

Visualización de datos

Tema 4: Comunicación



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Dos frases

“Everyone spoke of an information overload, but what there was in fact was a non-information overload”

Richard Saul Wurman

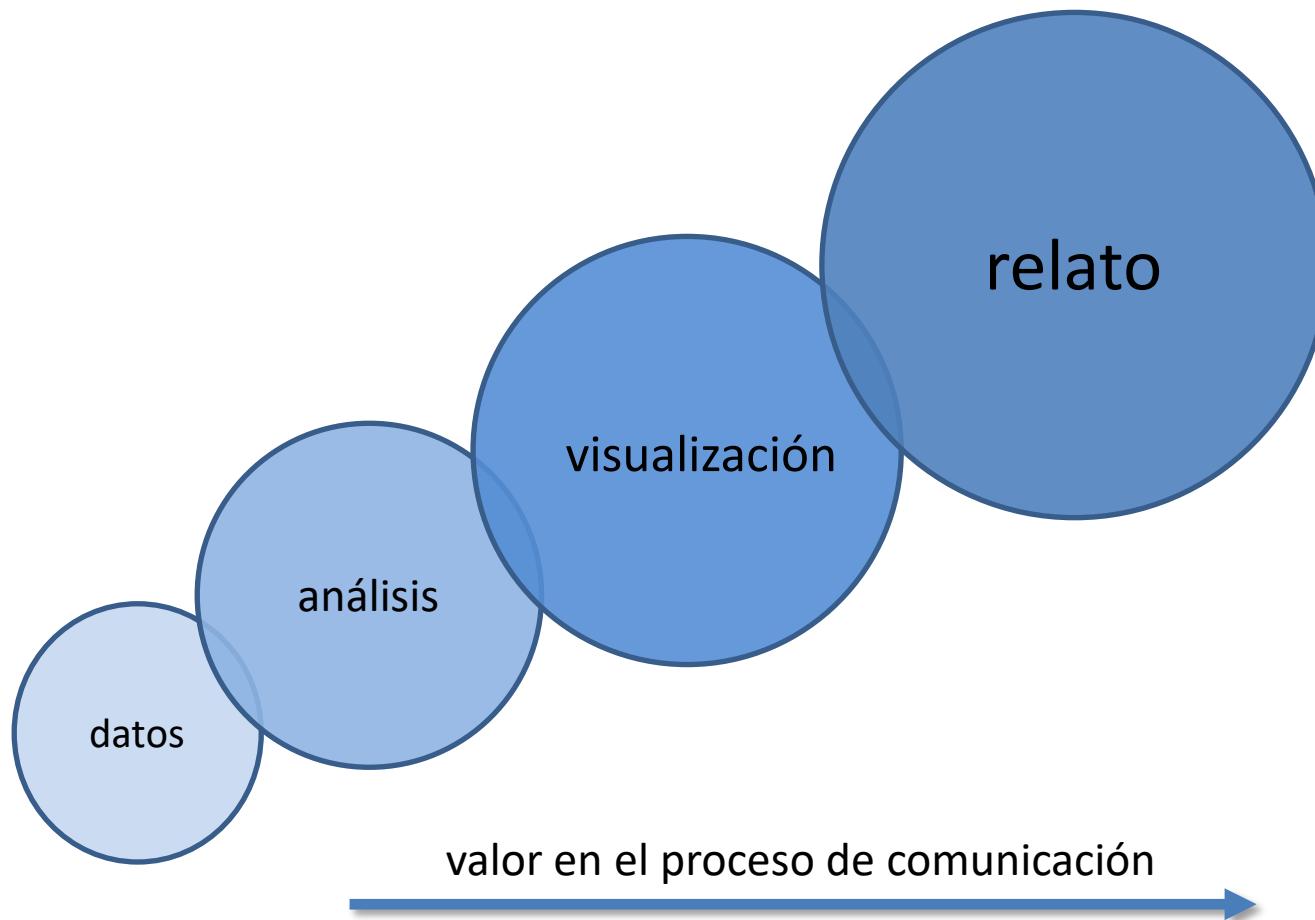
“What makes data journalism different to the rest of journalism? Perhaps it is the new possibilities that open up when you combine the traditional ‘nose for news’ and ability to tell a compelling story, with the sheer scale and range of digital information now available”

Adrian Holovaty

Resumen

- ▷ En este tema abordaremos el problema de la comunicación visual de resultados, muy ligada al ámbito del ‘data journalism’ o periodismo basado en la explotación de datos.
- ▷ Antes discutiremos algunas cuestiones relativas a la claridad en la representación gráfica, con algunos principios básicos que han de tenerse en cuenta.
- ▷ Despues abordaremos algunos ámbitos de representación muy relevantes hoy en día: la **representación en el tiempo** y la **representación textual**.

El proceso al completo



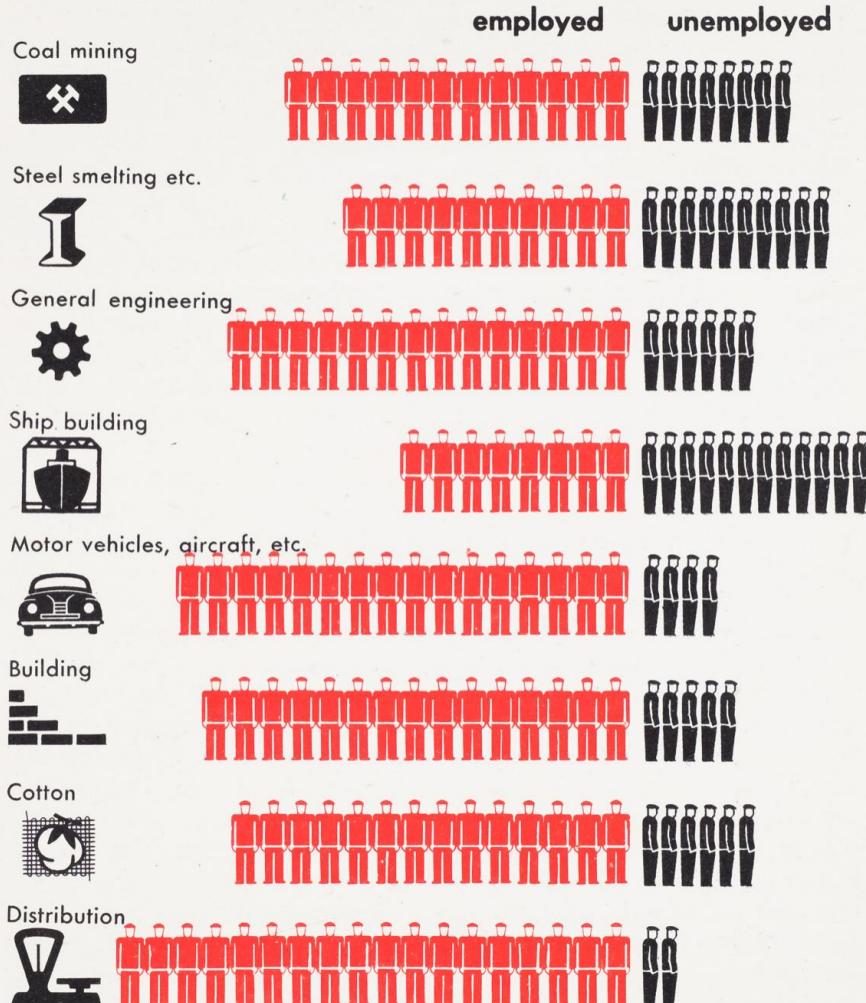
Claridad

- ▷ Algunos principios fundamentales:
 1. Mostrar los datos, y fundamentalmente los datos.
 2. Eliminar datos redundantes de la visualización.
 3. Maximizar la razón datos-píxeles, dentro de lo razonable.
 4. Eliminar aquello que no representa a los datos, dentro de lo razonable.
 5. Explotar la capacidad representativa de cada elemento gráfico.
 6. Utilizar colores fácilmente distinguibles.
 7. Redactar textos claros, evitando el uso de acrónimos o códigos indescifrables.
 8. Evitar múltiples direcciones de lectura para los textos.
 9. Adecuar el tipo de letra a la tecnología de visualización: con remate (serif) para la visualización en papel y sin remate (sans serif) para la visualización en pantalla.

Isotype Institute

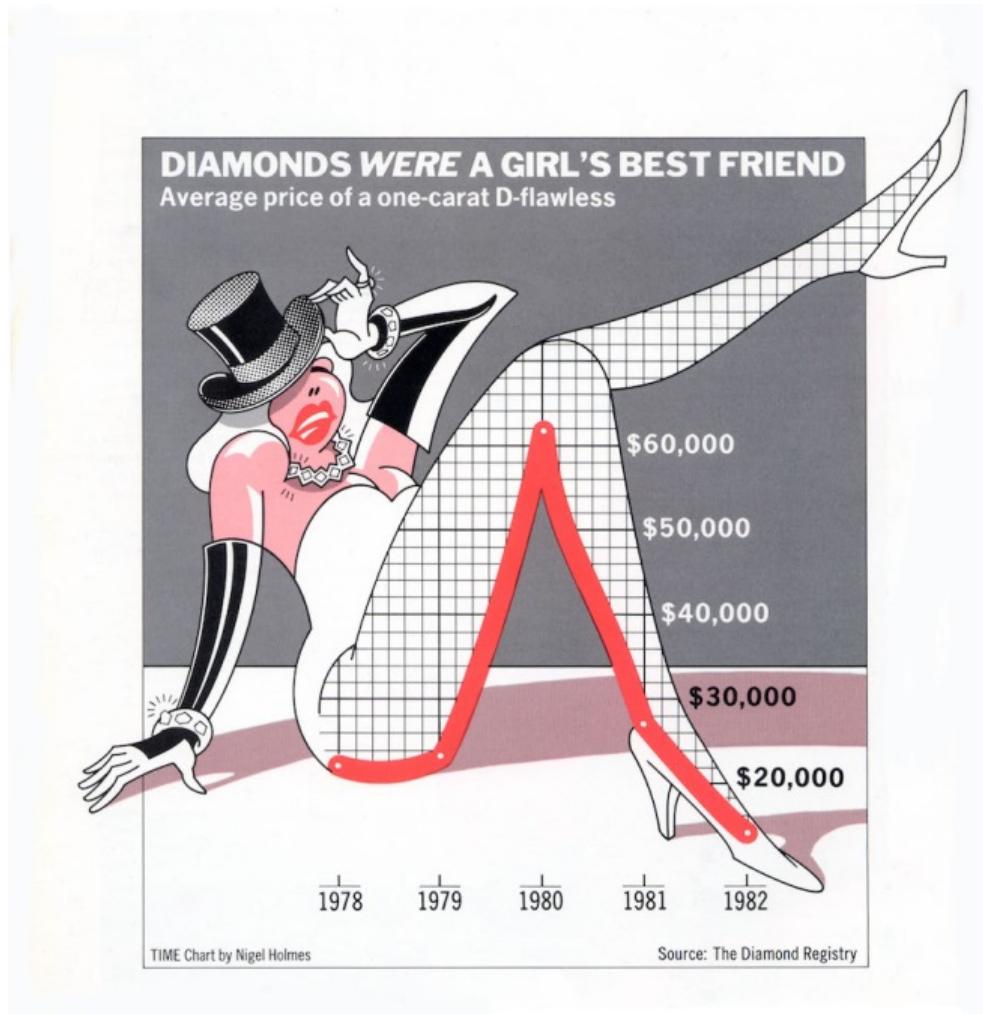
CHART XII

Unemployment by Industries, 1932



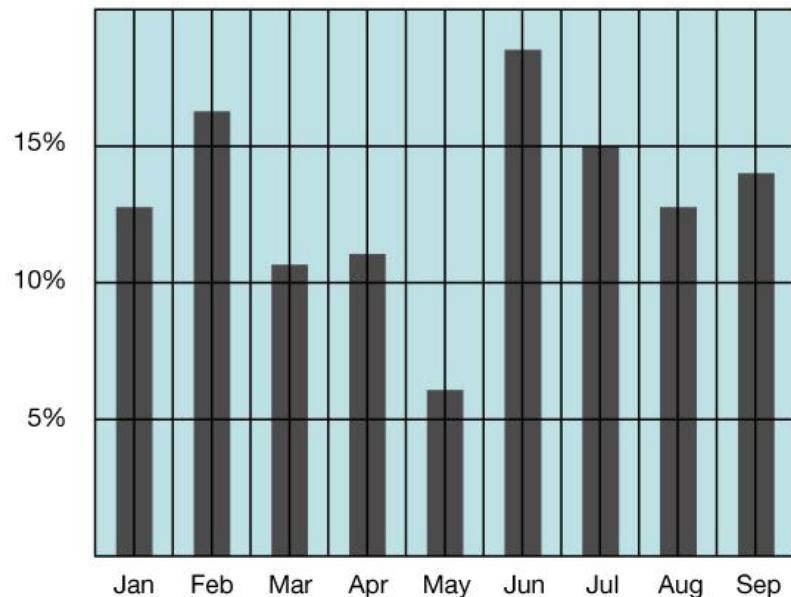
Each symbol represents 5 % of workers in each industry

¡Los datos!

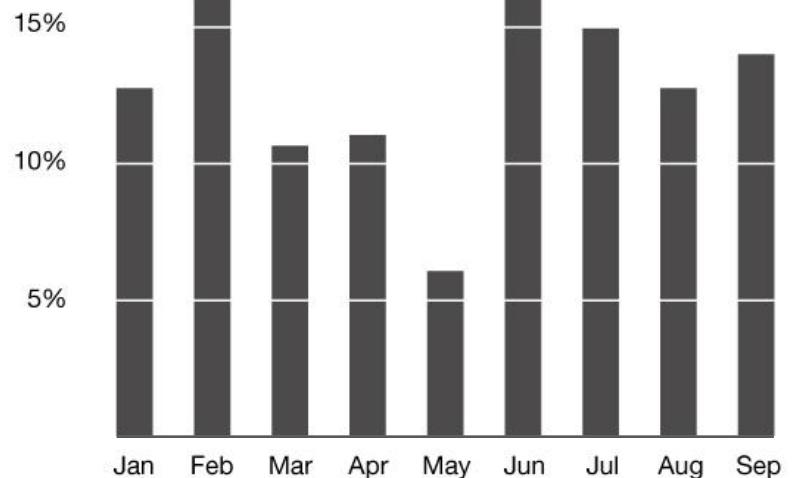


¡Los datos!

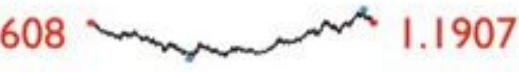
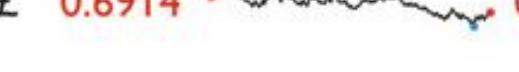
razón datos-píxeles
baja



razón datos-píxeles
alta



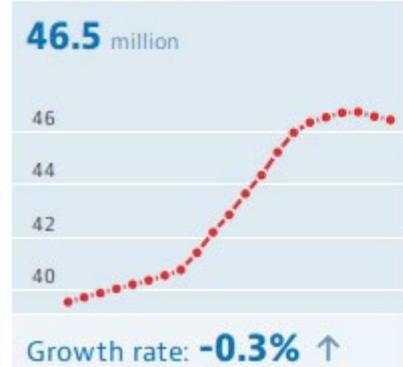
¡Los datos!

	1999.1.1	65 months	2004.4.28	low	high
Euro foreign exchange \$	1.1608		1.1907	.8252	1.2858
Euro foreign exchange ¥	121.32		130.17	89.30	140.31
Euro foreign exchange £	0.7111		0.6665	.5711	0.7235
	2003.4.28	12 months	2004.4.28	low	high
\$	1.1025		1.1907	1.0783	1.2858
¥	132.54		130.17	124.80	140.31
£	0.6914		0.6665	0.6556	0.7235

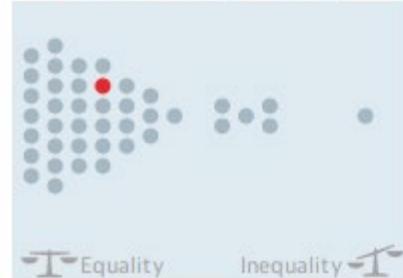
¡Los datos!

Selected indicators for Spain

Population



Income inequality



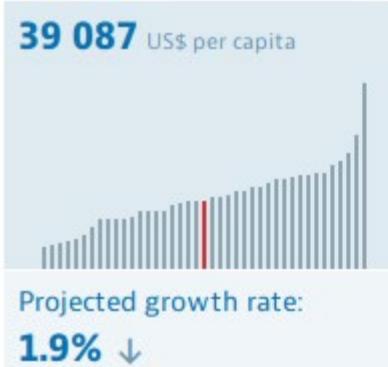
Education



CO₂ emissions



GDP



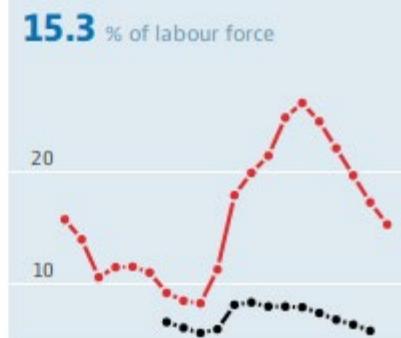
Debt



Tax

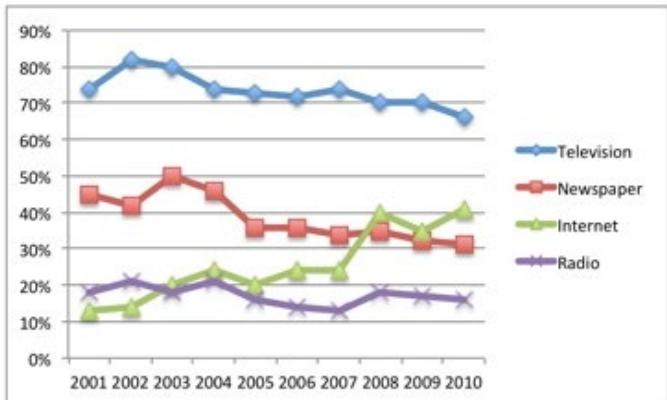


Unemployment



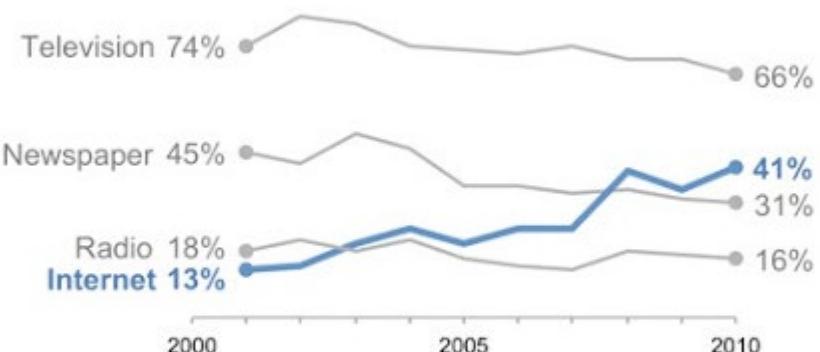
data.oecd.org/spain.htm

¿Dónde está la información?



How people get their news

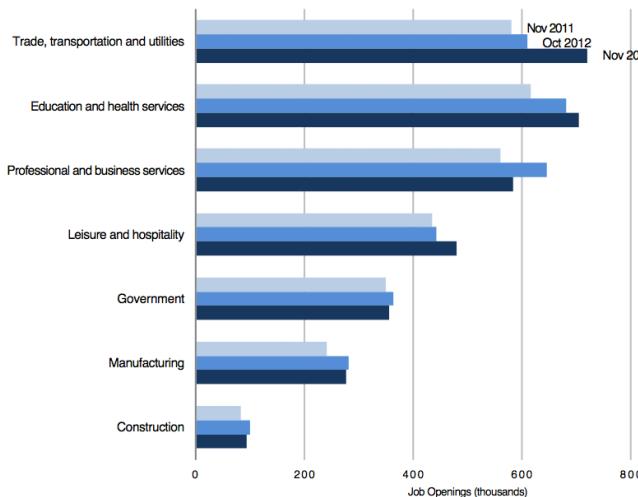
An increasing proportion cite the [internet](#) as their primary news source



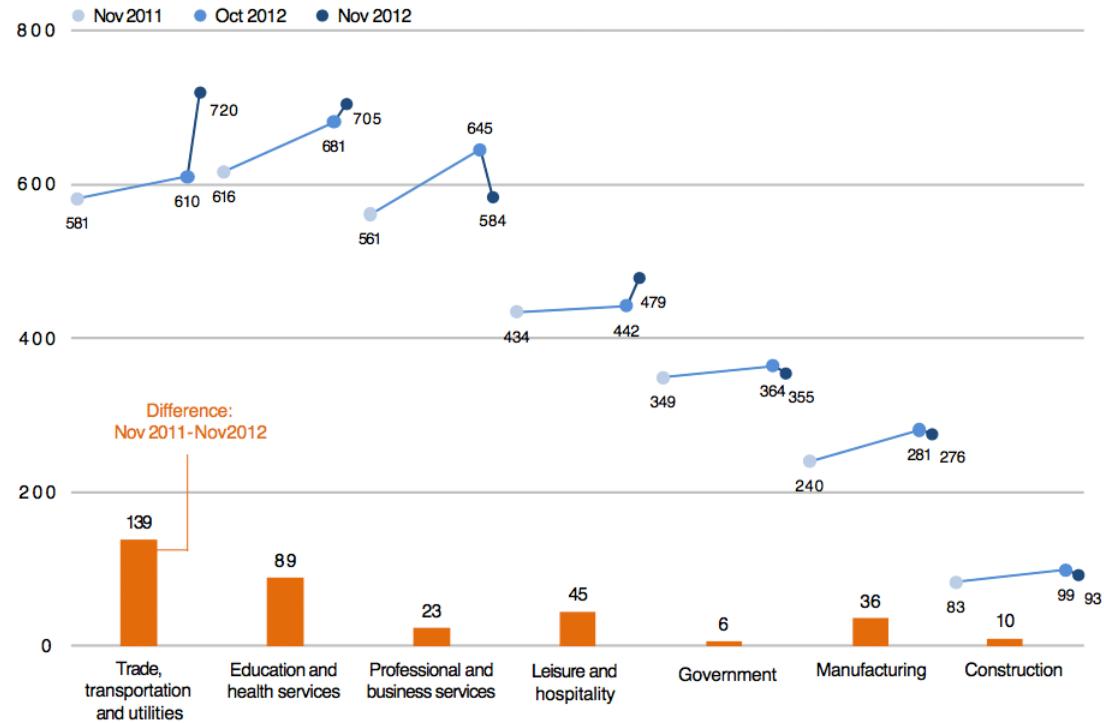
Source: Pew Research Center Poll. Represents responses to the question *Where do you get most of your news about national and international issues?* Figures sum to more than 100% because respondents could volunteer up to two main sources.

¿Dónde está la información?

Job openings by industry, November 2011, October 2012 and November 2012, seasonally adjusted



Job openings by industry, November 2011, October 2012 and November 2012, seasonally adjusted
(Thousands of jobs)

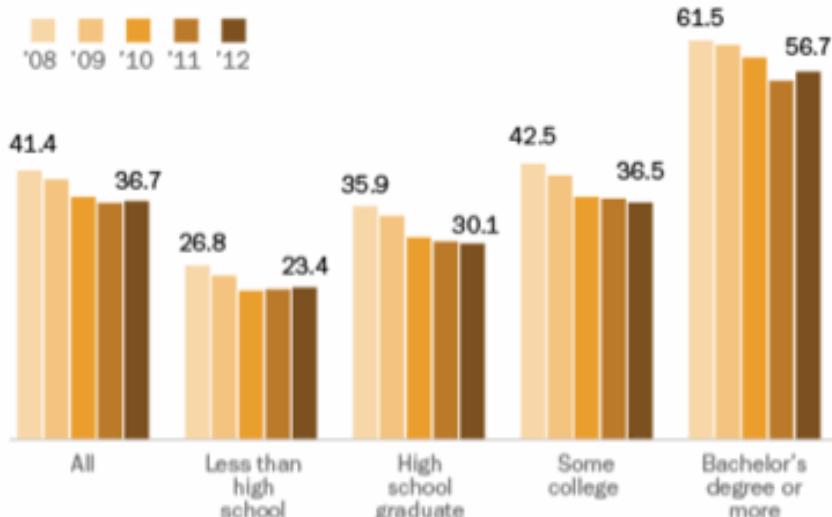


¿Dónde está la información?

ORIGINAL

New Marriage Rate by Education

Number of newly married adults per 1,000 marriage eligible adults



Note: Marriage eligible includes the newly married plus those widowed, divorced or never married at interview.

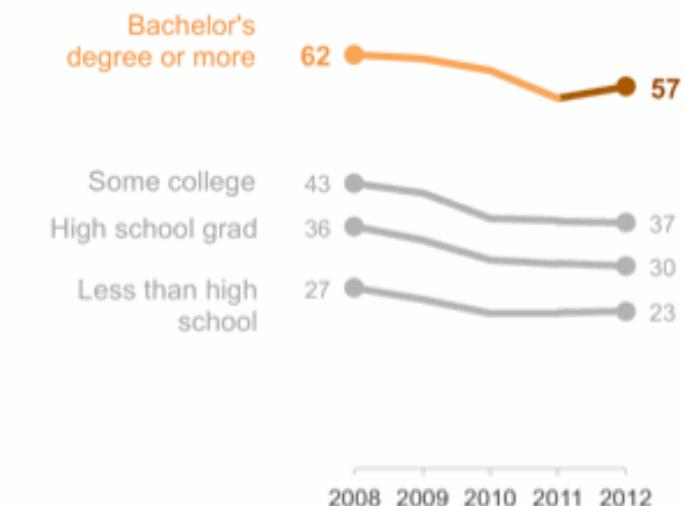
Source: US Census

PEW RESEARCH CENTER

COLE's MAKEOVER

New Marriage Rate by Education

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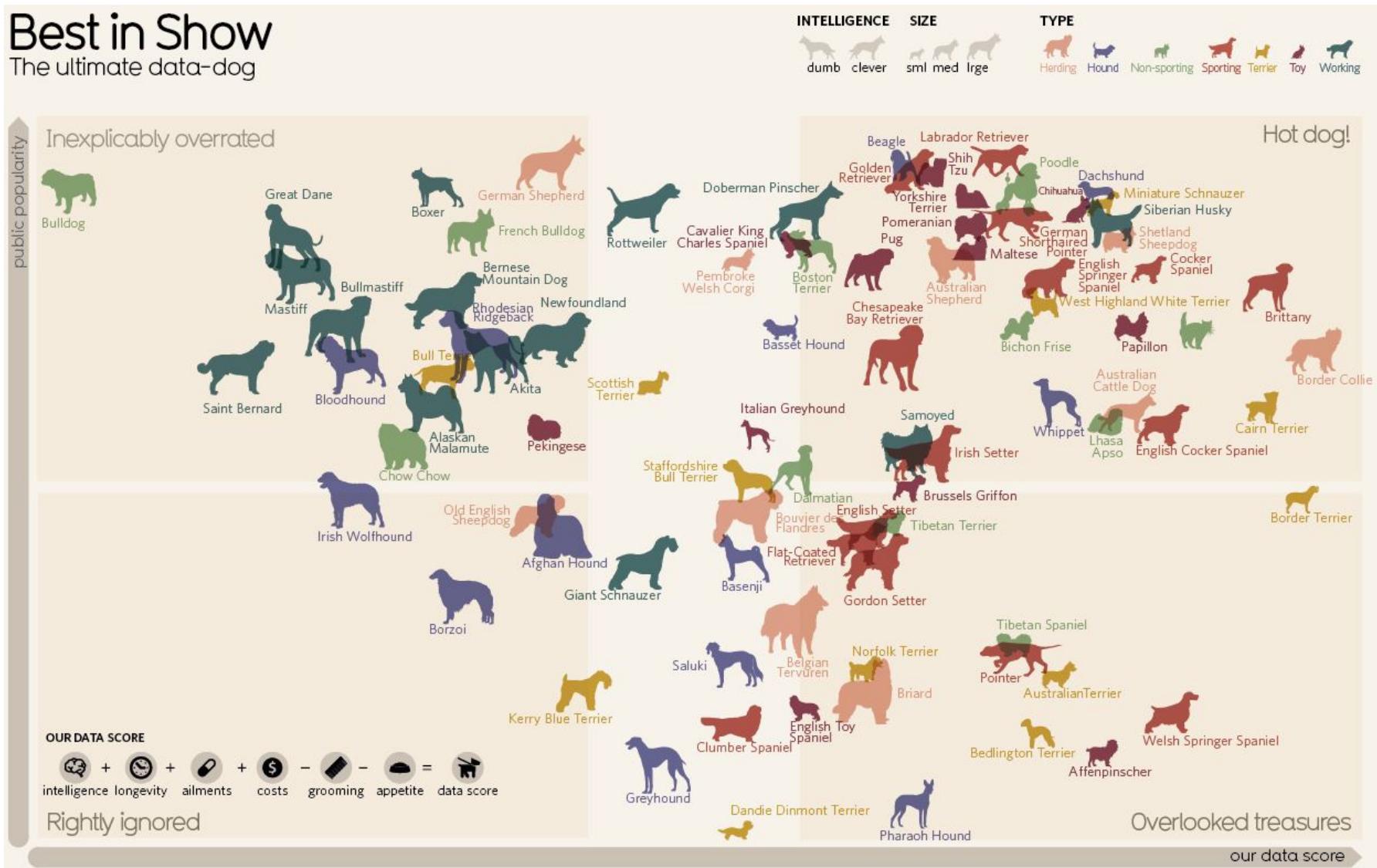
Source: US Census

PEW RESEARCH CENTER

¿Cómo codificamos múltiples parámetros?

Best in Show

The ultimate data-dog



Tipografías

líneas gruesas y finas

A large, bold black sans-serif font word "Serif" is shown. Four red lines with circular endpoints point from the top right towards the small vertical strokes (serifs) at the top of the letters "S", "e", "r", and "f".

Serif

remates o gracias (serifs)

Las tipografías con remate buscan una buena legibilidad en soportes materiales: papel, piedra, etc.

sin remates

A large, bold black sans-serif font word "Sans-Serif" is shown. Two red lines with circular endpoints point from the top left towards the top of the letters "S" and "S".

Sans-Serif

todas las líneas son aproximadamente del mismo grueso

Las tipografías Palo Seco buscan una buena legibilidad en soportes digitales.

Construire un relato visual

Carte Figurative des pertes successives en hommes de l'Armée Française dans la campagne de Russie 1812-1813.

Dessinée par M. Minard, Inspecteur Général des Ponts et Chaussées en retraite

Paris, le 20 Novembre 1869.

Les nombres d'hommes présents sont représentés par les larges des zones colorées à raison d'un millimètre pour dix-mille hommes ; ils sont de plus écrits en travers des zones. Le rouge désigne les hommes qui ont été en Russie, le noir ceux qui en sortent. — Les renseignements qui ont servi à dresser la carte ont été puisés dans les ouvrages de M. Chiers, de Léger, de Fezensac, de Chambray et le journal médical de Jacob, pharmacien de l'Armée depuis le 28 Octobre.

Pour mieux faire juger à l'œil la diminution de l'armée, j'ai supposé que les corps du Prince Jérôme et du Maréchal Davout, qui avaient été détachés sur Minsk et Mohilow en se rejoignant vers Orscha et Witelk, avaient toujours marché avec l'armée.

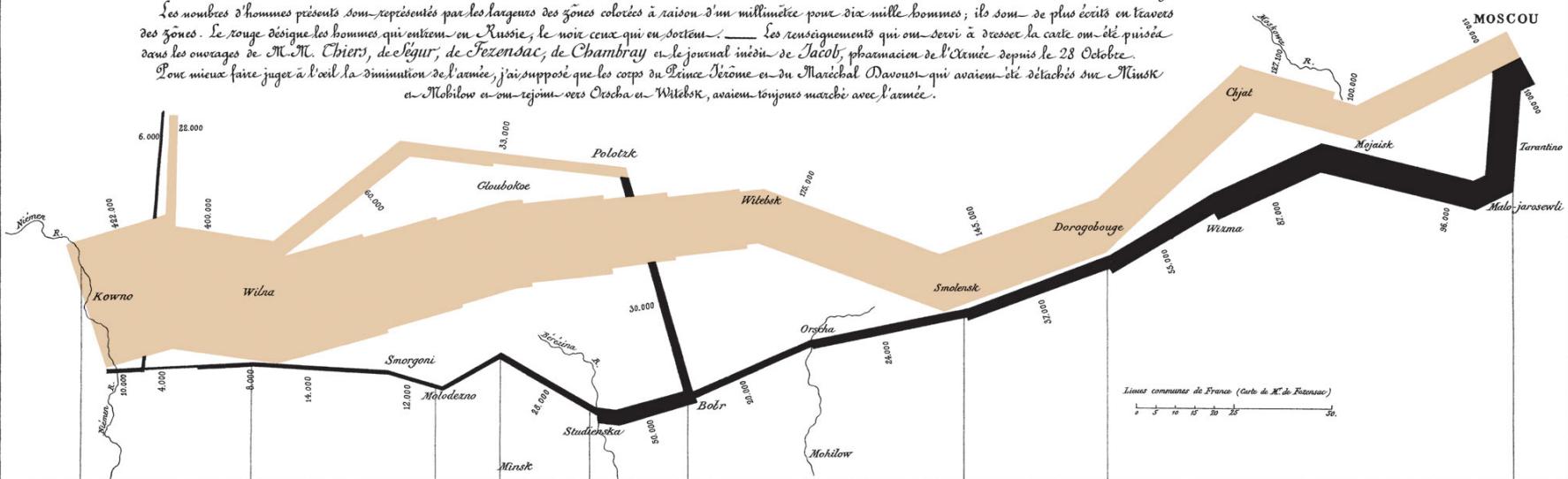
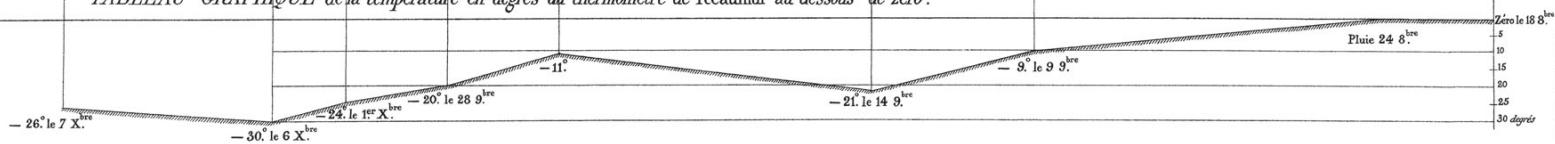


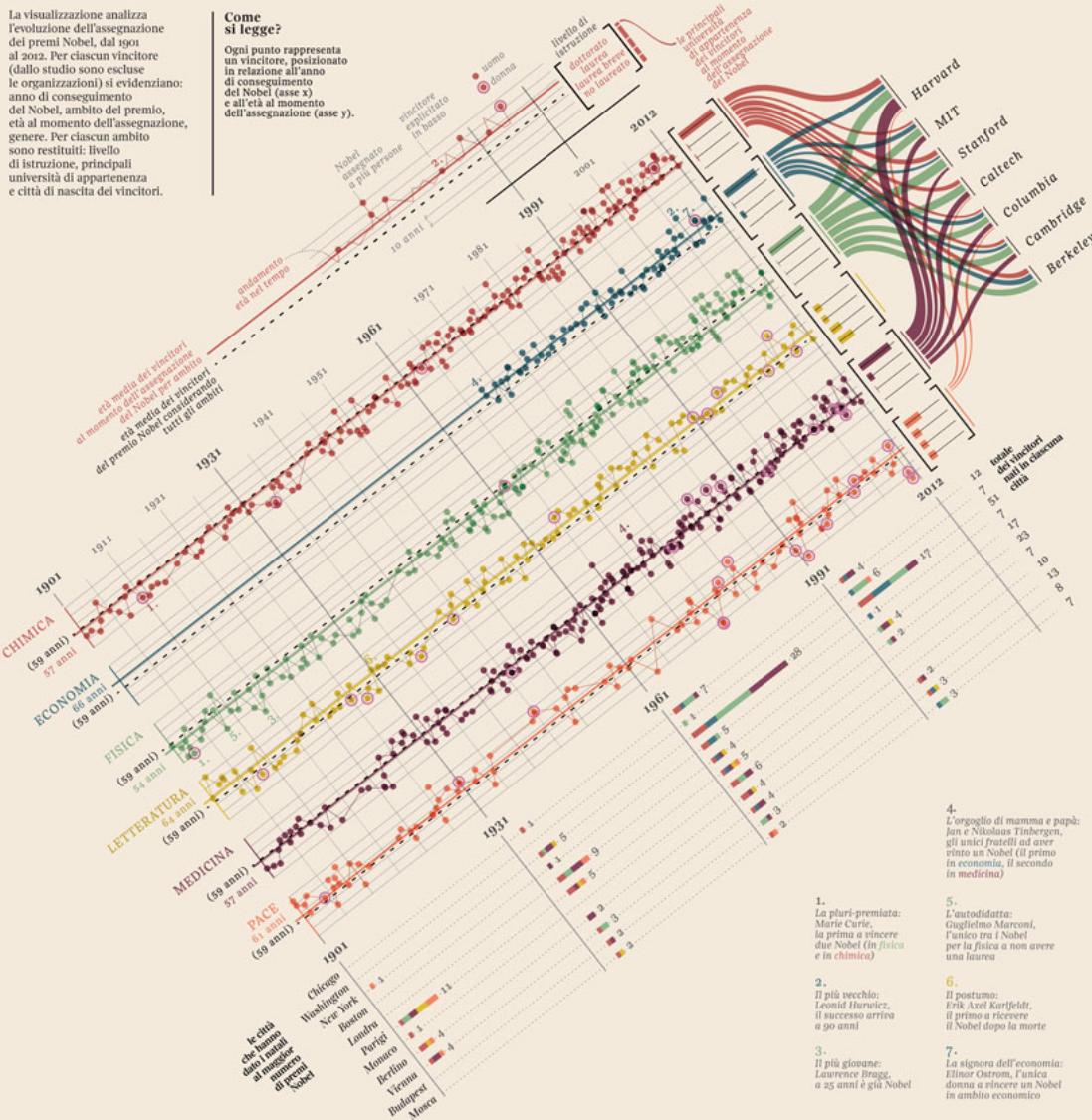
TABLEAU GRAPHIQUE de la température en degrés du thermomètre de Réaumur au dessous de zéro.

Les cosaques passent au galop
le Niemen gelé.

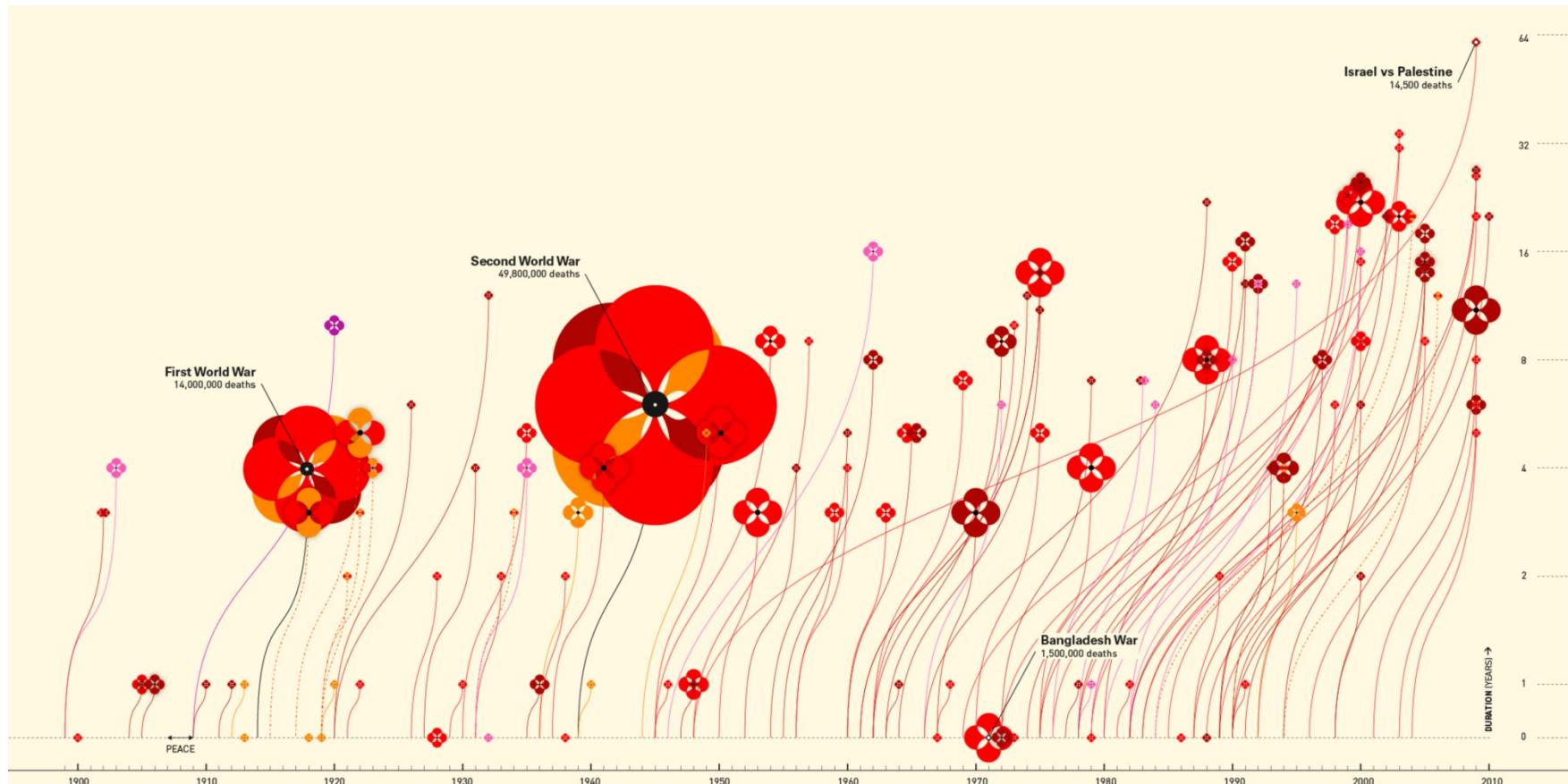


Provocar curiosidad

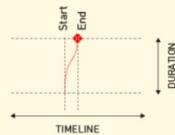
giorgialupi.com



Atraer



POPPY DIAGRAM



The remembrance poppy commemorates soldiers who have died in war. Each poppy in the diagram depicts a war of the last century (with more than 10,000 deaths). The stem grows from the year when the war started. The poppy flowers in the year the war ended. Its size shows the number of deaths.

NUMBER OF DEATHS IN THOUSANDS (POPPY'S SIZE)



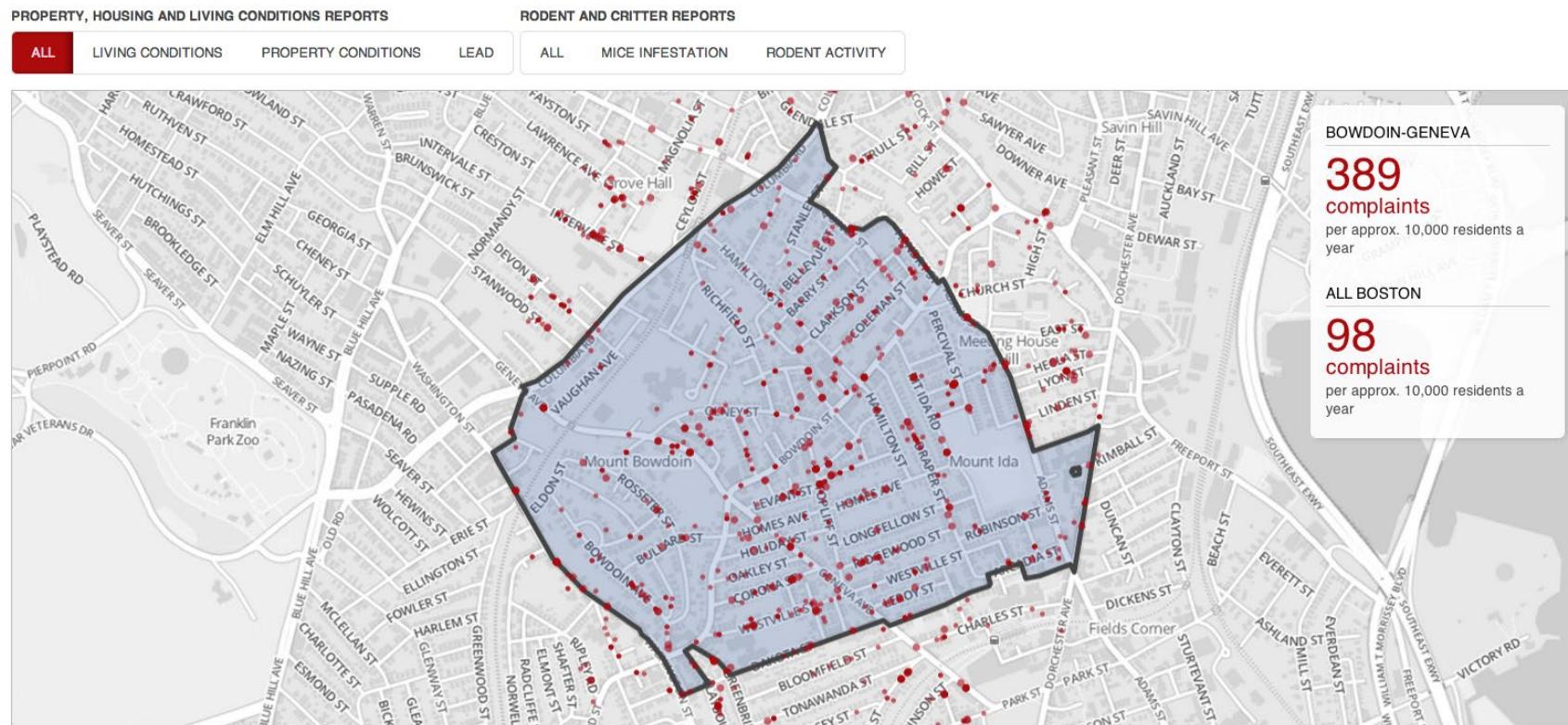
REGIONS INVOLVED IN WARS (POPPY'S COLOUR)



Un nuevo periodismo

Quality of life indicators in Bowdoin-Geneva

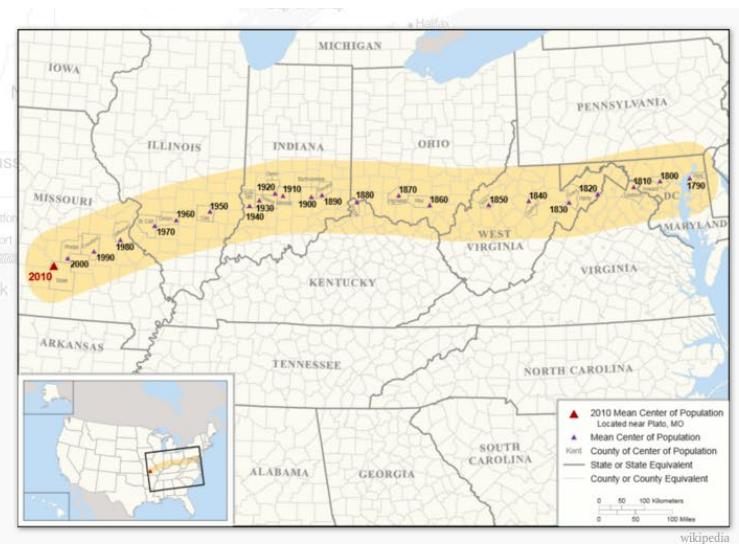
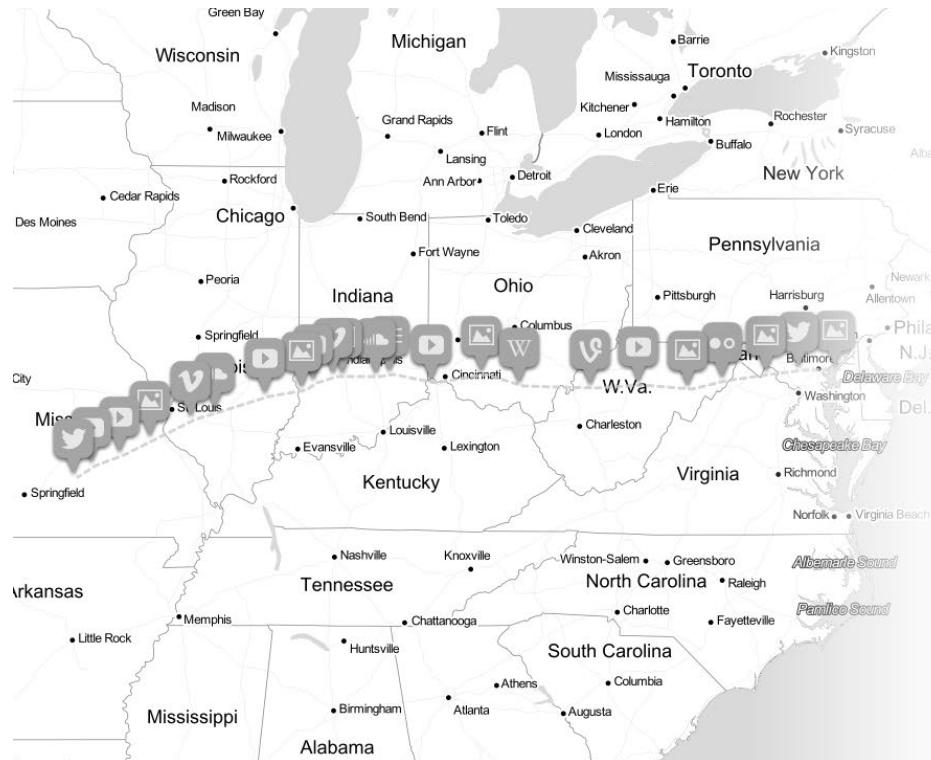
Citizen complaints offer a glimpse into problems encountered by neighborhood residents. The data from the City of Boston spans from Feb. 28, 2010, to June 28, 2012.



SOURCE: City of Boston

ALVIN CHANG, MATT CARROLL AND GRANT STAUBLIN/GLOBE STAFF

Construir una historia



US MANIFEST DESTINY

MEAN CENTER OF UNITED STATES POPULATION

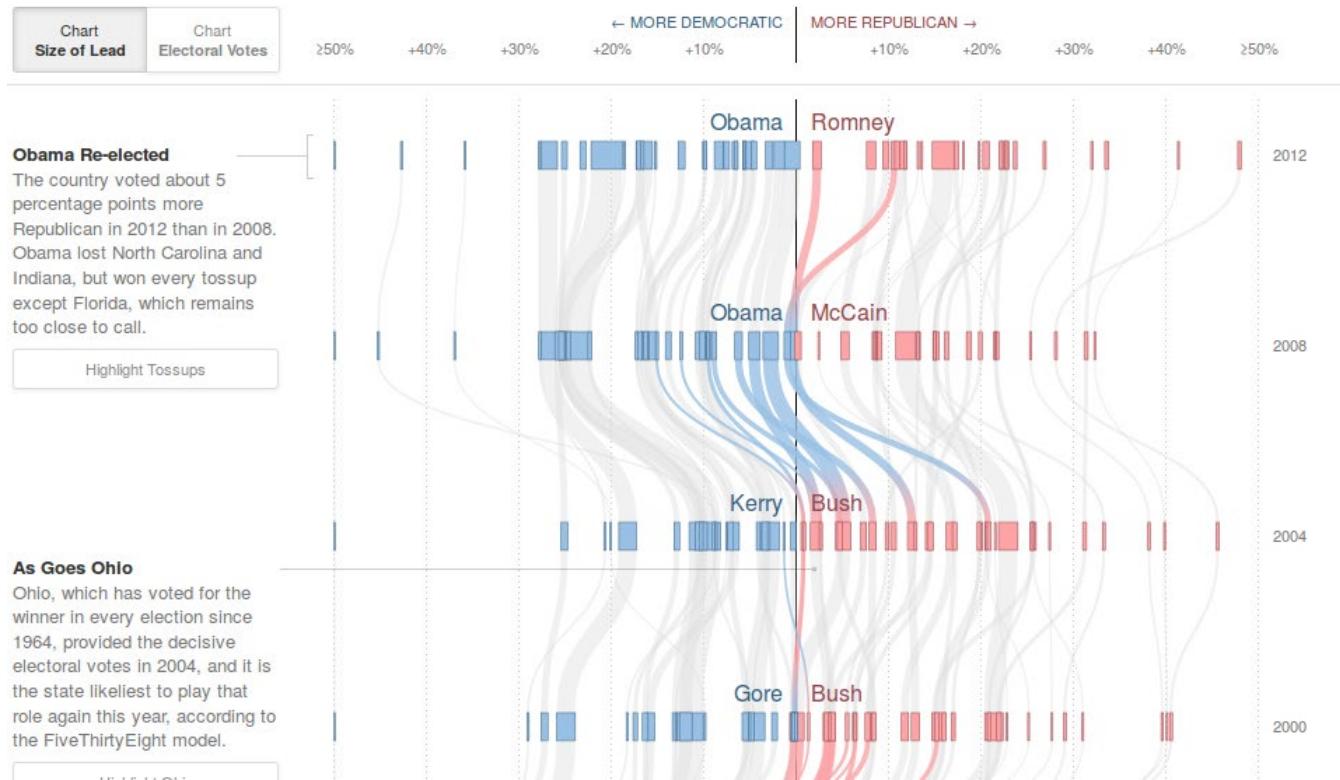
The mean center of U.S. population is determined by the United States Census Bureau from the results of each census. Defined as the point at which an imaginary, flat, weightless, and rigid map of the United States would balance perfectly if weights of identical value were placed on it so that each weight represented the location of one person on the date of the census.

Imaginación

Over the Decades, How States Have Shifted

Recent elections have placed a heavy emphasis on “swing states” — Ohio, Florida and the other competitive states. Yet in the past, many more states shifted between the Democratic and Republican parties. A look at how the states stacked up in the 2012 election and how they have shifted over past elections.

- Each box represents a state sized by number of electoral votes.
- Each curve shows how much it shifted left or right between elections.



nyti.ms/Wr1dhZ

Información temporal



12:00 AM
Forms the ANC's military wing, Umkhonto we Sizwe (Spear of the Nation).



Dennis Lee Royle / AP

African women join in a demonstration demanding the release of Mandela in South Africa, Aug. 16, 1962.



12:00 AM
January 11, 1962

Sneaking for Support

Mandela sneaks out of South Africa, traveling the continent and visiting England to drum up support for the ANC's cause. After receiving military training in North Africa, Mandela returned to South Africa in July.

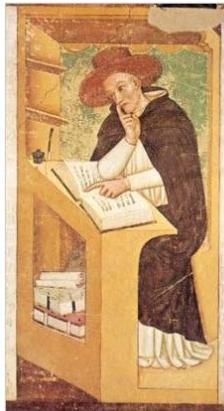
12:00 AM
Prison Sentence



Información temporal



1214
Roger Bacon



1215 — 1279
Robert Kilwardby

Robert Kilwardby (c. 1215–11 September 1279) was an Archbishop of Canterbury in England and as well as a cardinal. Kilwardby was the first member of a mendicant order to attain a high ecclesiastical office in the English Church.

Source: Wikipedia

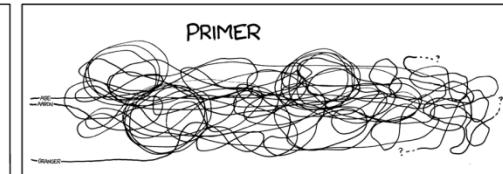
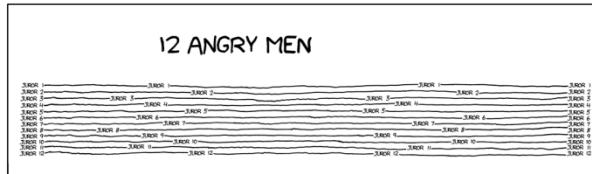
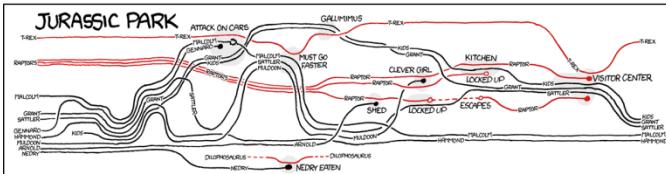
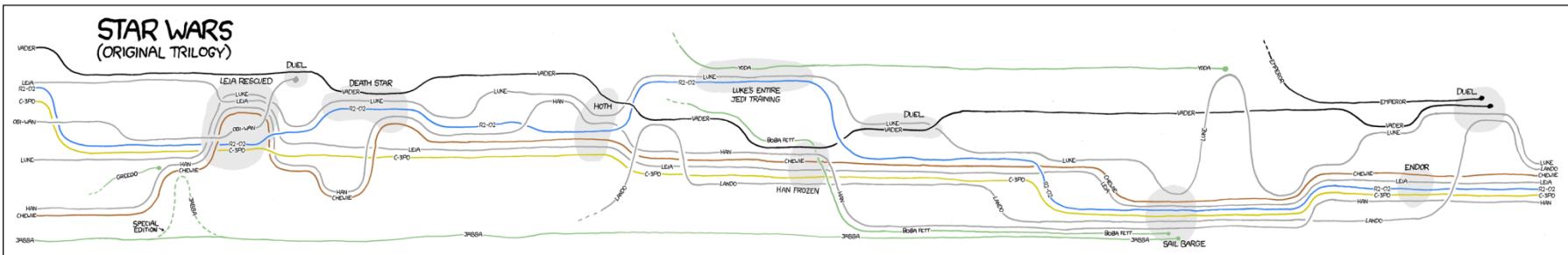
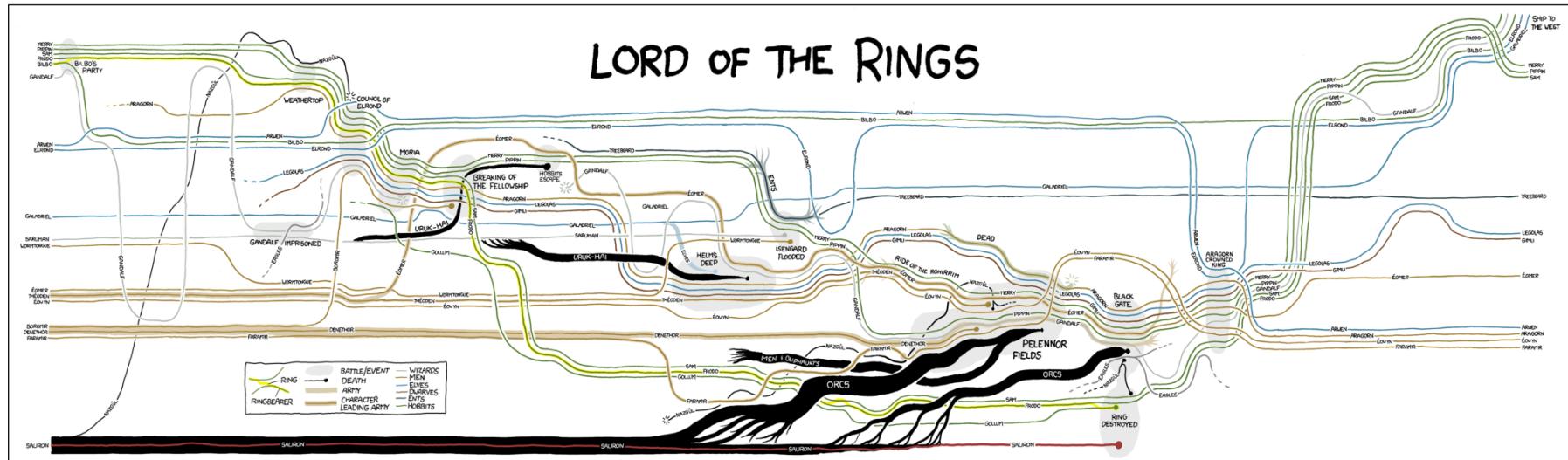


1217
Henry of Ghent



Información temporal

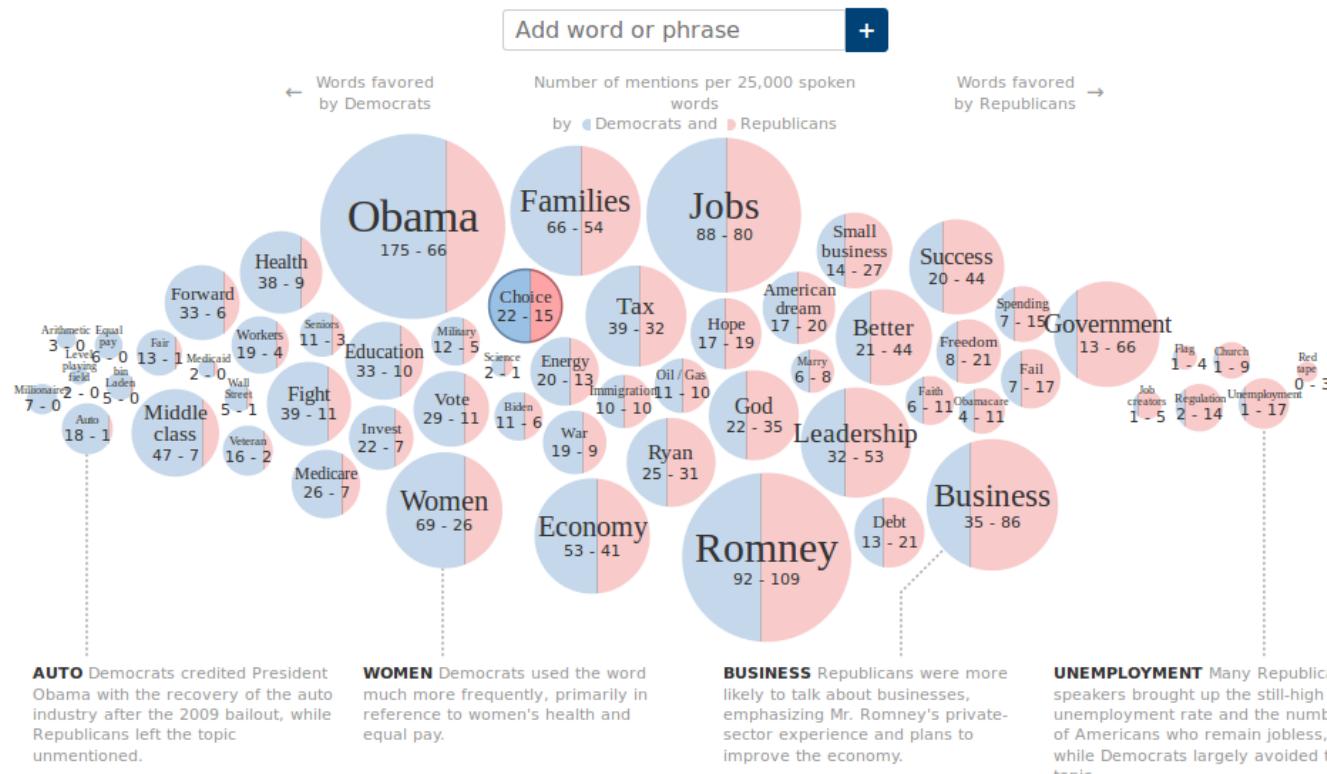
THESE CHARTS SHOW MOVIE CHARACTER INTERACTIONS.
THE HORIZONTAL AXIS IS TIME. THE VERTICAL GROUPING OF THE
LINES INDICATES WHICH CHARACTERS ARE TOGETHER AT A GIVEN TIME.



Análisis textual

At the National Conventions, the Words They Used

A comparison of how often speakers at the two presidential nominating conventions used different words and phrases, based on an analysis of transcripts from the Federal News Service.



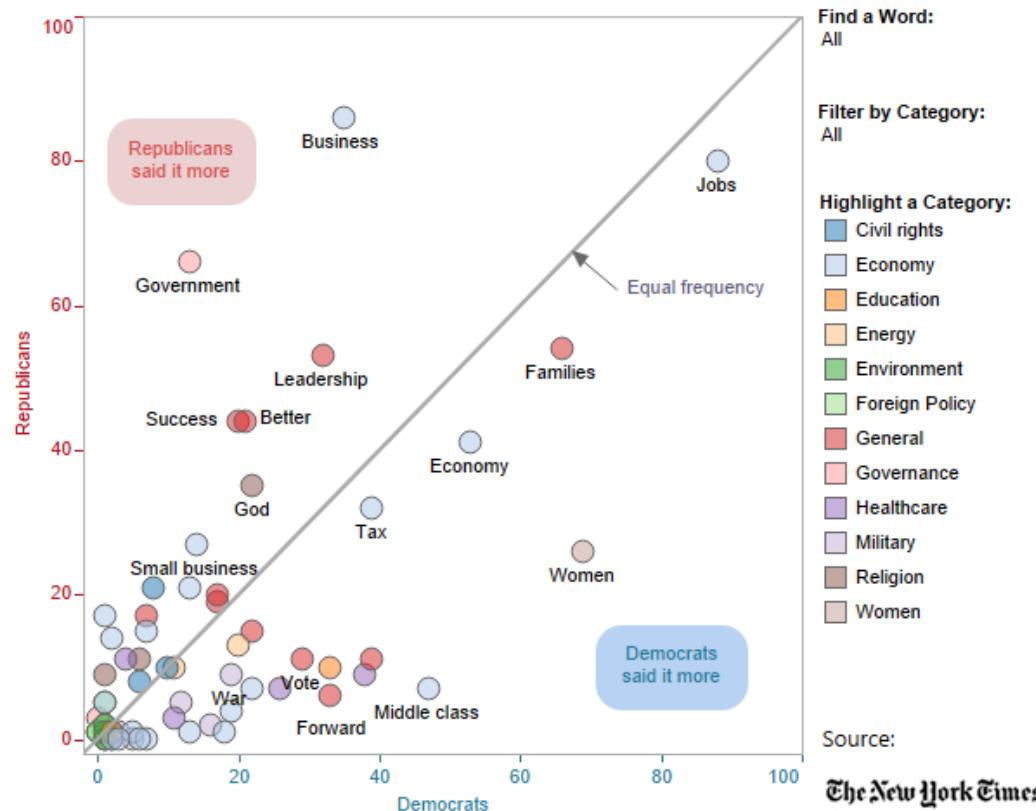
Análisis textual

Ye Shall Know Them By Their Words...



Compare how often speakers from the different parties used select words and phrases at their respective 2012 presidential nominating conventions. On each axis is plotted the count per 25,000 words.

Democrats had more to say about *healthcare*, *military* and *women*, while *Republicans* mentioned *religion* and *governance* more frequently:

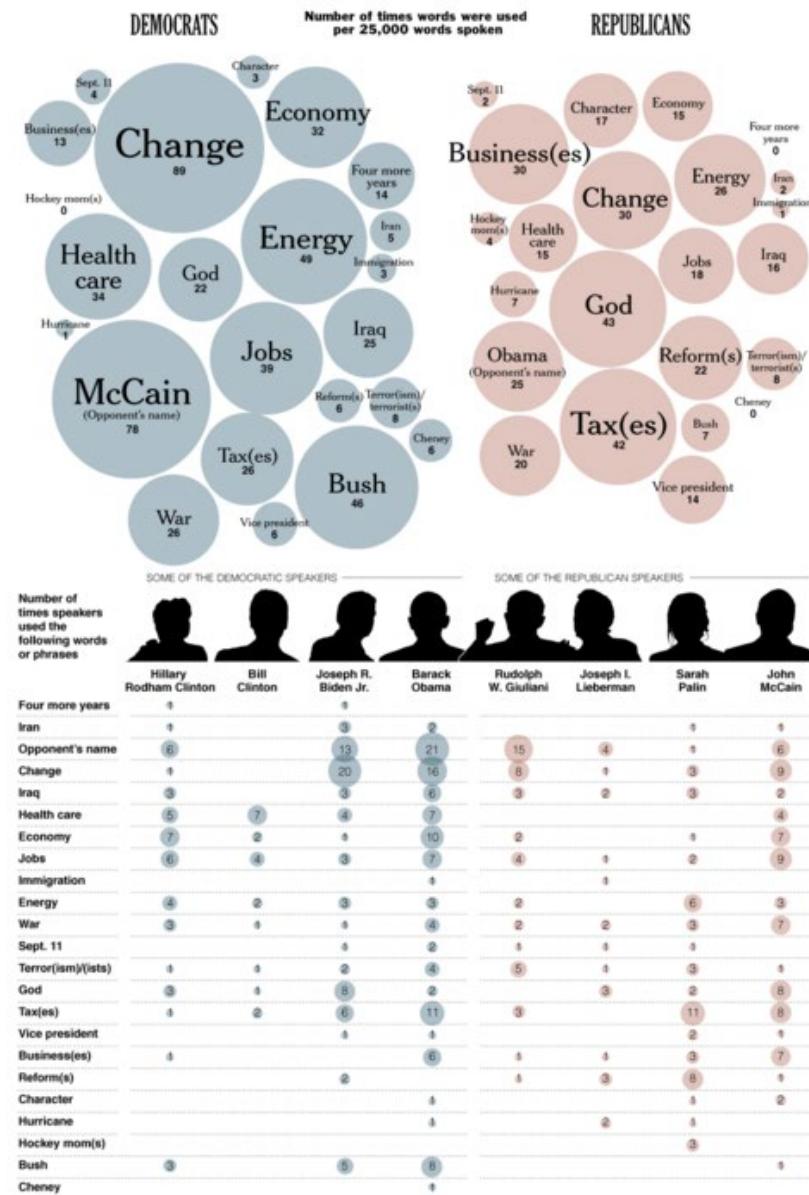


Análisis textual

Published: April 17, 2013

The Words They Used

The words that speakers used at the two political conventions show the themes that the parties have highlighted. Republican speakers have talked about reform and character more frequently than the Democrats. And Republicans were more likely to talk about businesses and taxes, while Democrats were more likely to mention jobs or the economy.

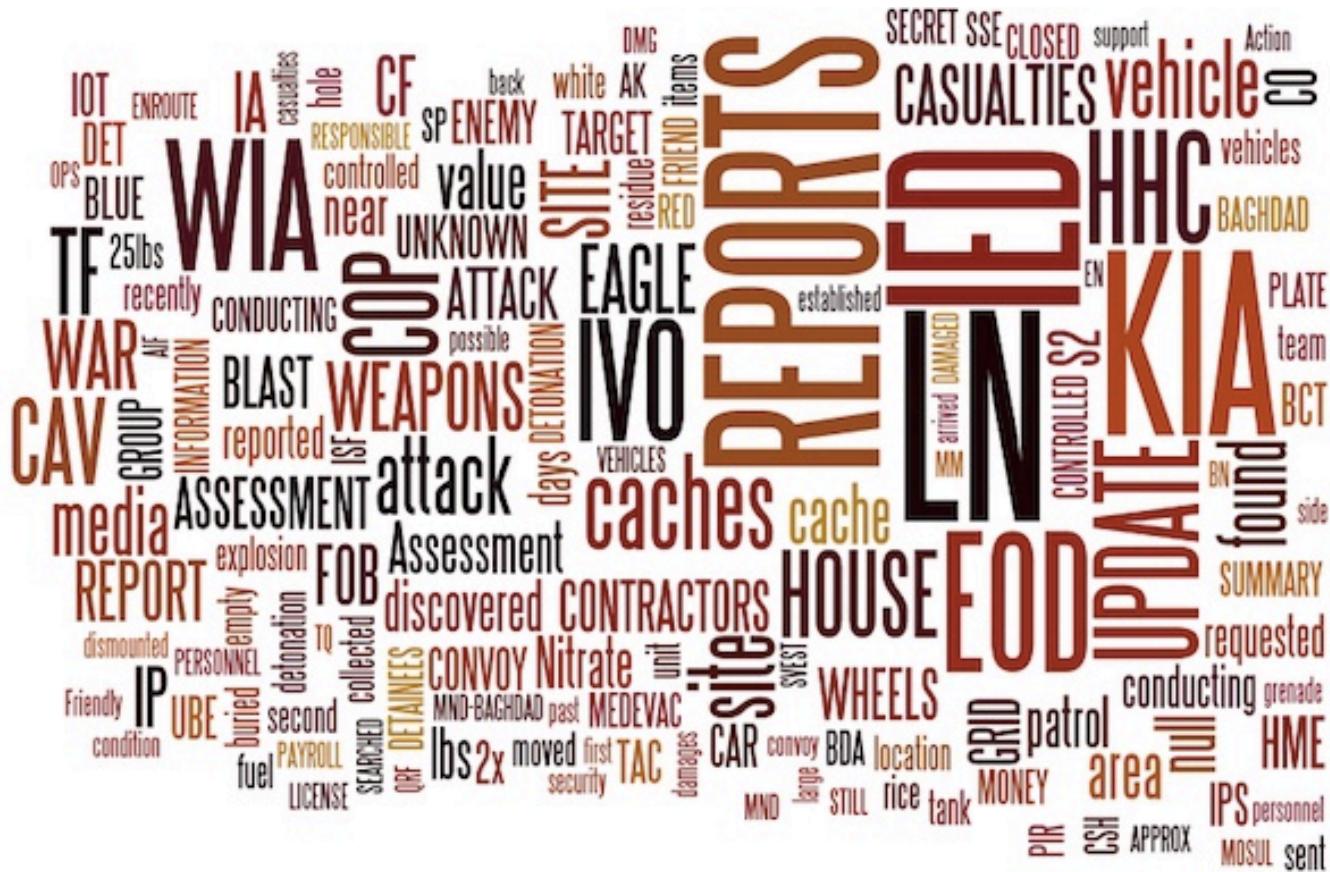


Análisis textual



wordle

Análisis textual: cuidado con abusar

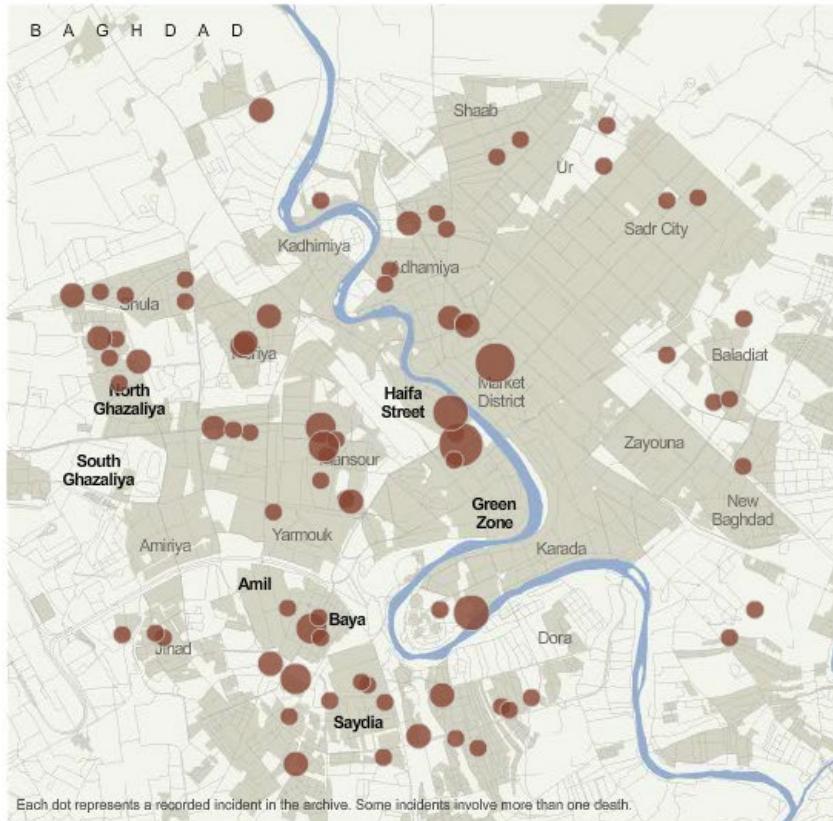


Obtenido a partir de los datos de Wikileaks War Logs

Análisis textual: cuidado con abusar

A Deadly Day In Baghdad

Violence peaked in December 2006, just two months before American troops arrived as part of what was later called "the surge." At right are the details of one of the city's deadliest days, Dec. 20. There were 114 separate episodes of violence that day, resulting in the deaths of about 160 Iraqi citizens and police officers.



Haifa Street

The day's deadliest incidents came in the religiously mixed area near Haifa Street. A total of 11 people were found dead in the area, their identities unknown.

Green Zone

This heavily fortified area, controlled by American troops, has been the seat of Iraq's government and the country's diplomatic center since 2003. There have been sporadic rocket attacks there, but compared with its surrounding neighborhoods it has been relatively safe.

Saydia, Baya and Amil

These formerly mixed neighborhoods, now dominated by the Shiite Mahdi Army, were places of intense violence both that day and throughout the war. A total of 19 people were killed there in 13 separate incidents.

Ghazaliya

This Sunni enclave in western Baghdad was one of the first to experience systematic cleansing of Shiites. It remained violent through the worst periods of the war.

Bibliografía

- ▷ E.R. Tufte, *The visual display of quantitative information*, Graphic Press, 2001.