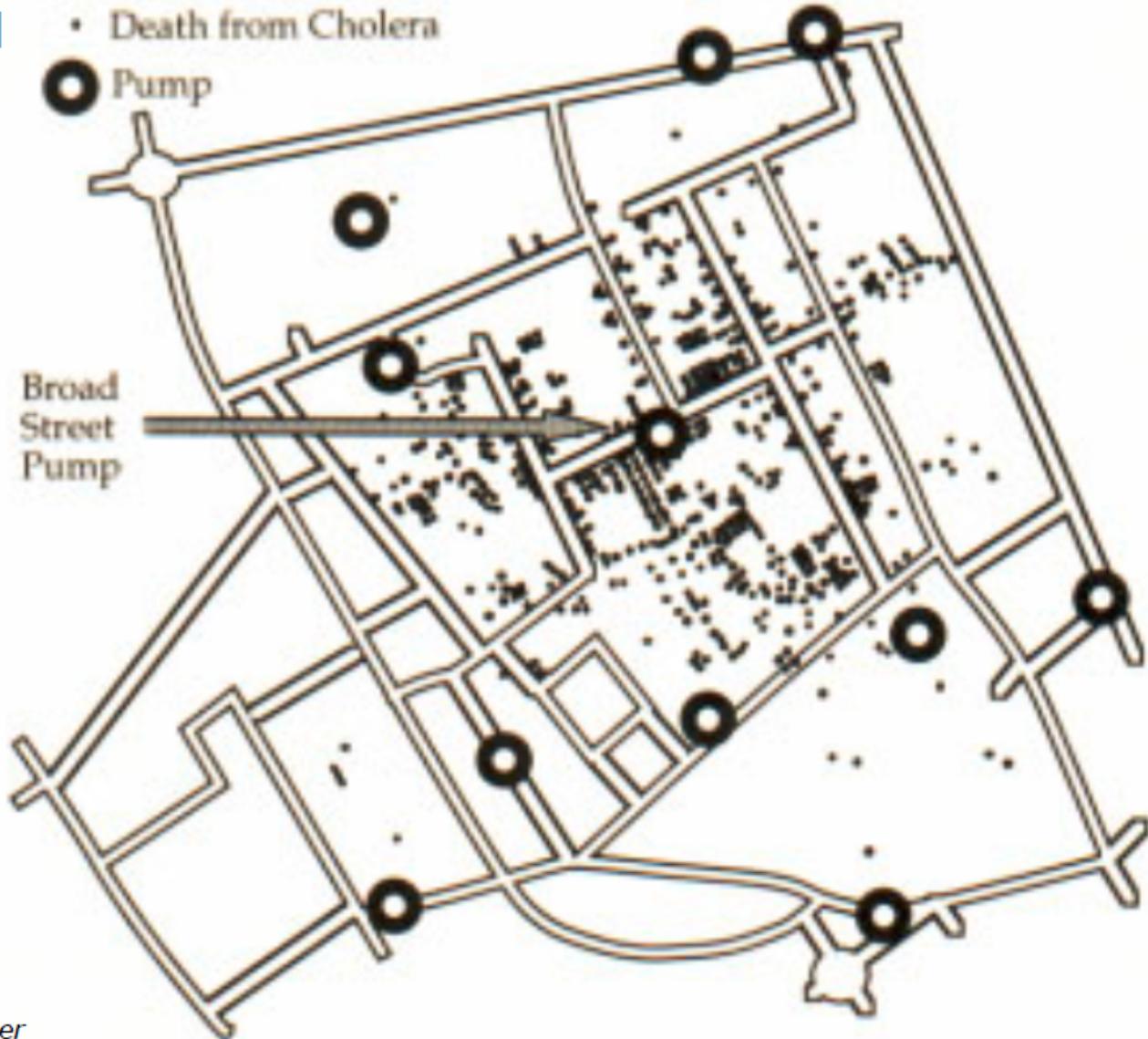
Mapa del Córula en Londres - 1854

Snow's Dot Map

• Death from Cholera



Broad
Street
Pump

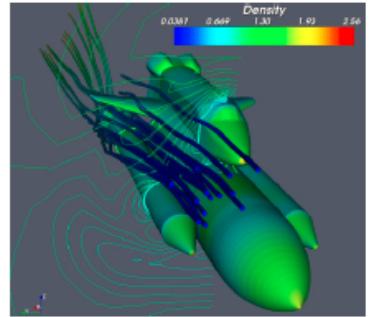


er

Scientific/Information Visualization

- **Information Visualization:** El uso de representaciones visuales, interactivas, apoyadas por computador de Datos abstractos para aumentar nuestro conocimiento (Card et al. 1999)

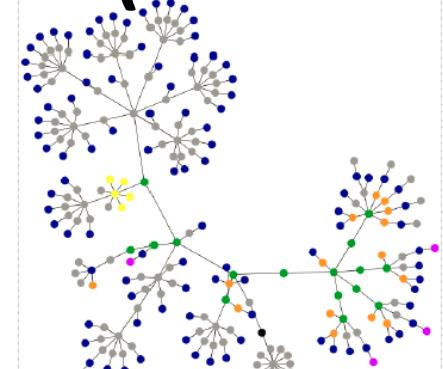
1252640 132394 128292 010154 004701 005011 152006 101632
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1252720 134495 124482 124482 125805 027184 107054 170774 172762
1252750 125745 125745 125745 125745 125745 125745 125745
1252760 117204 118216 117451 016444 120323 001774 140777 144673
1252800 117187 116055 115512 134444 107511 014405 147182 151505
1252810 117187 116055 115512 134444 107511 014405 147182 151195
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1252860 041023 074012 117112 012214 027024 032644 036373 123429
1252870 047291 017402 114012 114143 012504 012504 123430
1252880 040182 017402 114012 114143 012504 012504 123430
1252890 040223 017402 114012 114143 012504 012504 123430
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1252915 040179 115134 123134 007354 122525 112614 122335
1252920 117184 010944 114234 123101 123134 162706 134227 164326
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1252928 012276 111155 135468 005322 132867 175216 102655
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1252944 010112 014444 015364 057127 123620 007042 131334
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1252948 026330 017420 010190 121219 076393 141076 000797 011276
1252950 114064 042847 118475 120539 006211 104754 155447 112354
1252951 114064 042847 118475 120539 006211 104754 155447 112354
1252952 145207 015235 024446 130101 027855 041074 125513 151412
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1252955 017377 112397 115521 071178 074357 097293 111236 111236
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Information (abstract)

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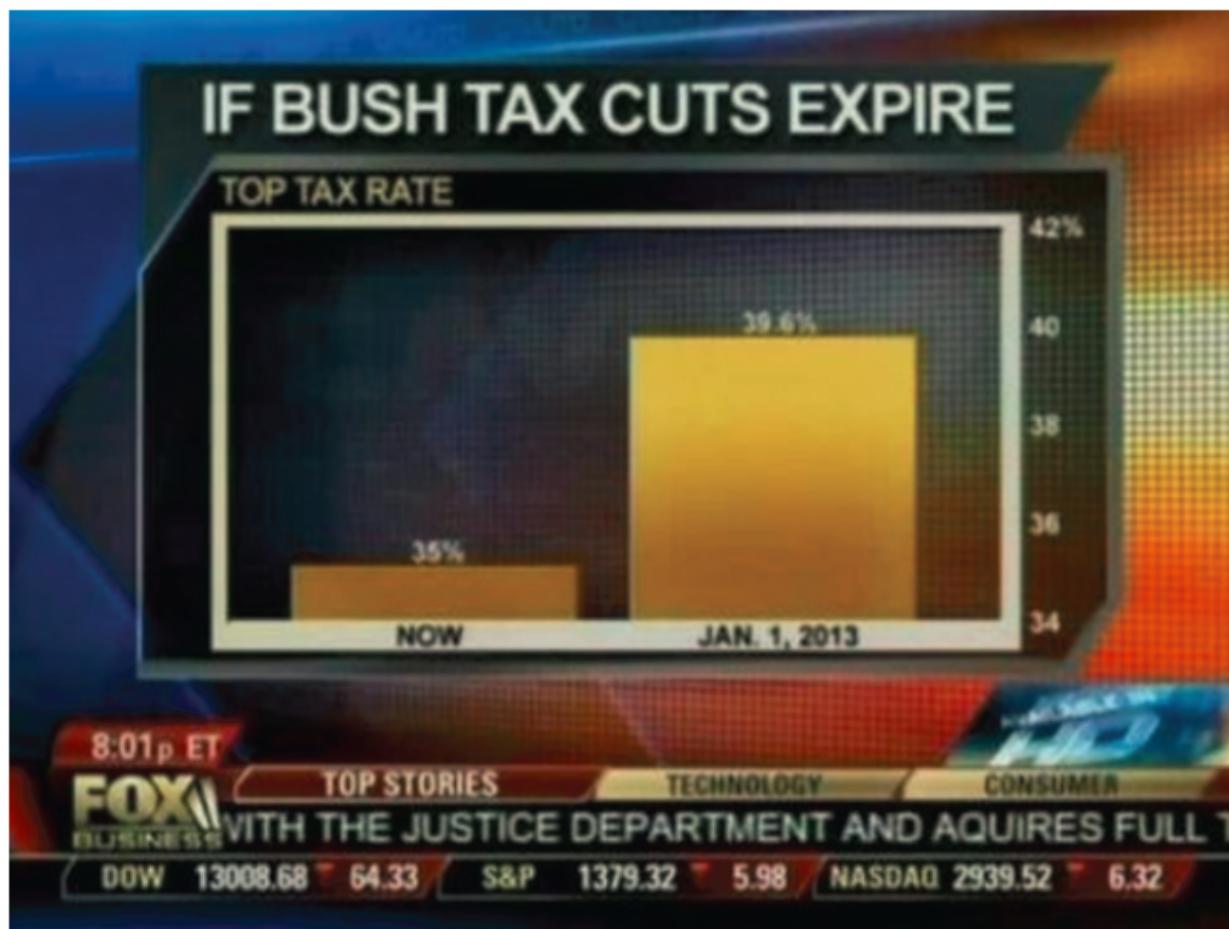
<http://www.bu.edu/students/life/career/>
<http://www.bu.edu/students/life/transportation/>
<http://www.bu.edu/students/life/activities/>
<http://www.bu.edu/students/life/bus-global-orientation-registration/>
<http://www.bu.edu/students/academics/>
<http://www.bu.edu/students/academics/link/>
<http://www.bu.edu/students/academics/admissions/>
<http://www.bu.edu/students/academics/registration/>
<http://www.bu.edu/students/academics/advising/>
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<http://www.bu.edu/students/health/varsitysports/>



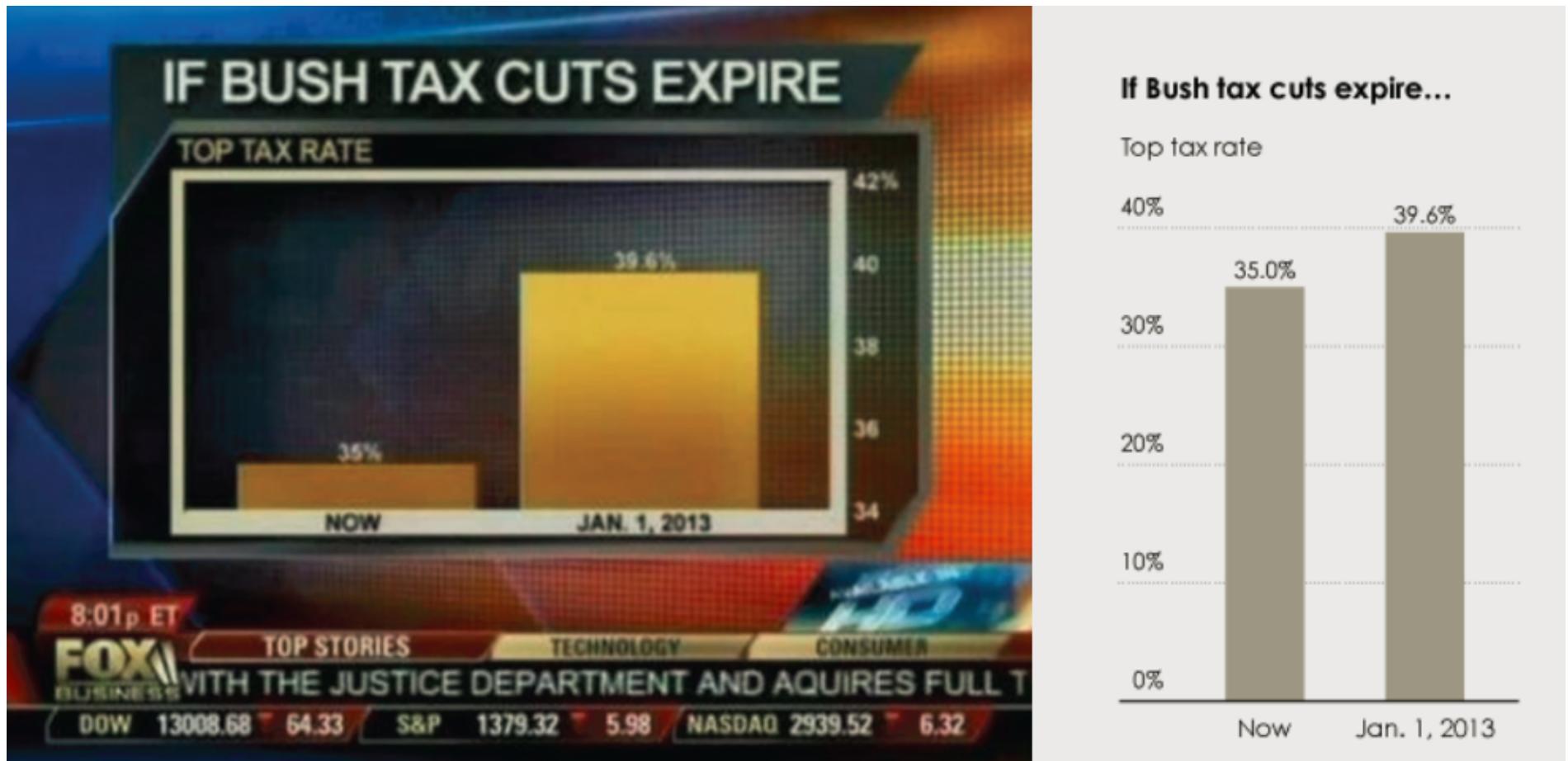
Scientific

Algunas lecciones y reglas

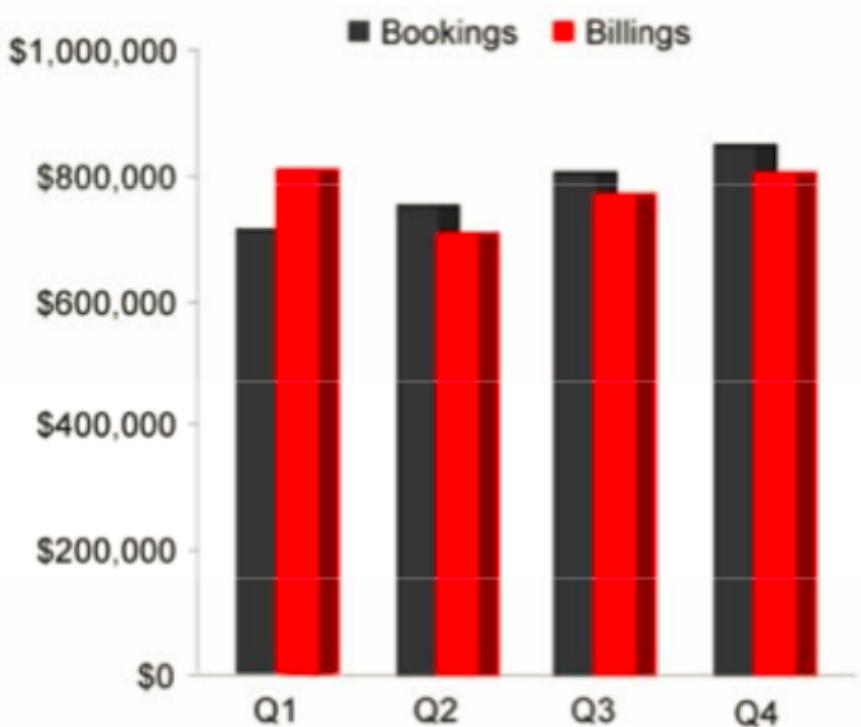
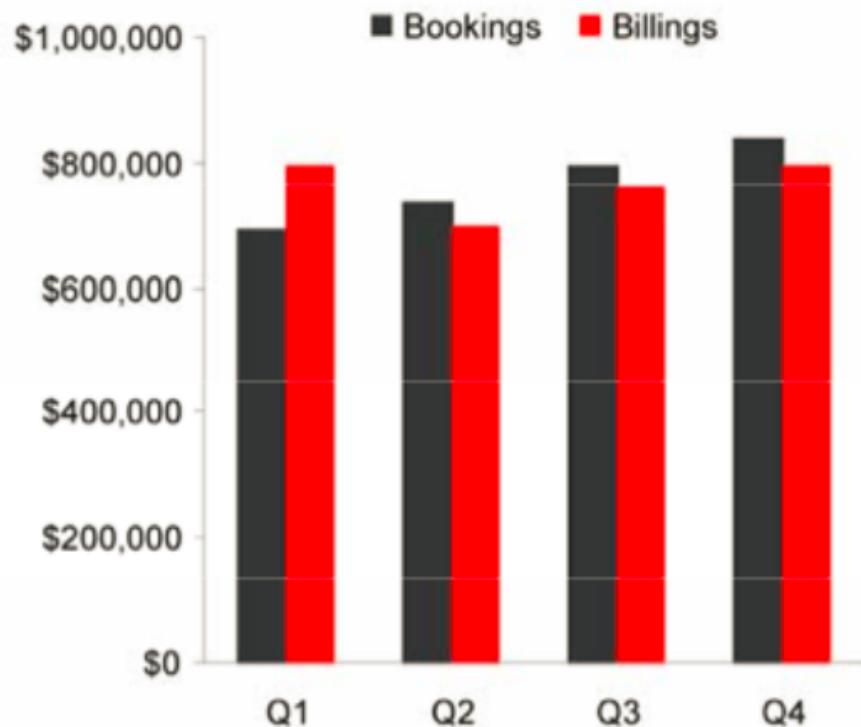
Qué hay de malo con este ejemplo?



Qué hay de malo con este ejemplo?

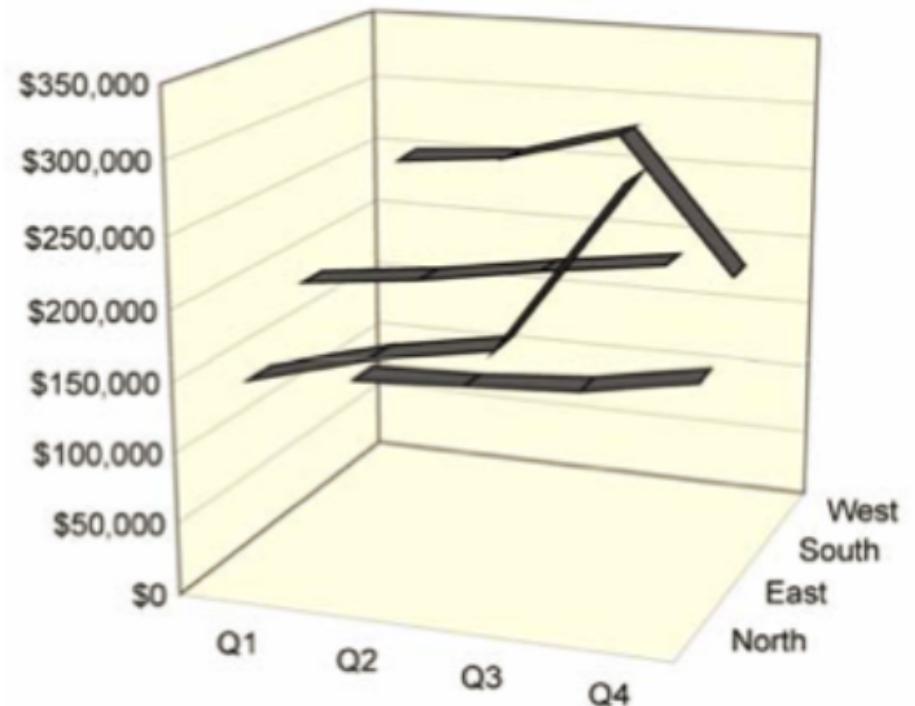
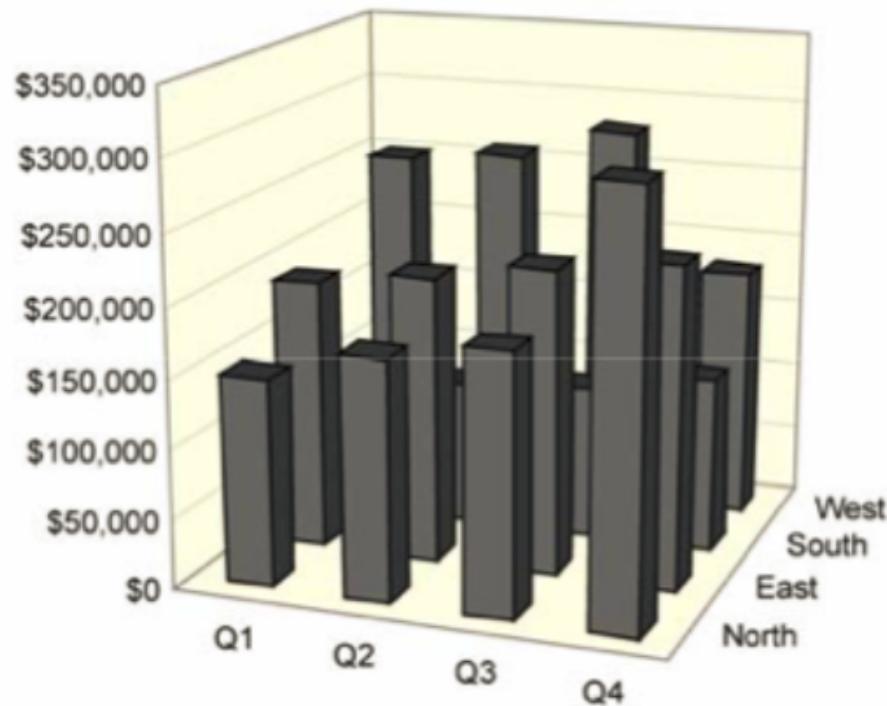


Cuándo usar 3D ?

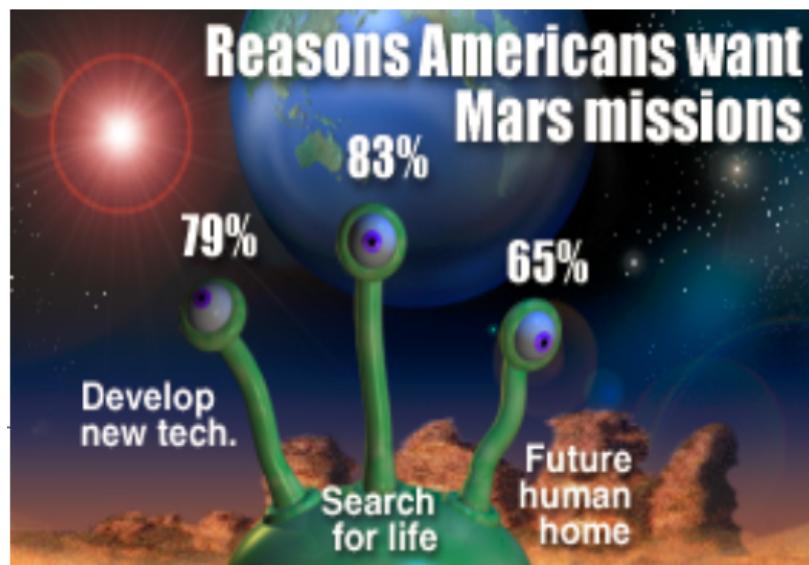
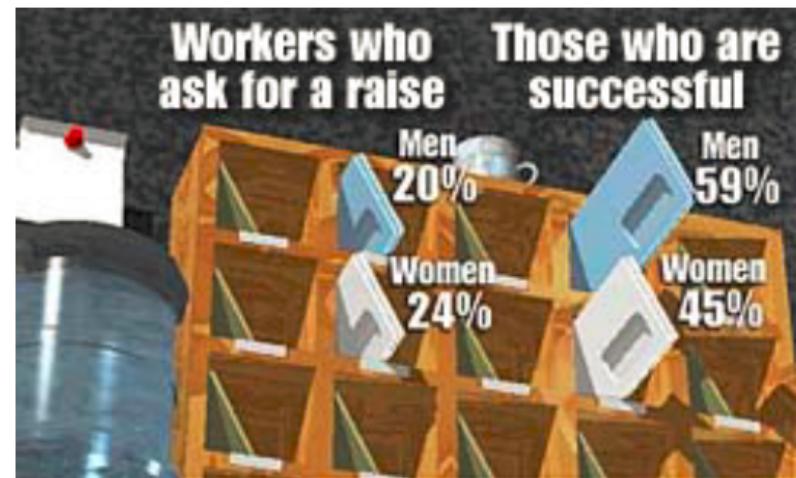
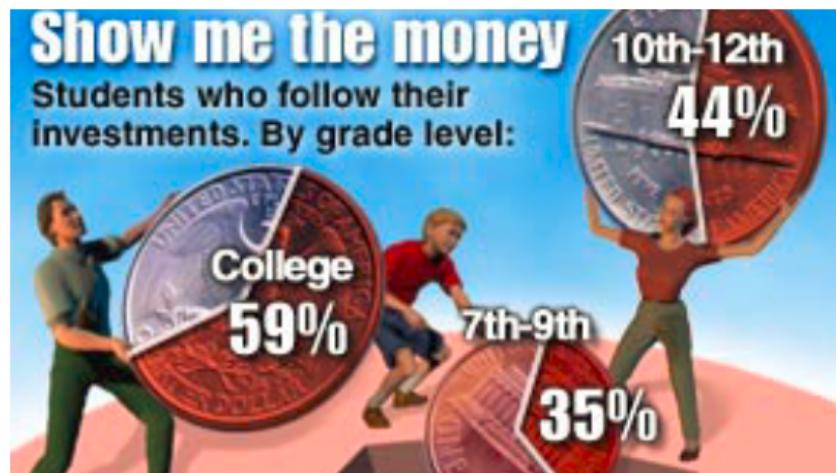


Cuándo usar 3D ?

- Si HAY una 3ra dimensión



Qué hace que estos gráficos sean malos?



Principios de Tufte

- Muestra la Verdad
 - Integridad Gráfica
- Hazlo de manera efectiva
 - Estética de diseño: claridad, precisión

"The success of a visualization is based on deep knowledge and care about the substance, and the quality, relevance and integrity of the content."

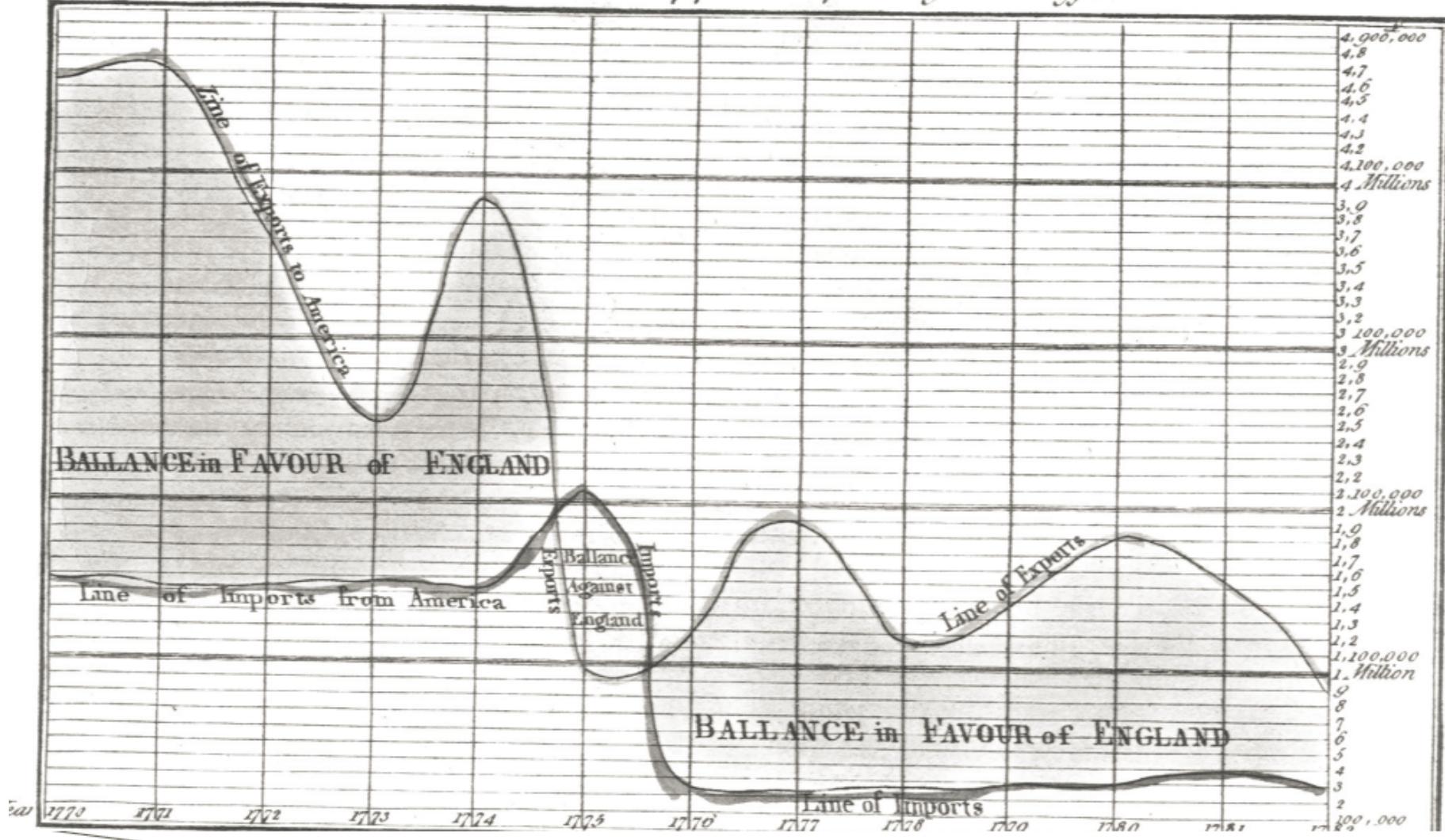
(Tufte, 1983)

5 principios

- Sobre todo: mostrar los datos
- Maximizar razón datos/tinta, con medida
- Borrar tintas que no muestre datos, con medida
- Borrar datos/tinta redundante
- Revisar y editar

Mostrar los datos

From the Year 1770 to 1782 by W. Playfair

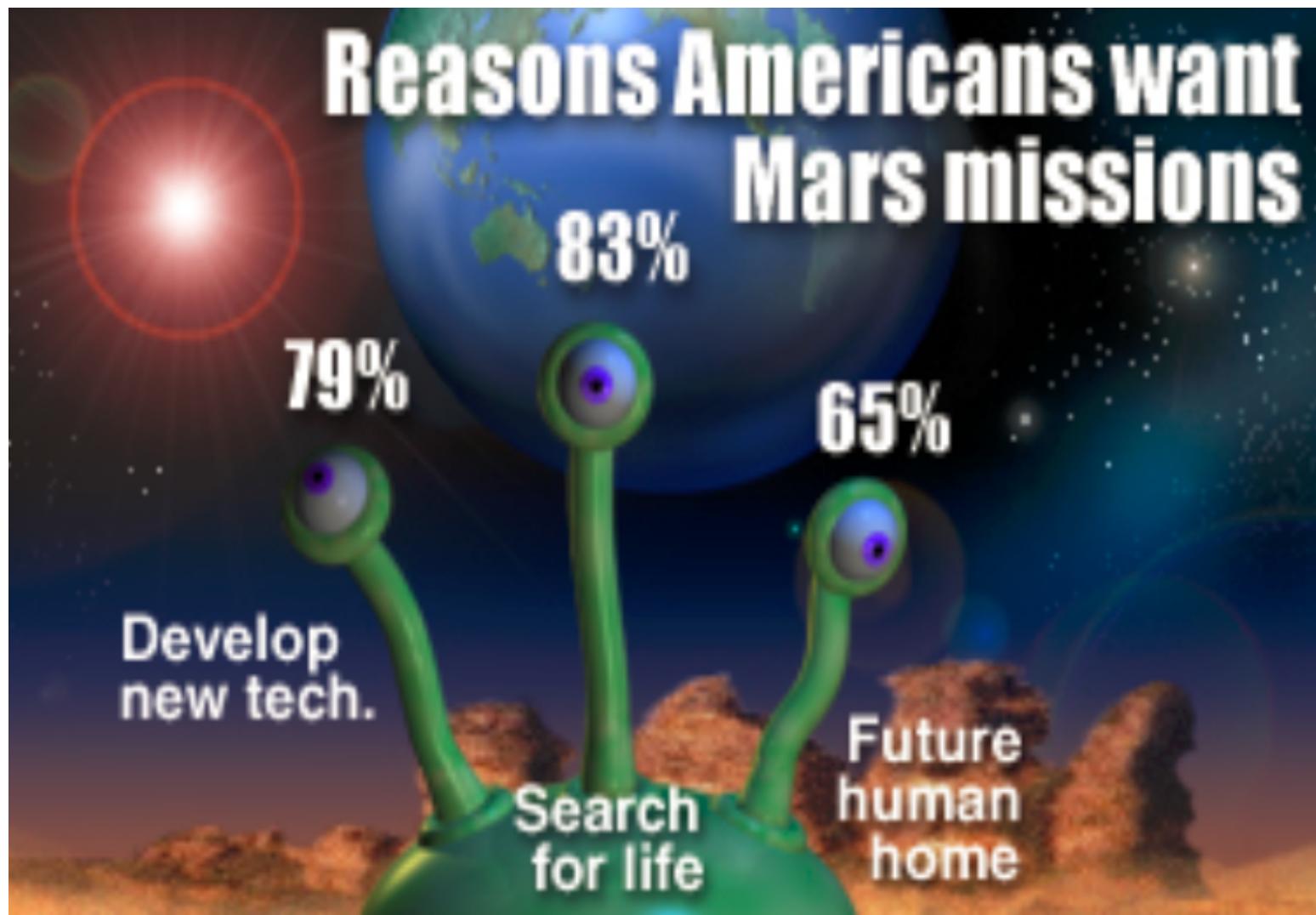


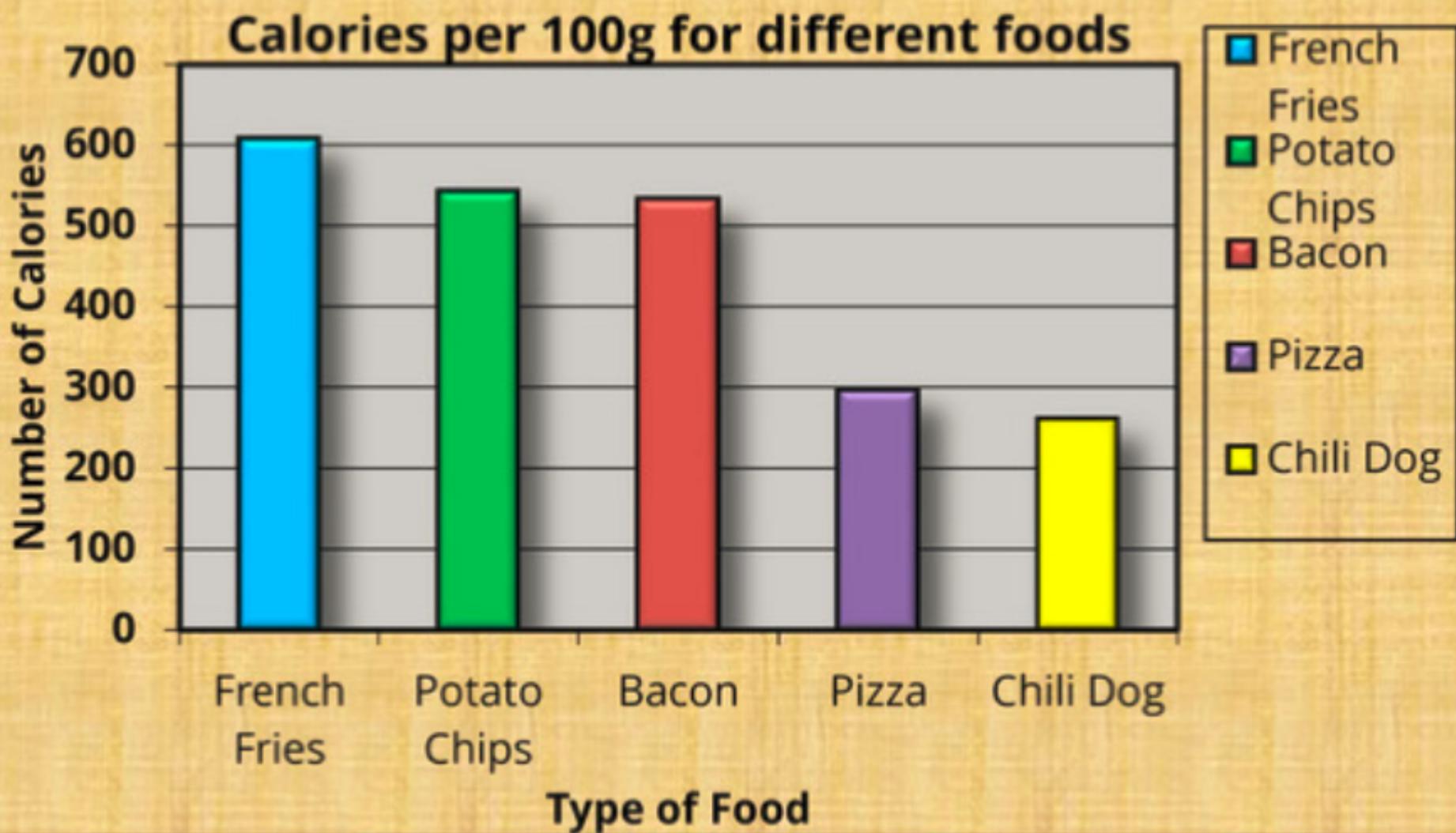
Razón Datos-Tinta

Data-ink ratio = $\frac{\text{data-ink}}{\text{Total ink used to print graphic}}$

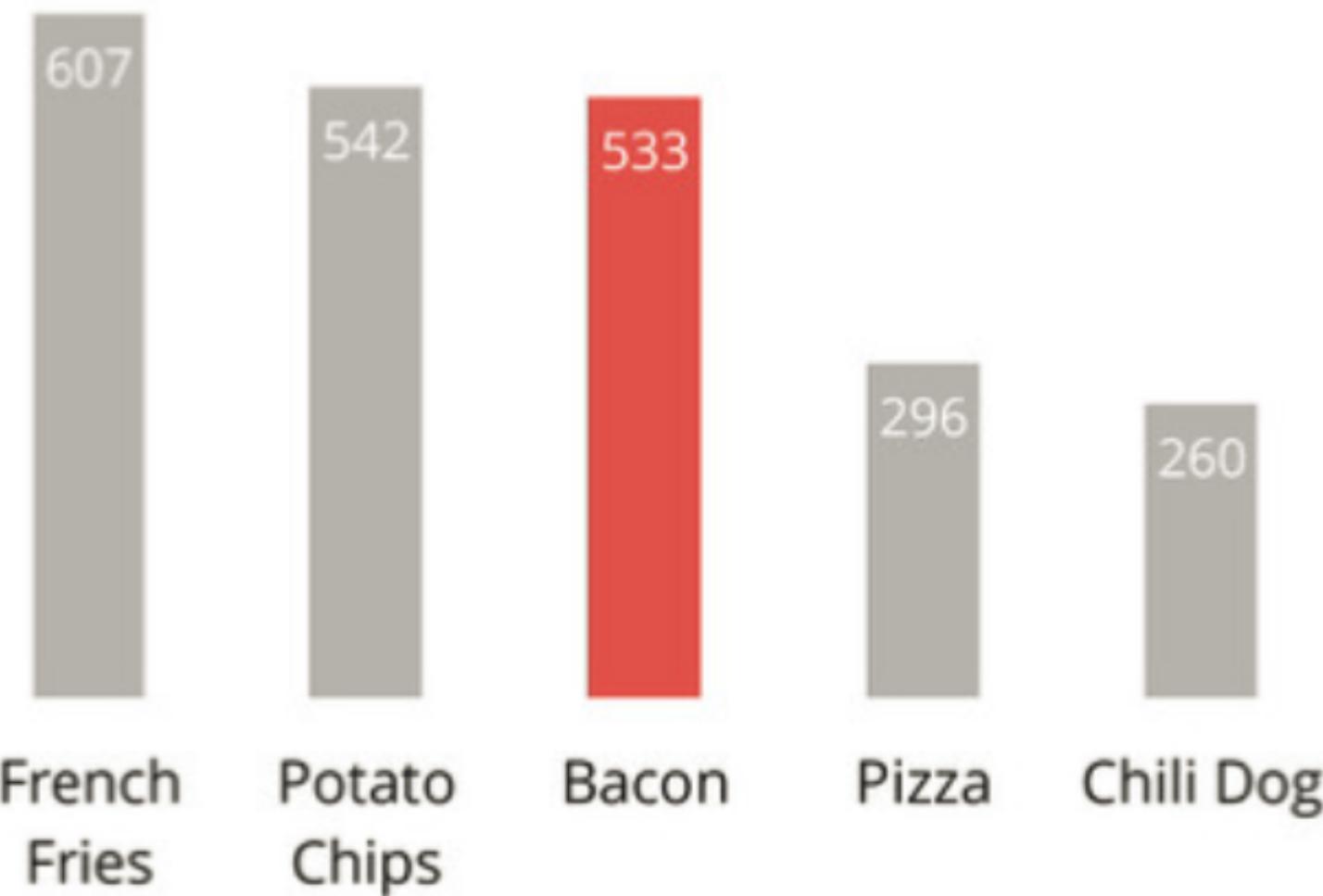
- = Proportion of a graphic's ink devoted to the non-redundant display of data-information.
- = $1.0 - \text{proportion of graphic that can be erased without the loss of information}$

< 0.001

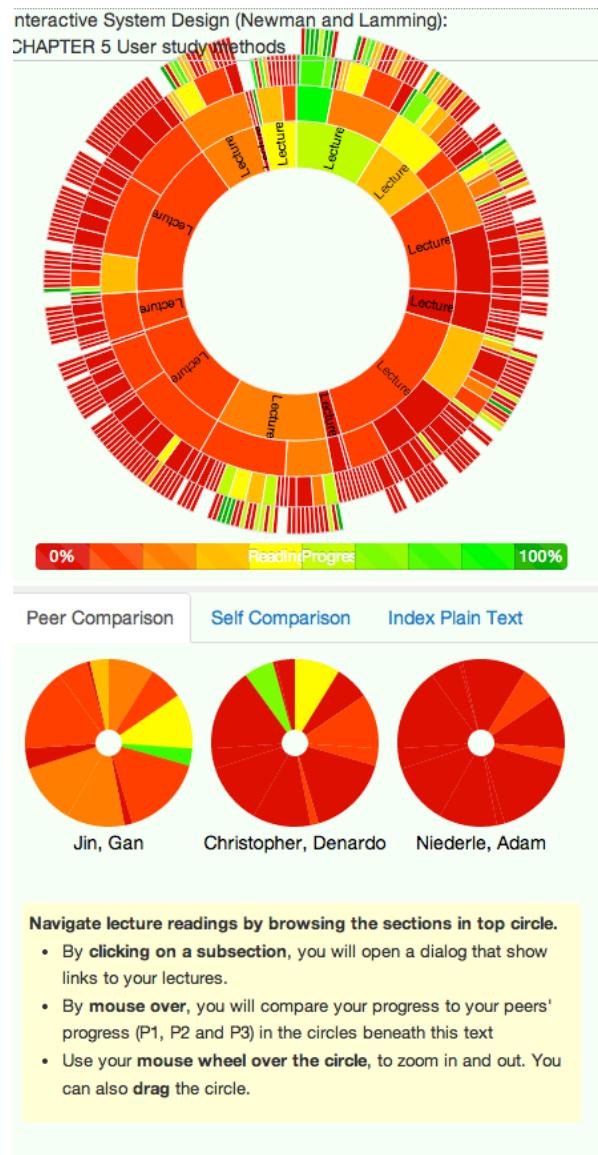




Calories per 100g



Ejemplo: ReadingCircle



<> THREE CATEGORIES OF STYLE 295 >>

ALL ME OFF SUMMARY

others they are accessed by composing and issuing commands in an appropriate language. It is convenient to distinguish between these three categories of style, which we will call *key-modal*, *direct manipulation* and *linguistic*. Within each category, we will find certain common properties shared by interaction styles and we will find certain notations particularly useful for describing the user interface.

12.2.1 Key-modal interaction styles

The term 'key-modal' is a shorthand way of saying that the user interface is operated mainly with the aid of function keys or an alphanumeric keyboard, and that it has a number of different *modes* of behaviour. Four common interaction styles can be considered key-modal:

- **Menu-based interaction.** The user interface presents the user with a display of options, and the selection of an option may generate a further set of options.
- **Question-and-answer.** The system presents a series of questions in text form, and the user enters the answers via a keyboard.
- **Function-key interaction.** The user makes a series of inputs by pressing function keys or using other special-purpose hardware, prompted along the way with displayed information.
- **Voice-based interaction,** often supported by simple telephone equipment. The user is presented with options by a recorded or synthesized voice message, makes choices with the keys on the telephone keypad, and records voice responses.

Each of these interaction styles depends on shifts of *mode*. In other words, the behaviour of the system in response to a particular input (for example, typing YES or pressing the RETURN key) varies according to the stage of the dialogue. A question-and-answer system might ask the question, 'Do you want to continue?' at one point, and later on might ask, 'Do you want to stop now?' The answer YES will have opposite effects at these two points, and we therefore say that the system has multiple modes or is *modal*.

Key-modal user interfaces are used in almost all systems designed for walk-up use, for example, automated tellers, ticket machines and voicemail systems. A very simple key-modal interface is presented by a door

Ejemplo: ReadingCircle

The Discipline of Organizing:
2.5.3.2 Individual Curricula
2.4.2 Interaction and Value Creation

0% 100%

Reading Progress

Guerra, Daniel

Peer Comparison

Average Comparison

Top 3 Comparison

Navigate lecture readings by browsing the sections in top circle.

- By clicking on a subsection, you will open a dialog that shows links to your lectures.
- By mouse over, you will compare your progress to your peers'

The Discipline of Organizing:
2.4.2 Interaction and Value Creation

Close

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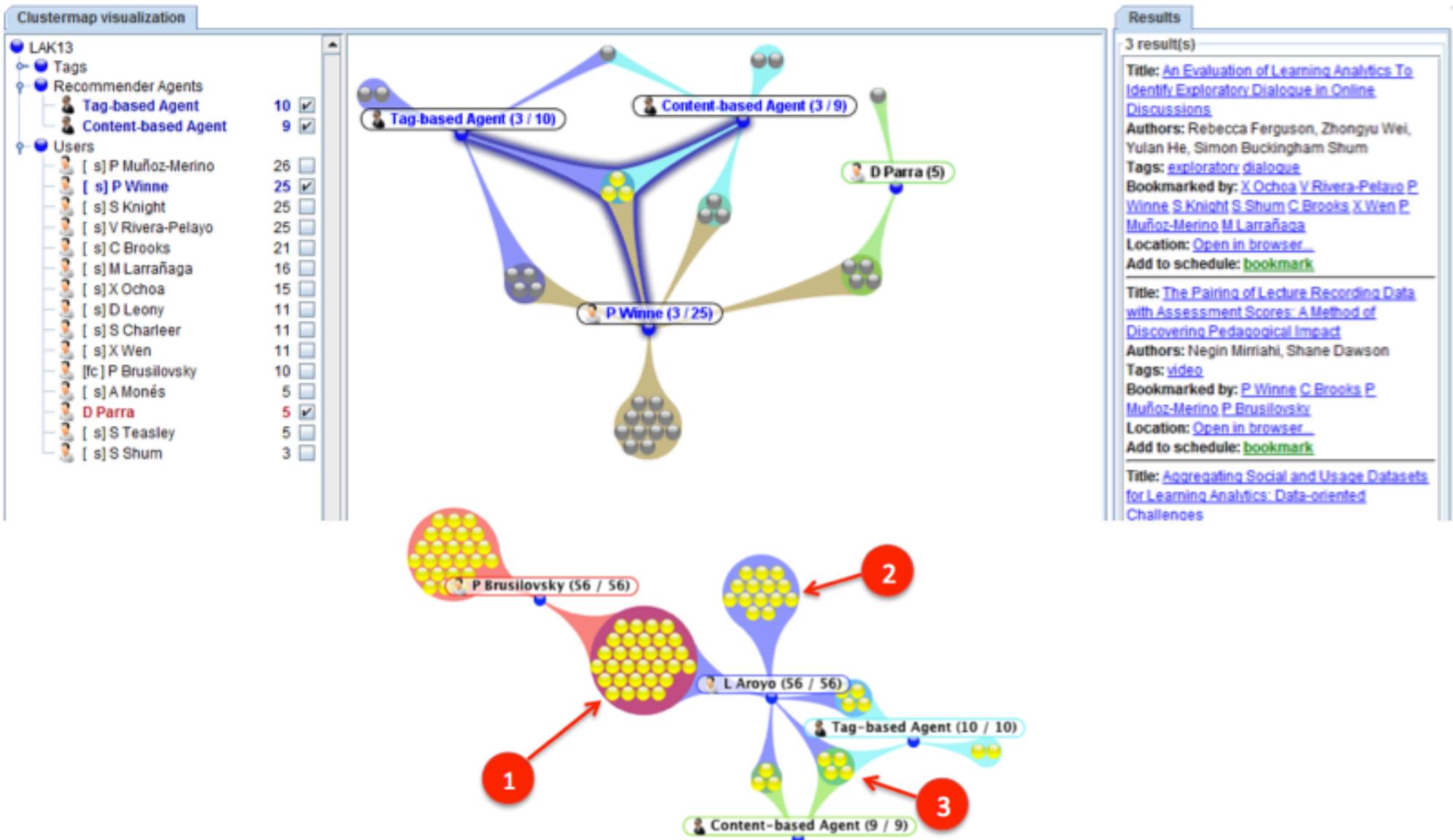
ight employ
arate your
ight put the

shirts you wear most often in the front of the closet so they are easy to locate. Unlike intrinsic properties of resources, which do not change, behavioral or usage-based properties are dynamic. You might move to Hawaii, where you can wear Hawaiian shirts to the office, or you could get tired of what were once your favorite shirts and stop wearing them as often as you used to.

Some arrangements of physical resources are constrained or precluded by resource properties that might cause problems for other resources or for their users. Hazardous or flammable materials should not be stored where they might spill or ignite; lions and antelopes should not share the same zoo habitat or the former will eat the latter; and adult books and movies should not be kept in a library where children might accidentally find them. For almost any resource, it seems possible to imagine a combination with another resource that might have unfortunate consequences. We have no shortage of professional certifications, building codes, MPAA movie ratings, and other types of laws and regulations designed to keep us safe from potentially dangerous resources.

http://columbus.exp.sis.pitt.edu/development/readingcircle_film/index.php?usr=dguerra&grp=testeraeder01&sid=XXXXXX&bookid=tdo&docno=tdo-2000&page=1&course=tdo#

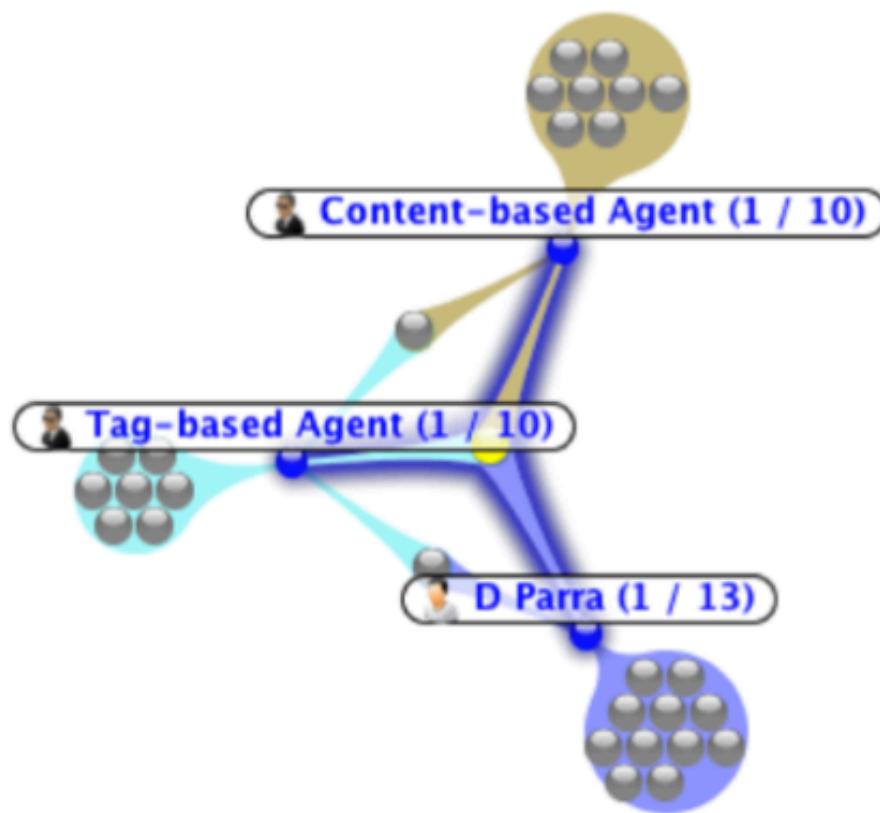
Exploración de Artículos Académicos



Exploración de Artículos Académicos



Comparar Conjuntos (traslape)



Clustermap



Venn diagram

SetFusion

Tune weights of the recommender methods: (b)

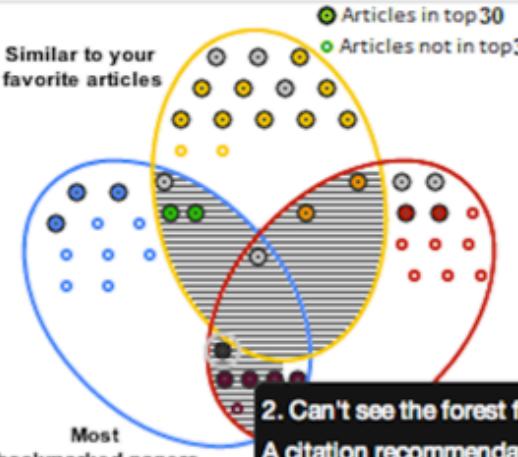
Most bookmarked papers  0.4

Similar to your favorite articles  0.8

Frequently cited authors in ACM DL  0.4

Update Recommendation List →

* Hover over circles to explore articles
* Click on the diagram to highlight subsets (c)



(a)

2. Can't see the forest for the trees? A citation recommendation system 
by C. Lee Giles, Cornelia Caragea, Adrian Silvescu, Prasenjit Mitra [\[see abstract\]](#)

3. When thumbnails are and are not enough: Factors behind users 
by Dan Albertson [\[see abstract\]](#)

7. Gendered Artifacts and User Agency 
by Andrea R. Marshall, Jennifer A. Rode [\[see abstract\]](#)

8. Two Paths to Motivation through Game Design Elements: Reward-Based Gamification and Meaningful Gamification 
by Scott Nicholson [\[see abstract\]](#)

9. Automatic Identifying Search Tactic in Individual Information Seeking: A Hidden Markov Model Approach 
by Zhen Yue, Shuguang Han, Daqing He [\[see abstract\]](#)

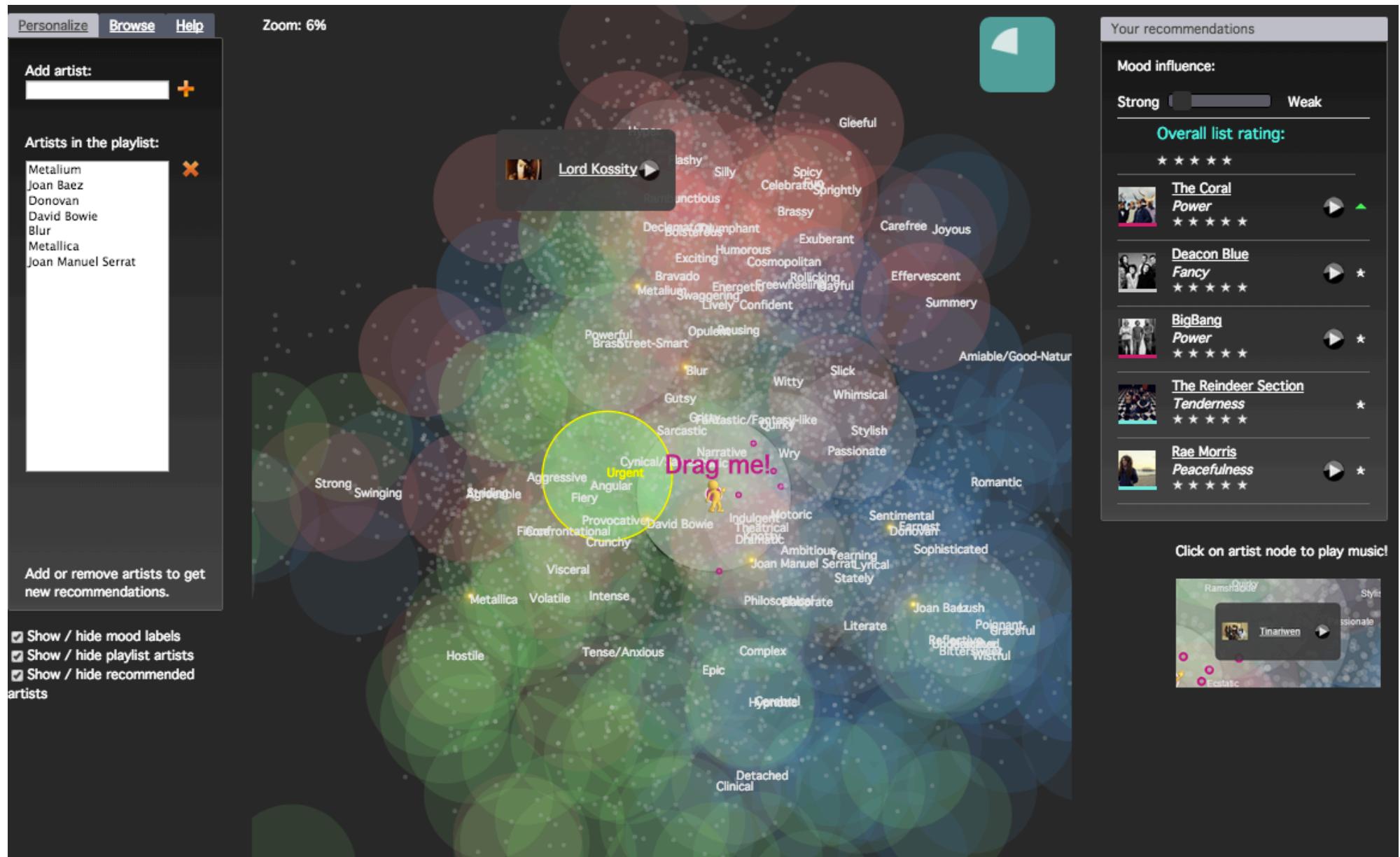
11. Old Maps and Open Data Networks 
by Werner Robitz, Carl Lagoze, Bernhard Haslhofer, Keith Newman, Amanda Stefanik [\[see abstract\]](#)

14. Effects of User Identity Information On Key Answer Outcomes in Social Q&A 
by Erik Choi, Craig Scott, Chirag Shah [\[see abstract\]](#)

15. Ebooks and cross generational perceived privacy issues 
by Jennifer Sue Thiele, Renee Kapusniak [\[see abstract\]](#)

16. Toward a mesoscopic analysis of the temporal evolution of scientific collaboration networks

Music Artists Recommendation



Gracias!

- dparra@ing.puc.cl
- Libro recomendado

Edward Tufte, in *The Visual Display of Quantitative Information* (1998, 2nd ed. 2001)