

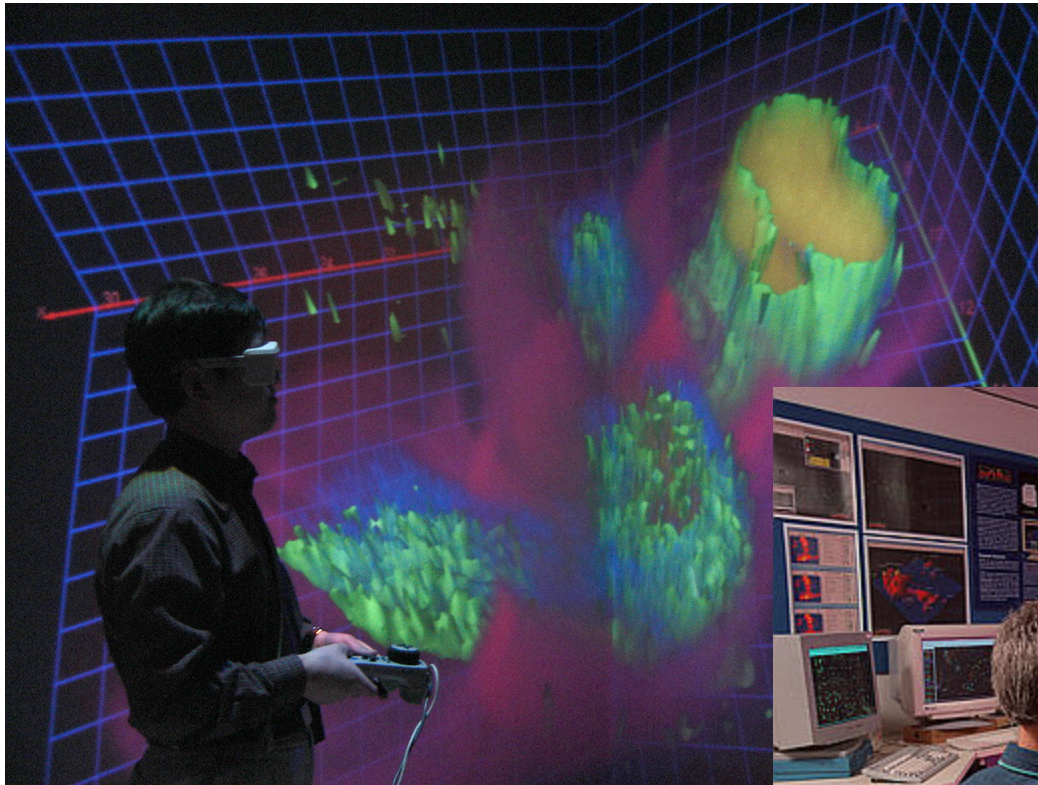
# Visualization as a medium



Fernanda Viégas  
Martin Wattenberg

flowing media

# The visualization pedigree...



**But the scientists don't have a monopoly...**

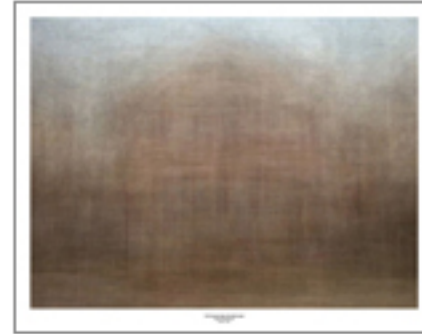
# Artists...



109 Homes for Sale,  
Seattle/Tacoma



117 Homes for Sale,  
Chicagoland



124 Homes for Sale,  
The 5 Boroughs



121 Homes for Sale,  
LA/Orange County



114 Homes for Sale,  
Dallas/Ft. Worth Metroplex



112 Homes for Sale,  
Miami-Dade County

Homes for Sale

Jason Salavon





The Class of 1988



The Class of 1967

**The Class of 1988**  
**The Class of 1967**

Jason Salavon





The 1960s



The 1970s



The 1980s



The 1990s

## Every Playboy Centerfold, The Decades

Jason Salavon



And web visualization is news...  
that's fit to print

# Casualties of War

FACES ANALYSIS THEIR STORIES

E-MAIL FEEDBACK

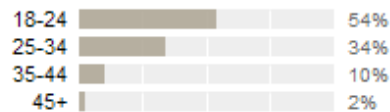
Use the slider below to investigate the demographics and military status of U.S. service members who died during the war in Iraq.

DEC. 19, 2004 — APRIL 21, 2007 (122 WEEKS)

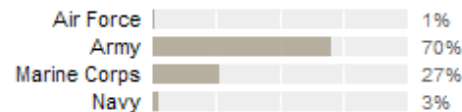
Show all | Last two months | Initial invasion | First invasion of Falluja | Second invasion of Falluja

1,988 deaths

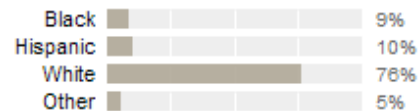
### Age



### Branch of Military



### Race

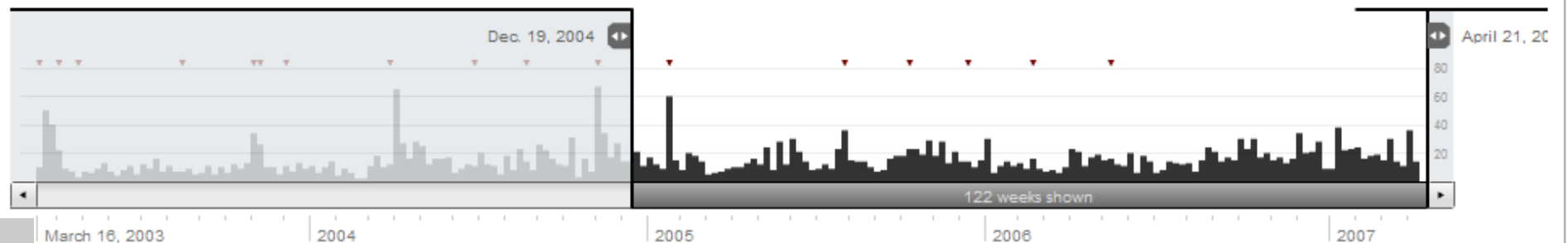
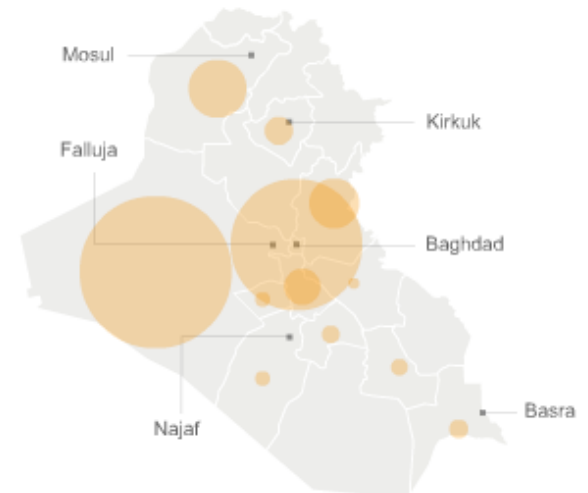


### Type of Duty



### Location of death

Circles sized according to percentage of deaths in each Iraqi province.





## Truck Sales Slip, Tripping Up Chrysler

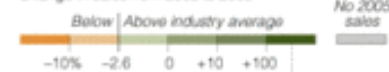
Over the past few years, Chrysler executives said they were following the lead of Toyota and Honda, focusing on vehicles that met the needs of their customers. But as American consumers turned away from large trucks and S.U.V.'s in 2006, Chrysler continued to churn out big vehicles, which are now sitting unsold at dealerships across the country.

### READING THE CHART

Boxes are scaled proportionally according to number of cars sold in 2006



### Change in sales from 2005 to 2006



Many of these vehicles were introduced in 2005.

SALES CHANGE TO 2006

**Chrysler Group** **-7.0%**  
Trucks/vans/S.U.V.'s 1.6 million  
Cars 0.5 million

Pickups, minivans and S.U.V.'s made up 76 percent of Chrysler's sales, which left it vulnerable when consumers shifted to cars.



**General Motors** **-8.7%**  
Trucks/vans/S.U.V.'s 2.5 million  
Cars 1.6 million

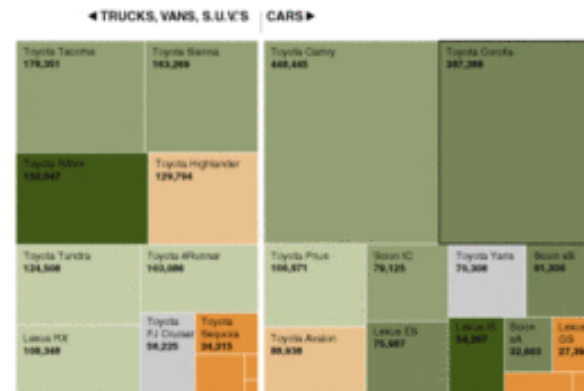
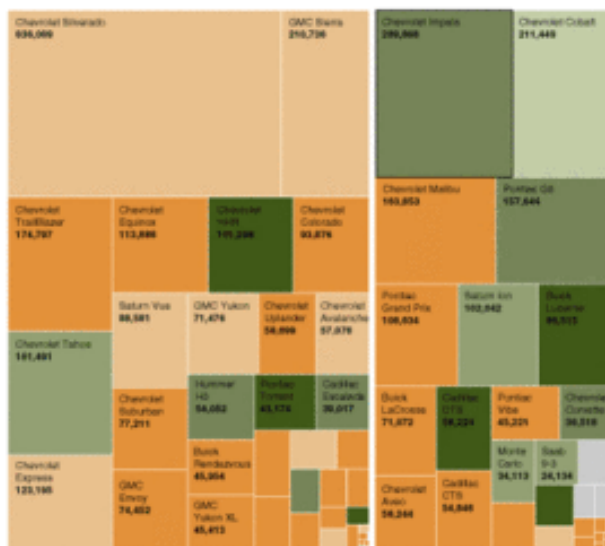
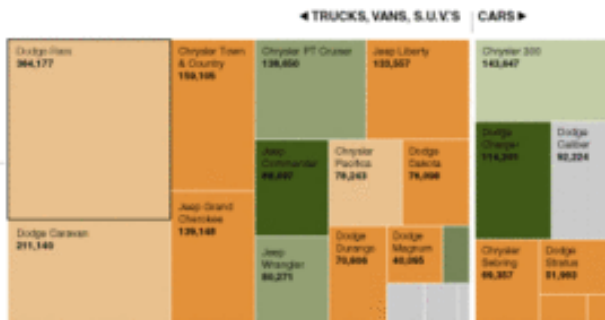
G.M. introduced new versions of its large S.U.V.'s in late 2005, hoping they would bolster sales. Instead, sales of big vehicles were hurt when gas prices climbed. One of the low standouts was the Chevrolet HHR, new in 2005.



The Chevrolet Impala, with or without flashing lights, did well in 2006, when a redesign came out.

**Ford** **-8.3%**  
Trucks/vans/S.U.V.'s 1.8 million  
Cars 1.1 million

Even the country's best-selling vehicles, the F-Series, slumped in 2006, with sales dropping 13 percent. One of Ford's bright spots was the new Fusion sedan, which made its debut in late 2005 and sold well in its first full year.



**Toyota** **+12.5%**  
Trucks/vans/S.U.V.'s 1.1 million  
Cars 1.5 million

Toyota rolled out a new version of the Camry, and once again it was the country's best-selling car.



Corolla sales also jumped, along with gas prices. Toyota could not escape the decline in sales of super-sized S.U.V.'s like its Sequoia.



**Honda** **+3.2%**  
Trucks/vans/S.U.V.'s 0.7 million  
Cars 0.8 million

Like the Corolla, the small Honda Civic did well. But the Accord stalled. Buyers, it seems, are waiting for the new version to be released this year.



**Nissan** **-5.3%**  
Trucks/vans/S.U.V.'s 0.5 million  
Cars 0.6 million



**BMW** **+2.1%**  
Trucks/vans/S.U.V.'s 0.1 million  
Cars 0.3 million

**Mercedes-Benz** **+10.3%**  
Trucks/vans/S.U.V.'s 0.1 million  
Cars 0.2 million

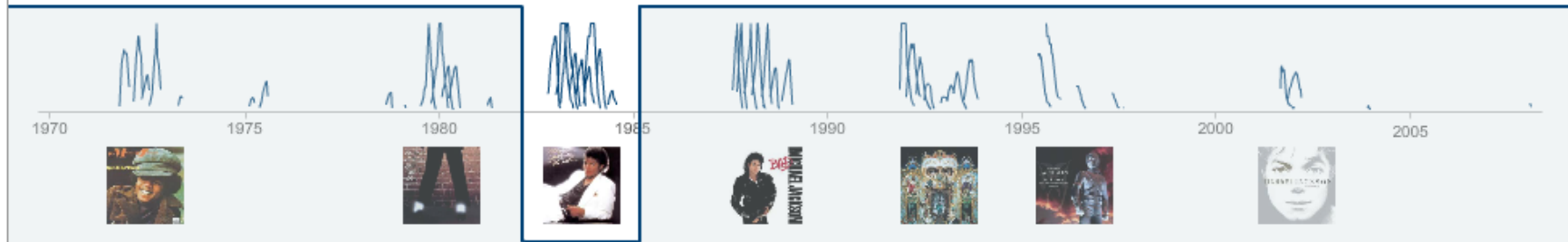
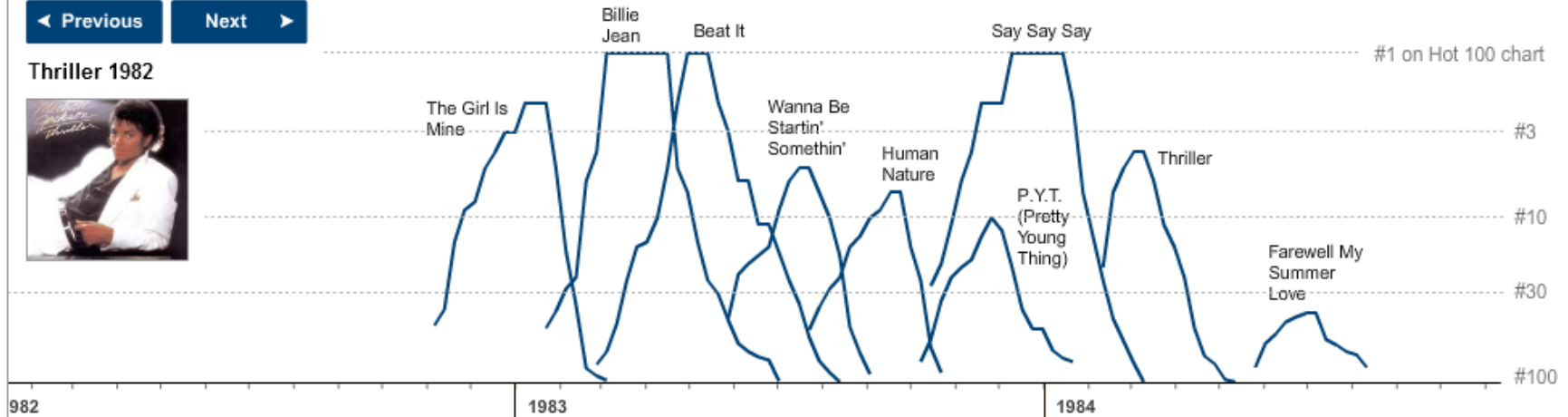
Mercedes-Benz, owned by DaimlerChrysler, had a comeback in 2006, thanks to a new version of its flagship S-Class. BMW sales were helped by a new version of its...

# Jackson's Billboard Rankings Over Time

A timeline of how Michael Jackson's songs performed on the [Billboard](#) Hot 100 chart.

Previous Next

## Thriller 1982

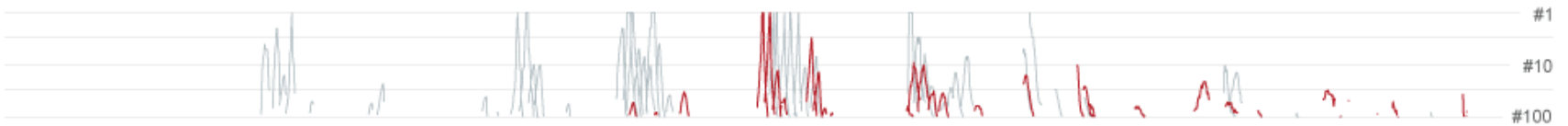


## How Michael Jackson's Billboard Rankings Compare With Other Notable Artists

### The Beatles



### U2



**We've gone from here...**



**We've gone from here...**



**To here.**



**We've gone from here...**



**To here.**

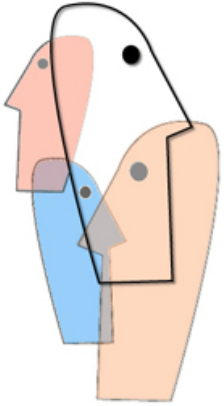


**The photojournalism of the 21<sup>st</sup> century?**

But what if you're not a data whiz?

But what if you're not a data whiz?





# Many Eyes

*[www.many-eyes.com](http://www.many-eyes.com)*

**A website where you can:**

- view and discuss visualizations
- view and discuss data
- create visualizations from existing data
- upload their own data to visualize



**admin**

**explore**

- visualizations
- data sets
- comments
- topic hubs
- my stuff

**participate**

- create visualization
- upload data set
- create topic hub

**learn more**

- quick start
- visualization types
- about Many Eyes

**Try Our Featured Visualizations**

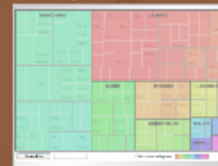
**Proto-/Indo-European Language Tree**



Zoom and explore.

by Belarius

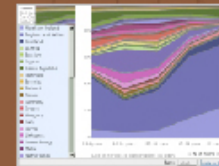
**1872 Canada Parliament Occupations**



A few more farmers than you'd see today

by shawnday

**Ireland: Where do people come from?**



For those born outside the Republic of Ireland, 2006.

by Karim

**Social Network Monthly Visitors (April 2007)**



Which is your social circle?

by Anonymous

**Featured Topic Hubs** (dive into a topic of interest, or create a hub of your own)



**Literature**  
Books, authors, poems.



**Irish Life**  
Aspects of Irish life.



**OECD Factbook**  
Official statistics.



**many eyes** beta

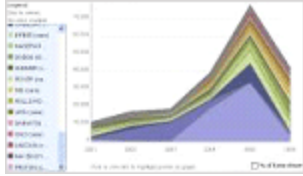
*for shared visualization and discovery*

check out the new community features on Many Eyes

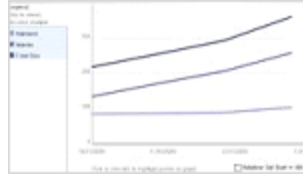


brought to you by **IBM**

Stack graph



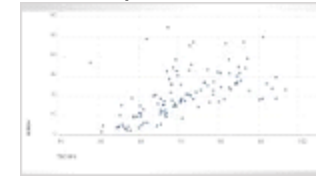
Line graph



Bar chart



Scatterplot



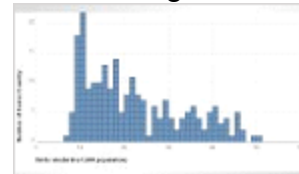
Country maps



World map



Block histogram



Bubble chart



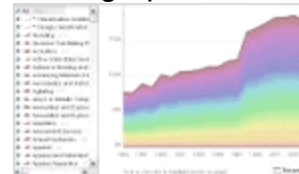
Pie chart



Treemap (2 types)



Stack graph for categories



Network diagram



Matrix chart



Tag cloud



Word Tree

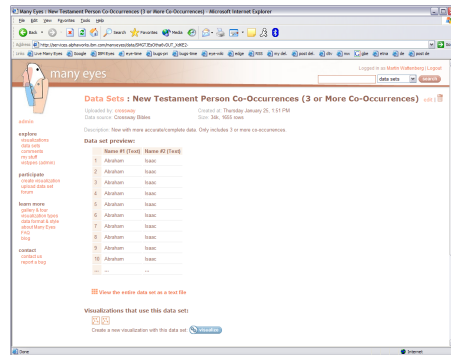


Phrase Net

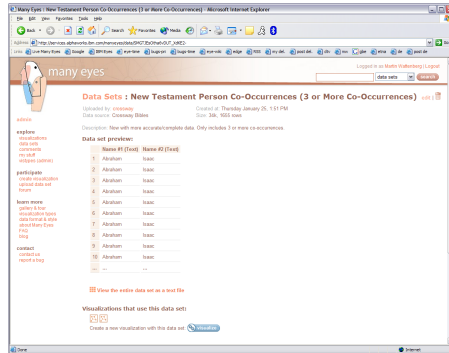


So what are people doing?

# 1 User "crossway" uploads co-occurrence data for biblical figures to Many Eyes



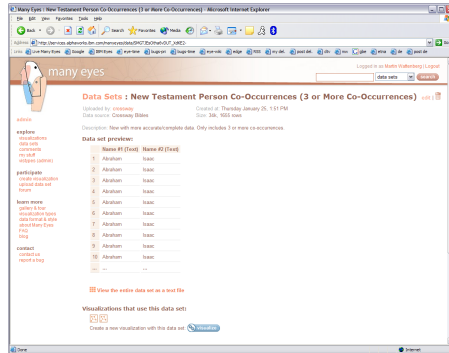
1 User "crossway" uploads co-occurrence data for biblical figures to Many Eyes



2 Crossway uses the network diagram tool to create a graph visualization



**1** User “crossway” uploads co-occurrence data for biblical figures to Many Eyes

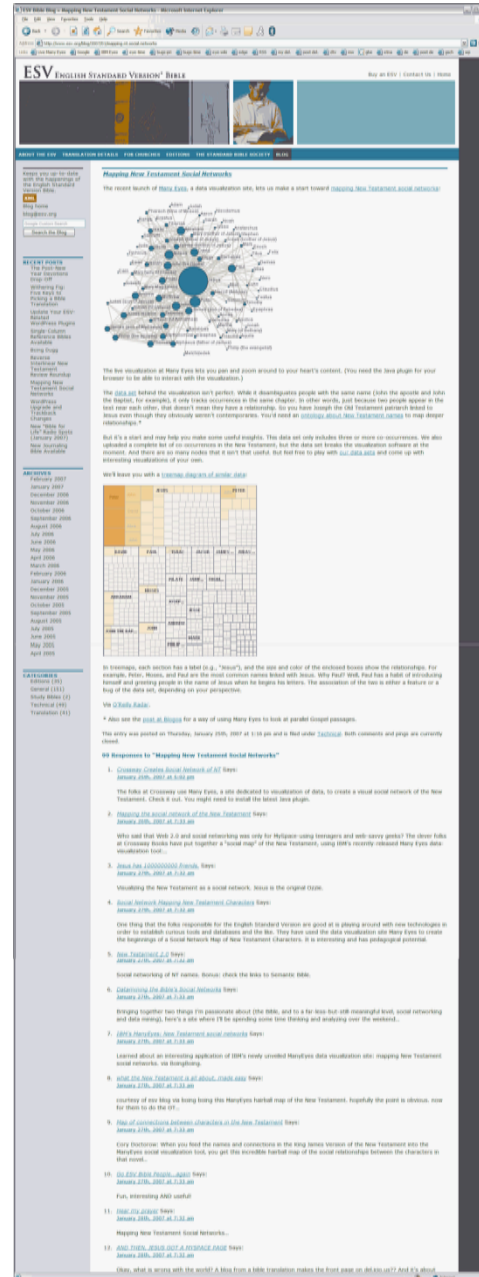


**2** Crossway uses the network diagram tool to create a graph visualization

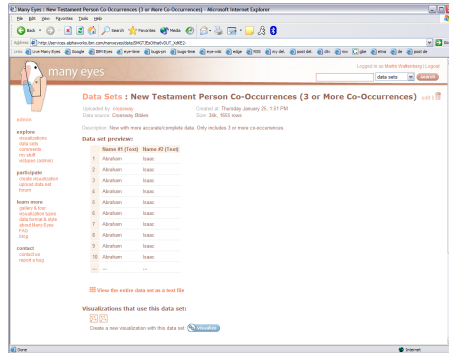


The long list of responses / trackbacks on the ESV blog entry: a discussion about the visualization and analysis.

**3** Crossway writes about the visualization on ESV blog



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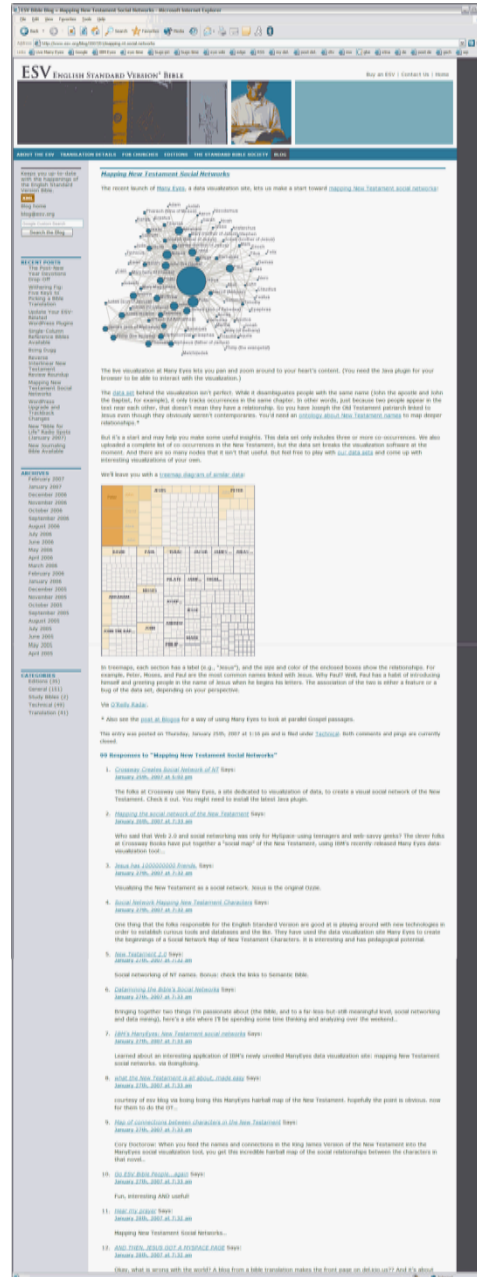


**2** Crossway uses the network diagram tool to create a graph visualization

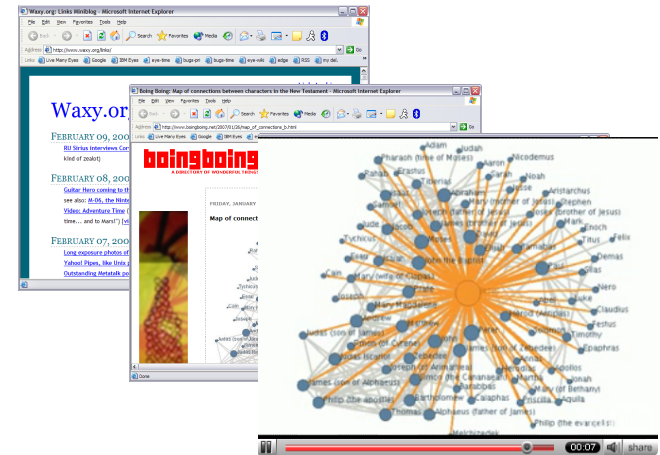


The long list of responses / trackbacks on the ESV blog entry: a discussion about the visualization and analysis.

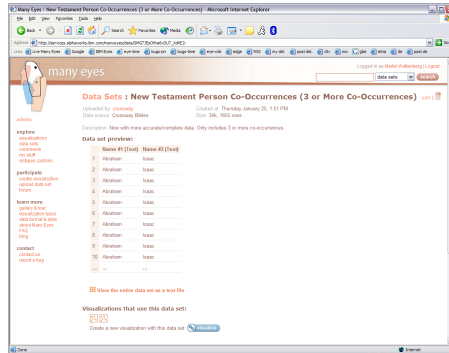
**3** Crossway writes about the visualization on ESV blog



**4** Many blogs (almost 100 by Google's count) write about crossway's blog entry.



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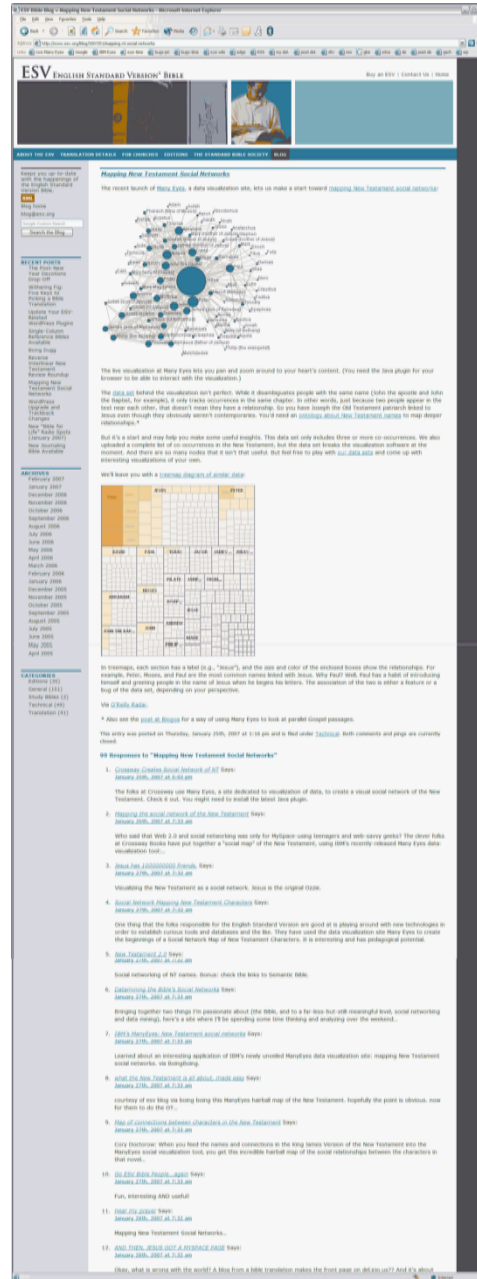


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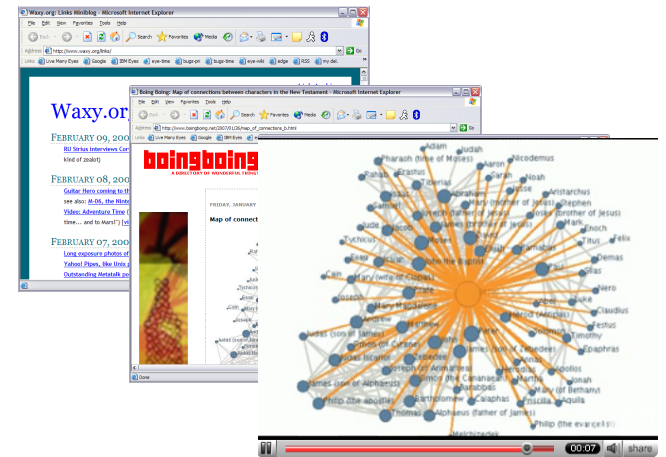


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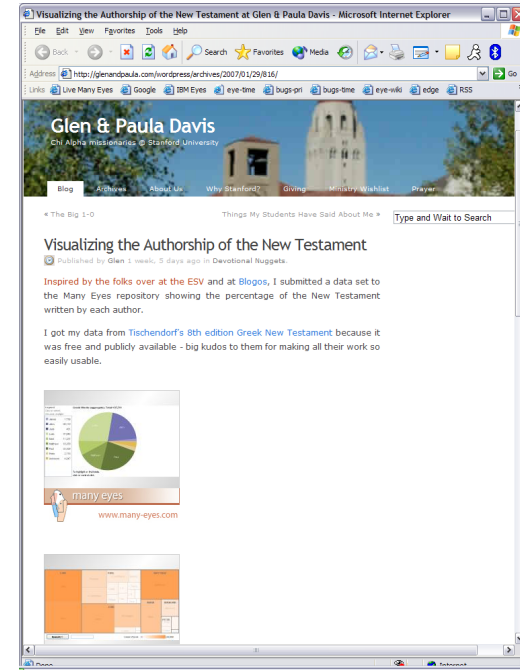
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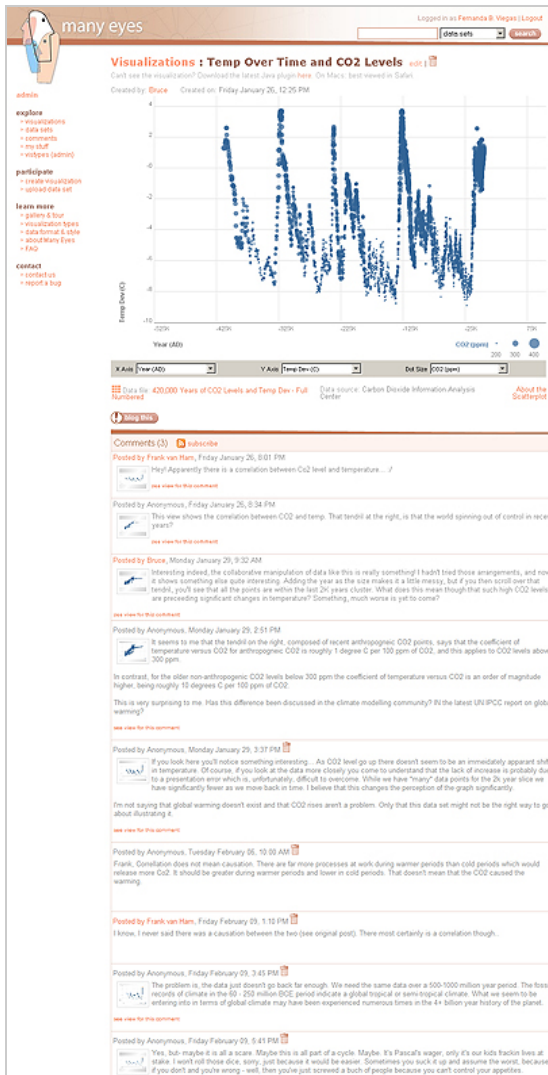


**5** One of these bloggers posts new data to Many Eyes—and, of course, blogs about the results.





# Analysis by non-experts

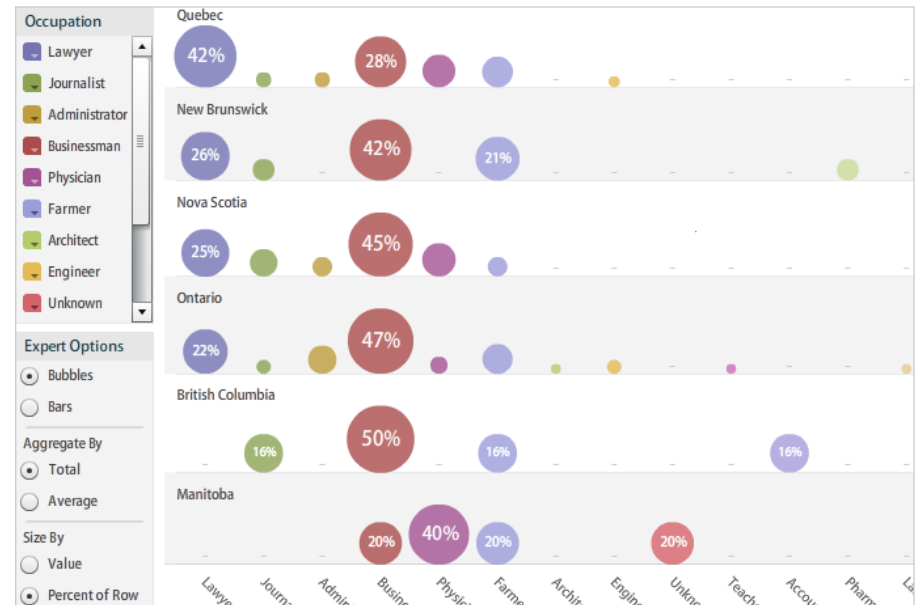
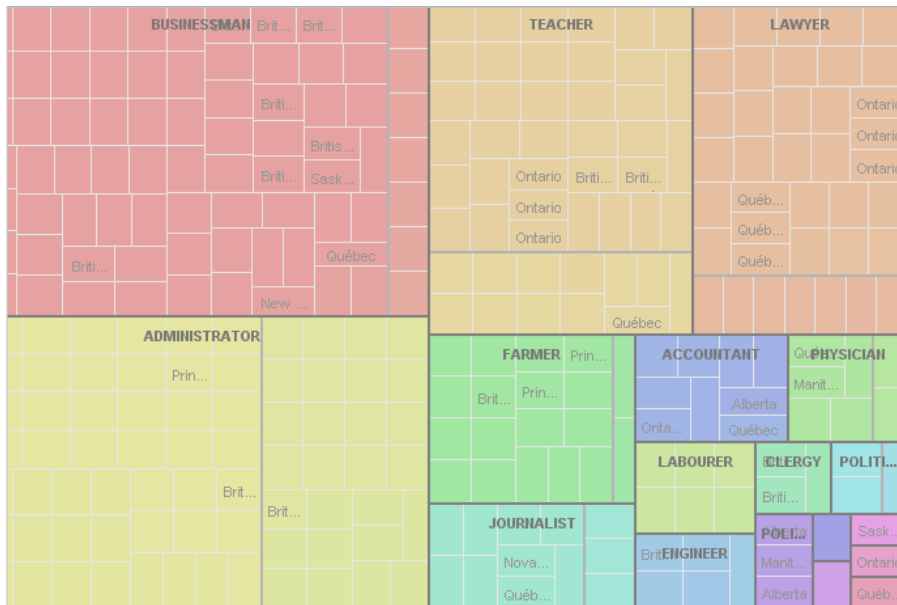


*"I hadn't tried those arrangements, and now it shows something else quite interesting."*

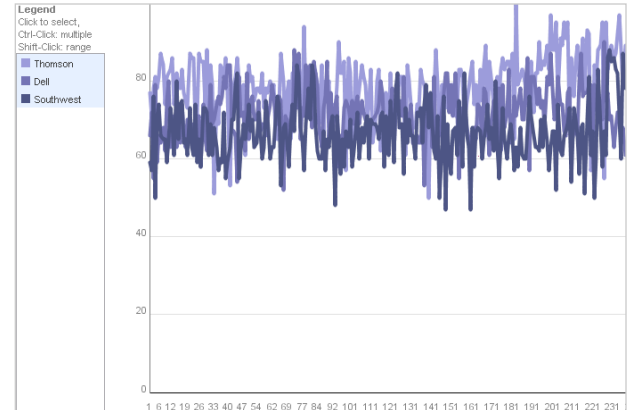
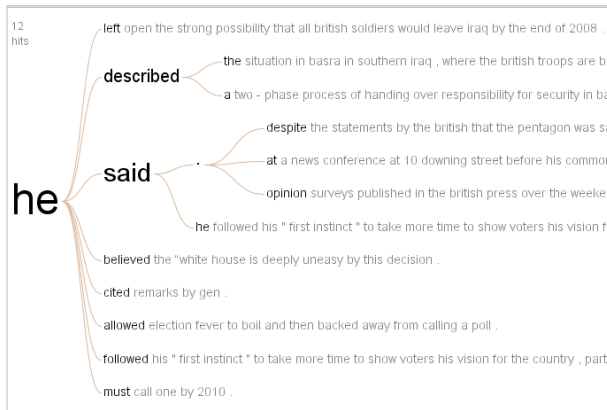
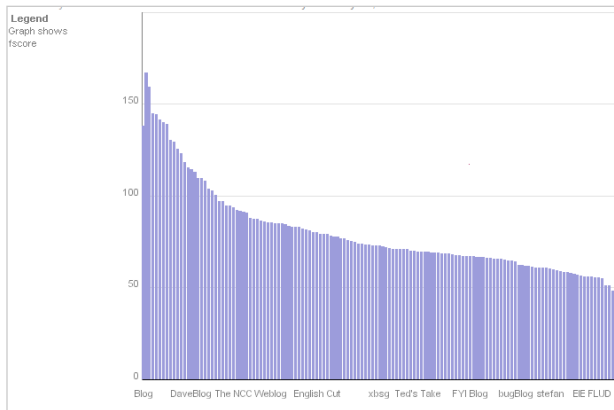
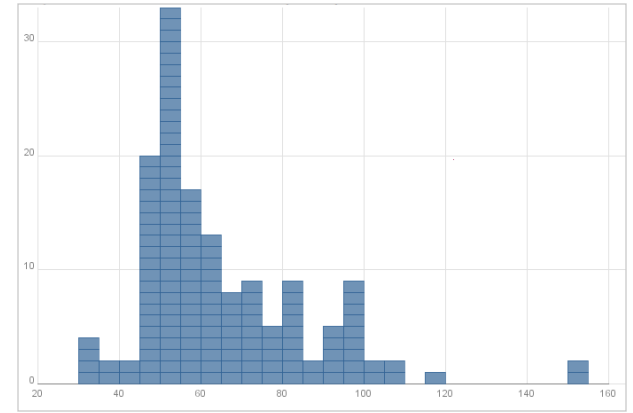
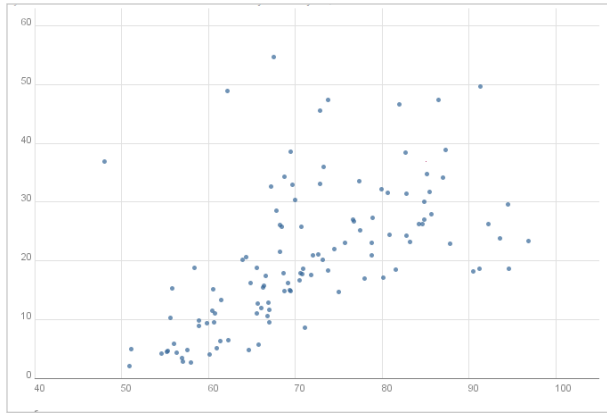
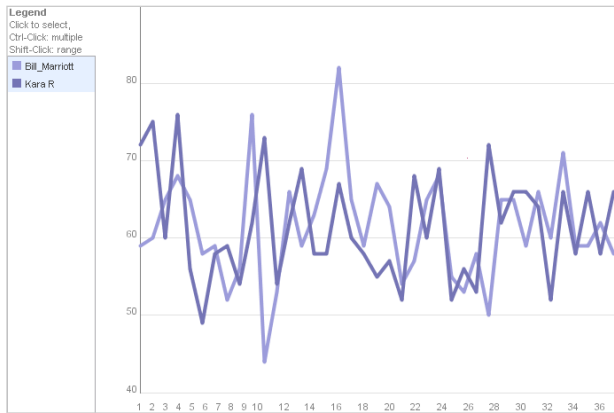
*"It seems to me that the tendrils on the right, composed of recent anthropogenic [sic] CO2 points, says that the coefficient of temperature versus CO2 for anthropogenic [sic] CO2 is roughly 1 degree C per 100 ppm of CO2, and this applies to CO2 levels above 300 ppm."*

*"I've since revised the script that created the pairs so the date nearest to a corresponding data point was used as opposed to simply the last data point."*

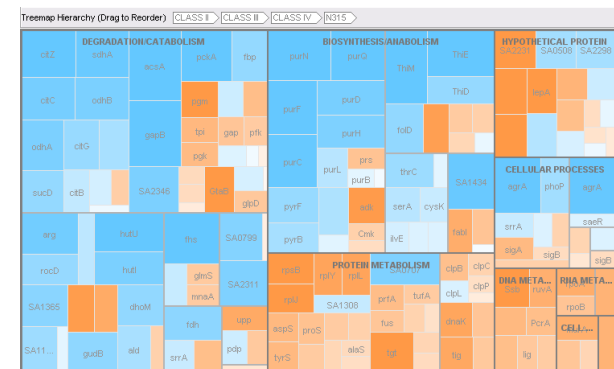
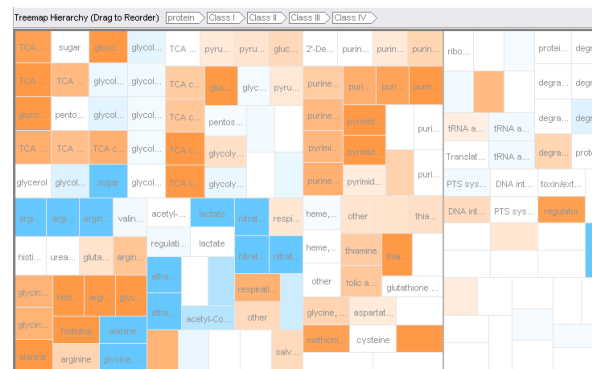
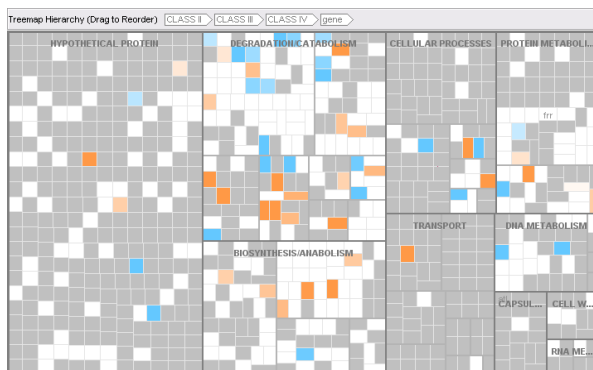
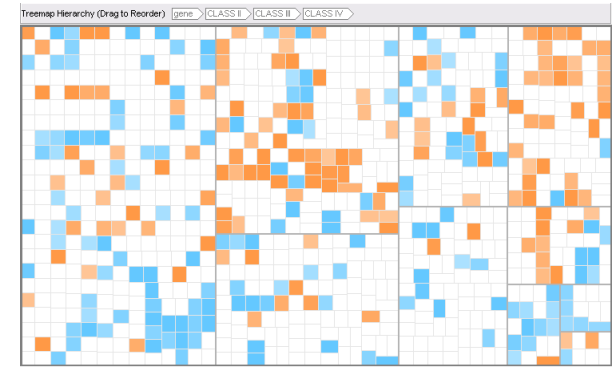
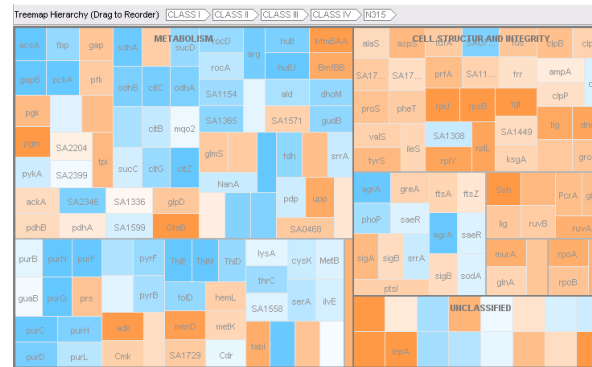
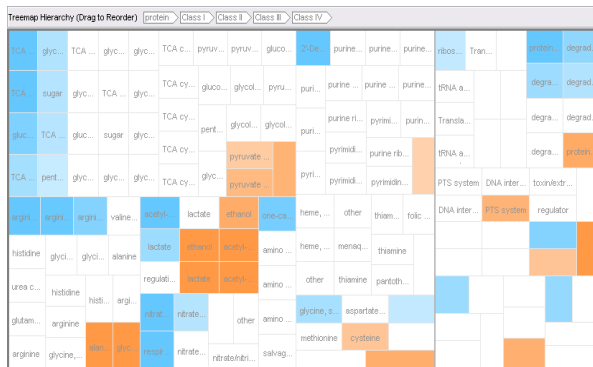
# Canadian Parliament



# Language formality



# Microarray data





## Visualizing Earmarks

Select Visualizations of 2005 OMB Earmark Data

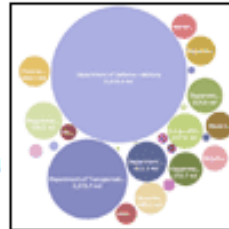
Visualizations created through [Many Eyes](#)

Download [entire data set](#) (Updated 6/12/2007)



### [Earmark Spending by State](#)

See which states get the most earmark money per capita.



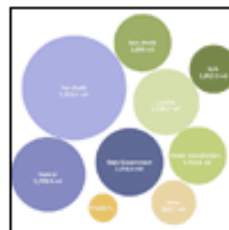
### [Earmarks by Agency](#)

See how much money Congress earmarked for projects by agency.



### [Earmark Description Tag Cloud](#)

See the words Congress most frequently uses to describe earmarked projects



### [Earmarks by Type of Organization](#)

See how much money Congress earmarked for companies, universities, nonprofits and state and local government.

\*\* Visualizations require [the latest Java plugin](#). On Macs: best viewed in Safari.

\*\*

## Corruption Lecture - alpha version

October 14, 2007 8:17 AM - [comments \(2\)](#)



As promised, here's the first lecture on corruption. It is an alpha version. I'm eager for comments and feedback. My first written feedback came from [Aaron Swartz](#), with whom I had conspired last winter about making this move. I'll post his comments and some replies later today. I've also set up a [page on the wiki](#) where I will collect significant versions of the argument. Summary and criticism there would be helpful.

**Sunlight LABS** a project of Sunlight Foundation

### Visualizing Earmarks

Selected Visualizations of 2005 OMB Earmark Data  
Visualizations created through [Many Eyes](#)  
Download [earmarks\\_data.set](#) (Updated 6/10/2007)

- Earmark Spending by State**  
See which states get the most earmark money per capita.
- Earmarks by Agency**  
See how much money Congress earmarked for projects by agency.
- Earmark Description Tag Cloud**  
See how many Congress most frequently uses to describe earmarked projects
- Earmarks by Type of Organization**  
See how much money Congress earmarked for companies, universities, nonprofits and state and local government.

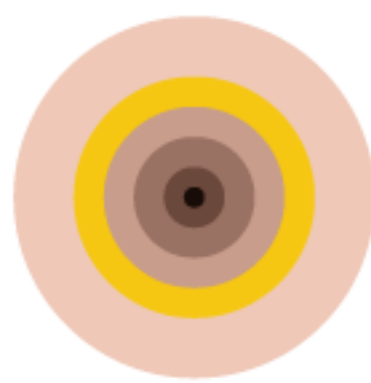
\*\* Visualizations require the [latest Many Eyes](#) plug-in. On Macs: best viewed in Safari.

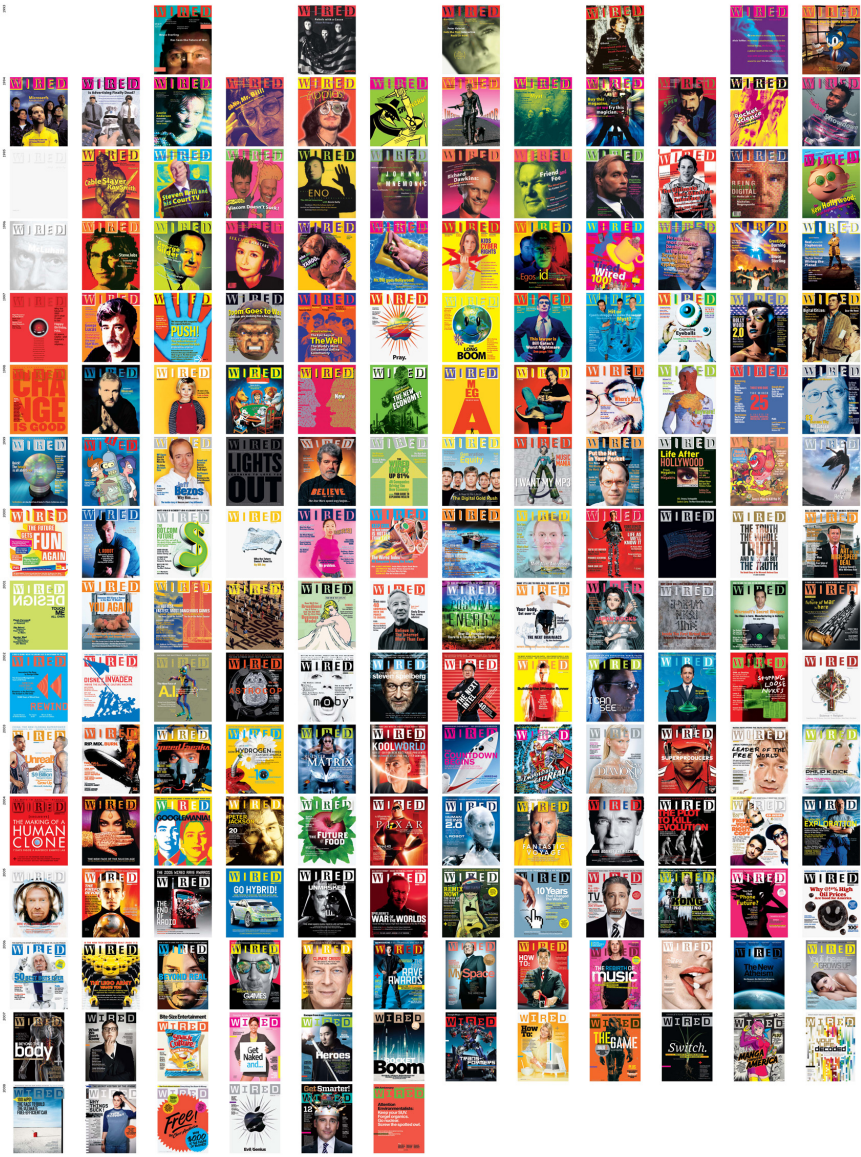


# Visualization and the arts









WIRED

10 YEARS OF WIRED, JANUARY 1993 - JUNE 2008



WIRED

15 YEARS OF WIRED'S BIRTHDAY  
This anniversary cover design is a collaboration between WIRED's art director, Patrick Steyer, and artist Martin Wittenberg. The design features 225 unique circles, each representing a year of WIRED's history. The circles are arranged in a grid that is mostly full, with the bottom row containing only 10 circles. The colors and patterns of the circles vary significantly, creating a vibrant and complex visual field.

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From innusa



From G a r r y



From werkunz1



From CiaoChessa



From Robin Dude



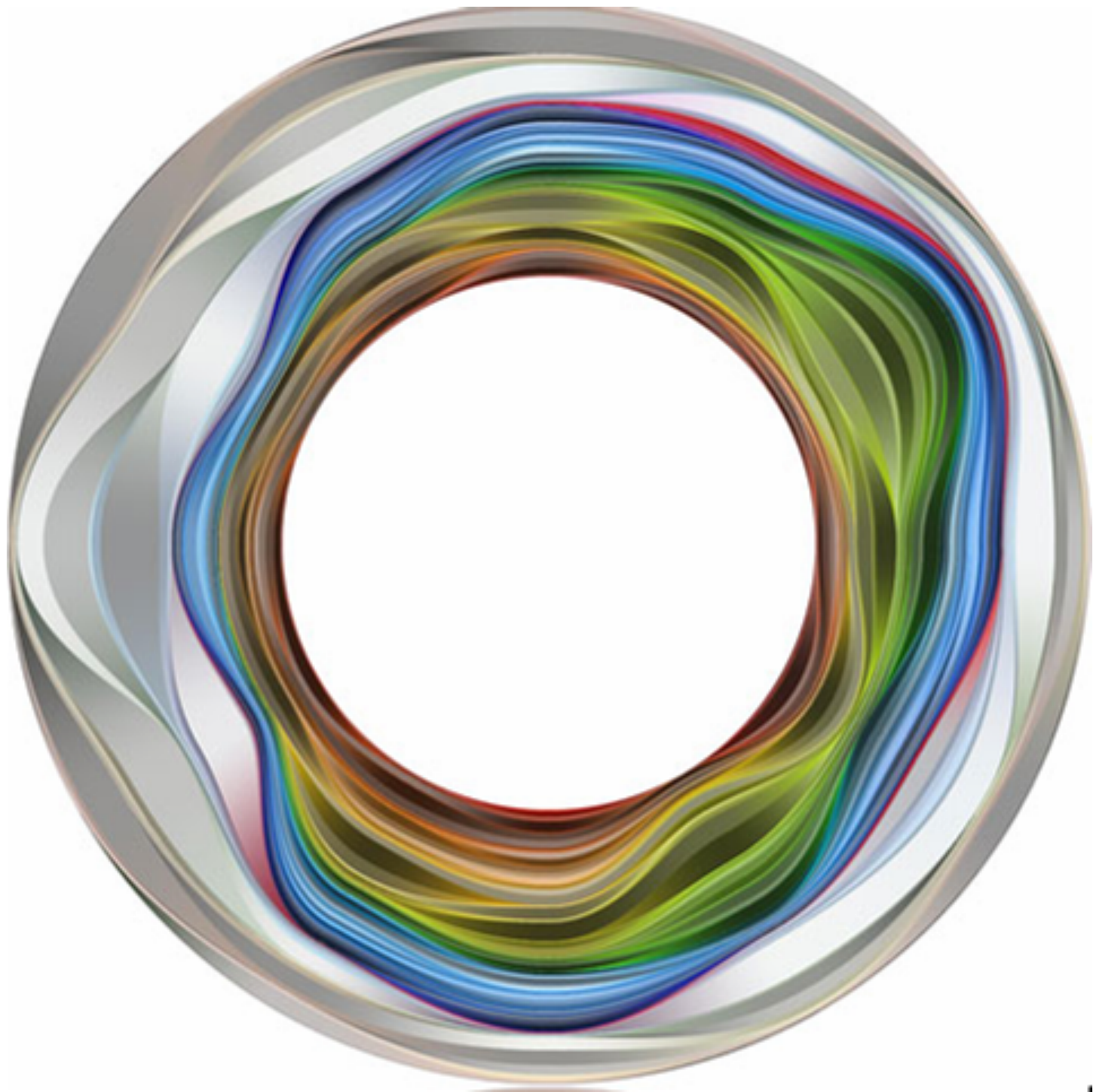
From werkunz1

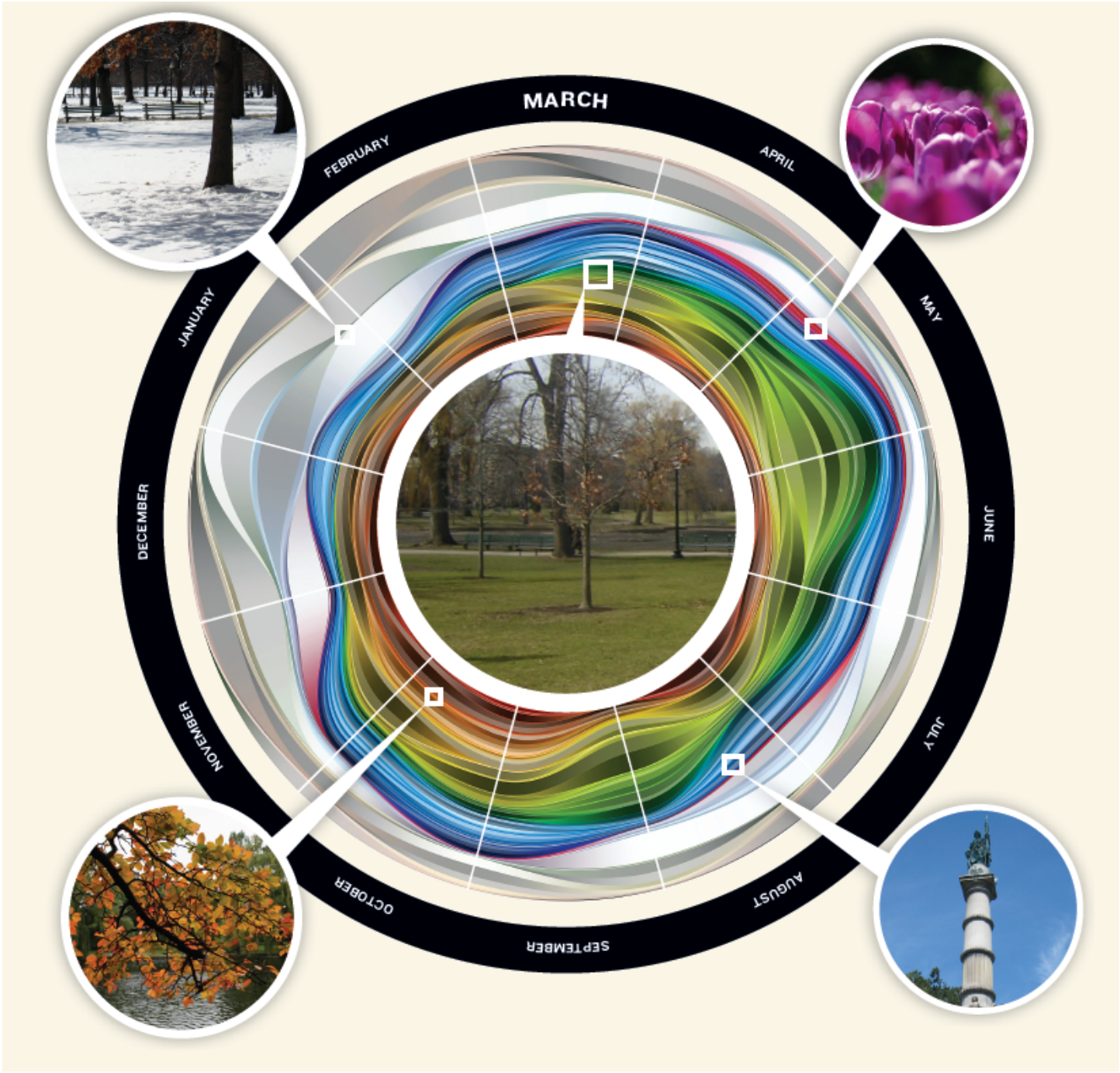


From diemieux



From Paco\_MUC





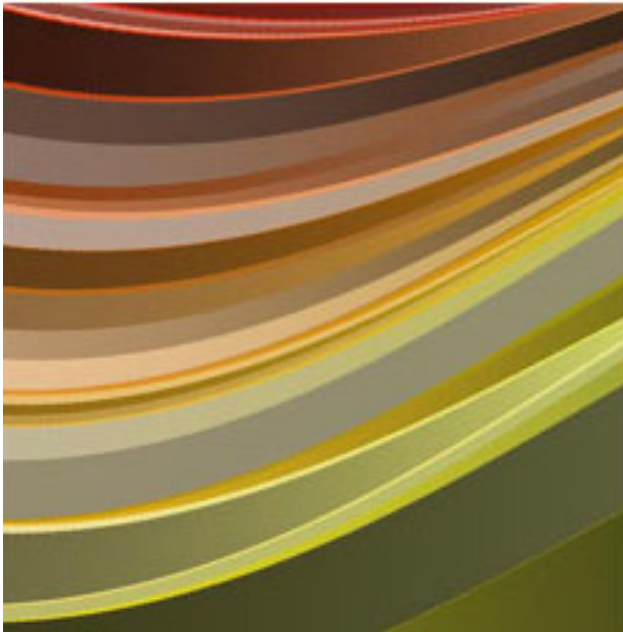
**WINTER**



**SPRING**



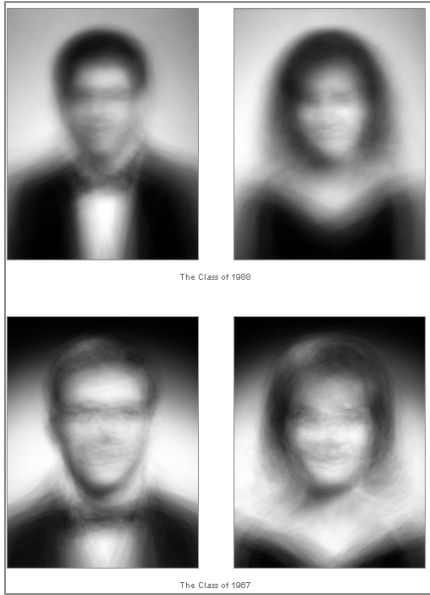
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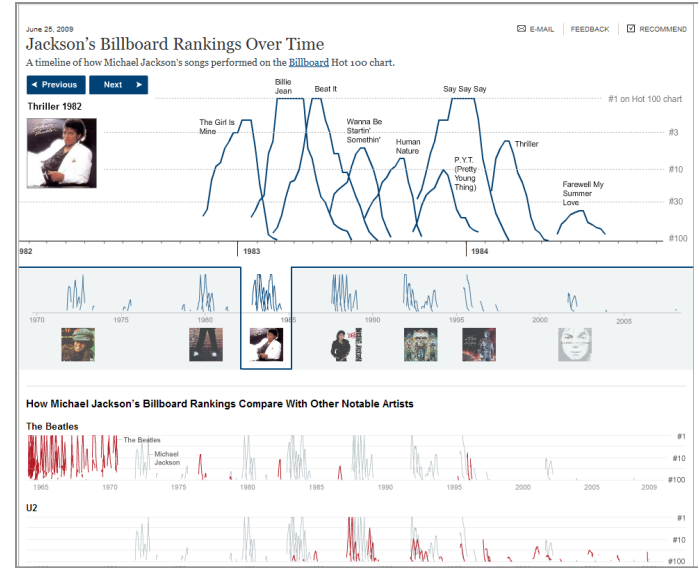
**SUMMER**



# Art



# Journalism



# Public Data

RECOVERY.CA.GOV  
CALIFORNIA ECONOMIC RECOVERY PORTAL

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### YOUR RECOVERY ACT DOLLARS PUT TO WORK IN CALIFORNIA

Recovery.ca.gov was designed to provide you – the taxpayer – a one-stop Web site to track how Recovery Act funding is coming into and being used in California. The federal Recovery Act is meant to boost our economy and create jobs by modernizing our nation's infrastructure, enhancing energy independence, expanding educational opportunities, preserving and improving affordable health care, and providing tax relief.

"We've launched recovery.ca.gov, so that taxpayers can log on and see exactly where and how the stimulus dollars are being spent."

Read Video Closed Captioning - Governor Arnold Schwarzenegger, 4/03/09

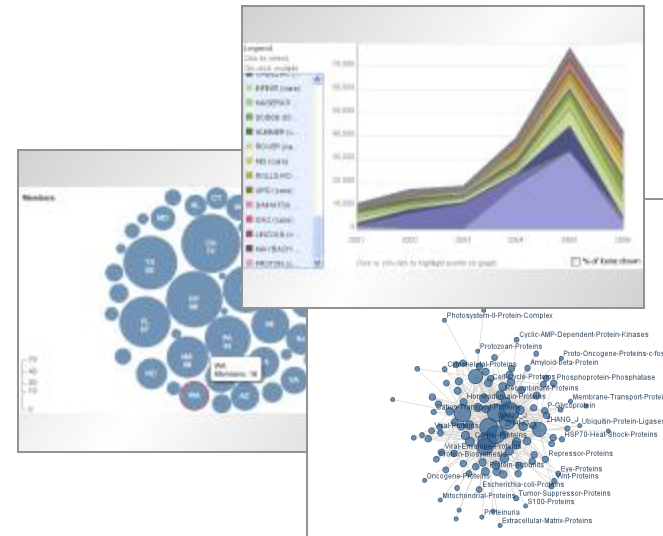
#### \$85 Billion in Benefit to California (est.)

	Billions
Health & Human Services	19.5
Education	11.8
Labor	5.2
Transportation	4.7

#### Featured News

- 07/01/09 - State CIO Issues Statement on Federal Guidelines for Broadband Recovery Act Funding
- 07/01/09 - California Recovery Task Force Issues Statement on Recovery Act Funding for Clean Energy Project in Bakersfield

# User participation





# Visualization as a medium



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