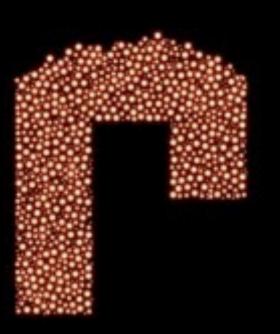
Data visualization

Rune Madsen

@runemadsen / runemadsen.com



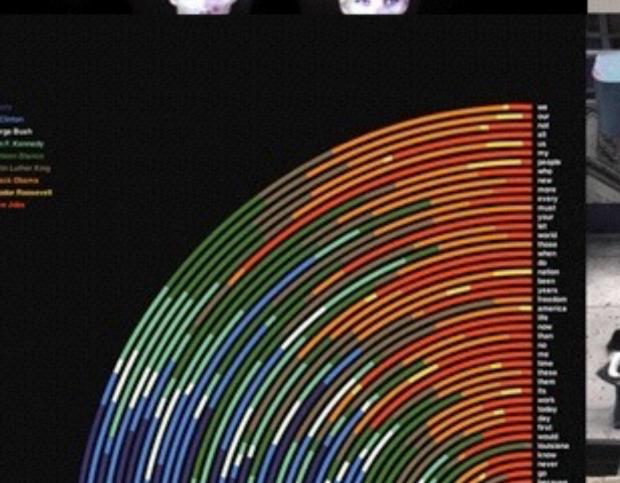


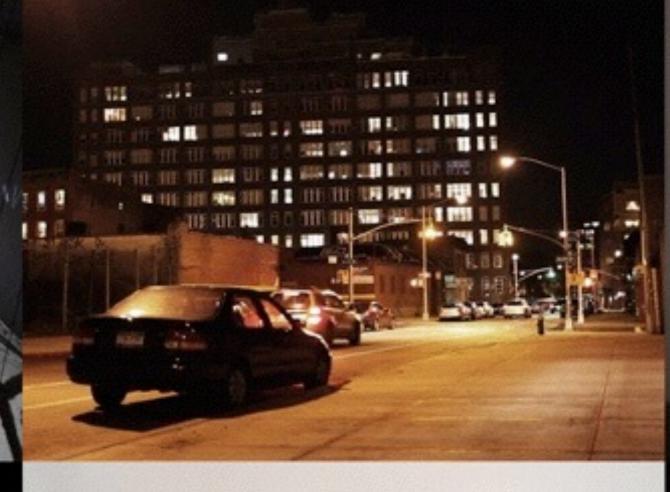


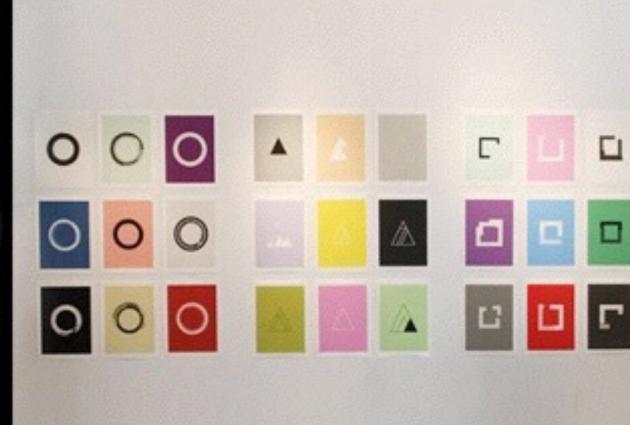












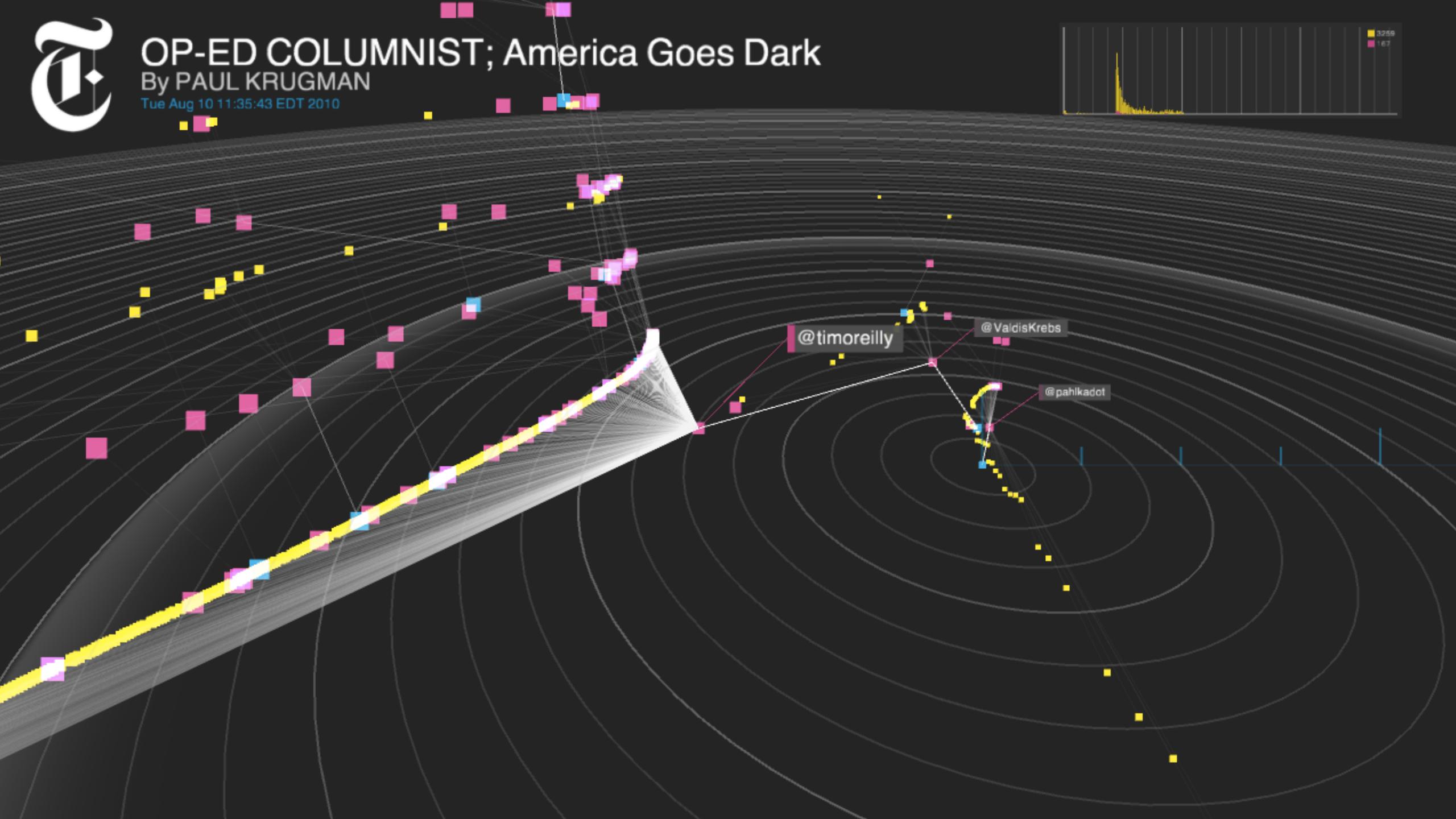


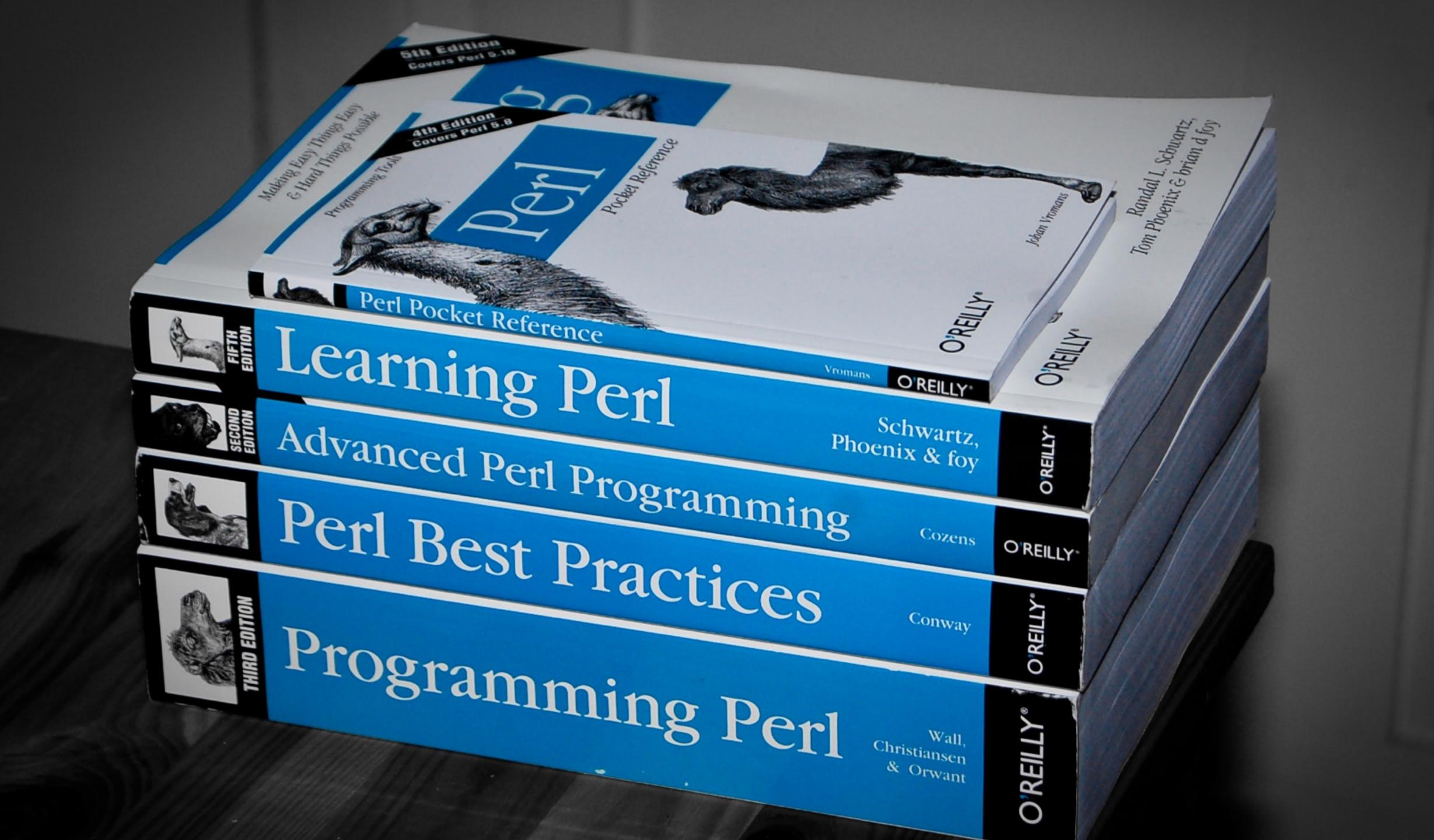






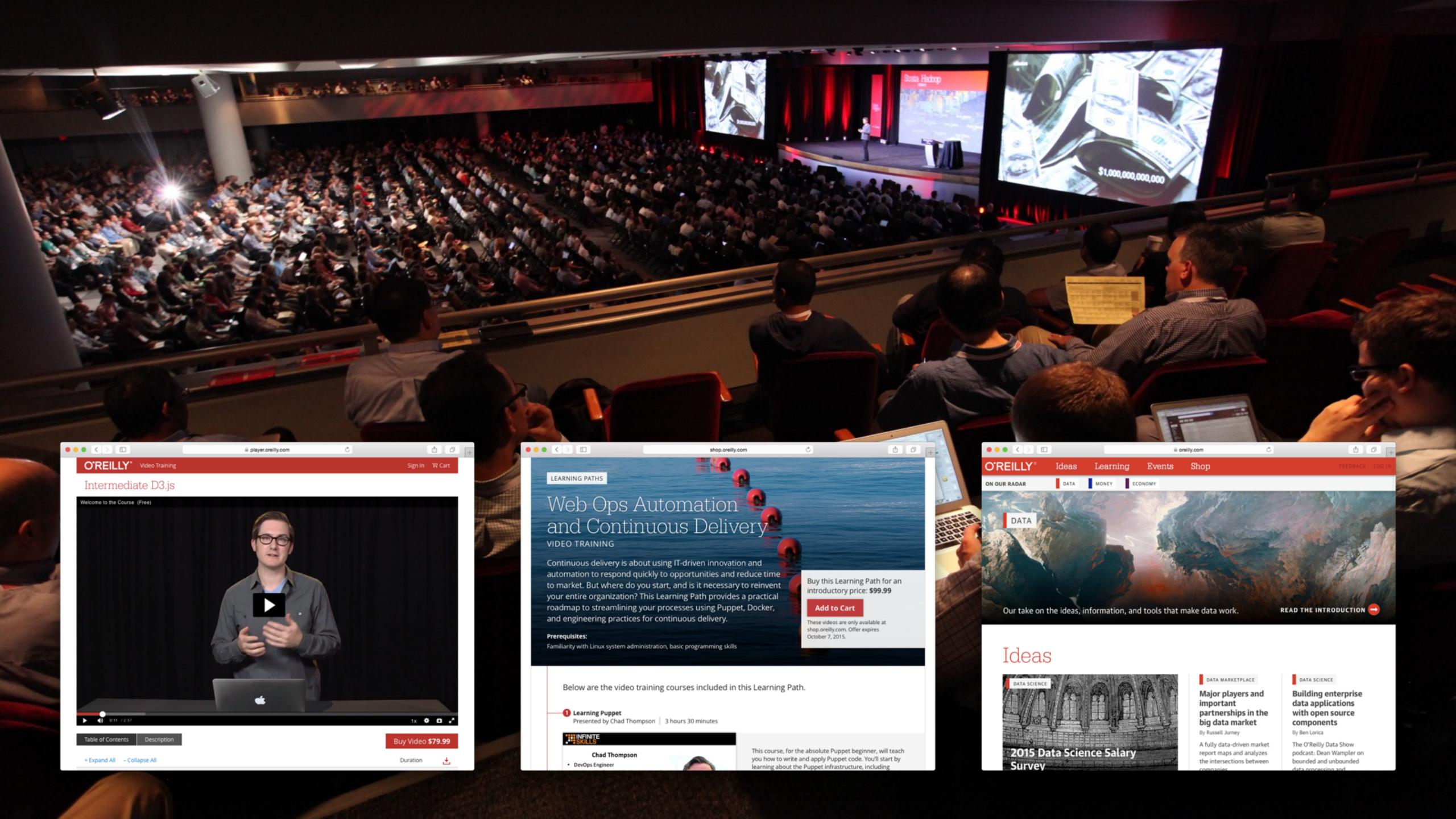


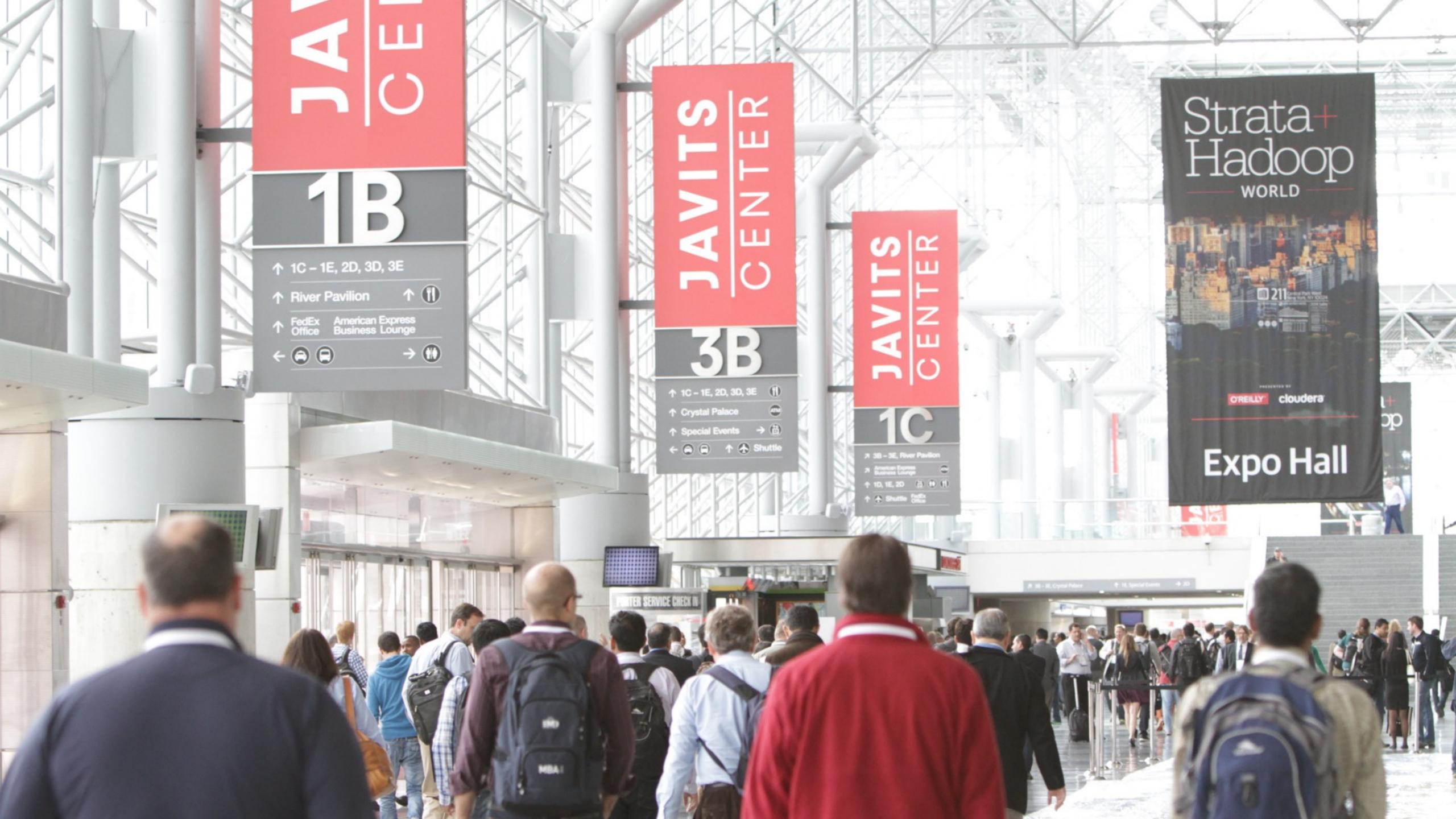




O'REILLY®

ORELLY

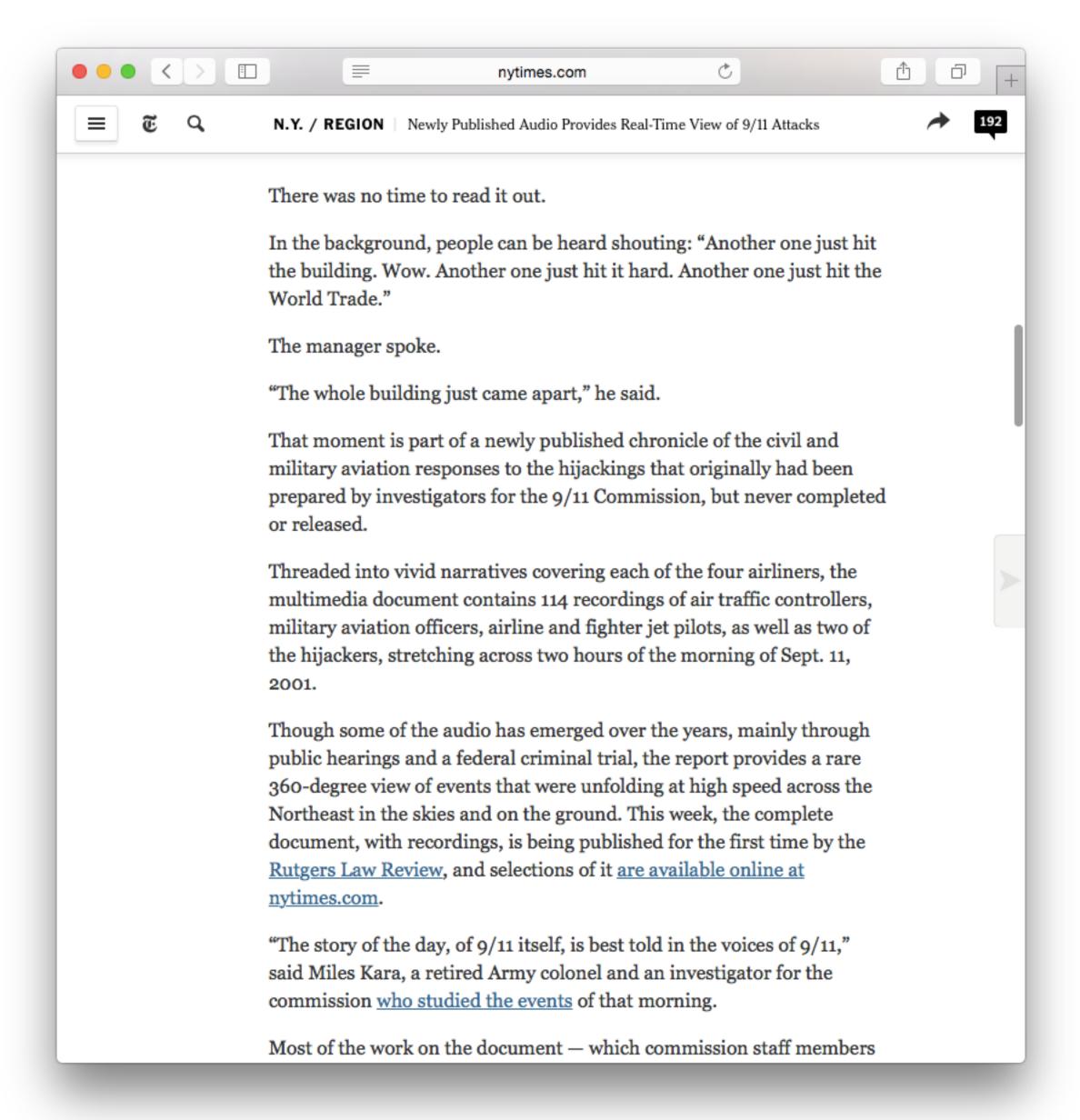


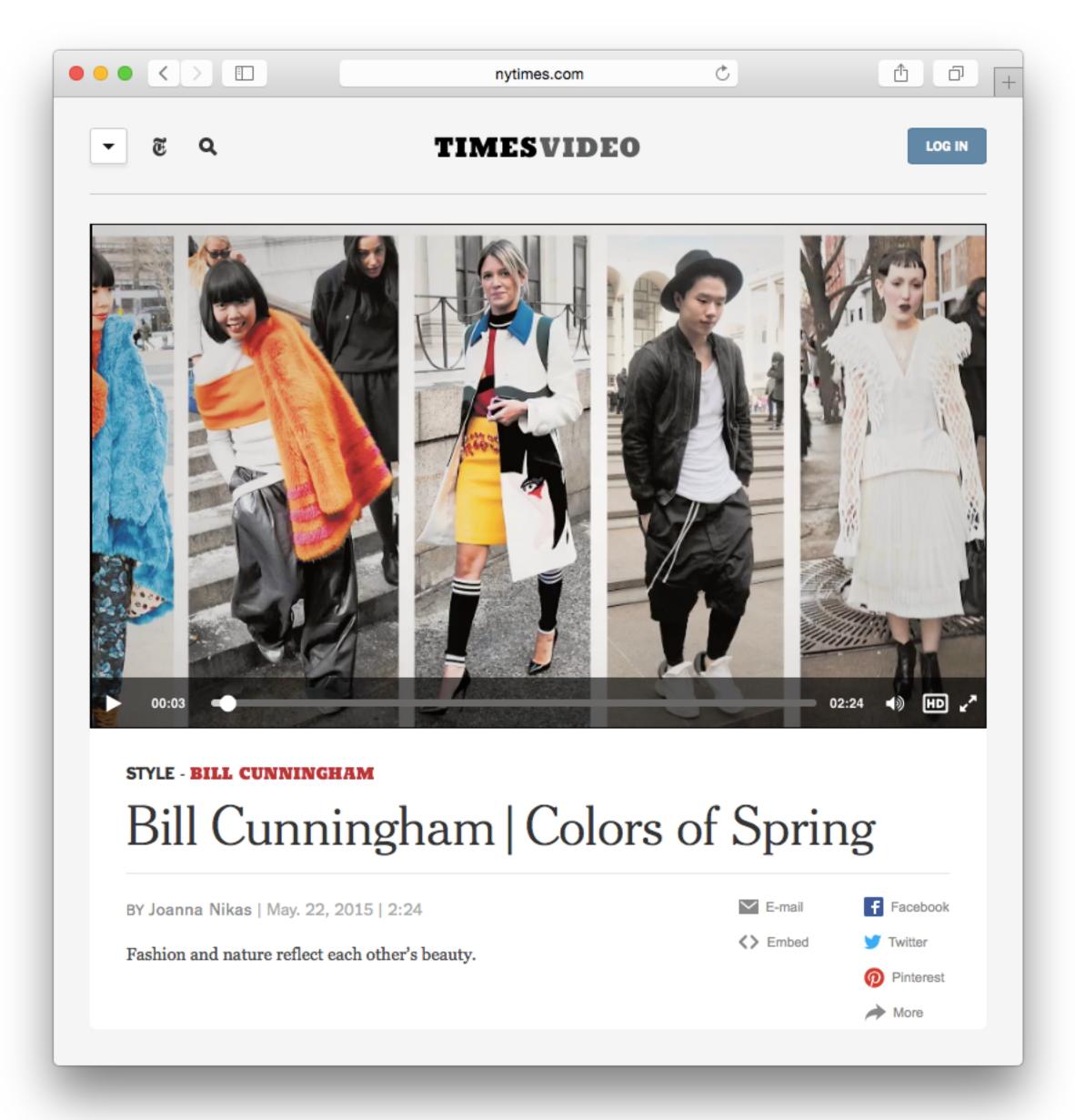


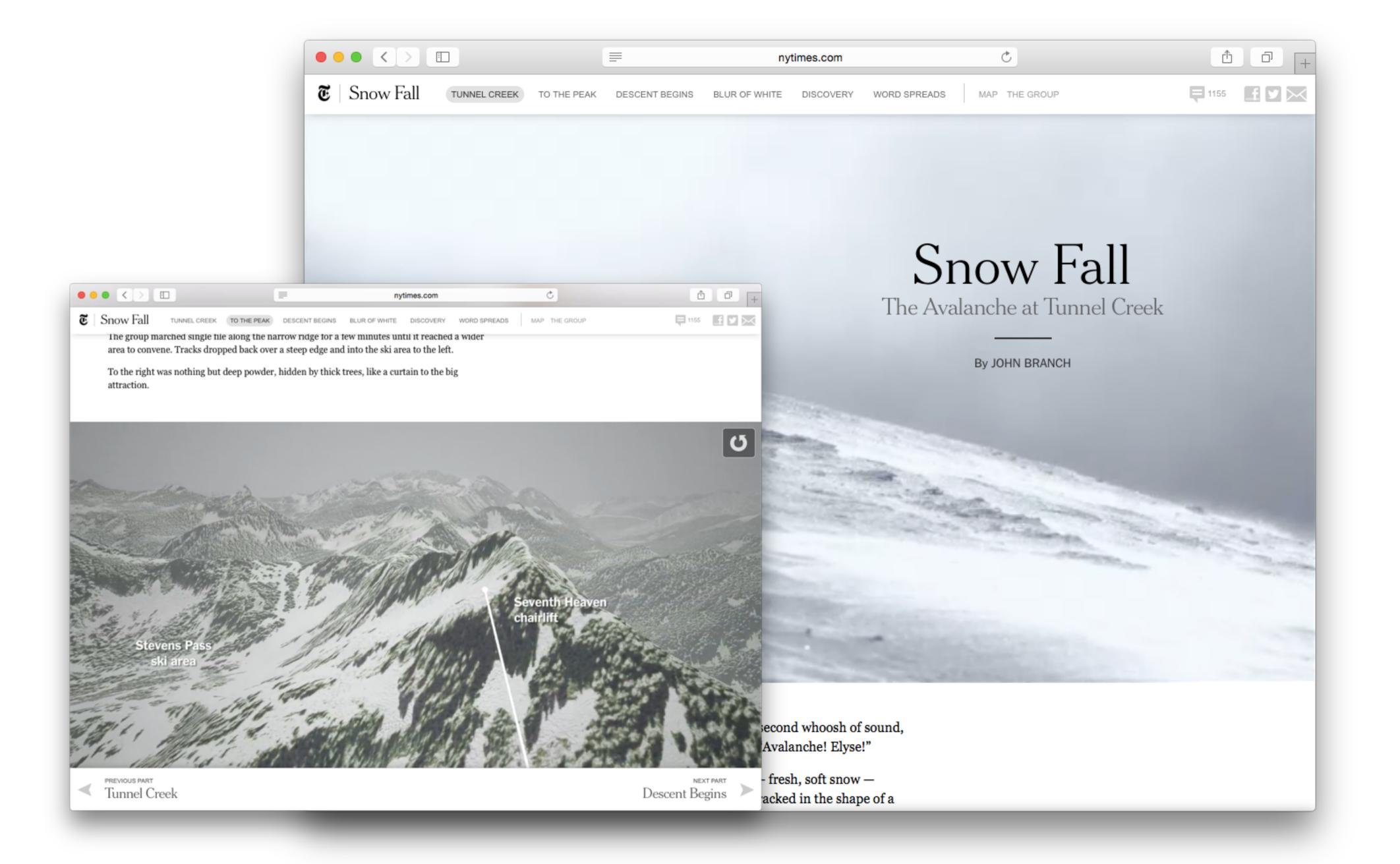


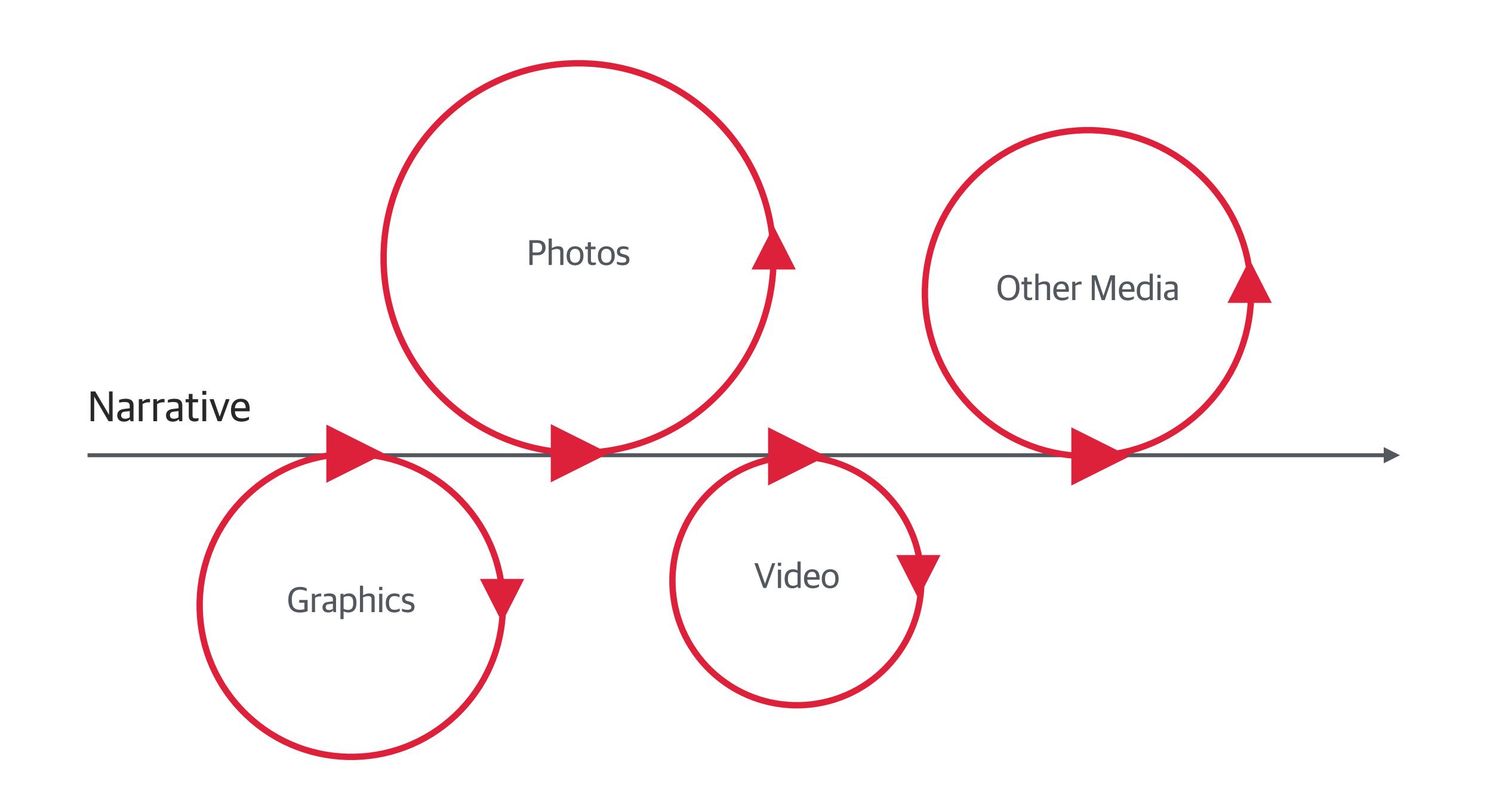


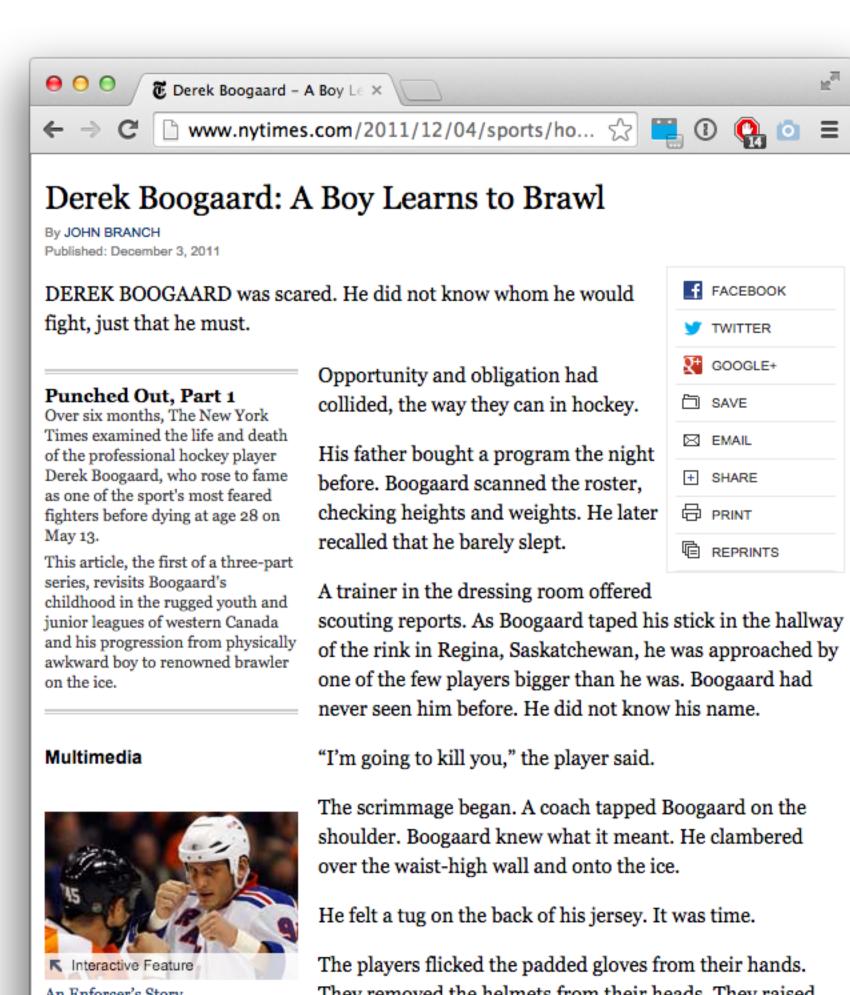
Digital Narratives







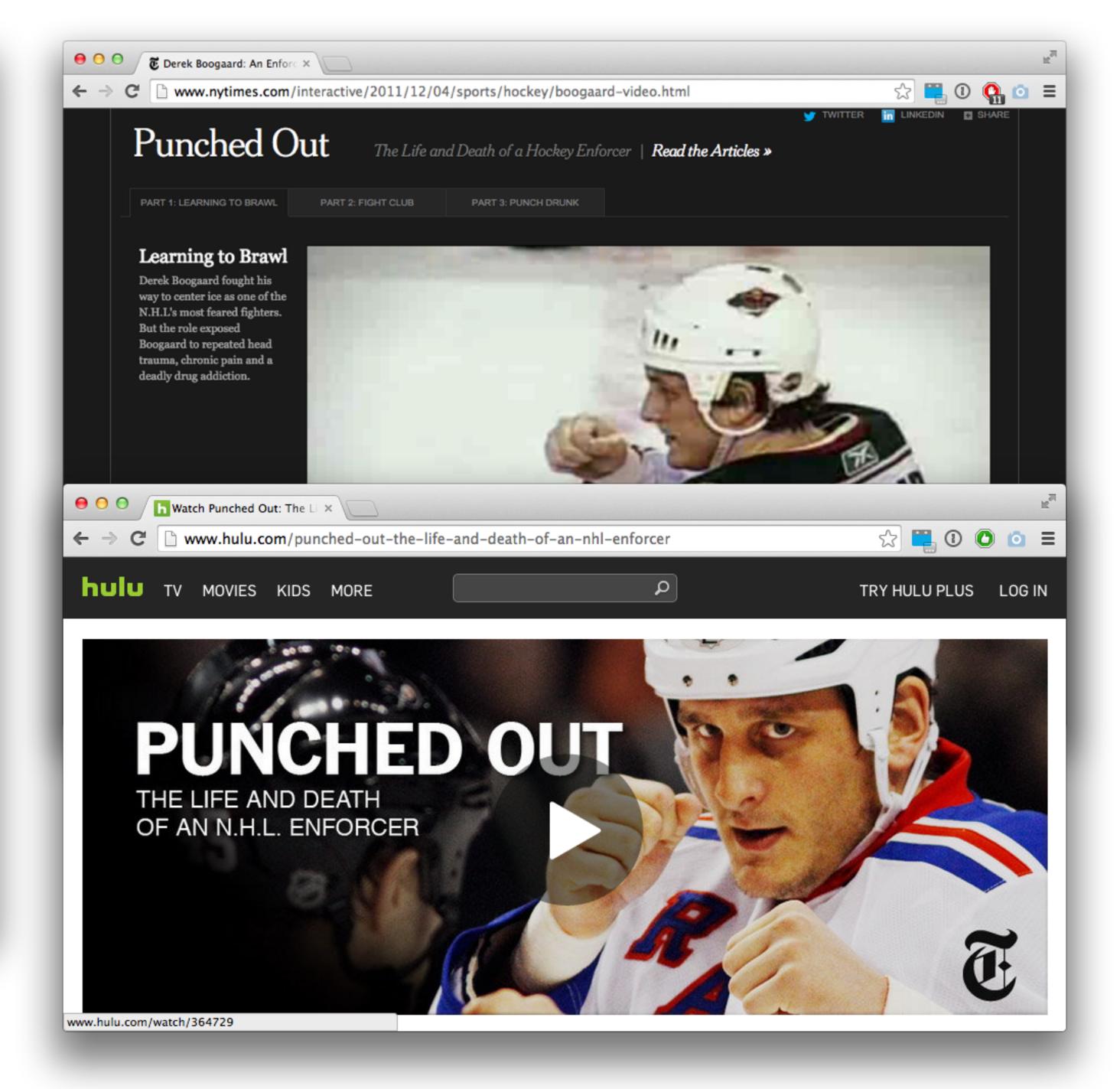




An Enforcer's Story

They removed the helmets from their heads. They raised their fists and circled each other. They knew the choreography that precedes the violence.

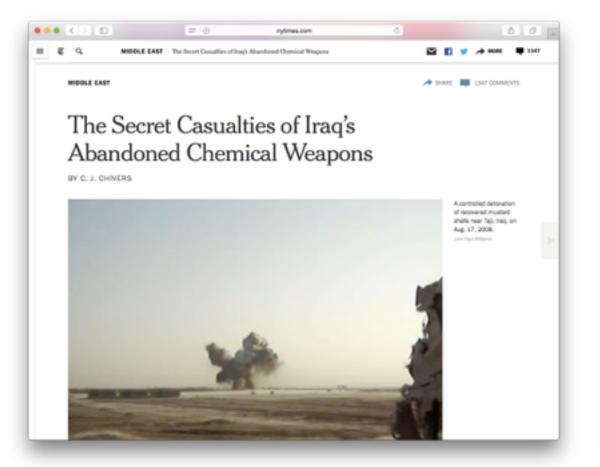
Boogaard took a swing with his long right arm. His fist smacked the opponent's face and broke his nose. Coaches and scouts laughed as they congratulated Boogaard.

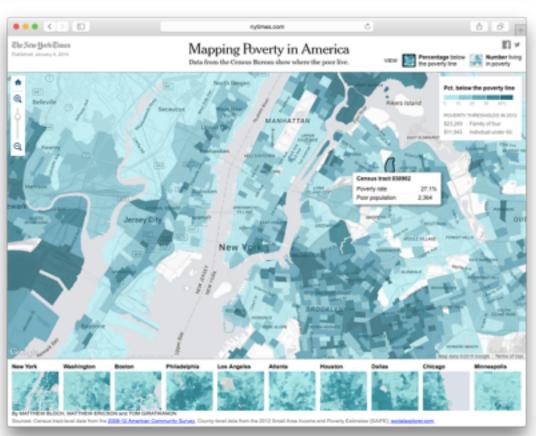


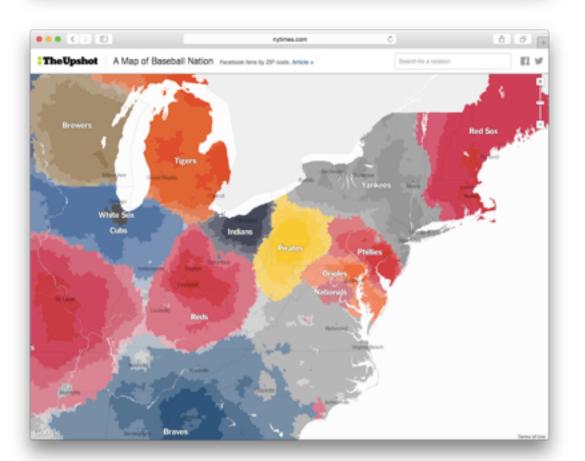


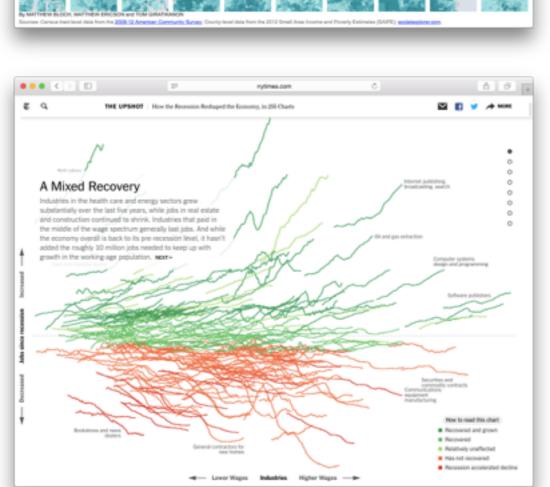
HOW THE ARCH IS BEING BUILT (0.58)

00+

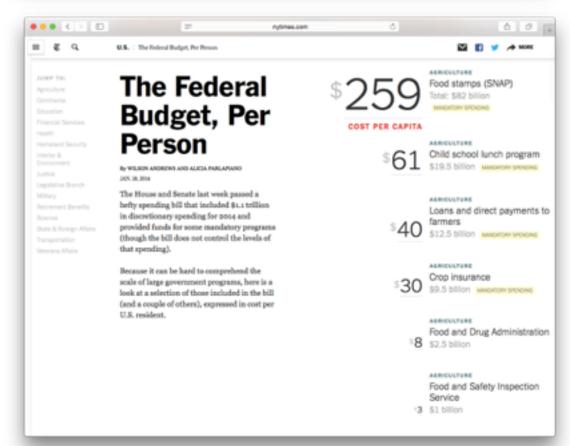








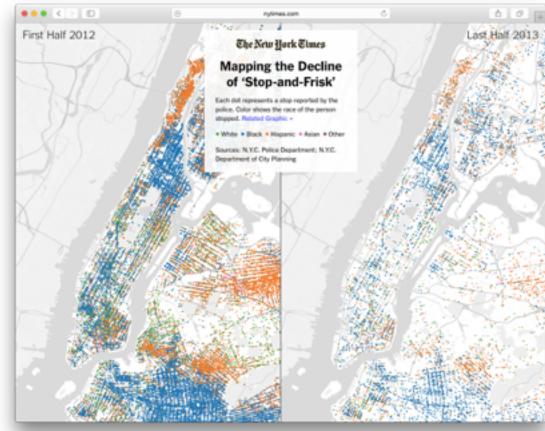
















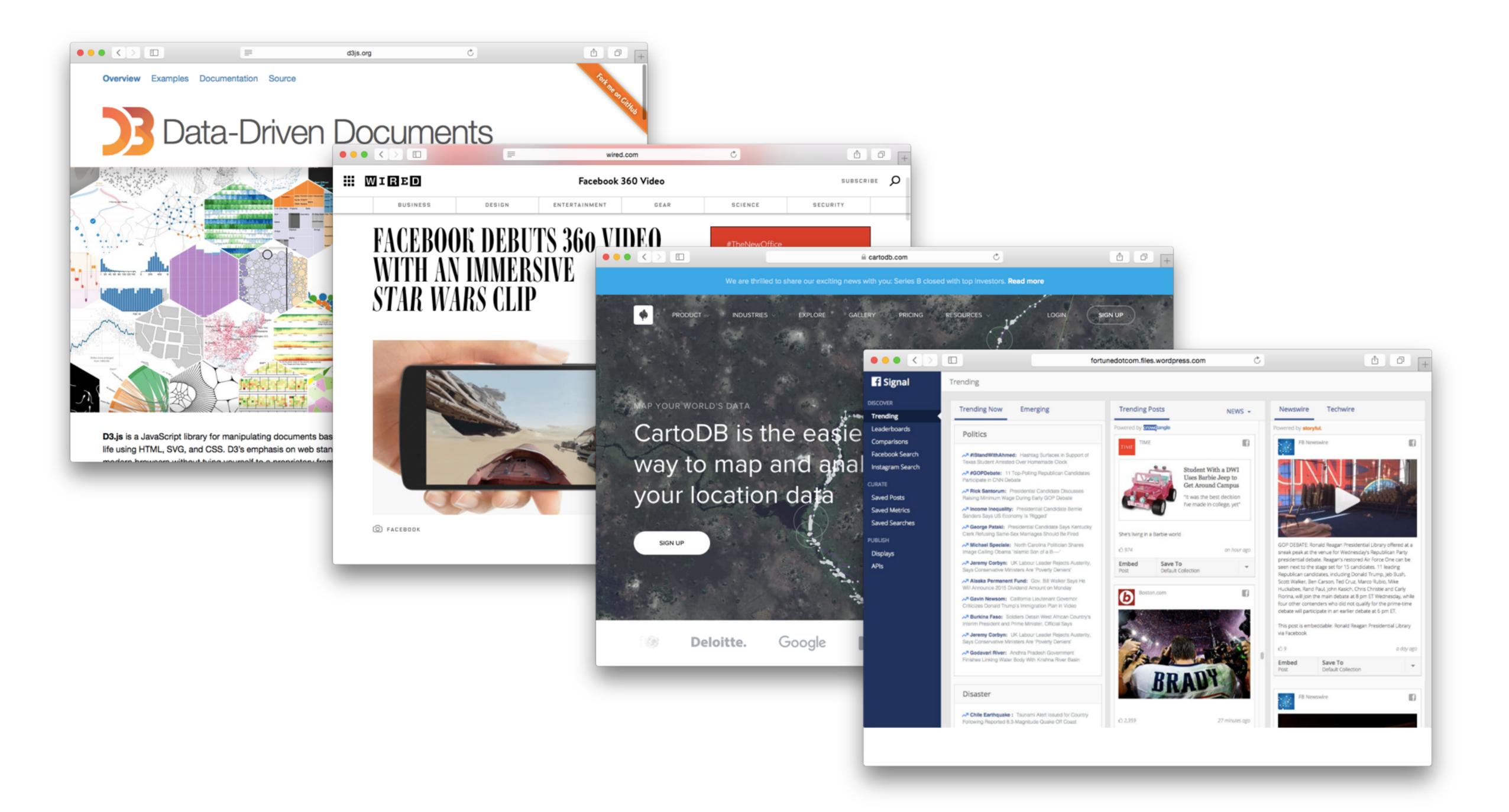


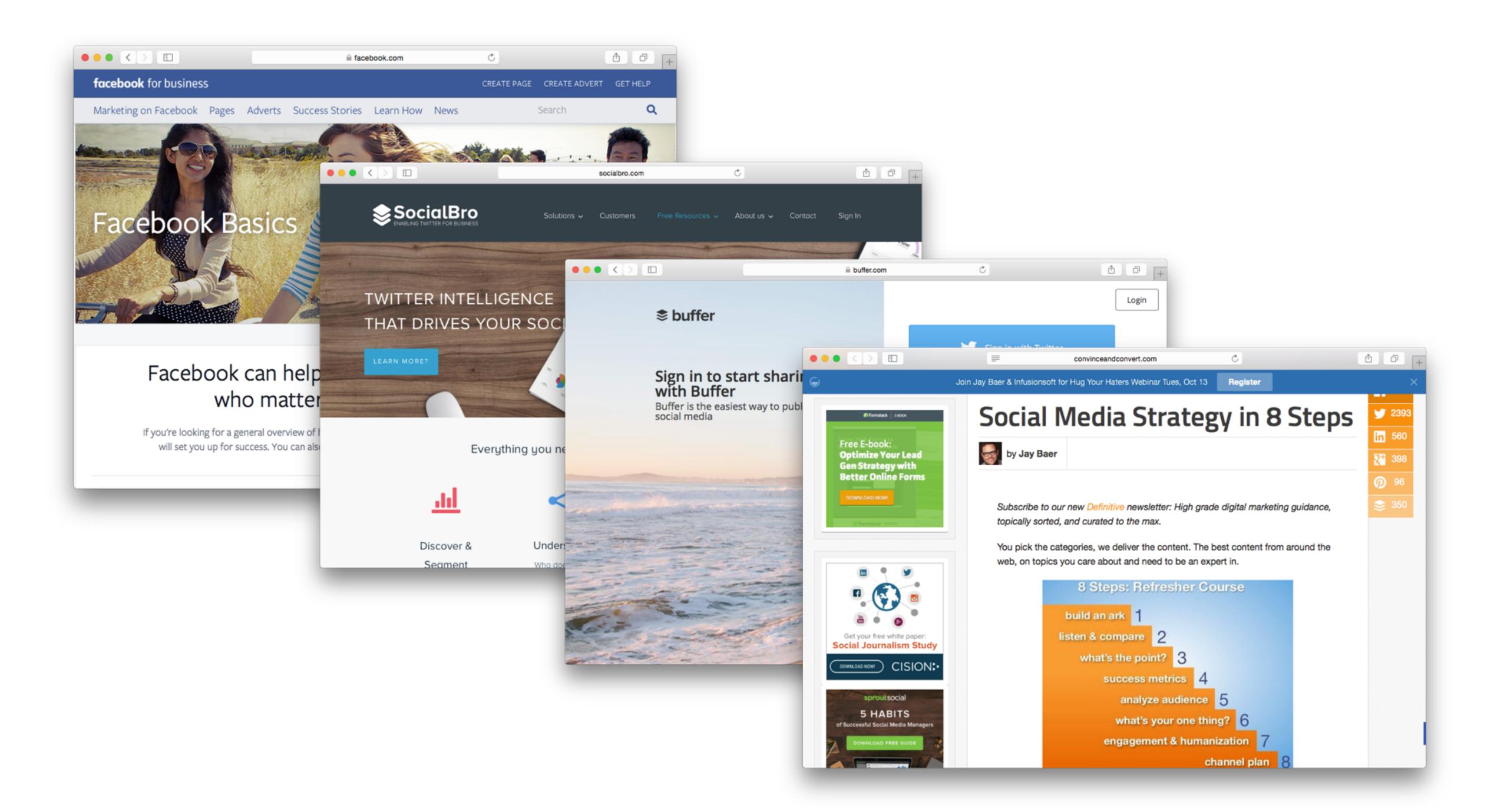
Mashable BuzzFeed (1)



Content and form

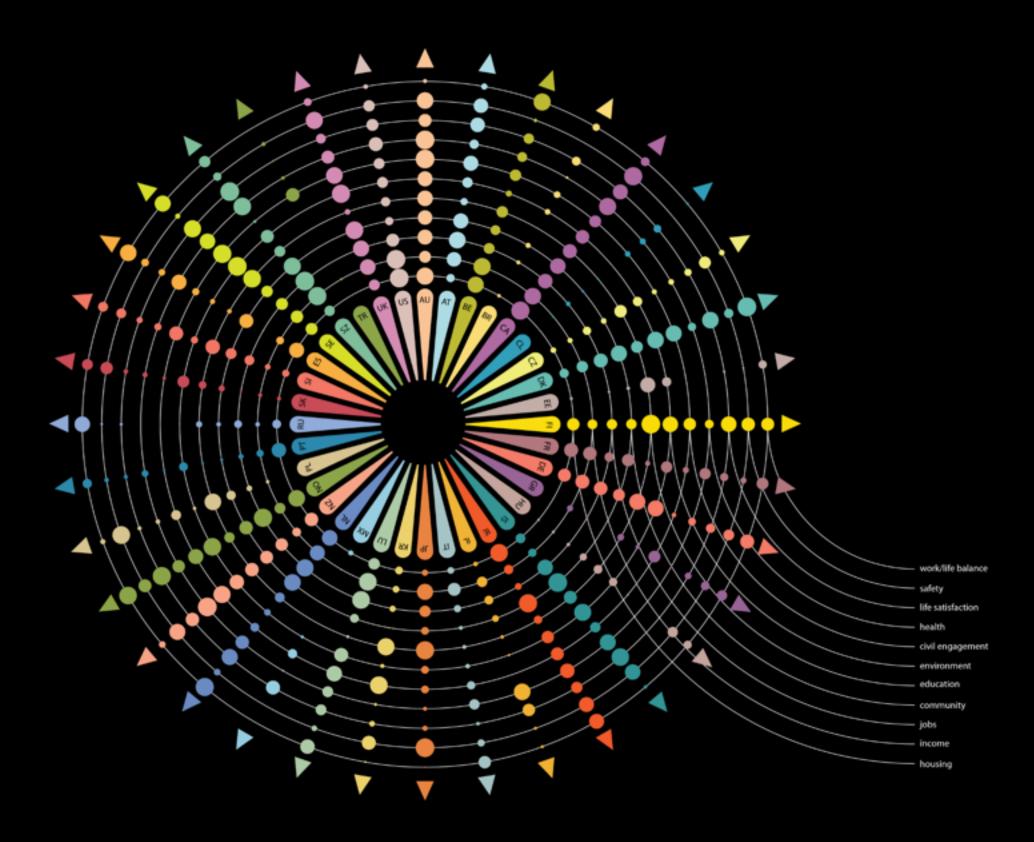
What makes a good data visualization?



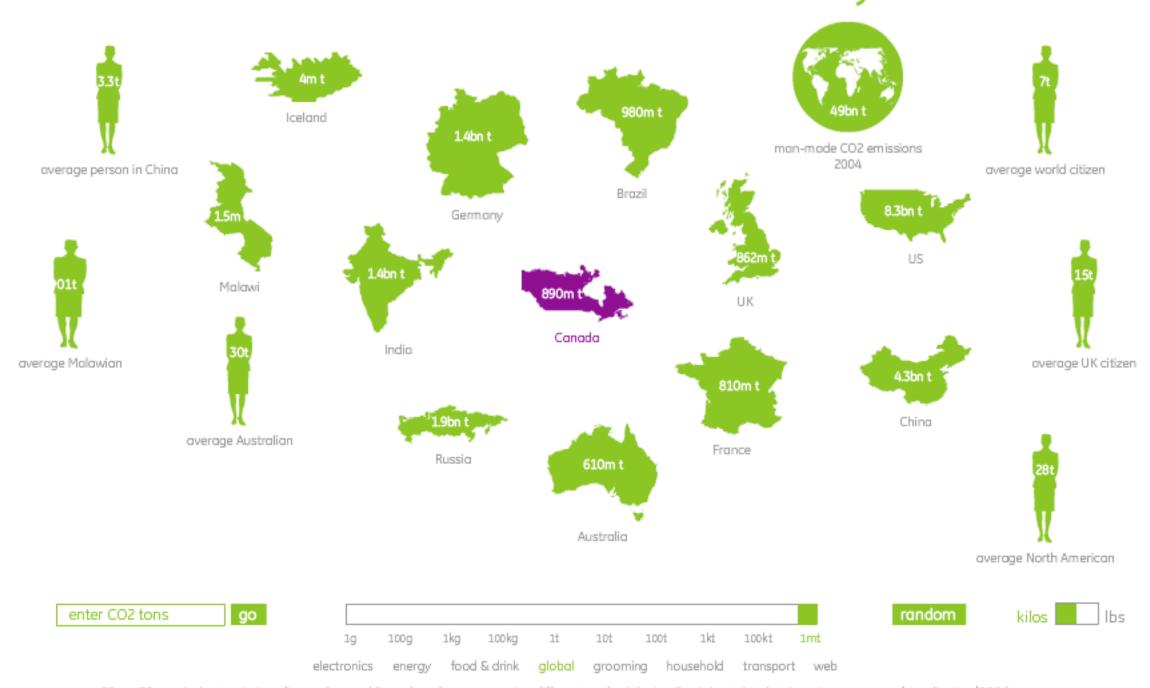


the better life snowflake

Data from The Organisation for Economic Co-operation and Development



How much CO₂ is created by...



CO2 or CO2-equivalent emissions figures from public and media sources using different methodologies. See "about this data" section on ge.com/visualization/CO2 for more. These figures are for illustrative purposes only and haven't been verified by GE. Per item or usage unless otherwise stated.



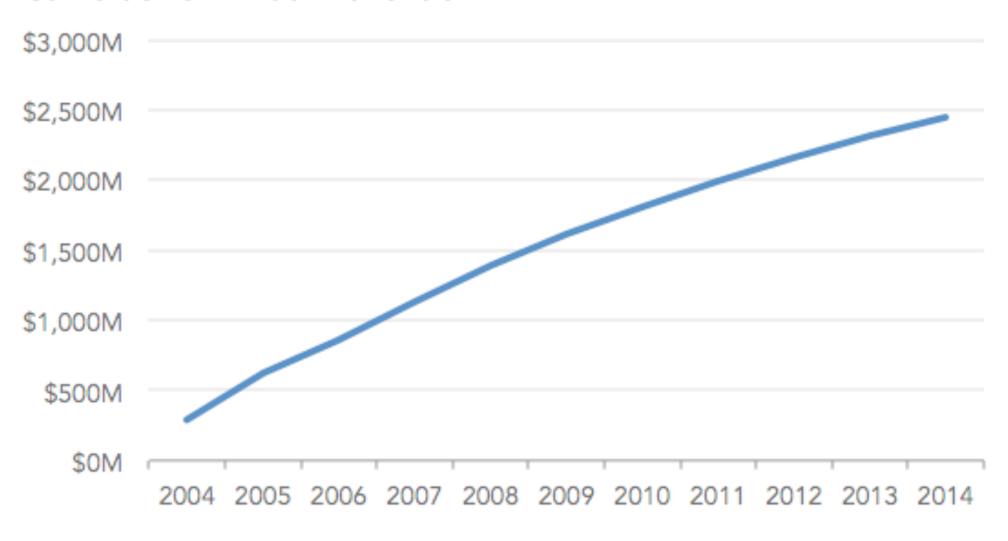
MOBILBETALING Mobilepay på vej

i Føtex, netto, Salling og Bilka

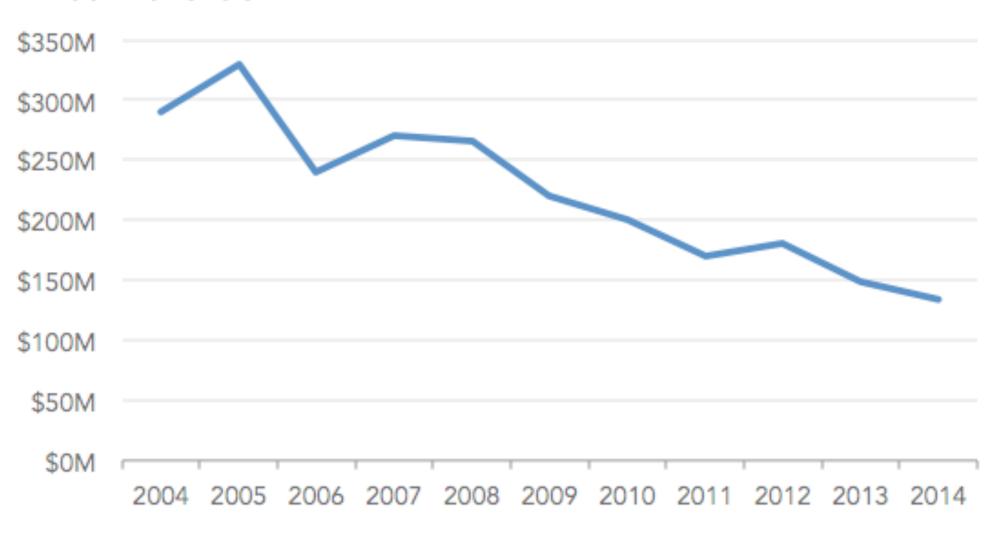
Delvis afskaffelse af kontantreglen

Danske virksomheder har pligt til at tage imod mønter og sedler, men regeringen vil give en række virksomheder lov til kun at tage imod betaling på fx dankort eller mobilbetaling.

Cumulative Annual Revenue



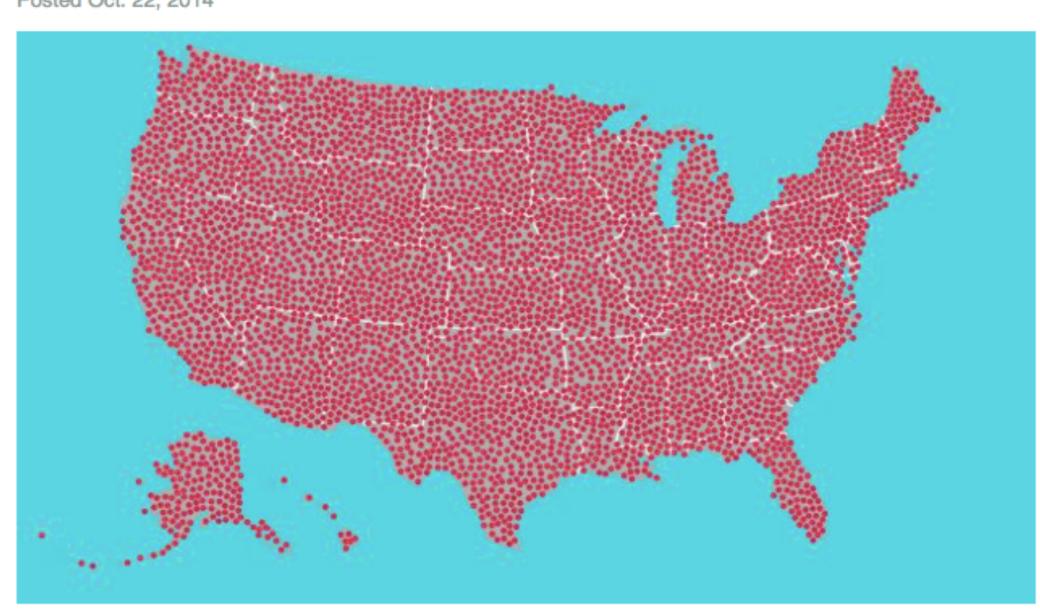
Annual Revenue



Without aesthetic, design is either the humdrum repetition of familiar cliches or a wild scramble for novelty. Without the aesthetic, the computer is but a mindless speed machine, producing effects without substance. Form without relevant content, or content without meaningful form. ")

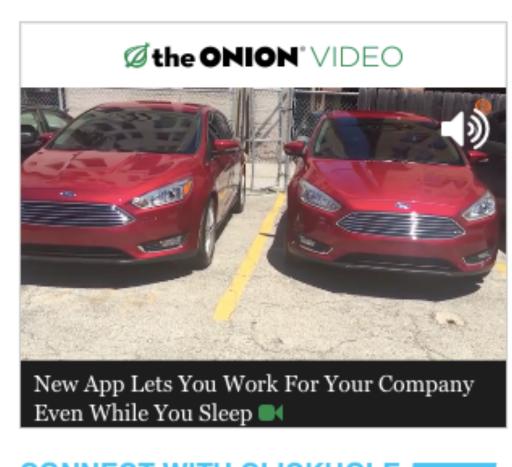
Paul Rand





Some statistics can be so unbelievable, or deal with concepts so vast, that it's impossible to wrap our heads around them. The human mind can only do so much to visualize an abstract idea, and often misses much of its impact in the translation. Sometimes you just need to step back and take a good, long look for yourself.

That's why we just put 700 red dots on a map.



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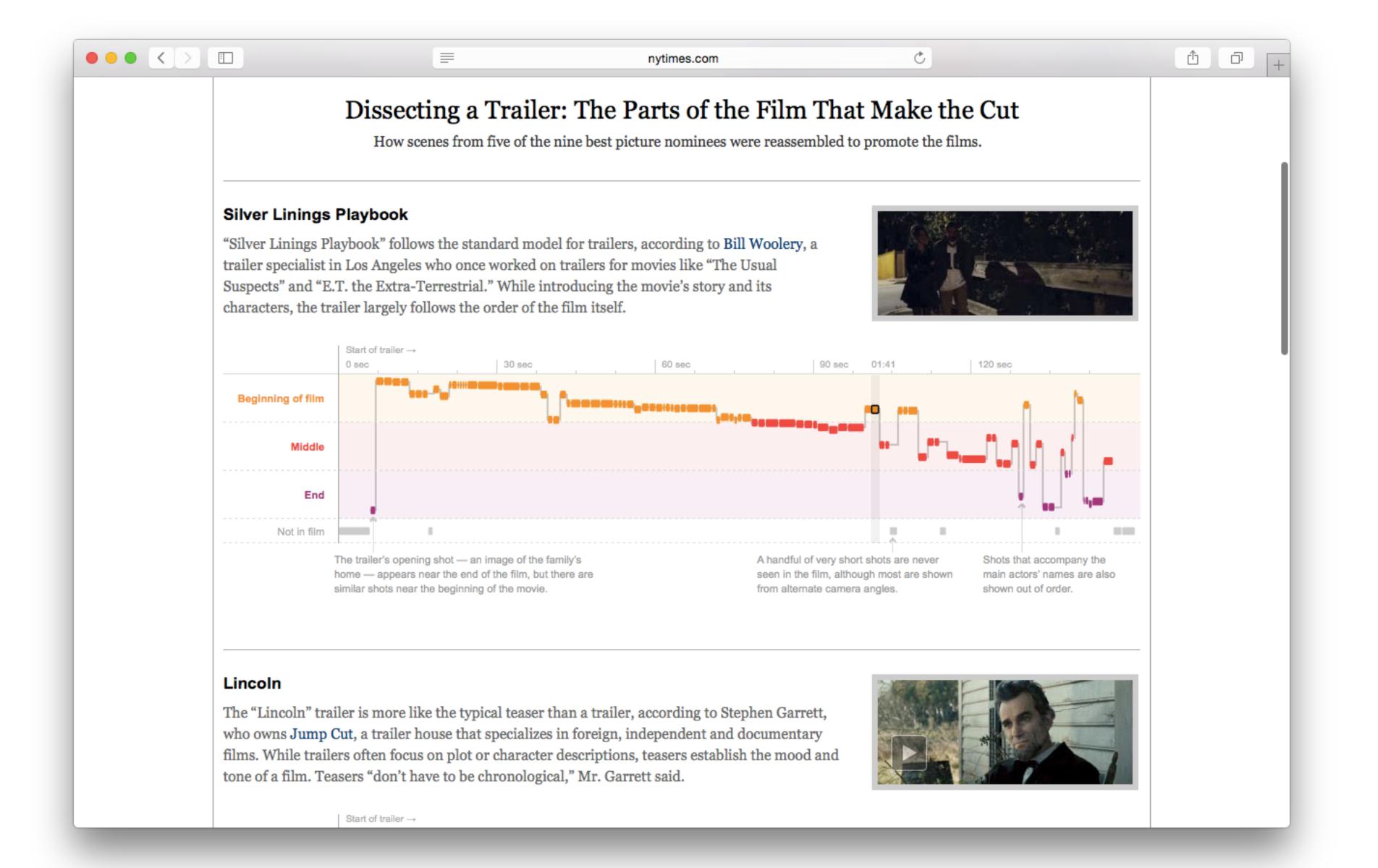
Enter Email Address

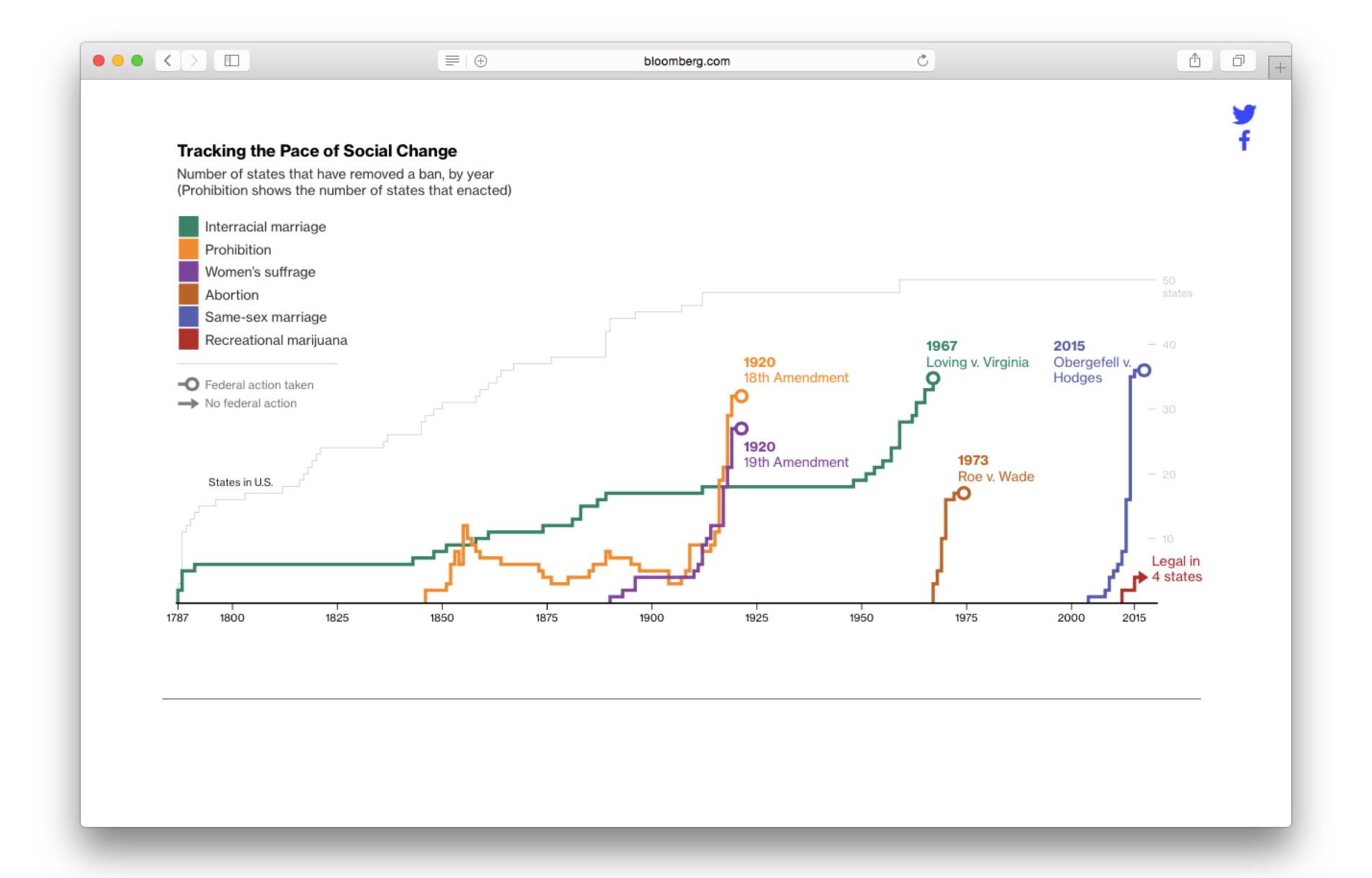
WE RECOMMEND



Heartbreaking: Twin Brothers Beg Themselves

Design.



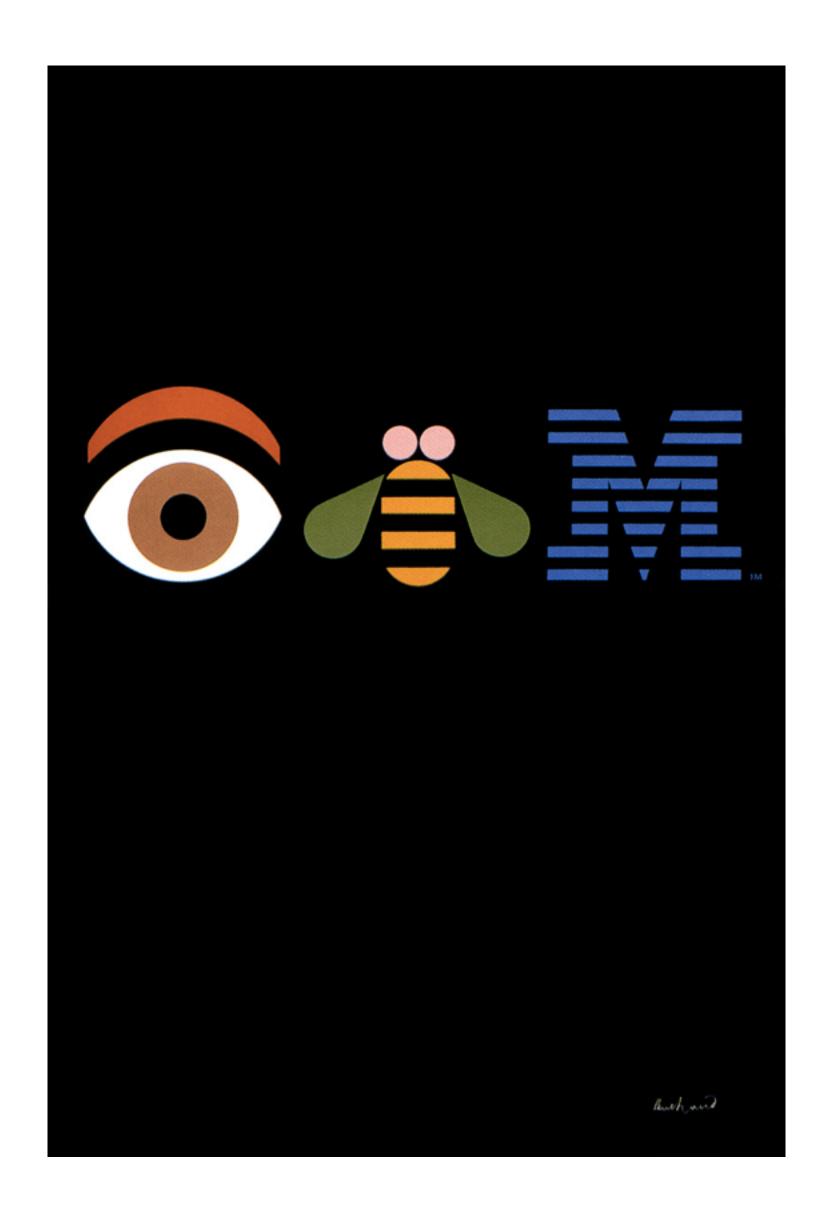


Design is a system of relationships between all of the aspects of the problem, which means the relationship between you and the piece of canvas, you and the eraser, you and the pen. This is one of the reasons why design is so difficult to accomplish. Because every time you do something, the potential for making mistakes is enormous. The process of designing is from complexity to simplicity. The part of complexity is filled with all kinds of horrible problems. ""

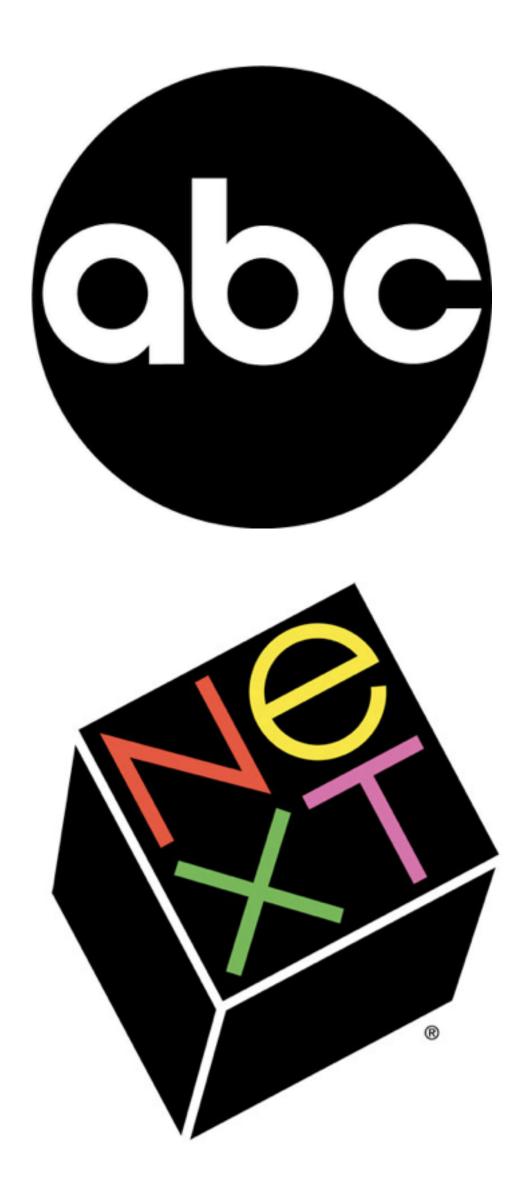
Paul Rand

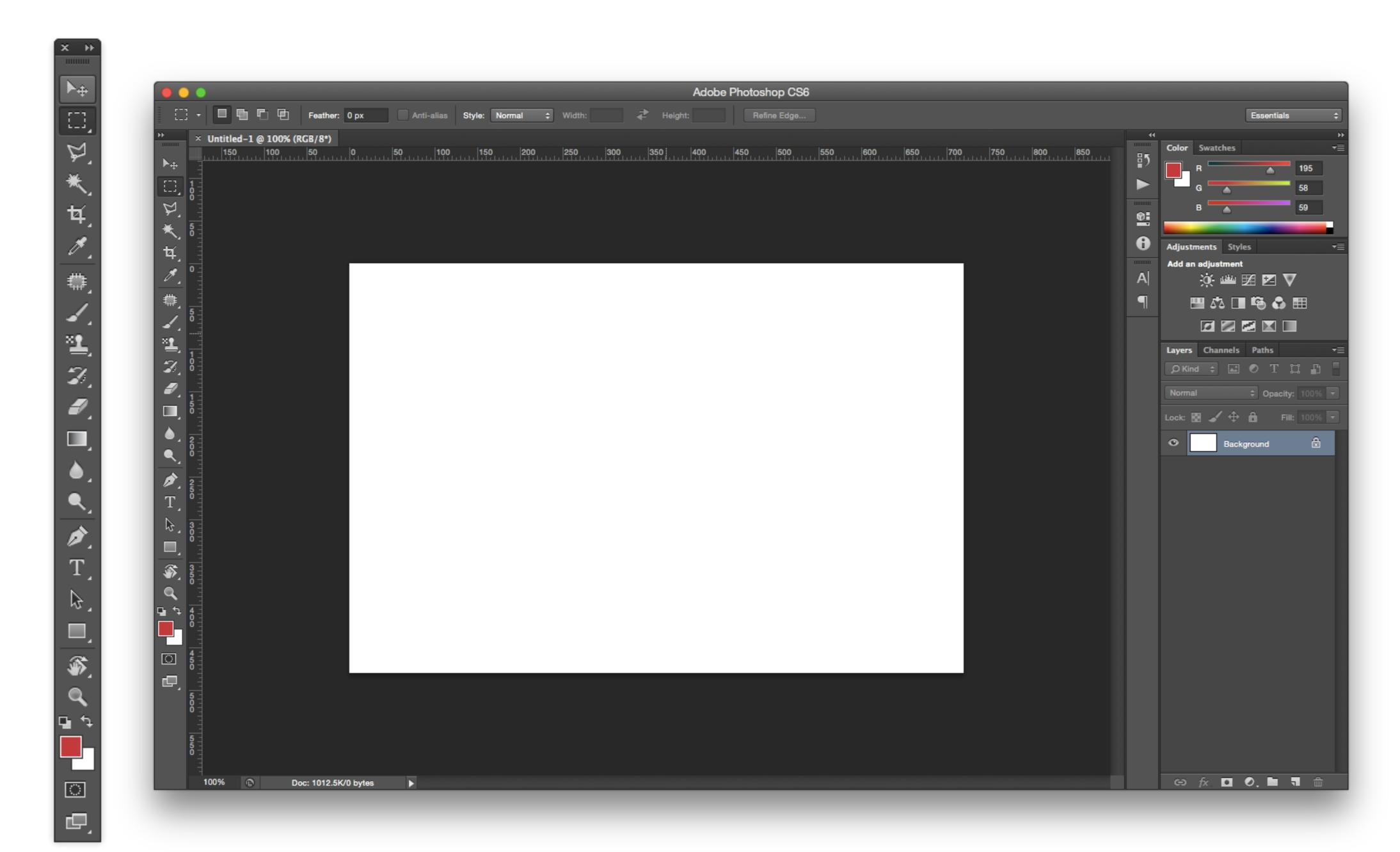
Design is changing

From design to meta-design





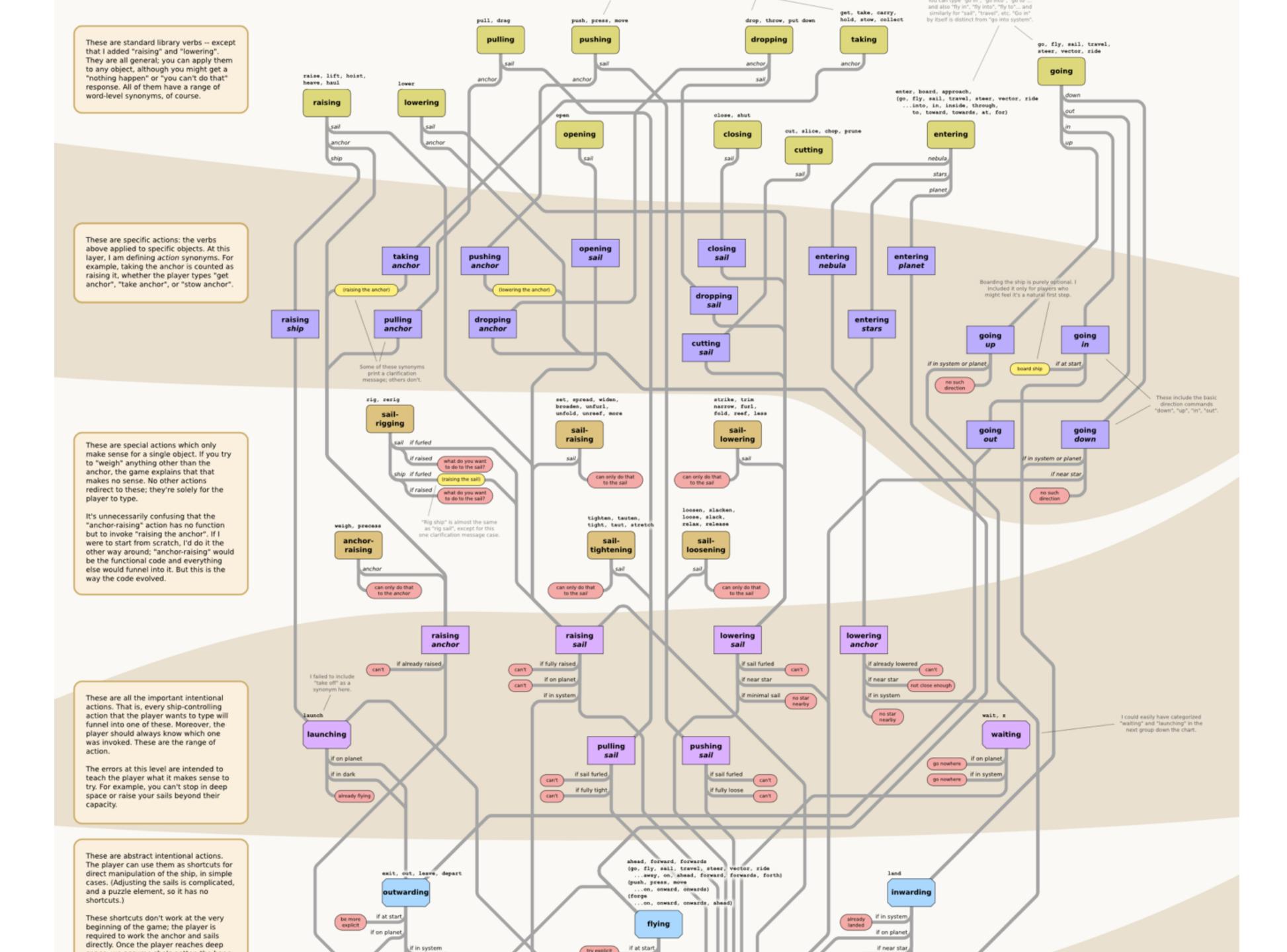




"It's important to use your hands. This is what distinguishes you from a cow or a computer operator."

Paul Rand









By ADAM NAGOURNEY, JEFF ZELENY AND SHAN CARTER November 4, 2008

Times map Your map

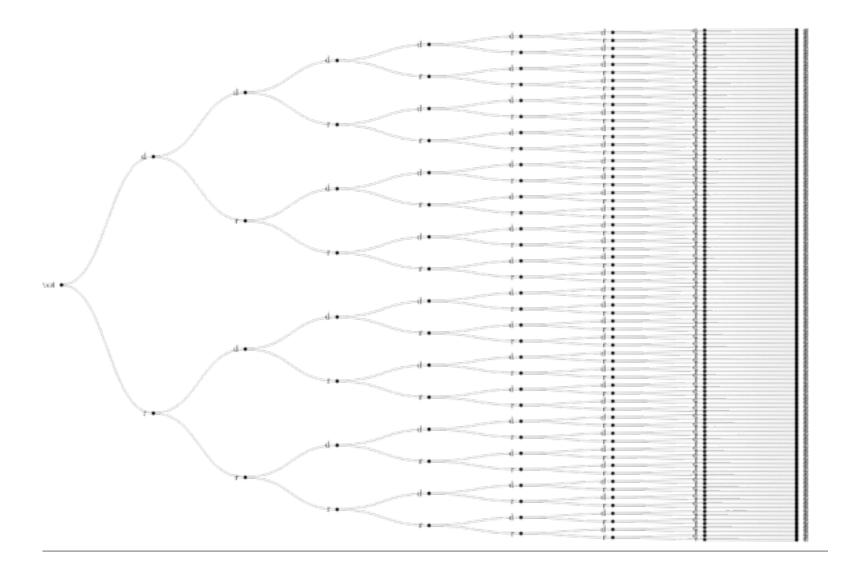


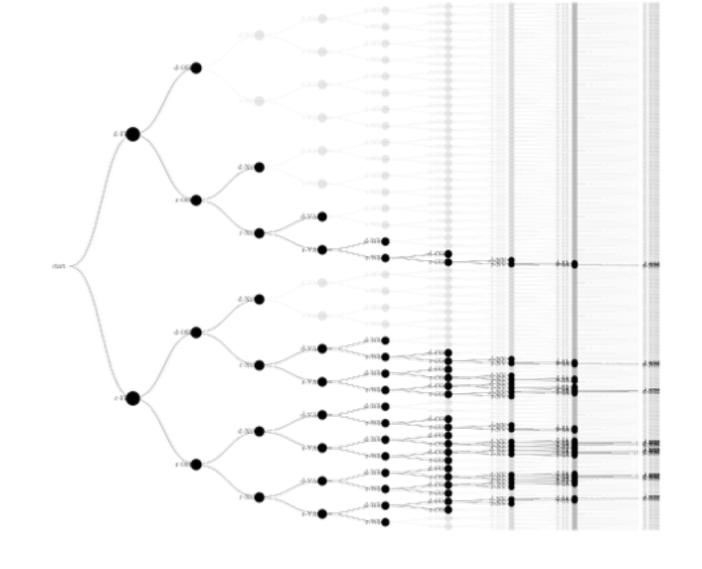
E-MAIL

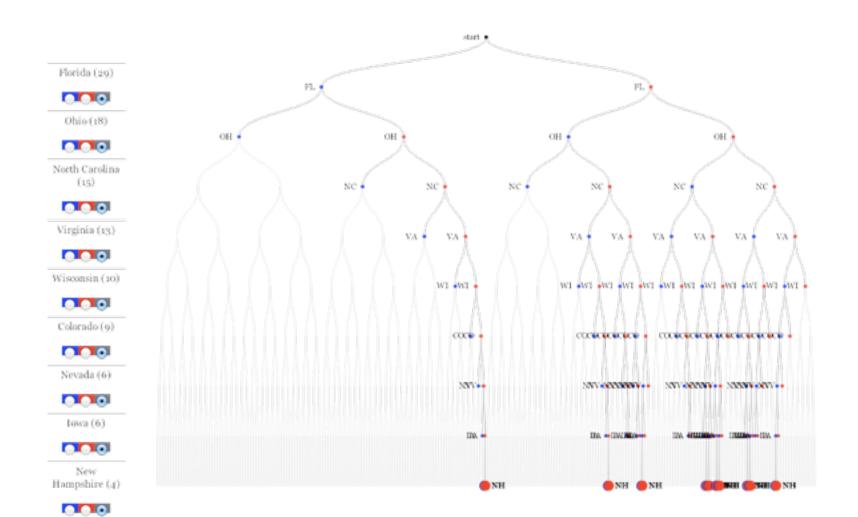
SHARE

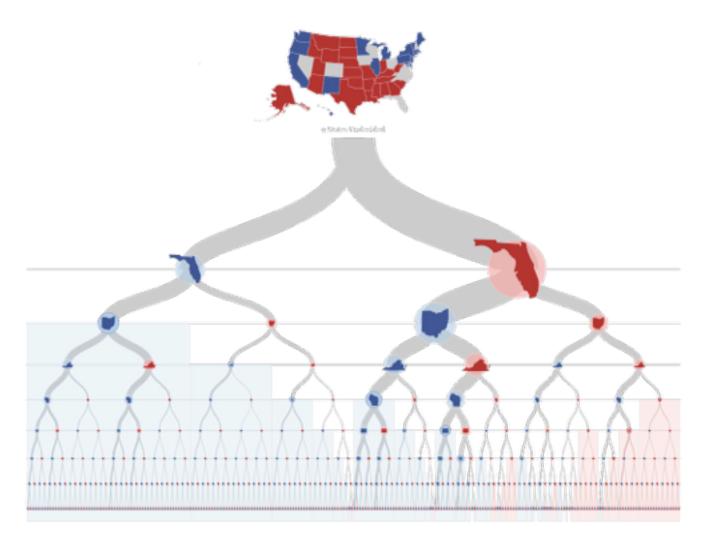
FEEDBACK

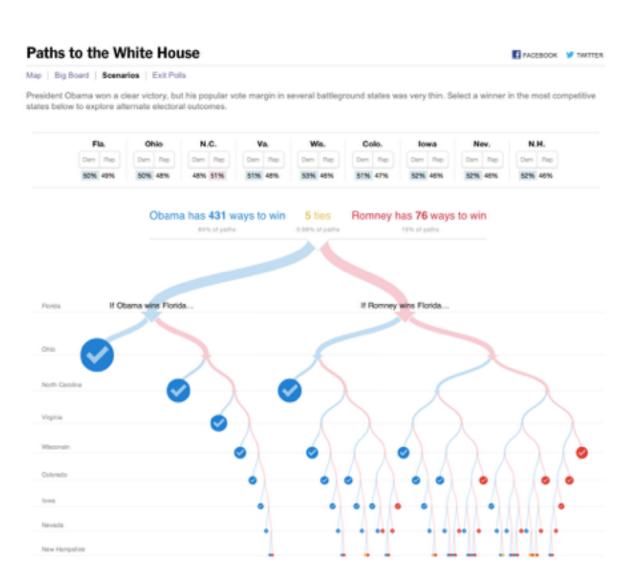
Recent polling	Obama		McCain	
Polls conducted by interactive	e Visioe Technology, including	Rasmussen a	nd SurveyUSA, d	do not meet the Times' polling standards and are not included.
Oct. 30	46.0%	1	47.0%	+/-4% Mason-Dixon Polling & Research
Oct. 23	45.0%	1	46.0%	+/-4% Mason-Dixon Polling & Research
Oct. 19	44.0%		45.0%	+/-4% Suffolk University









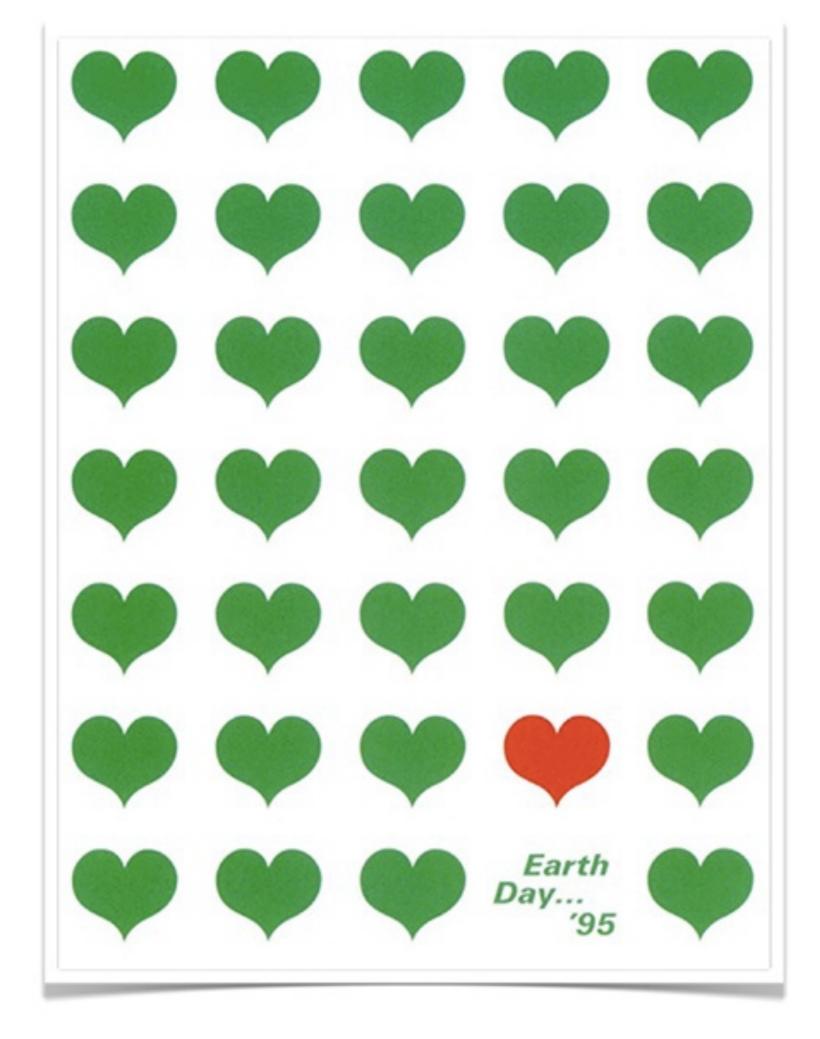




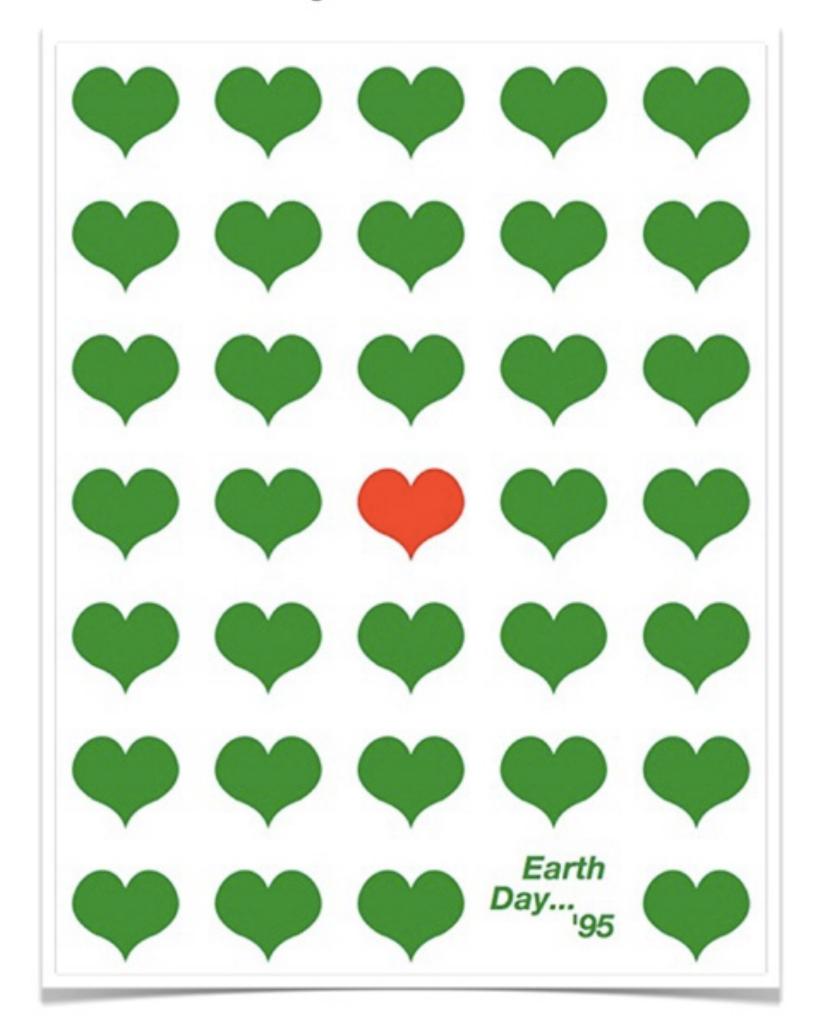
"Meta-design is much more difficult than design; it's easier to draw something than to explain how to draw it."

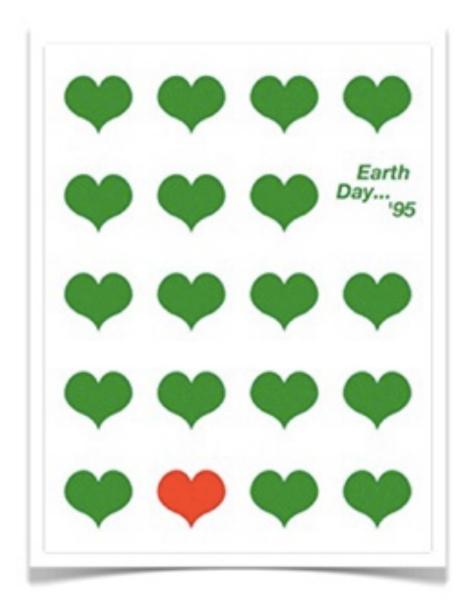
Donald Knuth

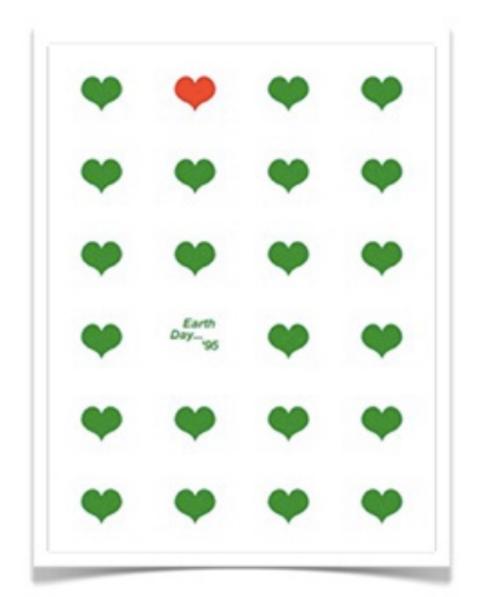
Paul Rand

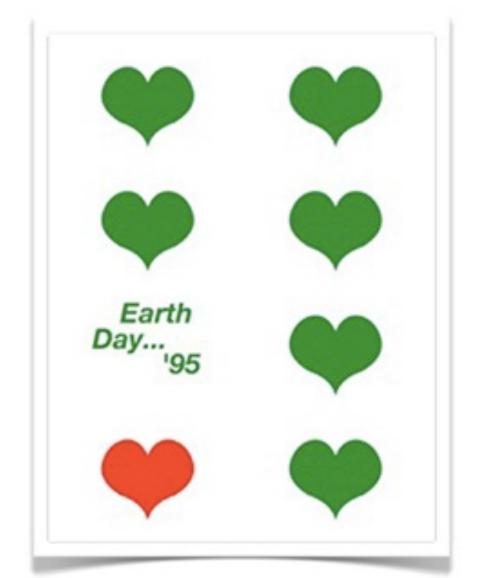


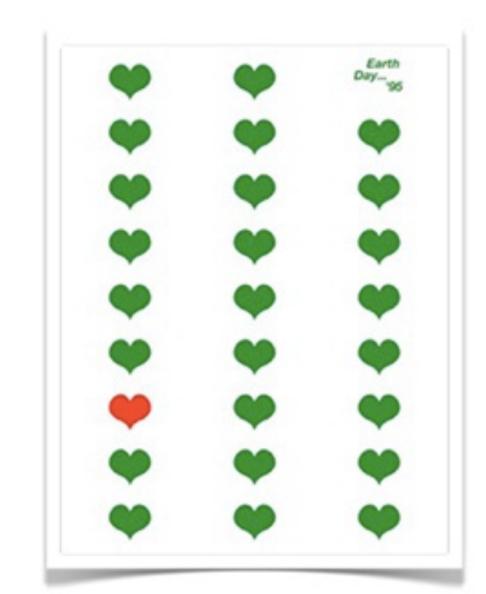
My Version

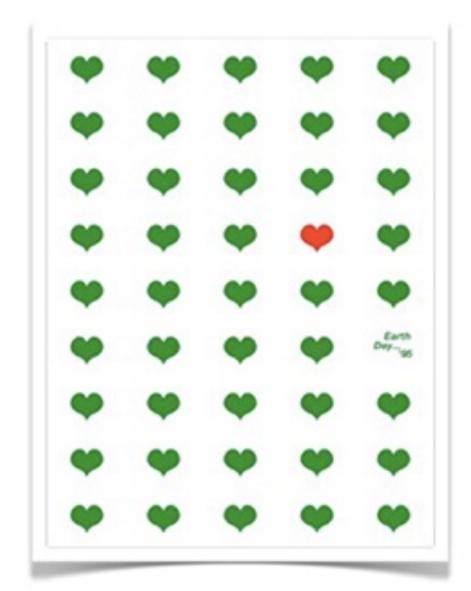




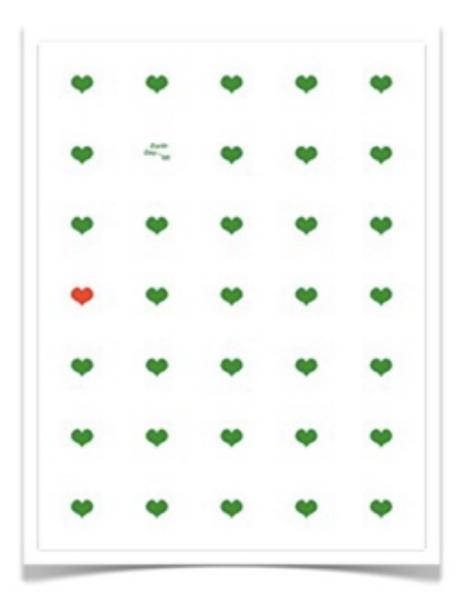


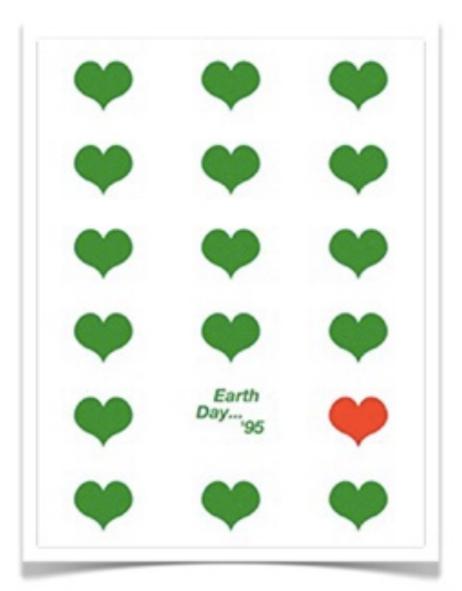


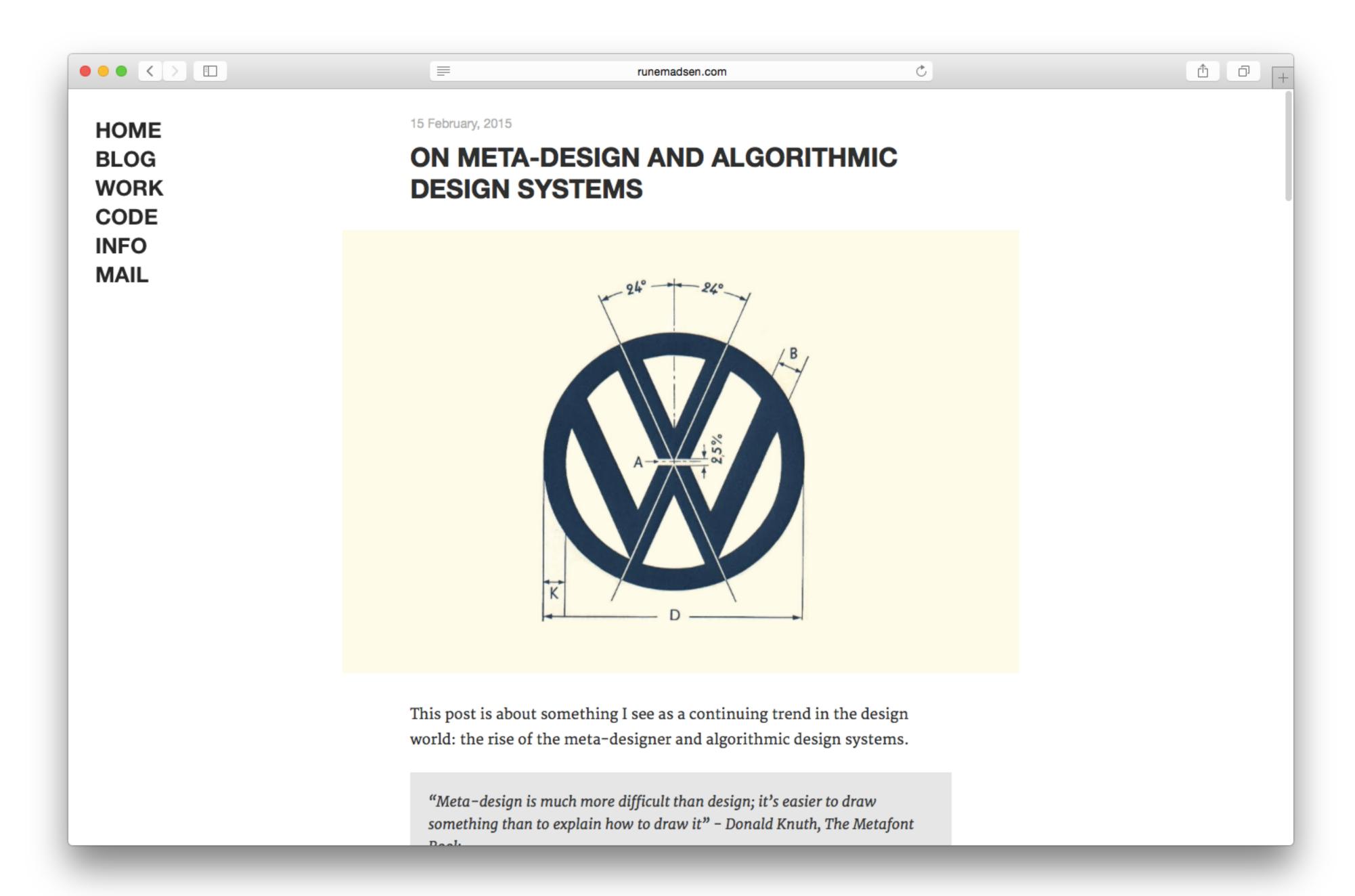






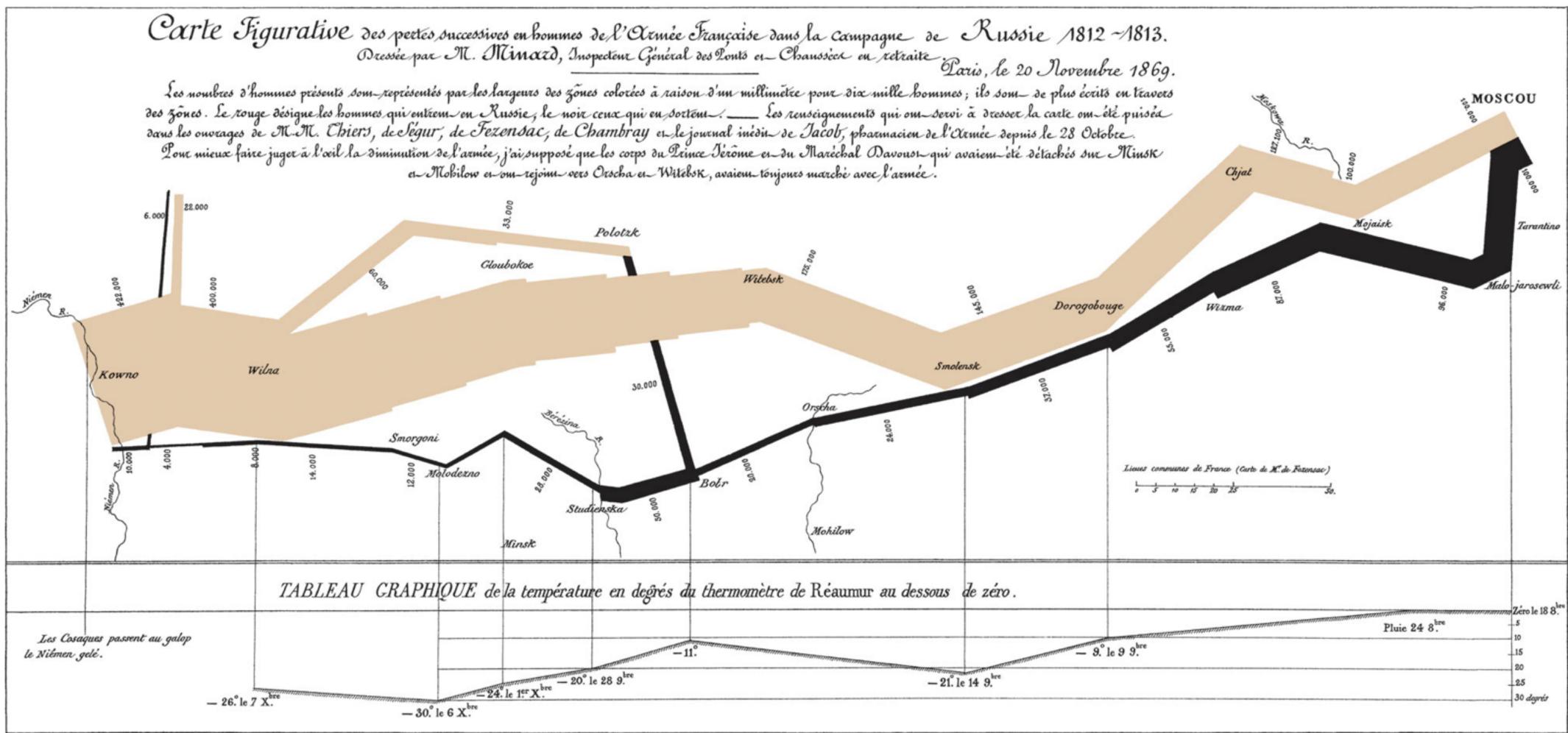




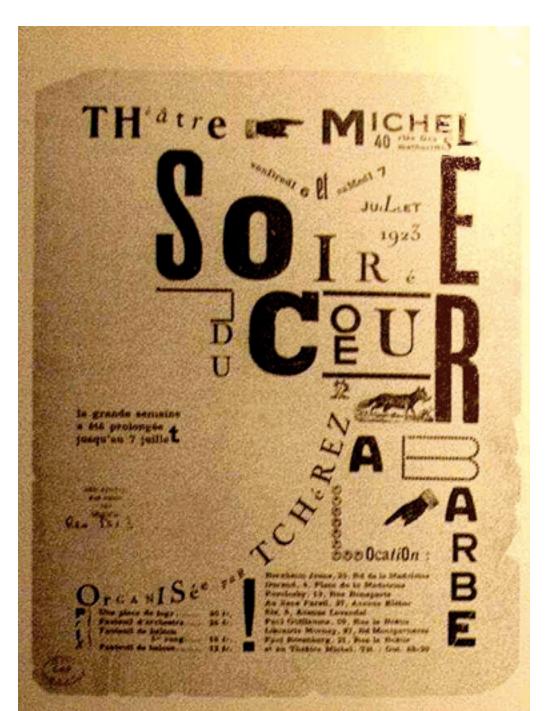


A brief history of

Data, systems, and design.

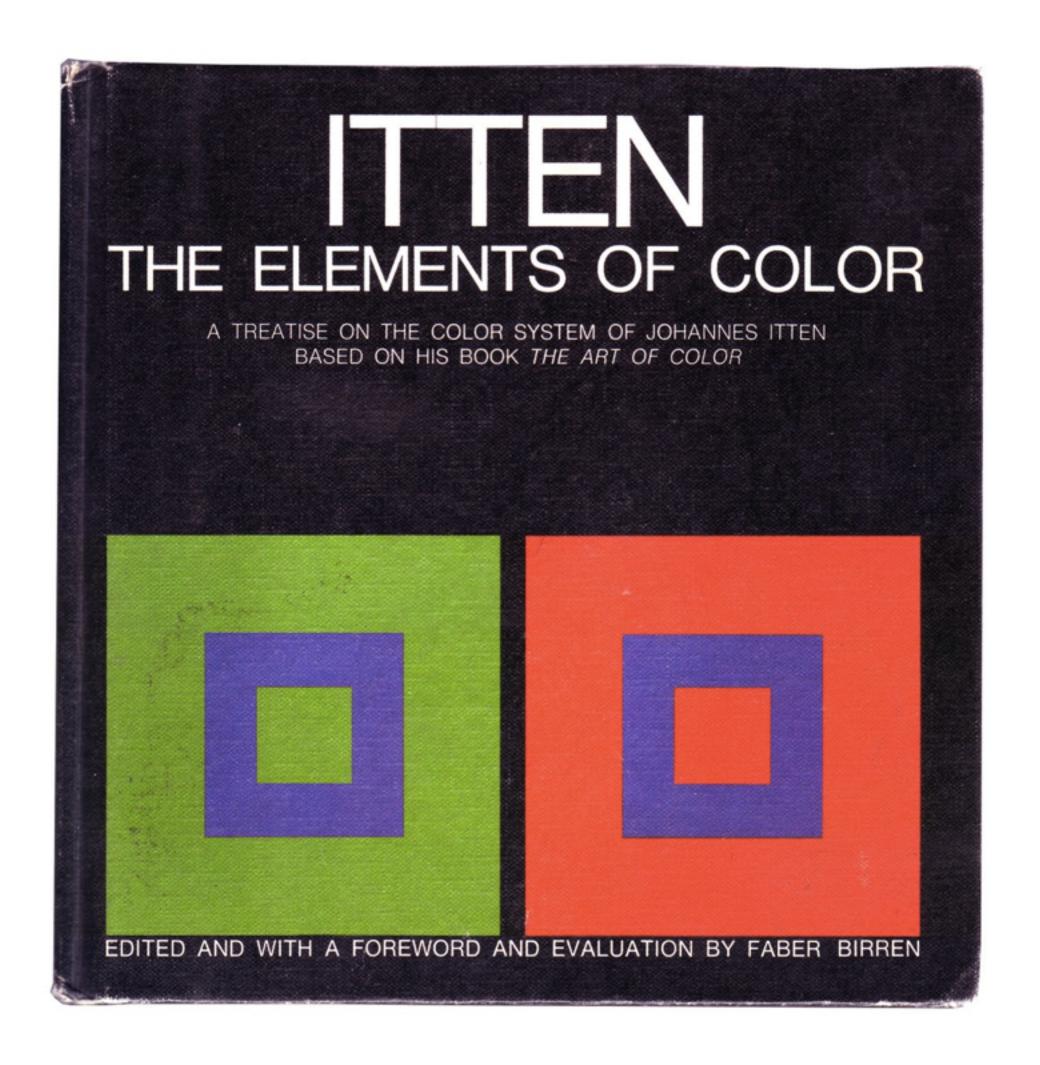








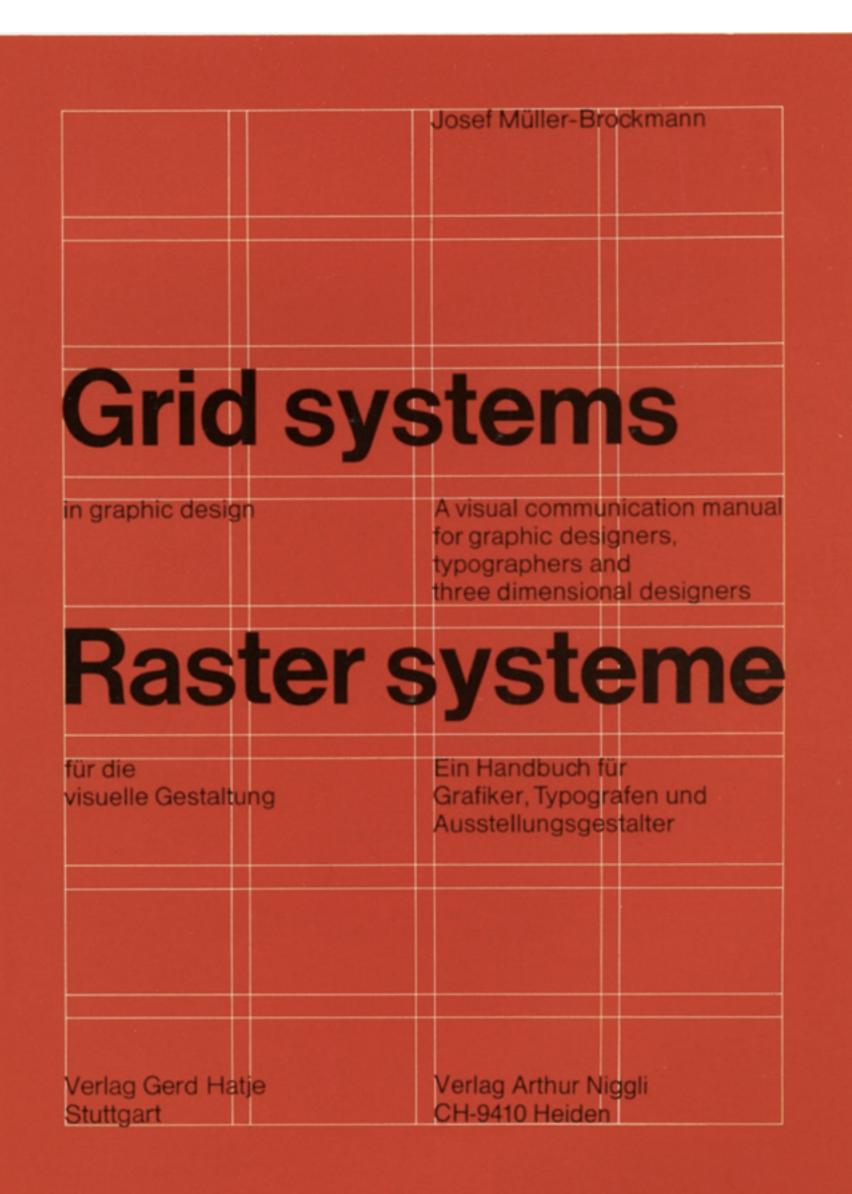




Josef Albers Interaction of Color

Revised and Expanded Edition







Karl Gerstner:

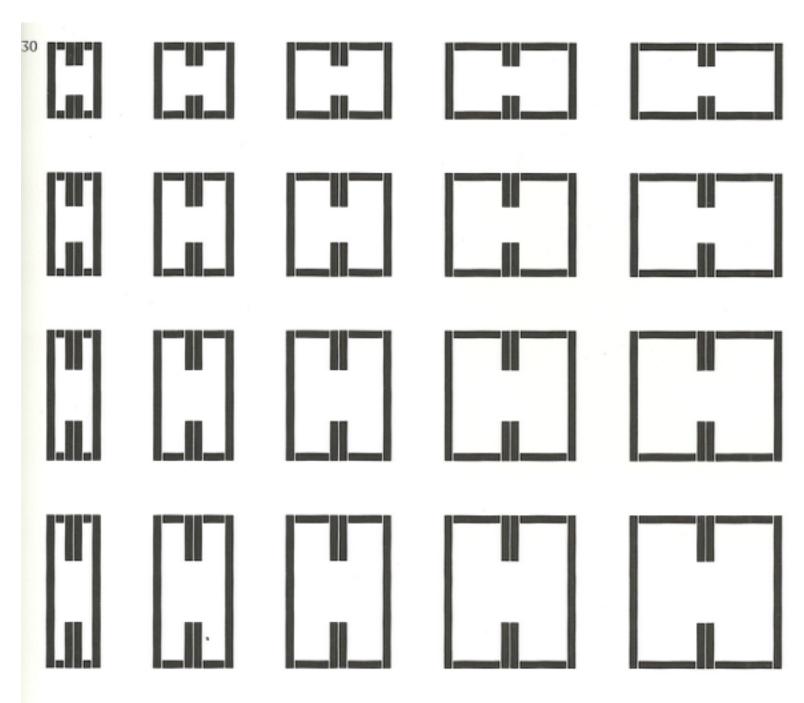
Designing Programmes

instead of solutions for problems programes for solutions

Programme as | typeface

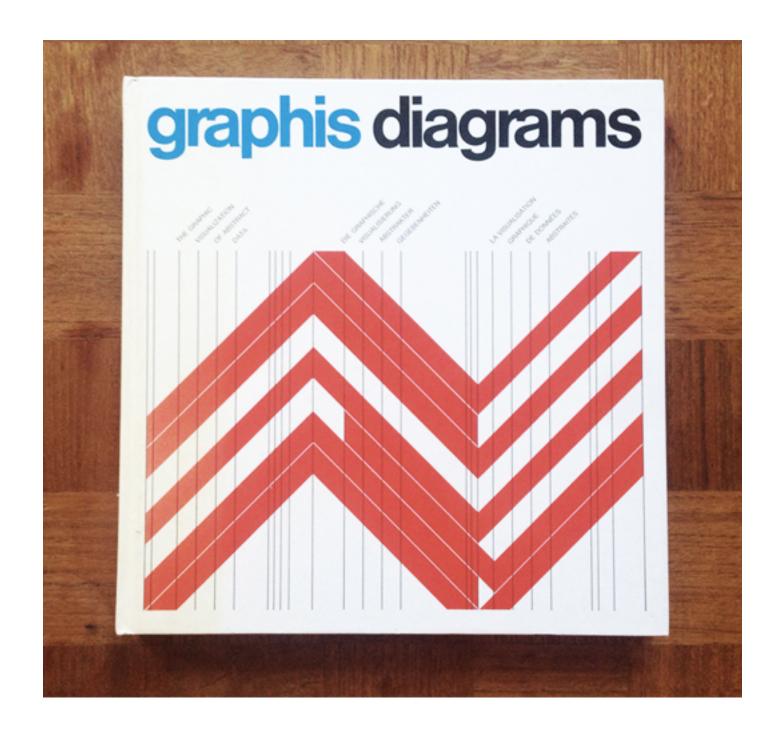
typeface typography picture method morphology logic grid photography literature music

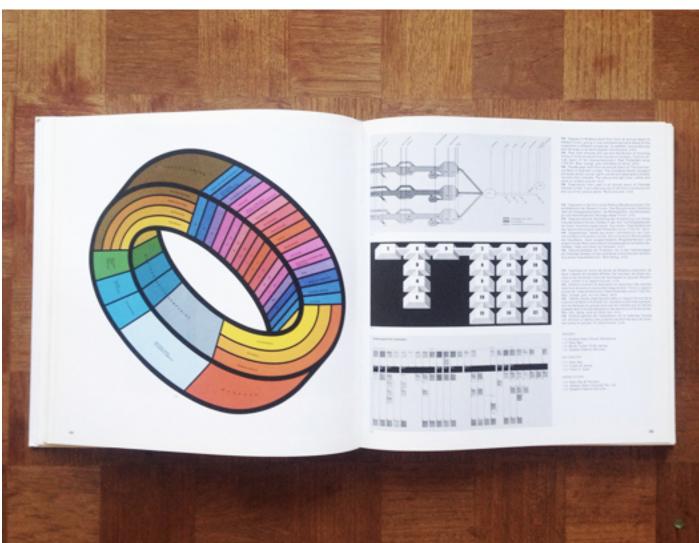
Lors Miller Publisher















1. AB BC CD DA AE BF CG W XO.

2. AB & CD DA AE BFEF X3.

3. AB BC CO DA 4E BF FG LIXO.

Y. AB BC CD DA AE BFHE (QX)

S. AB BC CD DA AE LGEF DI A BX (4).

7. AB BC CD DA AE EFF6 A DE ST

8. ABBC LD DA

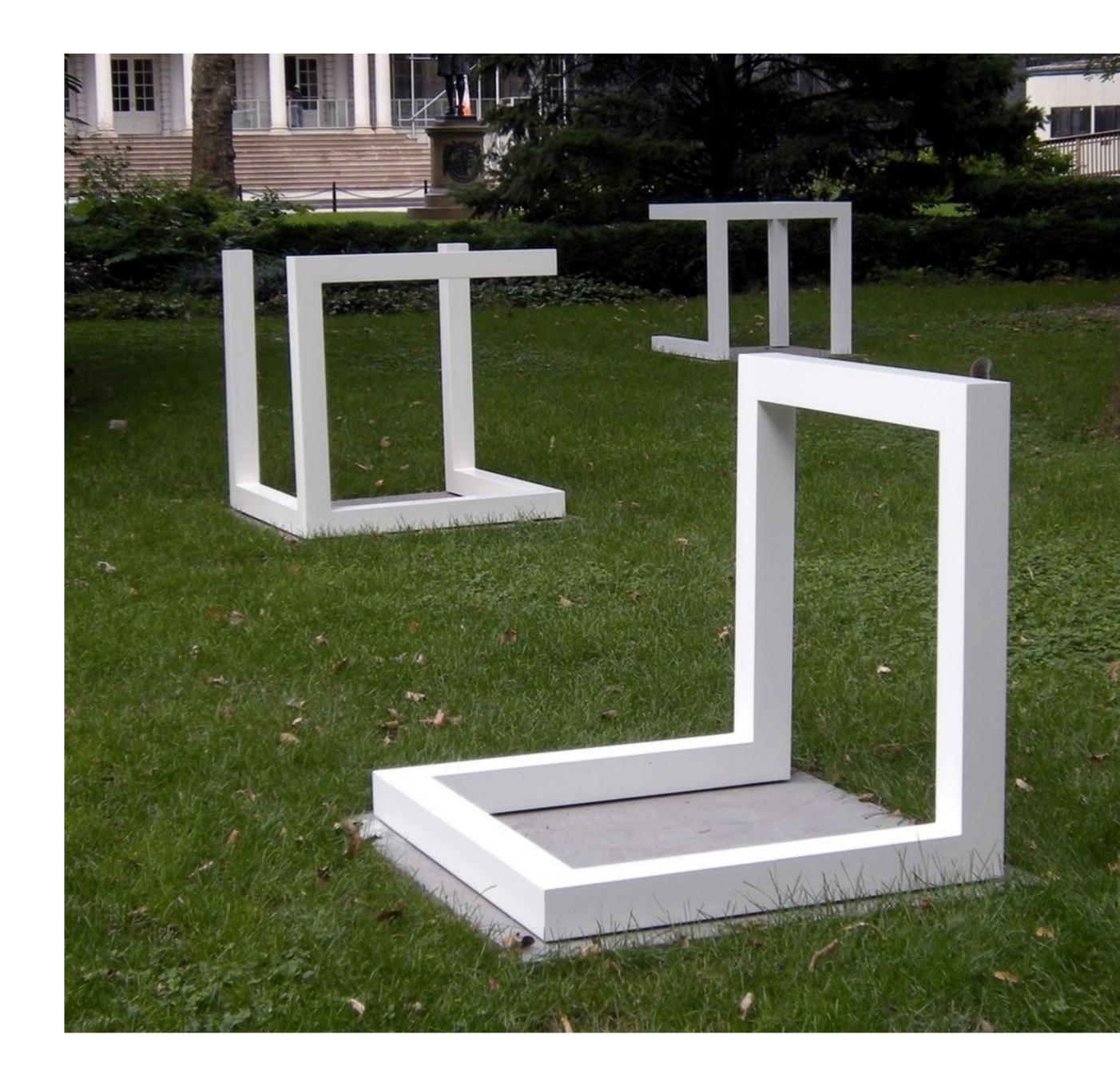
9. AB BC CD DA

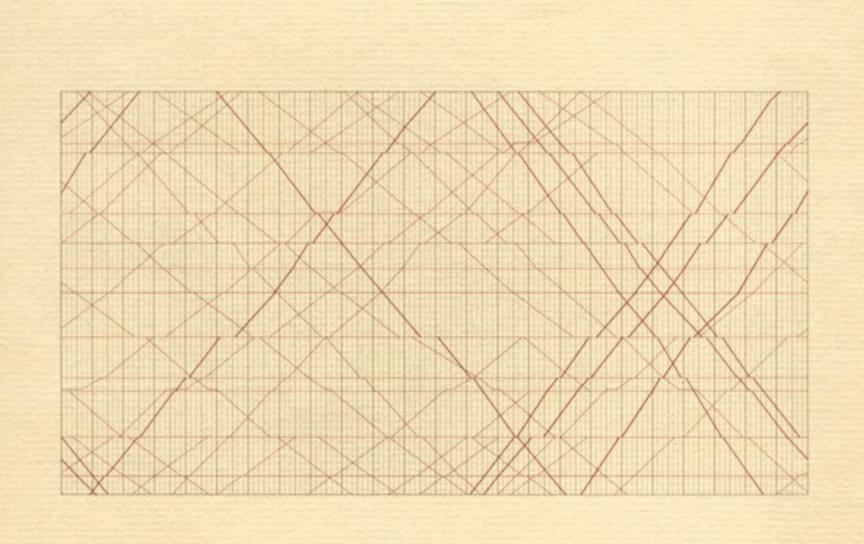
10. AB BC CD AE

11. AB BC CD AE

12. AB BC CD

VARIAT	IONS O	F II	ICO	MPL	ETE	0P	EN (CUB	ES	
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The Visual Display of Quantitative Information

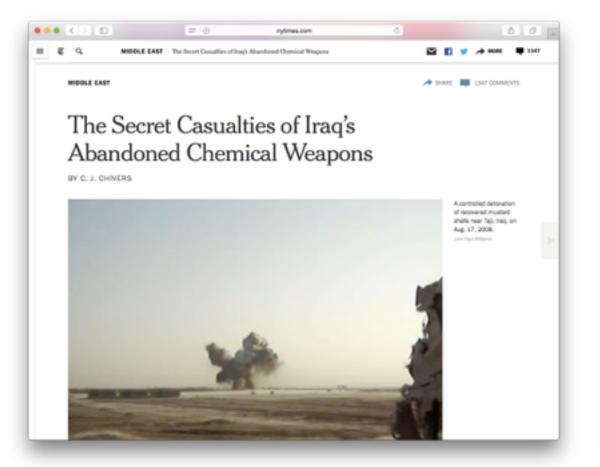
EDWARD R. TUFTE

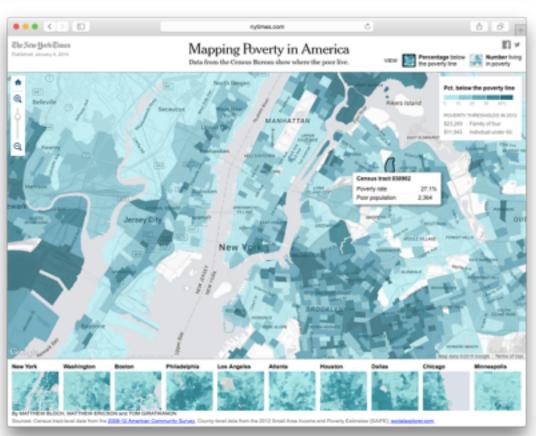
- Show the data
- Induce the viewer to think about the substance rather than about methodology, graphic design, the technology of graphic production, or something else
- Avoid distorting what the data have to say
- Present many numbers in a small space
- Make large data sets coherent
- Encourage the 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

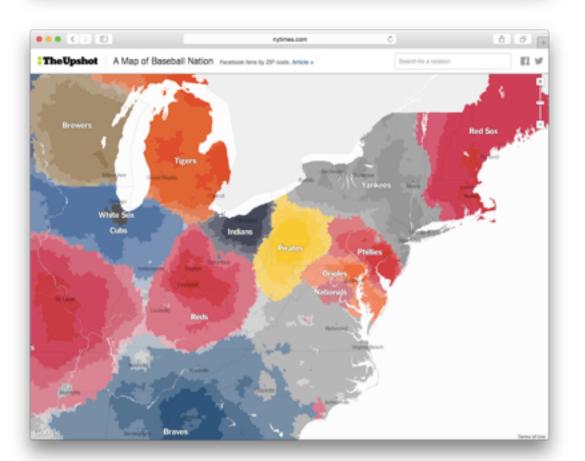


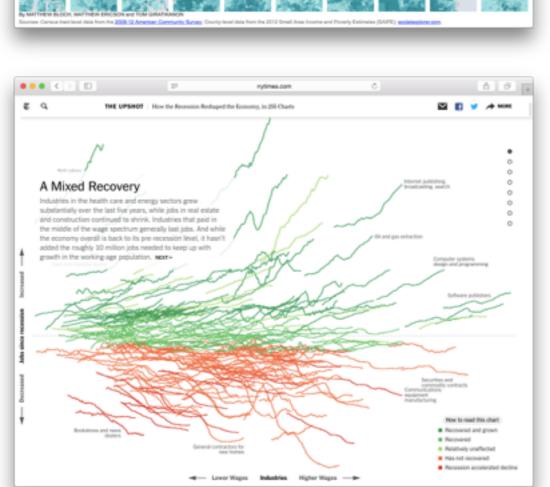
HOW THE ARCH IS BEING BUILT (0.58)

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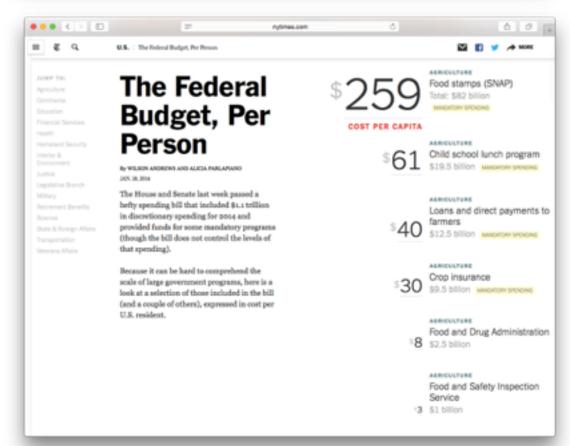








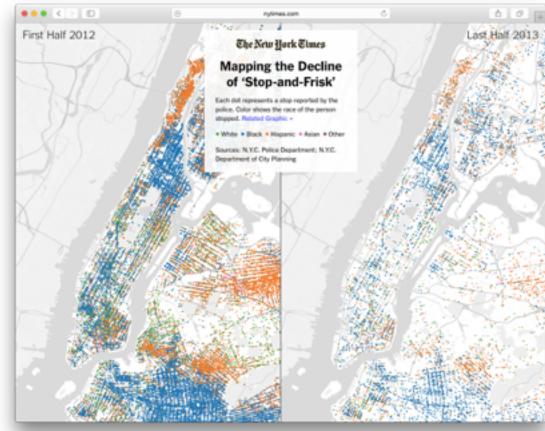












HXamples

512 paths to the white house

How, after several attempts at designing the perfect electorial vote calculator, I came to the realization that the best electorial vote calculator shouldn't include electorial votes or calculations. **?

Shan Carter, New York Times

"Our designs are almost always built up incrementally, starting with the core visual encoding of data. But at the same time, we almost never publish something without annotation, so we think constantly about how to guide the user."

Mike Bostock, New York Times

Election 2004

NYTimes: <u>Home</u> - <u>Site Index</u> - <u>Archive</u> - <u>Help</u>		
Go to a Section Go	Site Search:	Go
NYTimes.com > Washington > Campaign 2004		

Note: This feature is no longer being updated. Complete election results are available here.

INTERACTIVE GRAPHIC

RELATED: A CLOSER LOOK AT THE SWING STATES | FEEDBACK

2004 Election Guide

THE PRESIDENTIAL RACE

THE SWING STATES
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PRESIDENTIAL CALCULATOR

ELECTORAL VOTES CHANGES
THE NADER FACTOR

THE SENATE

THE HOUSE

THE GOVERNORS

THE MONEY RACE

PREVIOUS ELECTIONS

PUBLIC OPINION: BUSH'S TERM

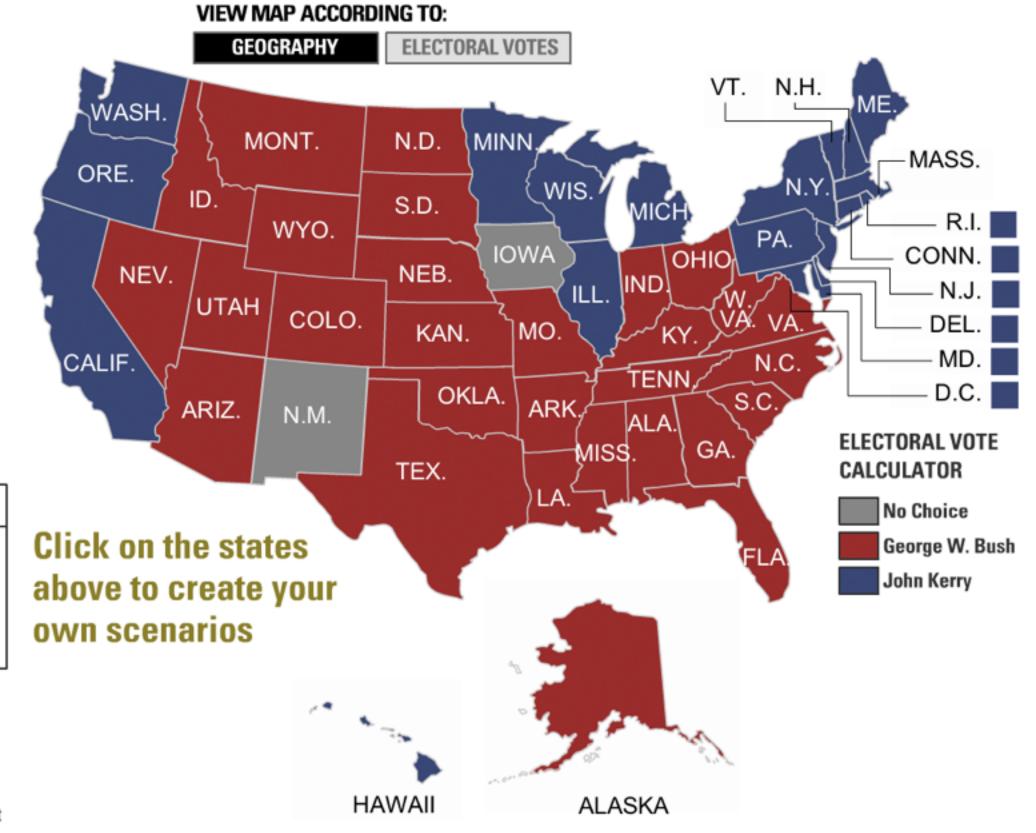
ELECTORAL VOTE CALCULATOR

BUSH	KERRY	NO CHOICE
274	252	12

270 electoral votes are needed to secure the presidency. The states are allocated according to current results. RESET

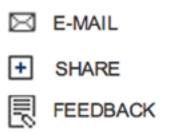
Other Scenarios: 2000 ELECTION NO CHOICES

Colorado, Maine, and Nebraska have the potential to split their electoral votes this election. Clicking on those states will bring up the various scenarios.



The Electoral Map: Key States

By ADAM NAGOURNEY, JEFF ZELENY AND SHAN CARTER November 4, 2008





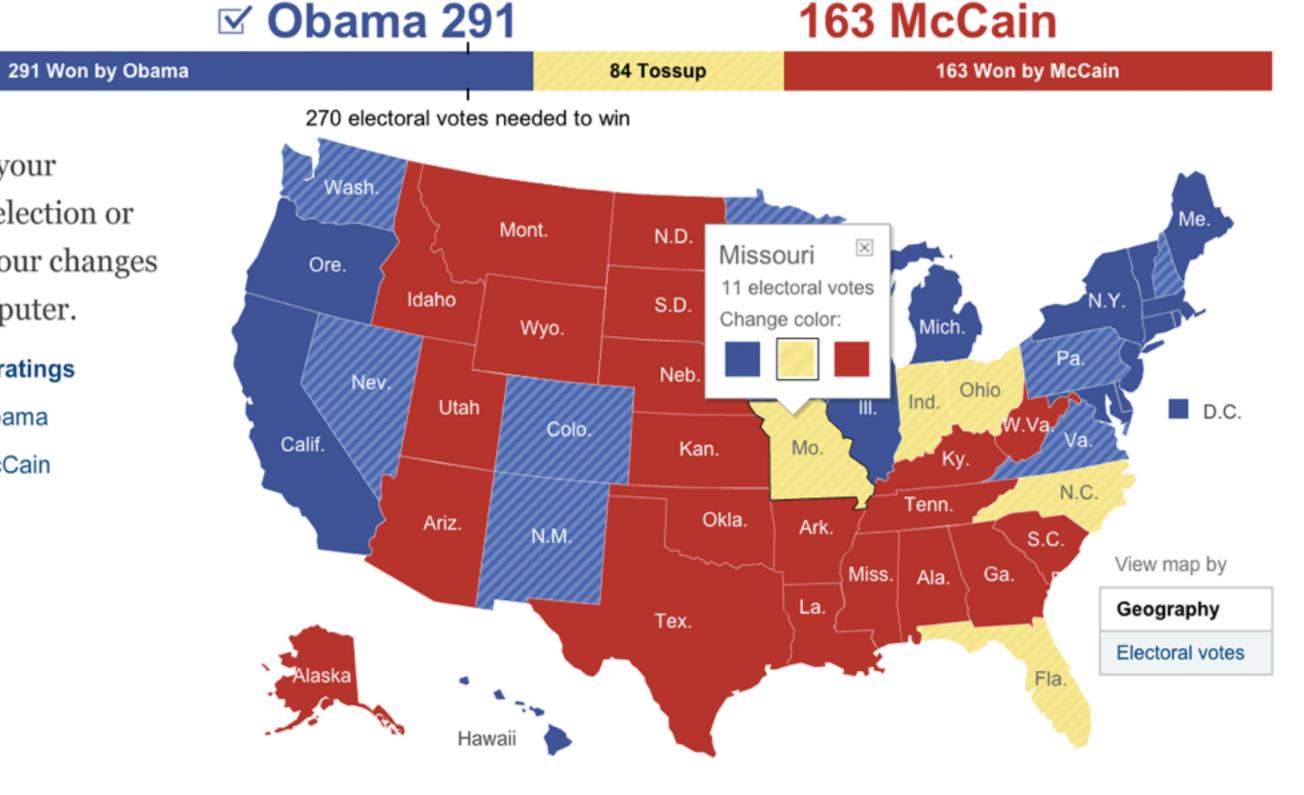
Click on a state to make your prediction for the 2008 election or choose a preset below. Your changes

Reset map to The Times's ratings

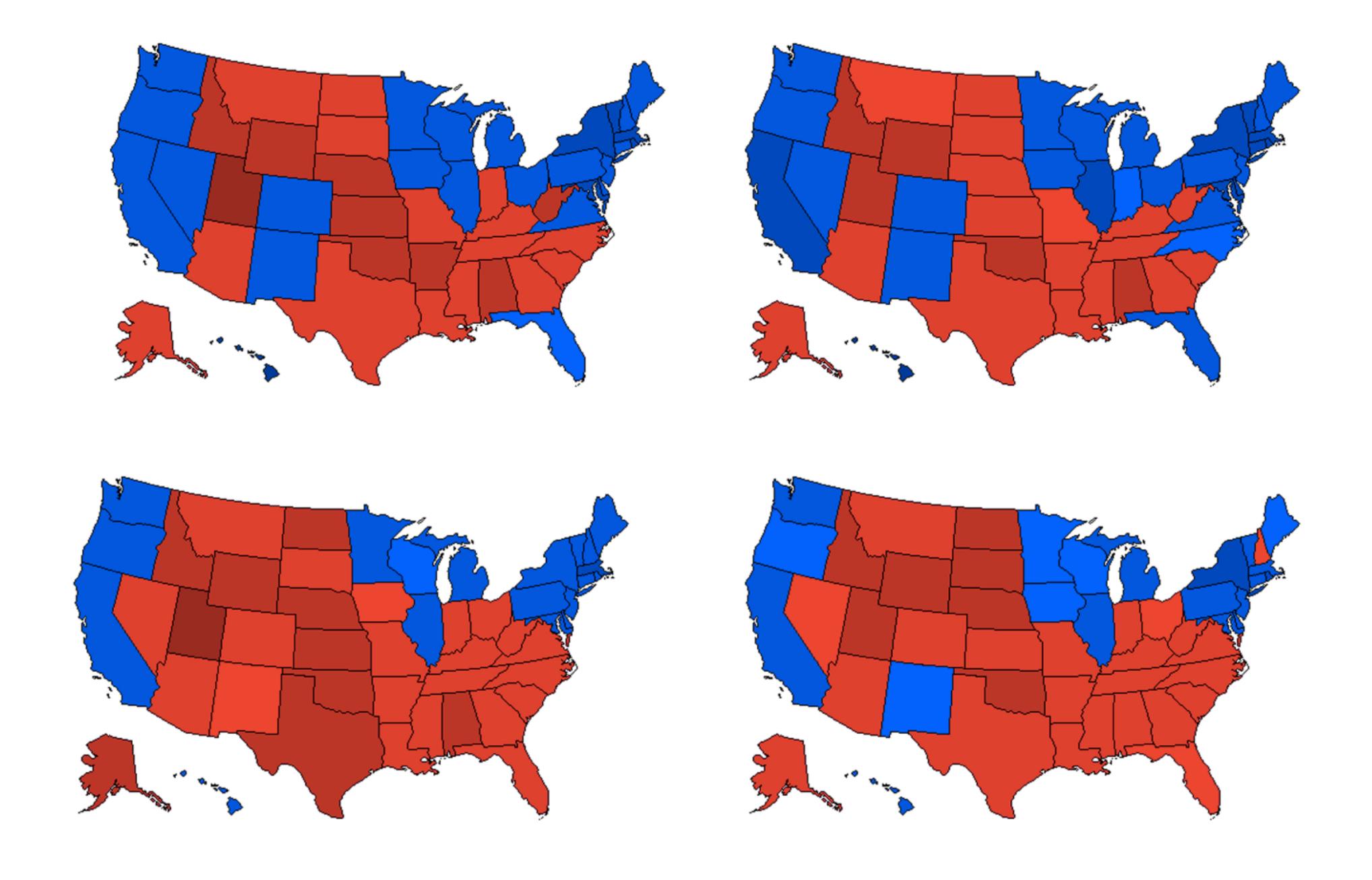
will be saved to this computer.

- Set all Times's tossups to Obama
- Set all Times's tossups to McCain
- Randomize Times's tossups
- Set map to 2004 results
- Set map to 2000 results

Share link to this map



Recent polling	Obam a	McCain		
Polls conducted by Interactive	Voice Technology, including Ra	smussen and SurveyUSA, d	o not mee	t the Times' polling standards and are not included.
Oct. 30	46.0%	47.0%	+/-4%	Mason-Dixon Polling & Research
Oct. 23	45.0%	46.0%	+/-4%	Mason-Dixon Polling & Research
Oct. 19	44.0%	45.0%	+/-4%	Suffolk University





Democrat 1.35

Republican 2.41

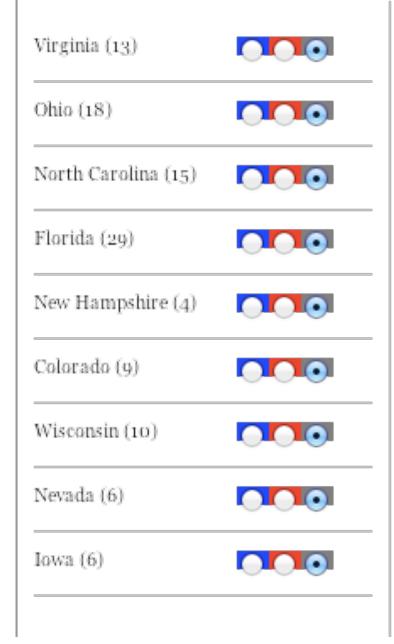
Republican

206

Electoral Votes Won

Democrat 332

Electoral Calculator



Romney

Needs:79

Total:191

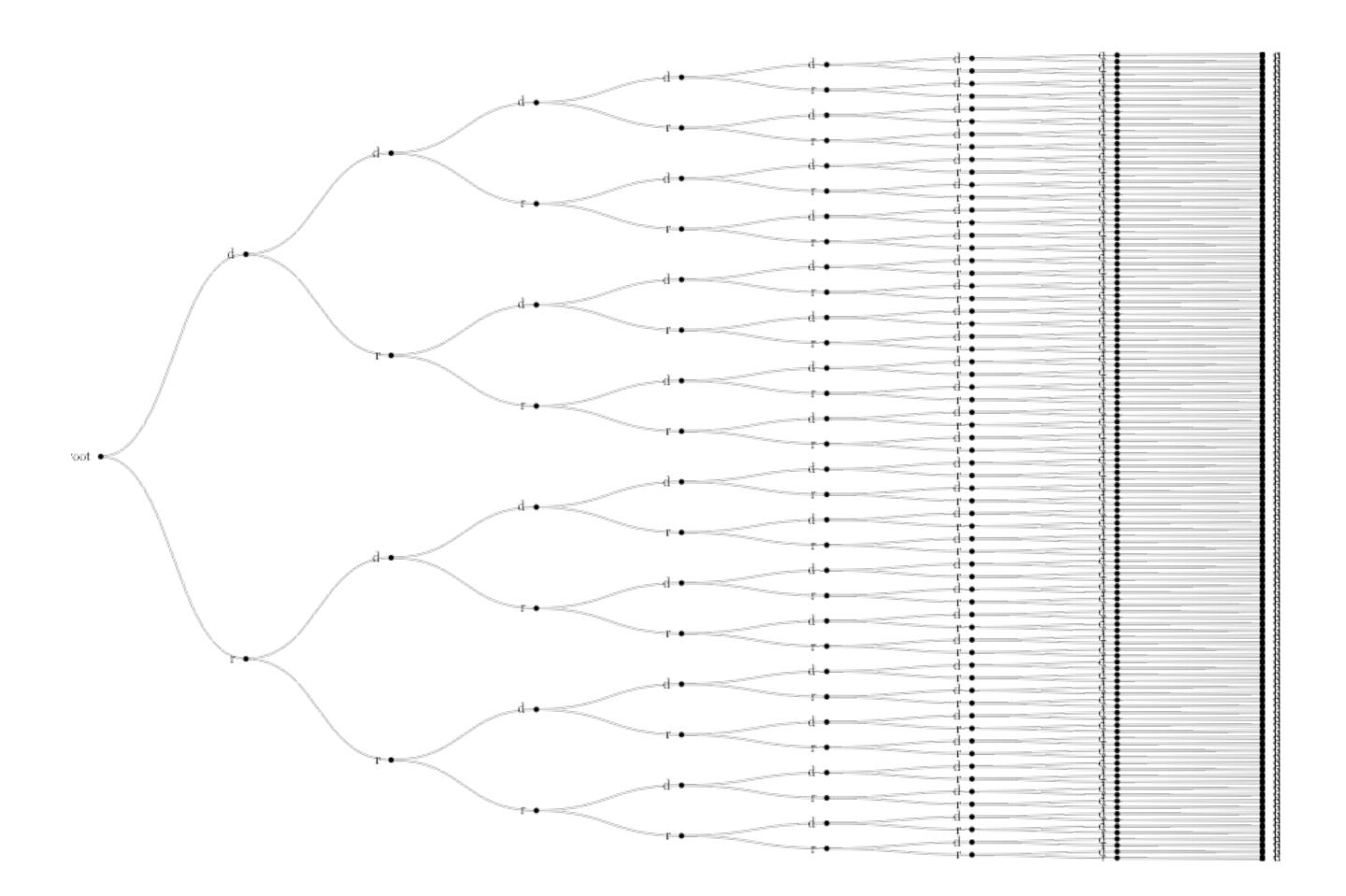
Overview

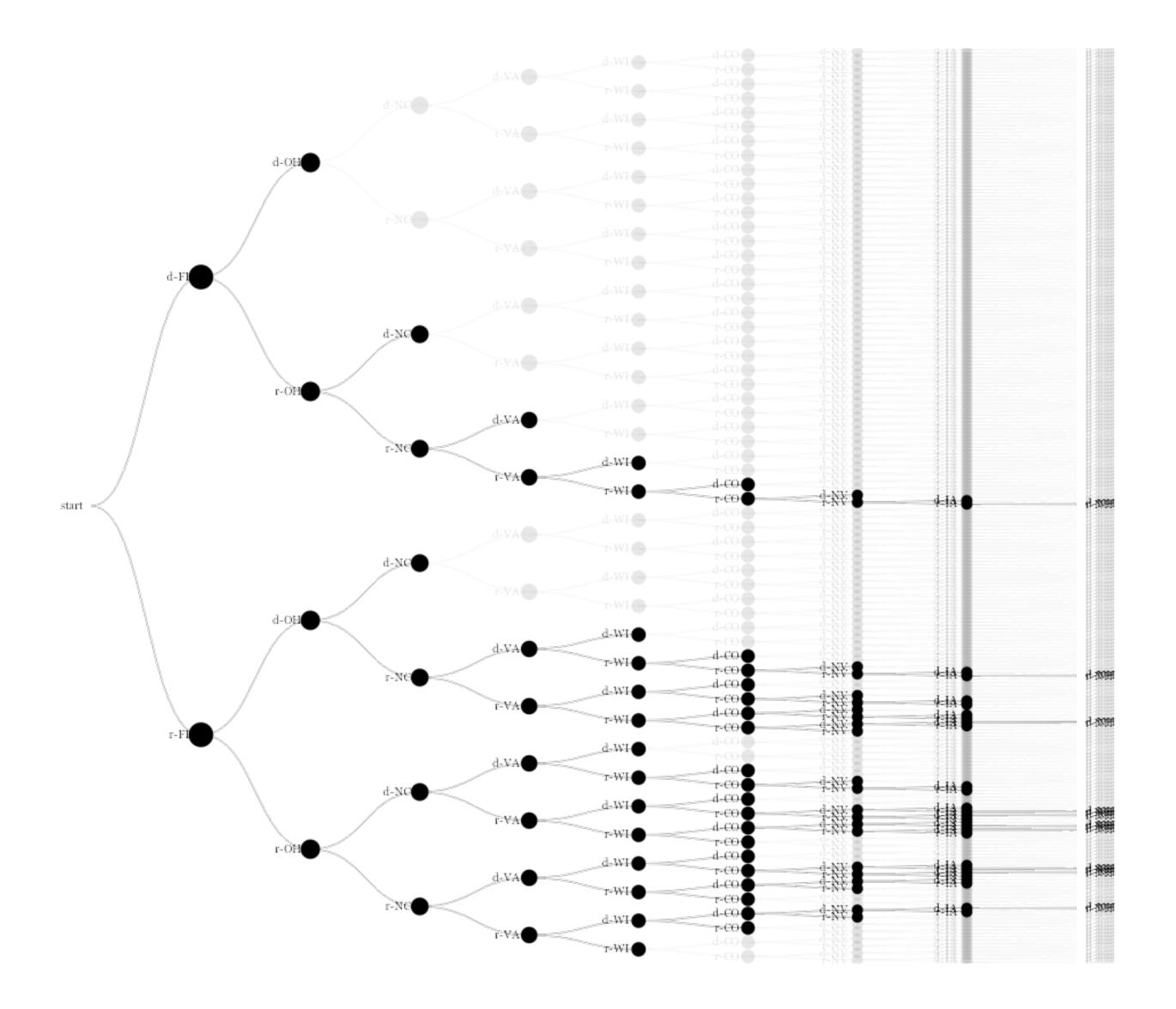
Remaining: 110

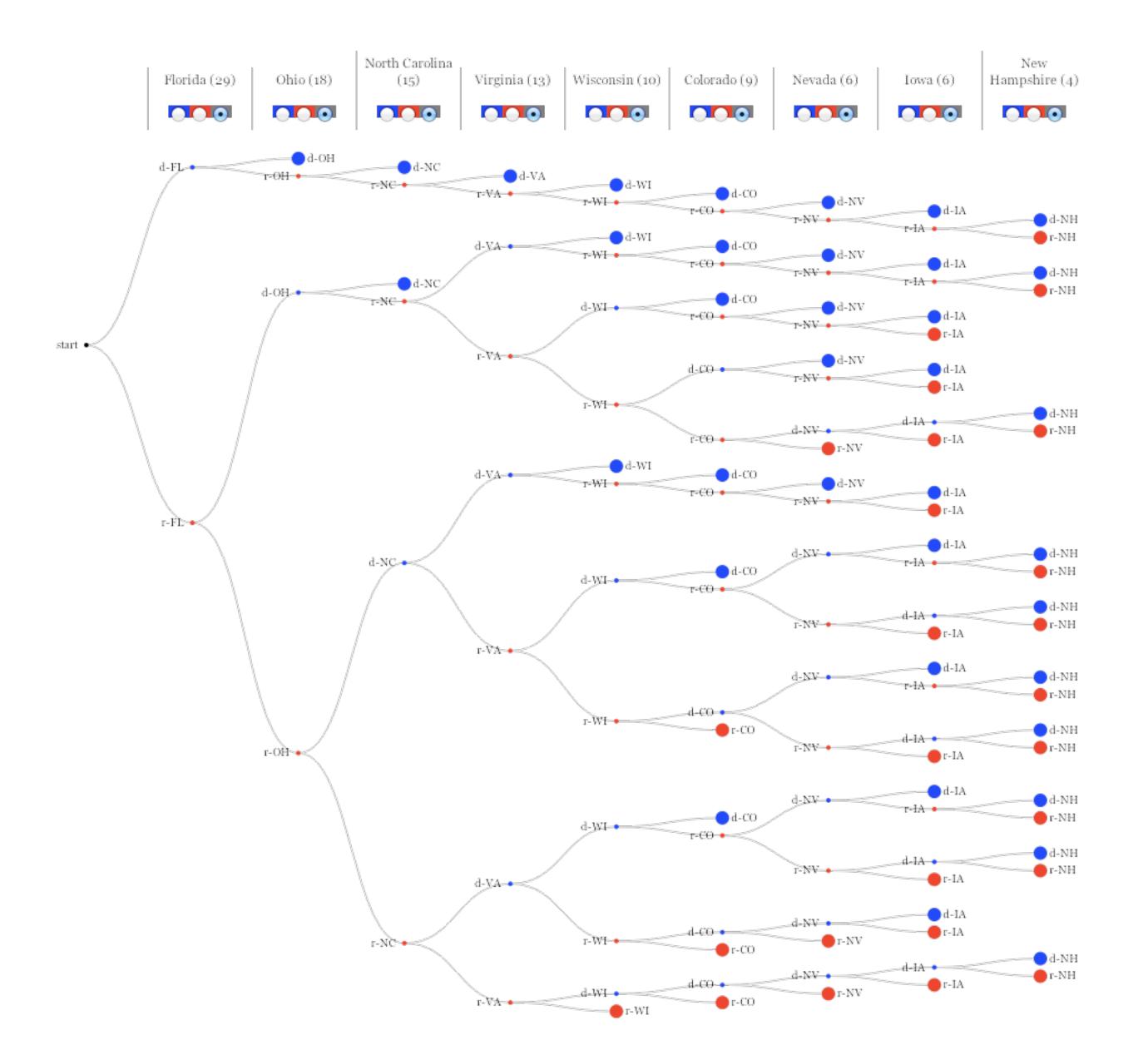
Obama

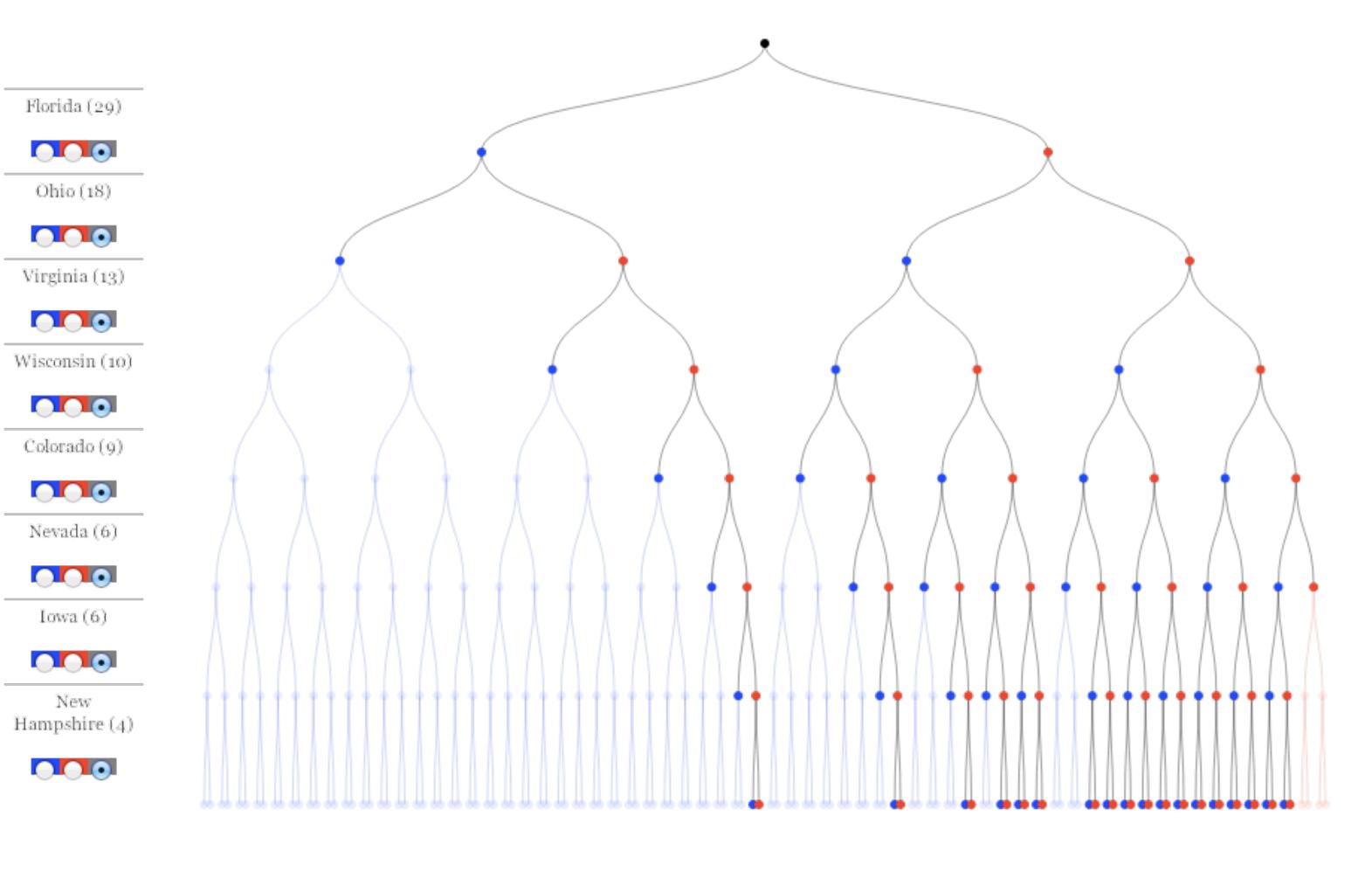
Total:237

Needs:33

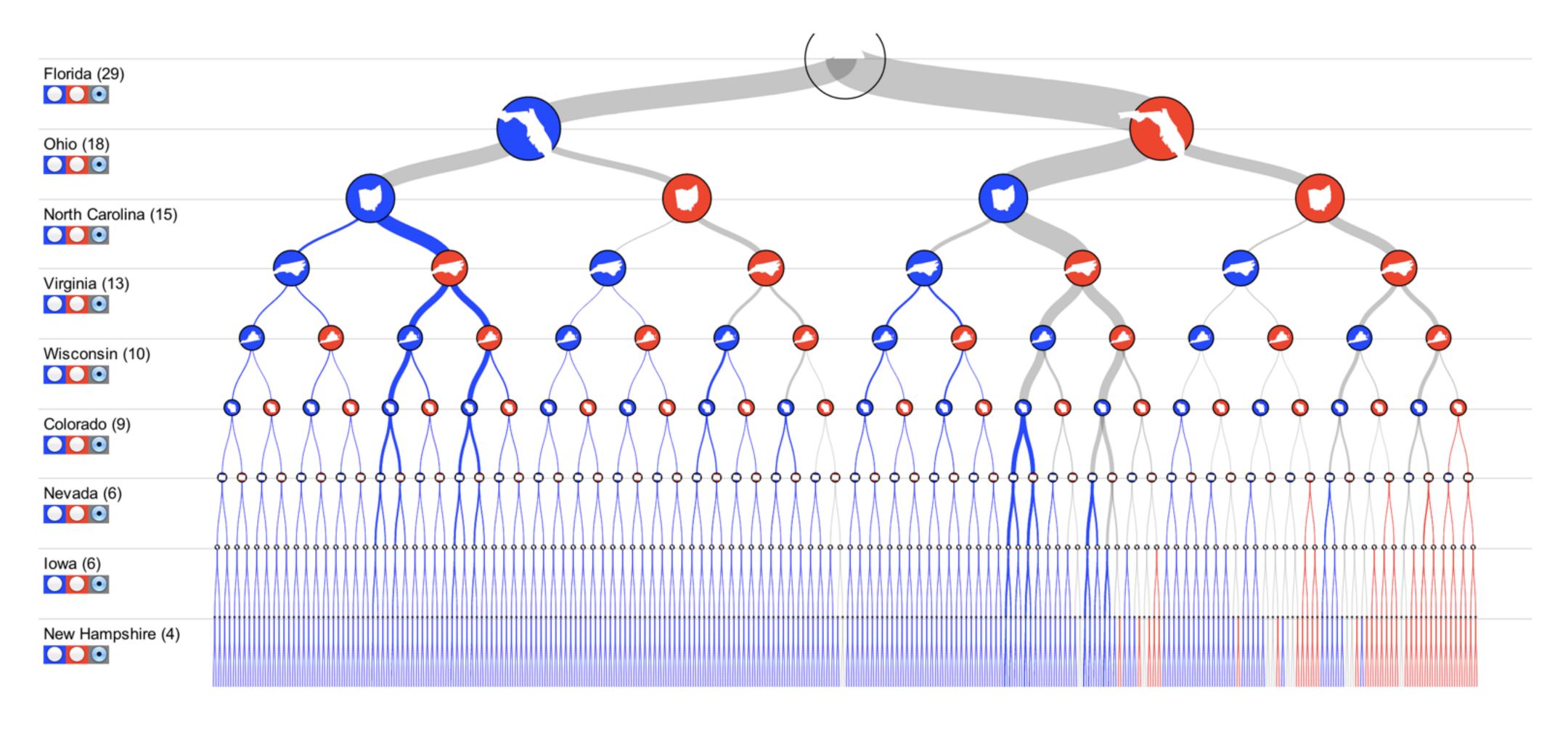


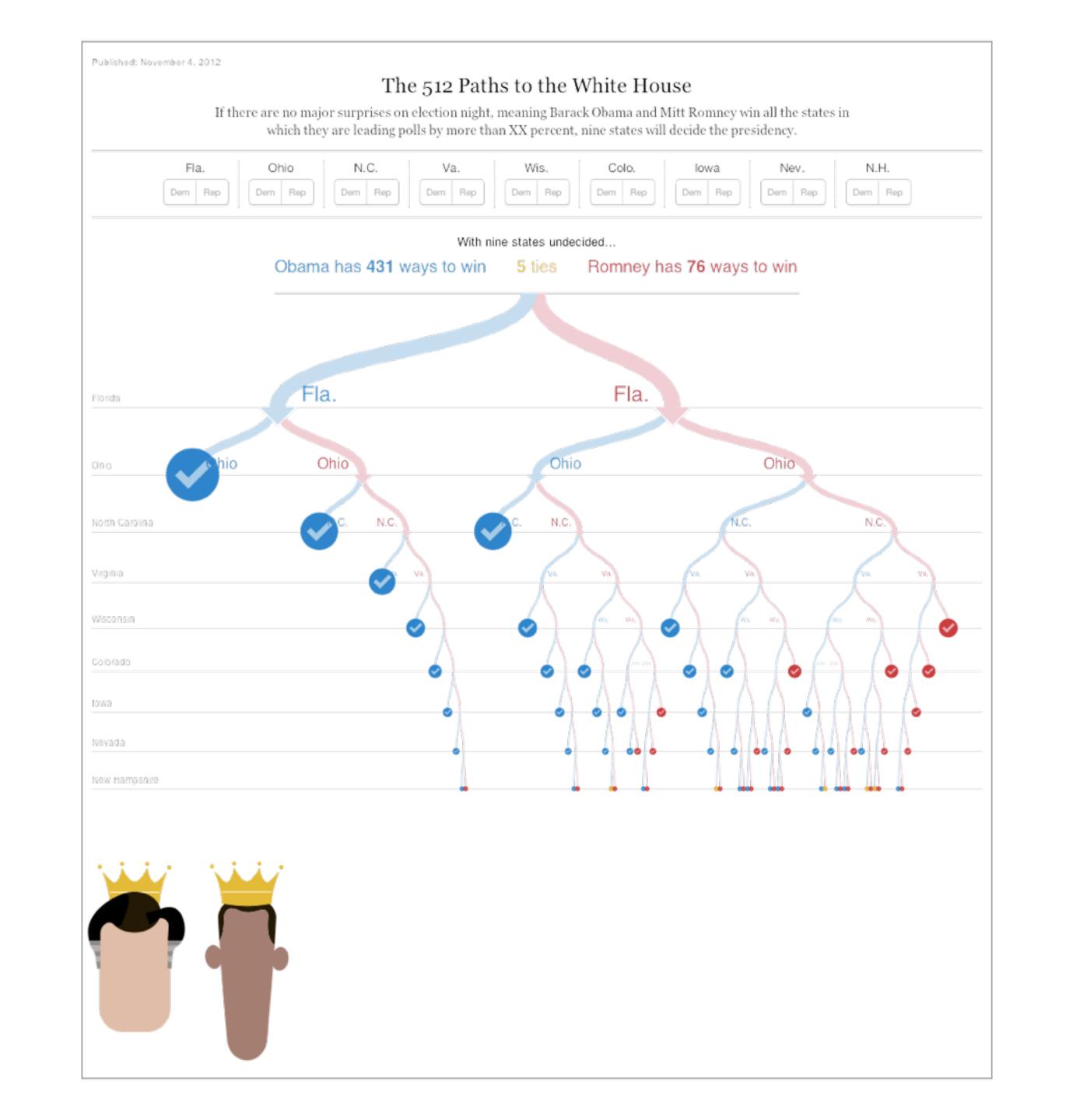


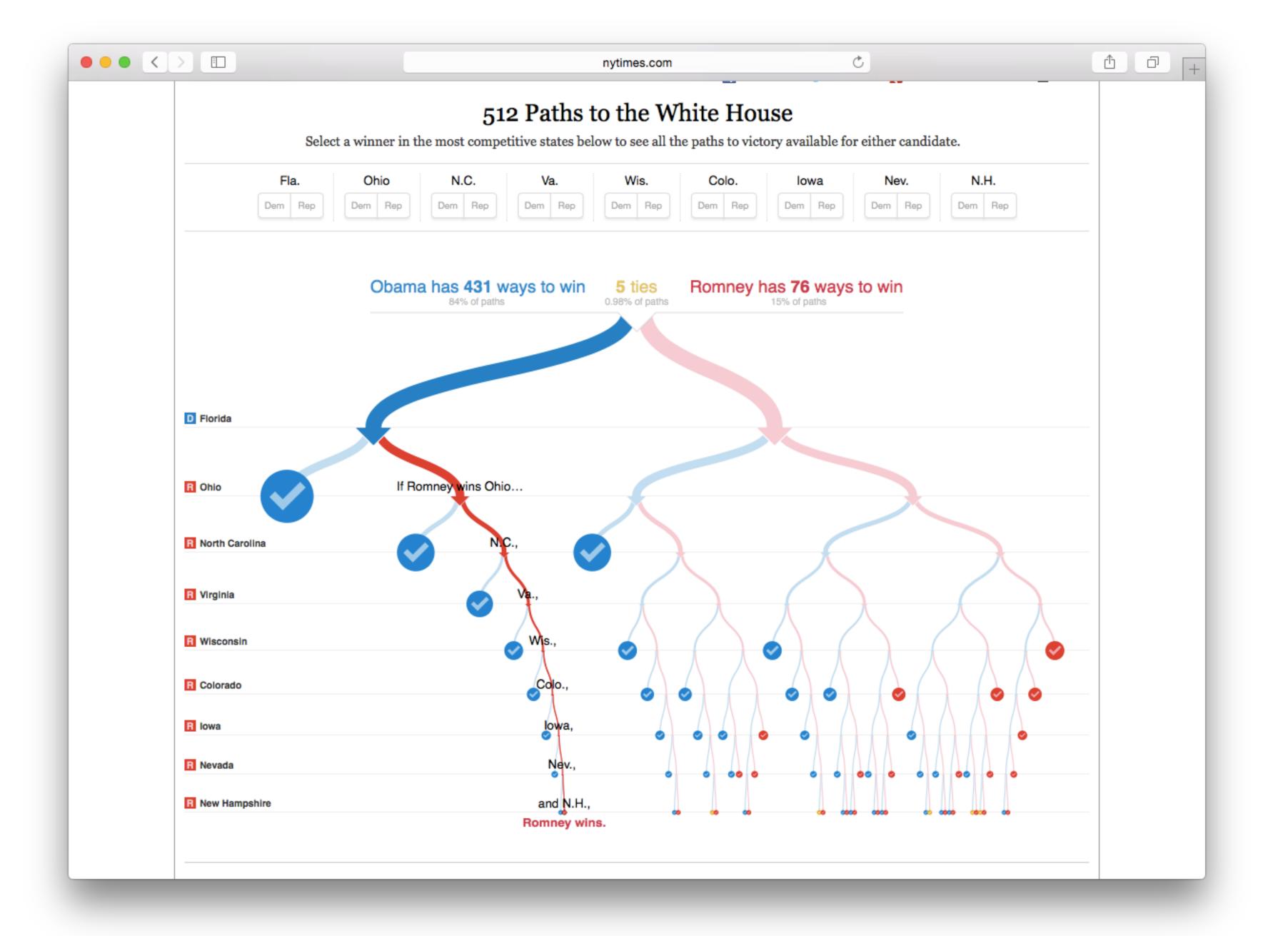




Electoral Calculator







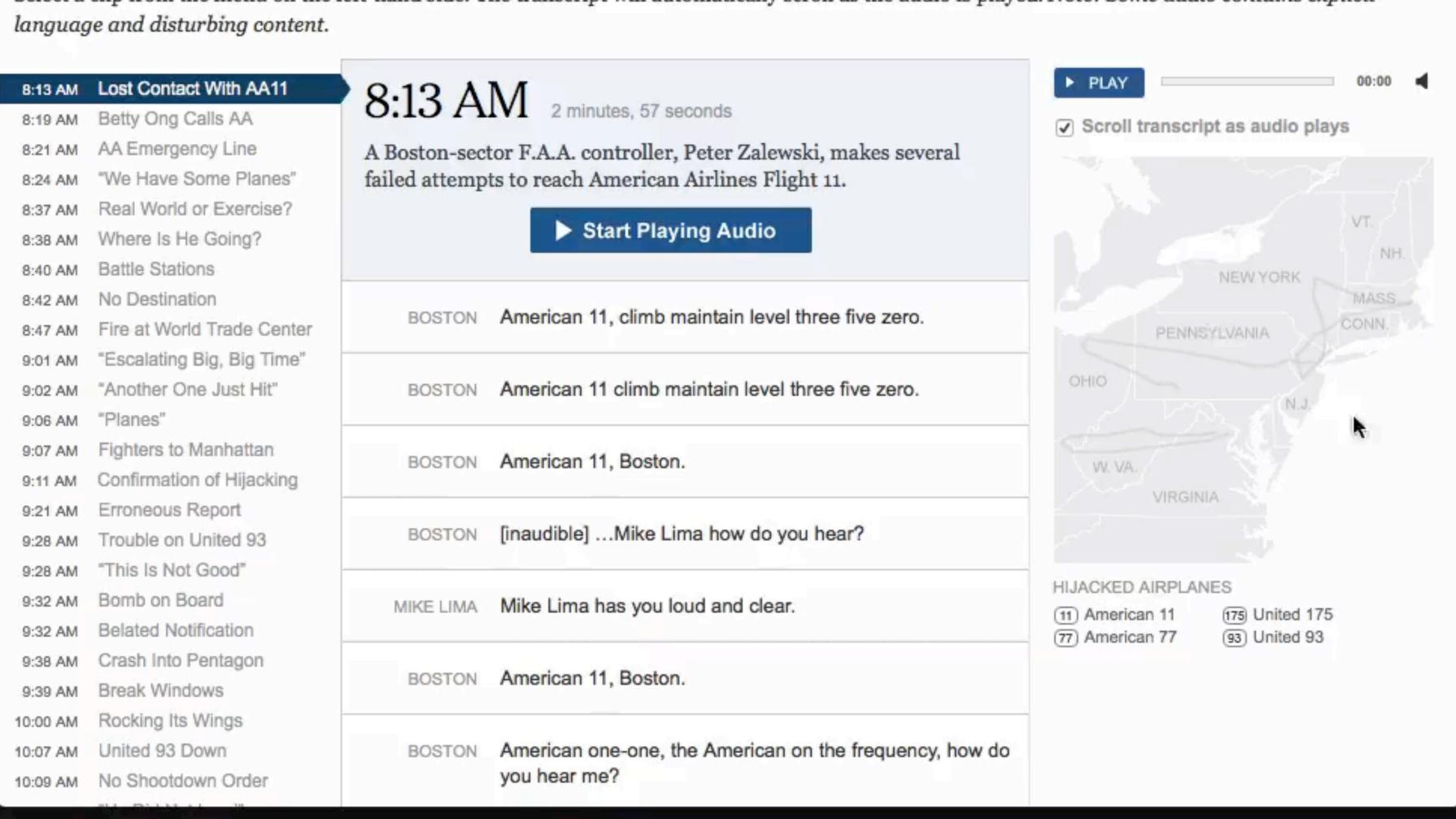
9/11 tapes



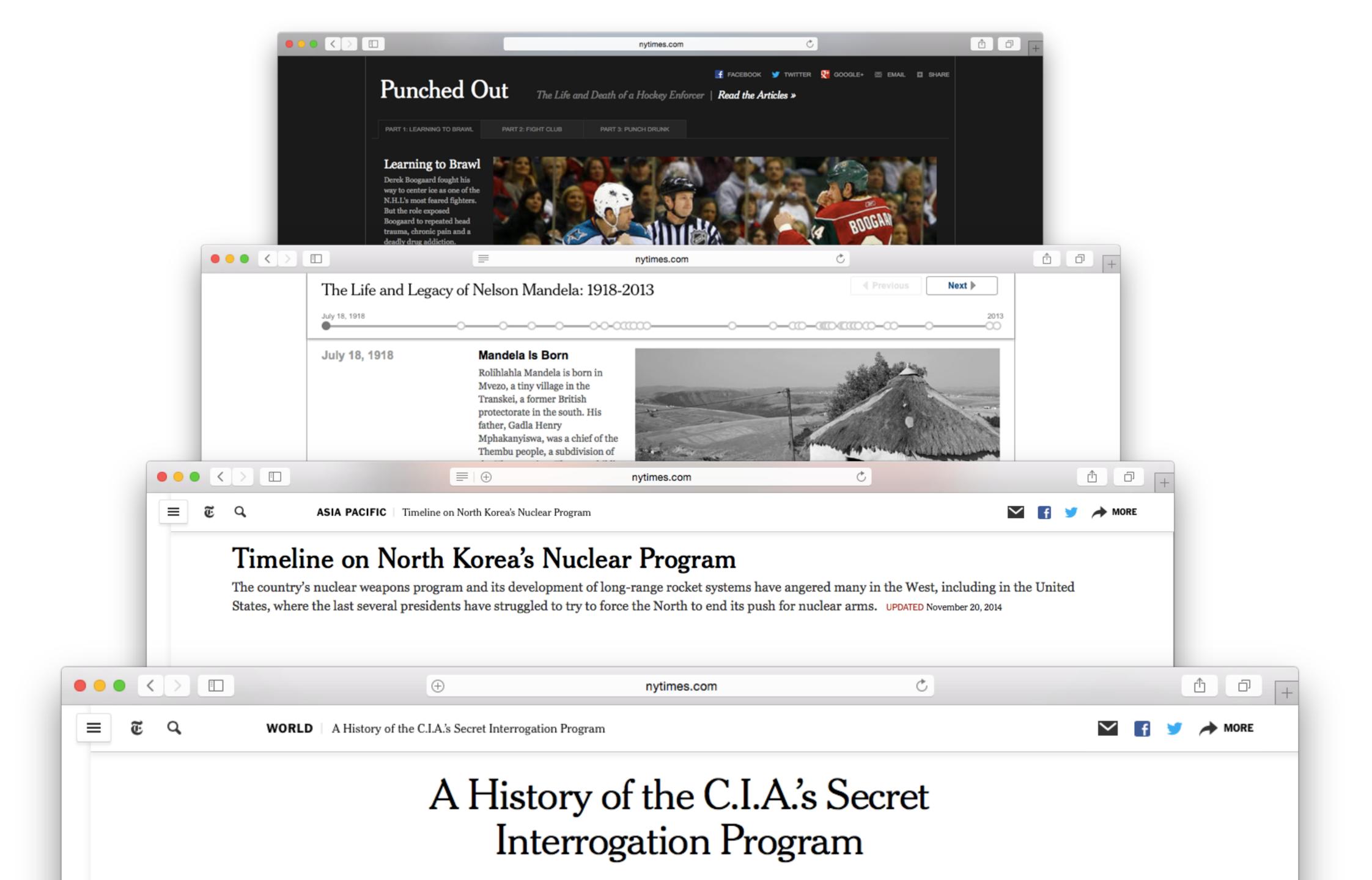
The 9/11 Tapes: The Story in the Air

A selection of audio recordings from the Federal Aviation Administration (F.A.A.), North American Aerospace Defense Command (Norad) and American Airlines from the morning of Sept. 11, 2001. The recordings, some of which have been published previously, are being released in a multimedia report originally intended to be part of the Sept. 11 Commission's 2004 report. Read Related Article »

Select a clip from the menu on the left-hand side. The transcript will automatically scroll as the audio is played. Note: Some audio contains explicit







Fractions of a second

Published: February 26, 2010

Fractions of a Second: An Olympic Musical

At the Olympics, the blink of an eye can be all that separates the gold medalist from the 10th-place finisher. In some events, this is obvious. But in others, with athletes racing one by one, the closeness of the race is harder to perceive. Listen to the differences below.



Alpine skiing

The women's downhill course was extremely tiring, and, because it was more challenging than the men's course, it ended up separating the skiers by much larger margins. This pattern appears in the two speed events: the downhill and the super-G.

	WINNING	SECONDS BEHIND GOLD MEDALIST																	
	TIME	0		0.	.25		0.5			0.75		1			1.	25			
PLAY ▶ Women's Downhill	1:44.19							0										- 1	0.0
PLAY ▶ Men's Downhill	1:54.31		00		0 0	0	0	0.00		0		00	-		0	0	1	0.0	- 6
PLAY ▶ Women's Super-G	1:20.14	0					0			0	0			0		00	0		
PLAY ► Men's Super-G	1:30.34	0			0 000		.0	0		-	0.0		0 (00	- 0		0		
PLAY Women's Super Combined	2:09.14	0											0				00		
PLAY ▶ Men's Super Combined	2:44.92	0				0			0		0				0	0			
PLAY ▶ Women's Slalom	1:42.89	.0				0							0			-	0		
PLAY ▶ Men's Slalom	1:39.32			0		0					0		0	0			0 0	0 0	9 0
PLAY > Women's Giant Slalom	2:27.11		0	0		-		0		0	00		0 0		-	0 0		0	
PLAY ▶ Men's Giant Slalom	2:37.83	0				0			0	ė.		0.0	0		0	0	0		



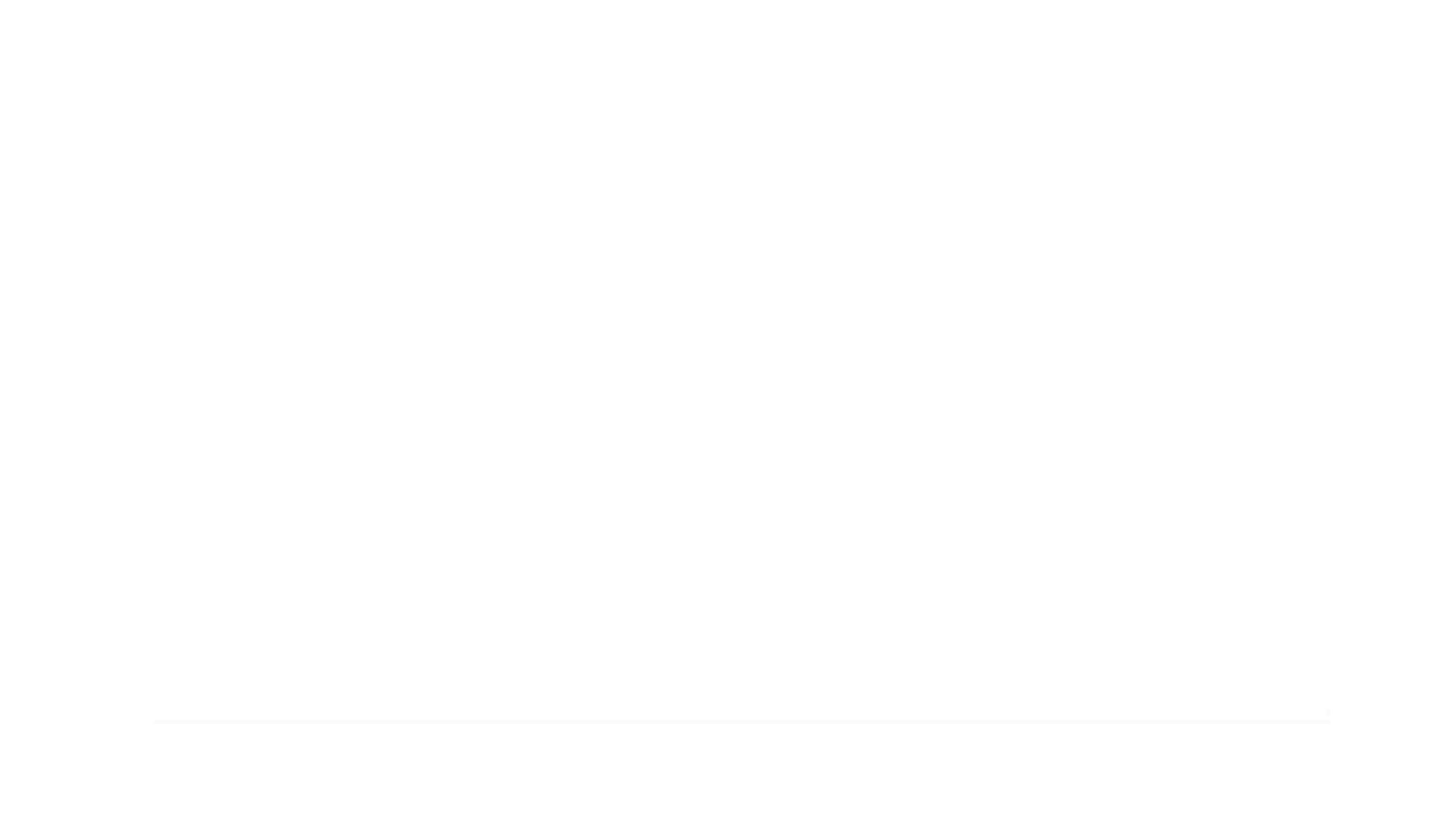
Skeleton, Bobsled and Luge

In percentage terms, the men's skeleton had one of the tightest finishes in Vancouver, with only .07 of a second separating the top two finishers across a three-and-a-half-minute run. But the difficult track produced speeds higher than expected, and many sliding events had relatively large gaps between gold and silver.

		WINNING	SEC	ONDS B	EHIND GO	LD MED	ALIST								
		TIME	0		0.25		0.5		0.7	5		1	1.25	j.	
PLAY ▶	Men's Skeleton	3:29.73		0								0		-	
PLAY ►	Women's Skeleton	3:35.64	0					0	0	0		0		0	0
PLAY ▶	Men's Two-Man Bobsled	3:26.65	0		0					0			00	0	
PLAY ▶	Men's Four-Man Bobsled	3:24.46				60						00	0		
PLAY ▶	Women's Bobsled	3:32.28	0							0		0			
PLAY ▶	Men's Singles Luge	3:13.085							0					00	
PLAY ▶	Women's Singles Luge	2:46.524						0	0 0		0	0 0 0			0
PLAY »	Doubles Luge	1:22.705			0	0 0	0		0	0	0	0	0		0

Mariano Rivera

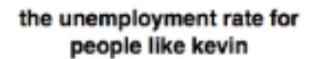


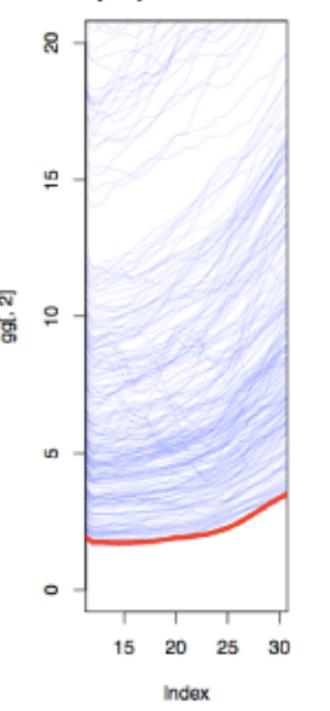


Process

Exploration

R/R Studio Illustrator





All education levels

Not a high school graduate

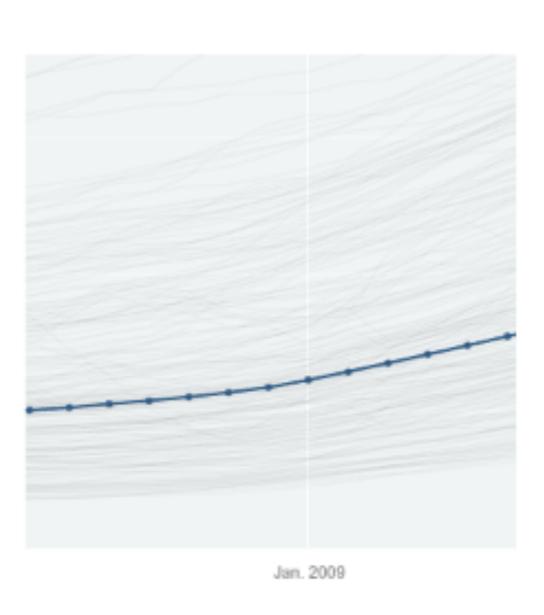
High school graduate

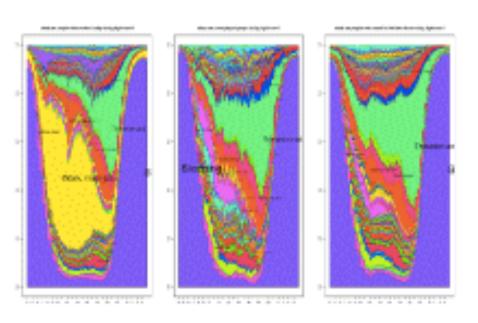
College graduate

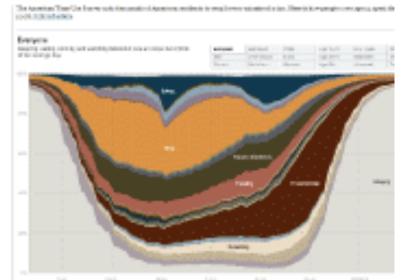
UNEMPLOYMENT RATE, 12 MONTH AVG. ENDING SEPT

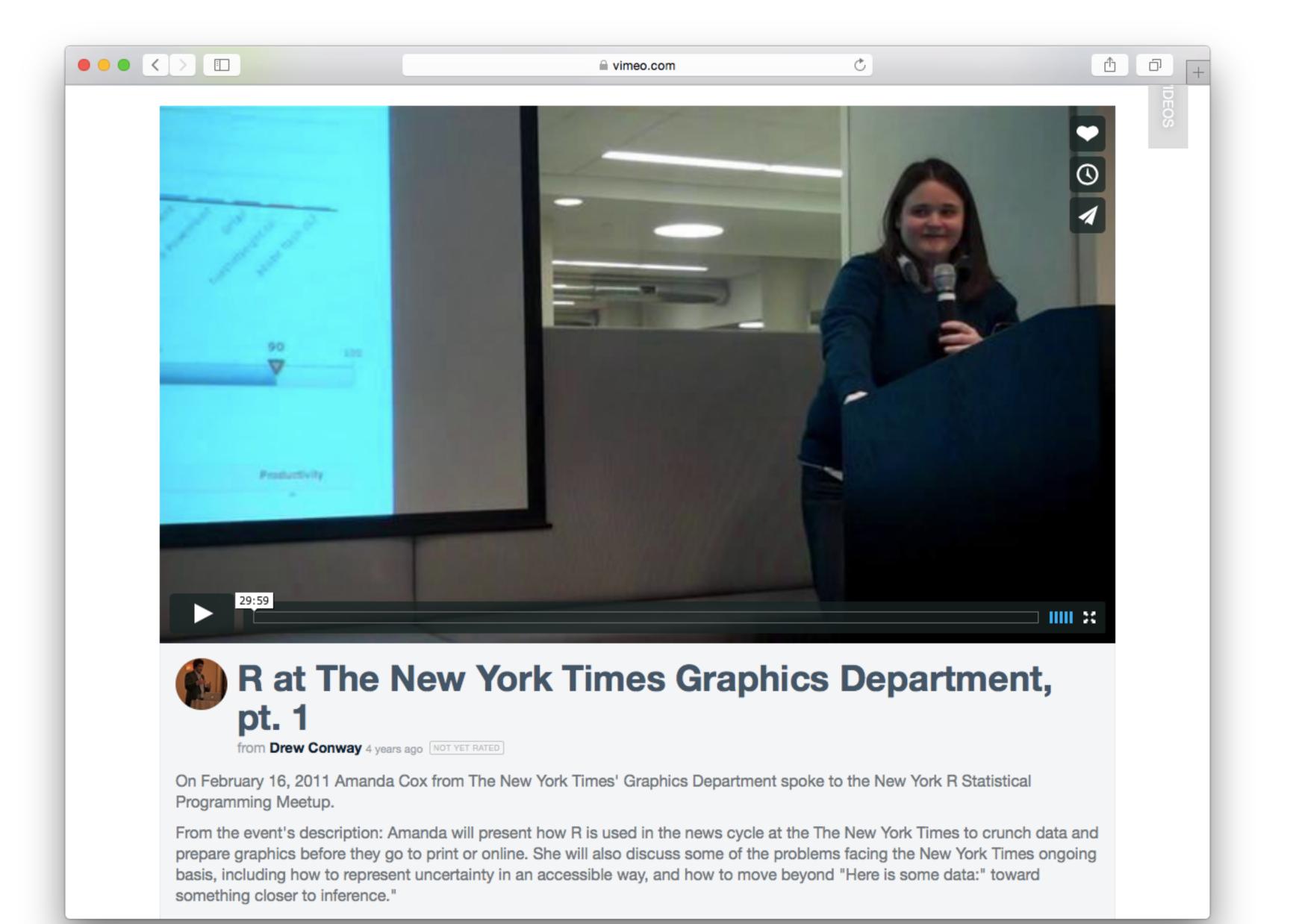
8.6%

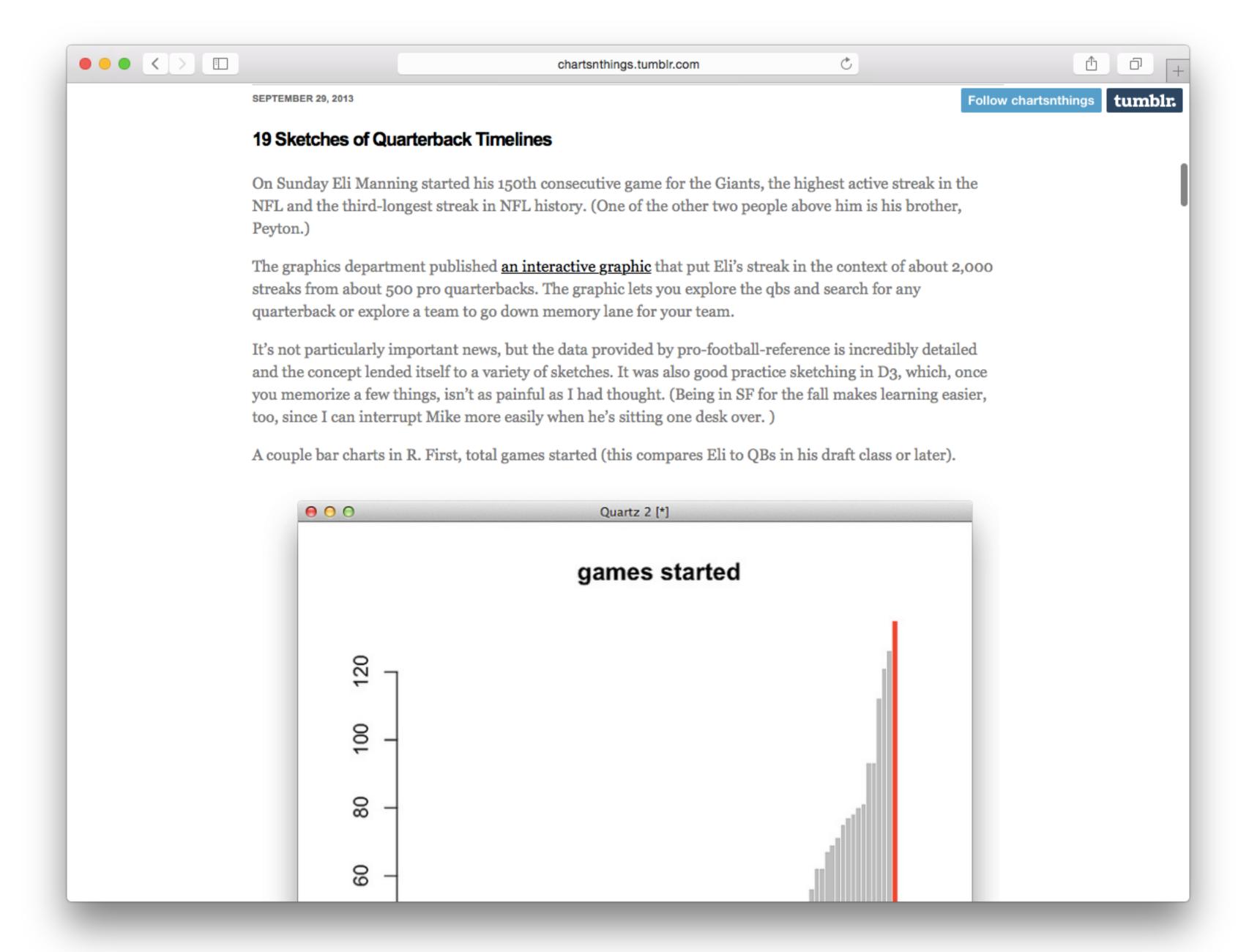
For all men and worr

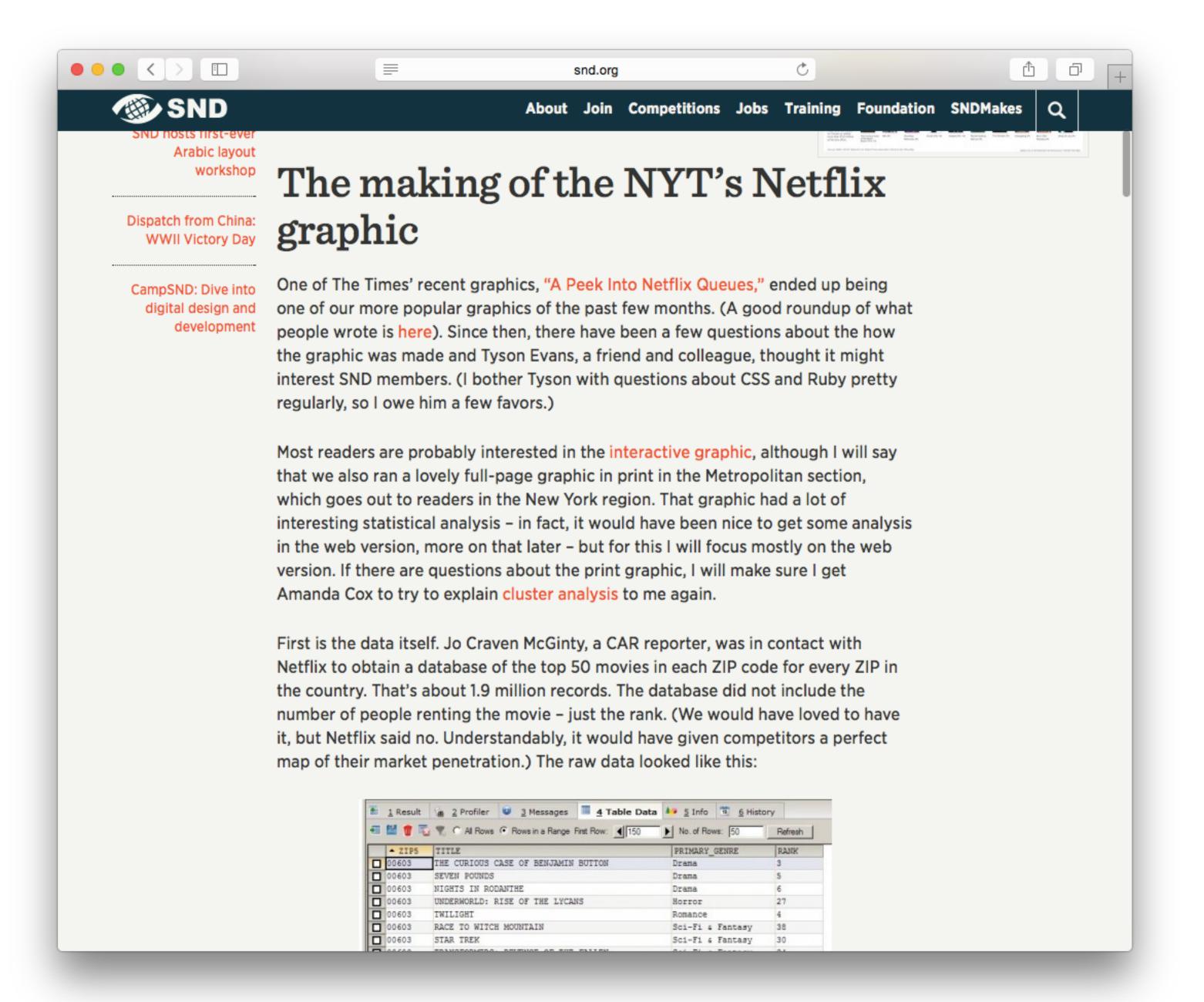








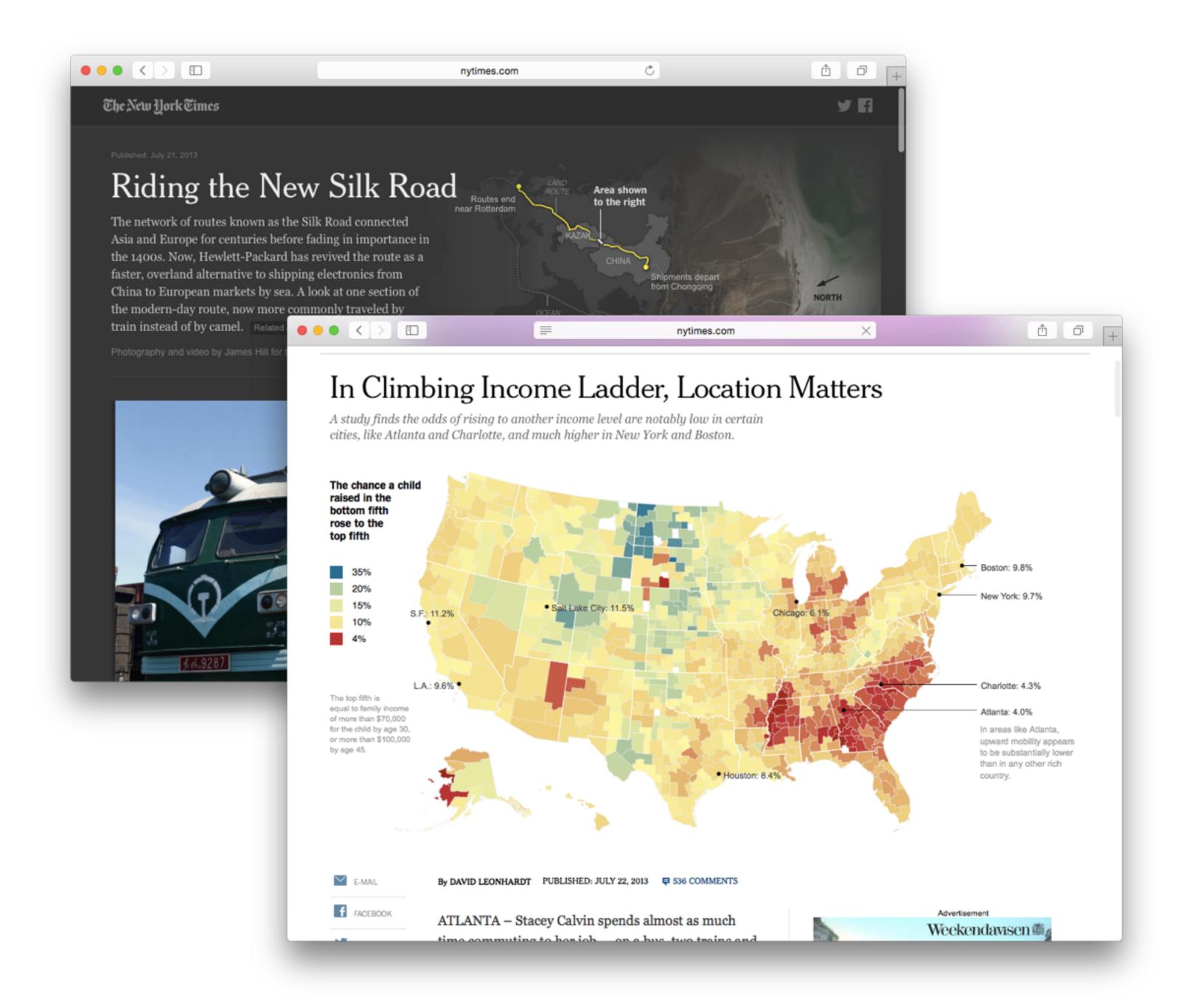




Production

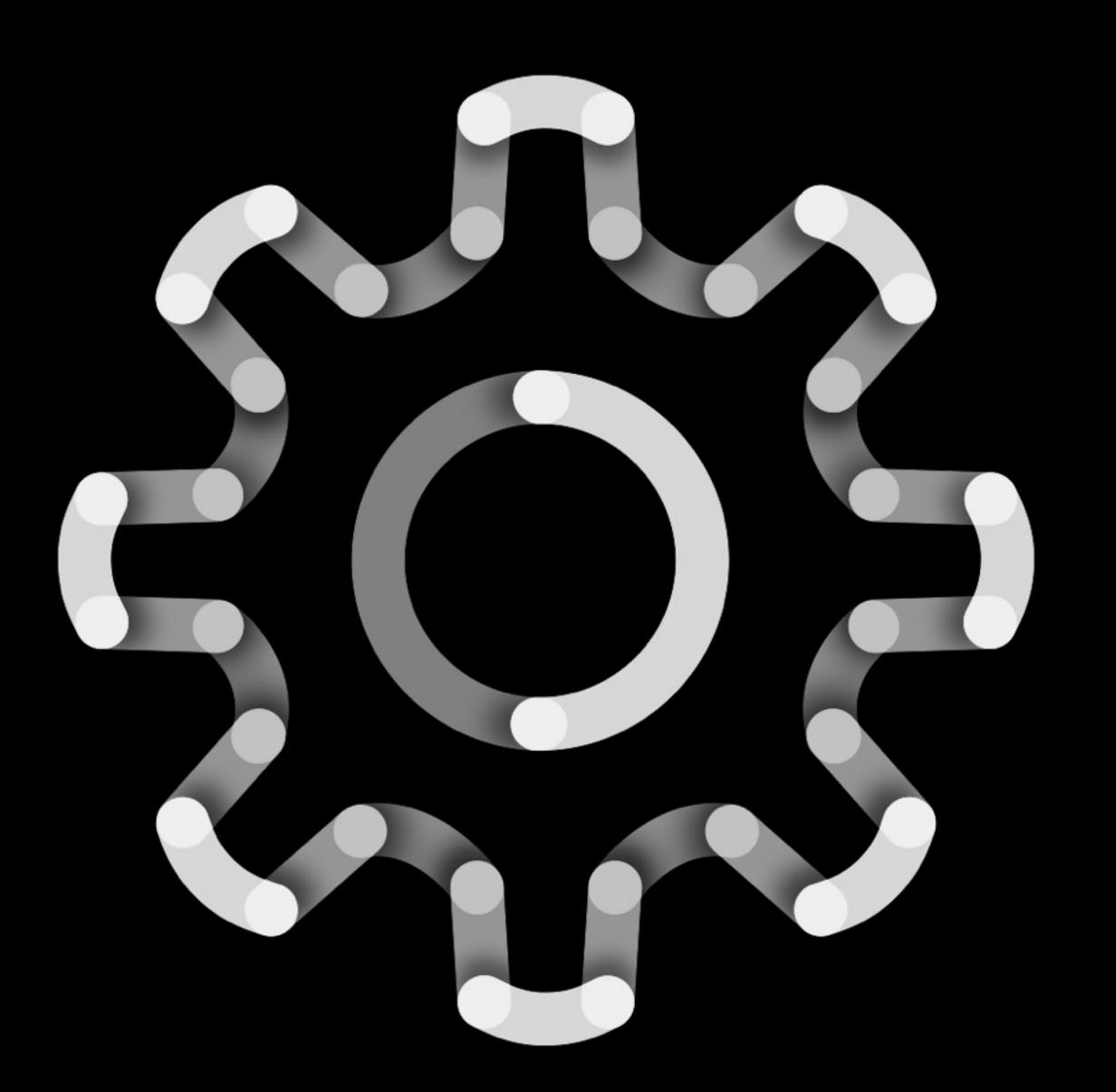
JavaScript

D3.jsjQueryUnderscoreSVG library



More examples

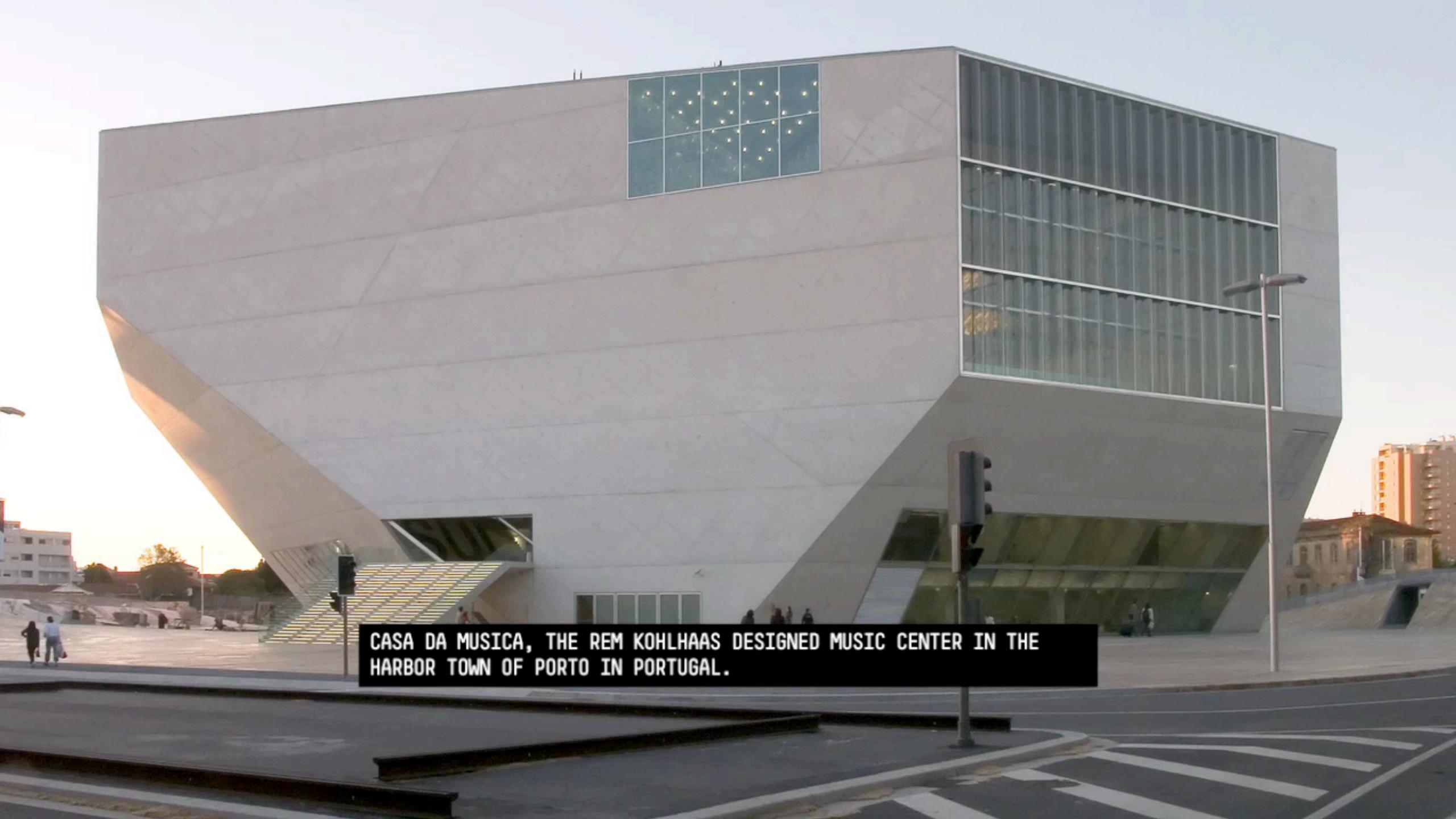
Design is becoming increasingly algorithmic.







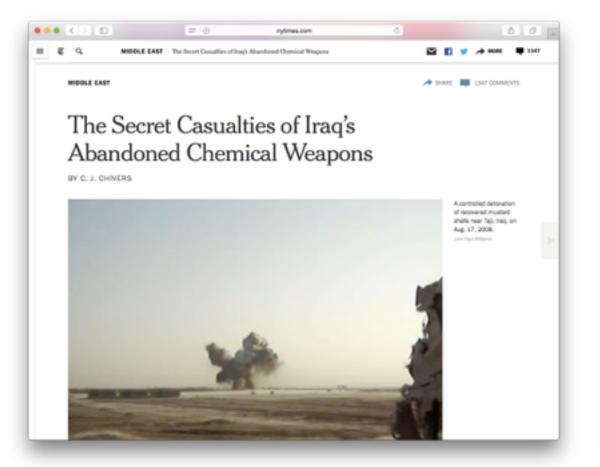
FUNCTION

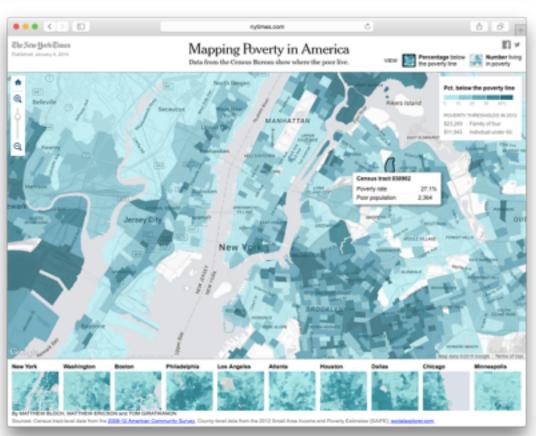


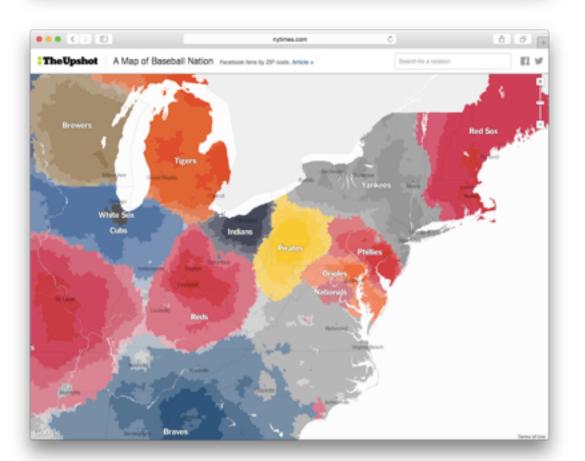


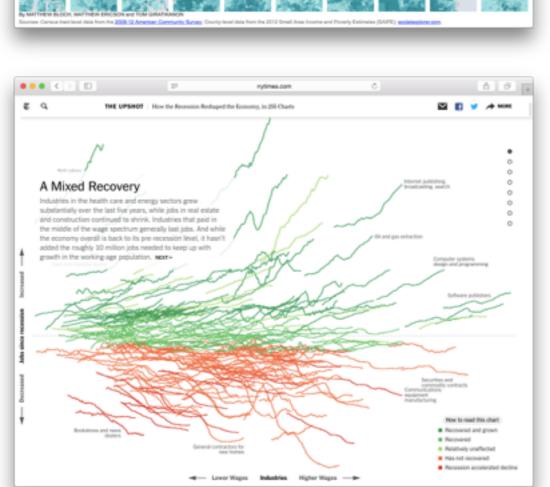
HOW THE ARCH IS BEING BUILT (0.58)

00+

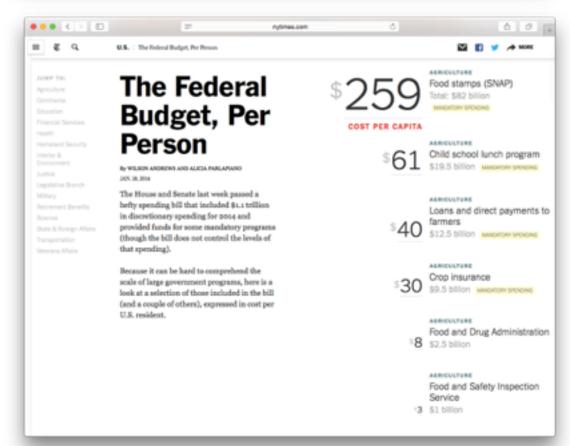








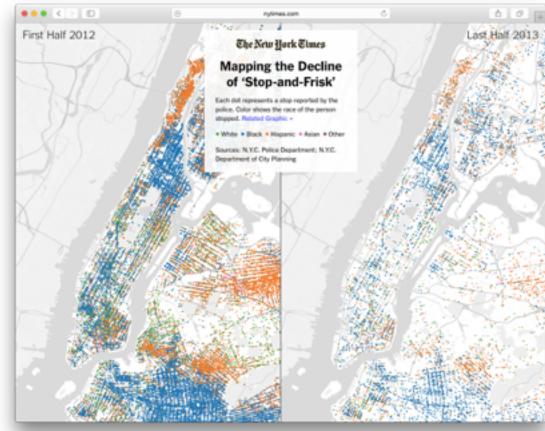






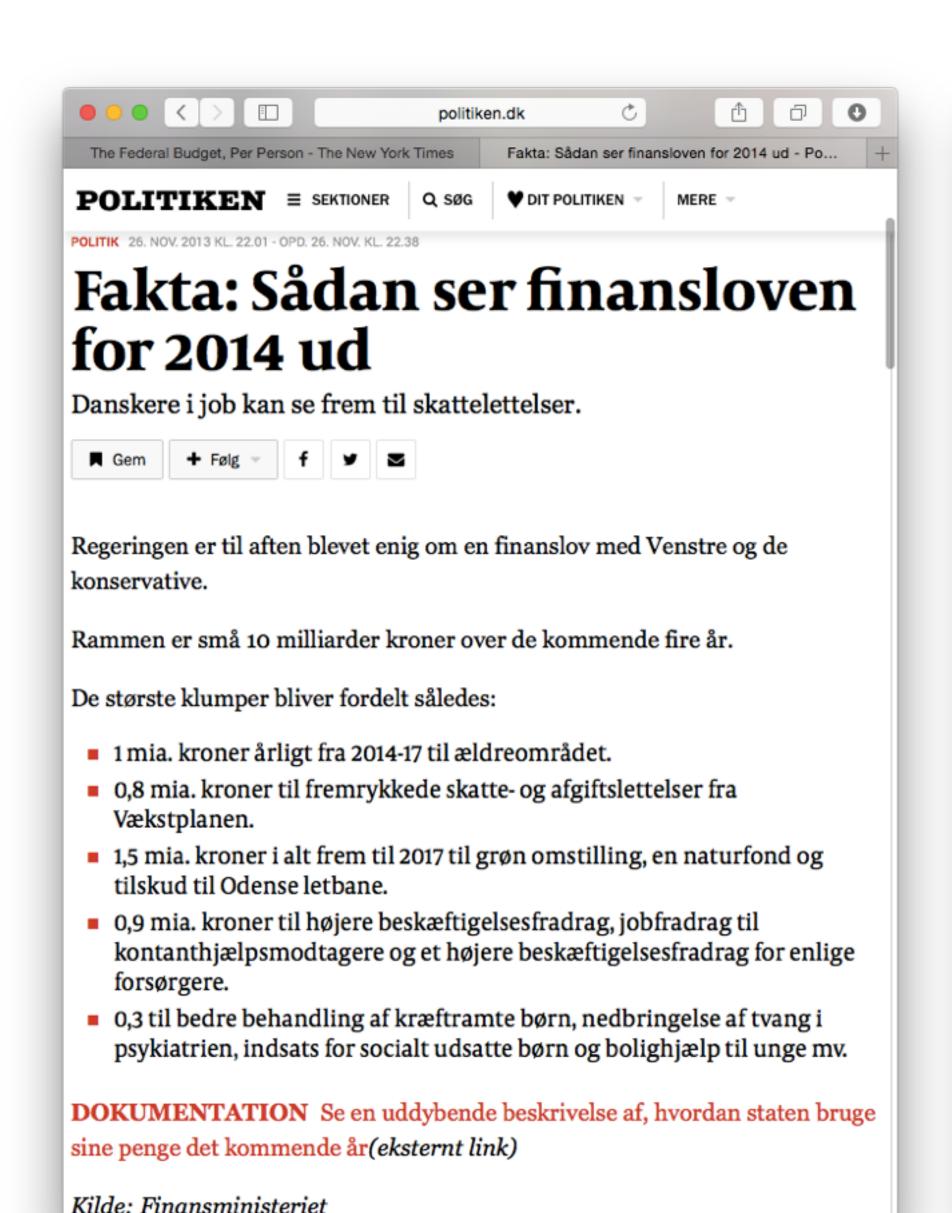


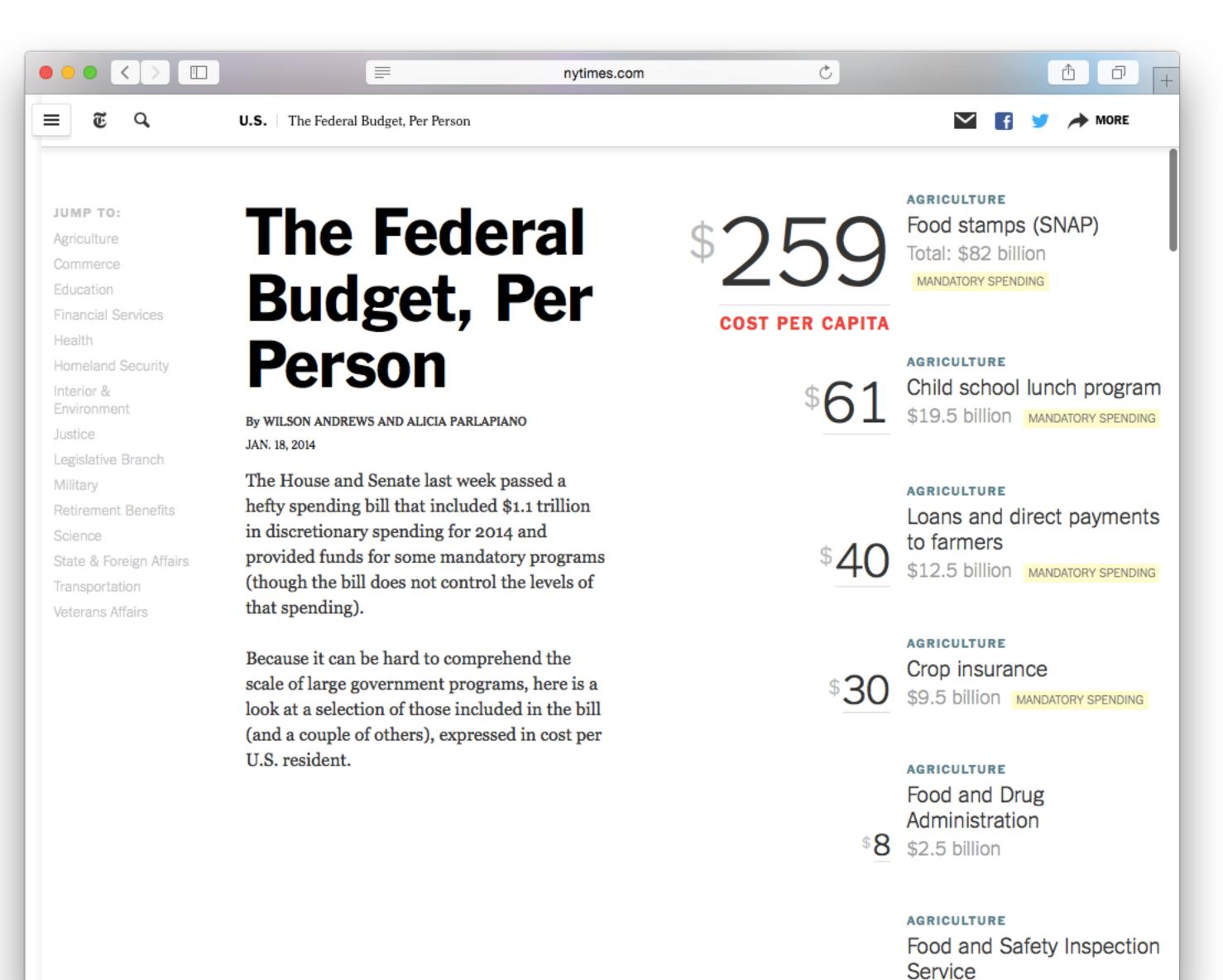




Finally...

Content first

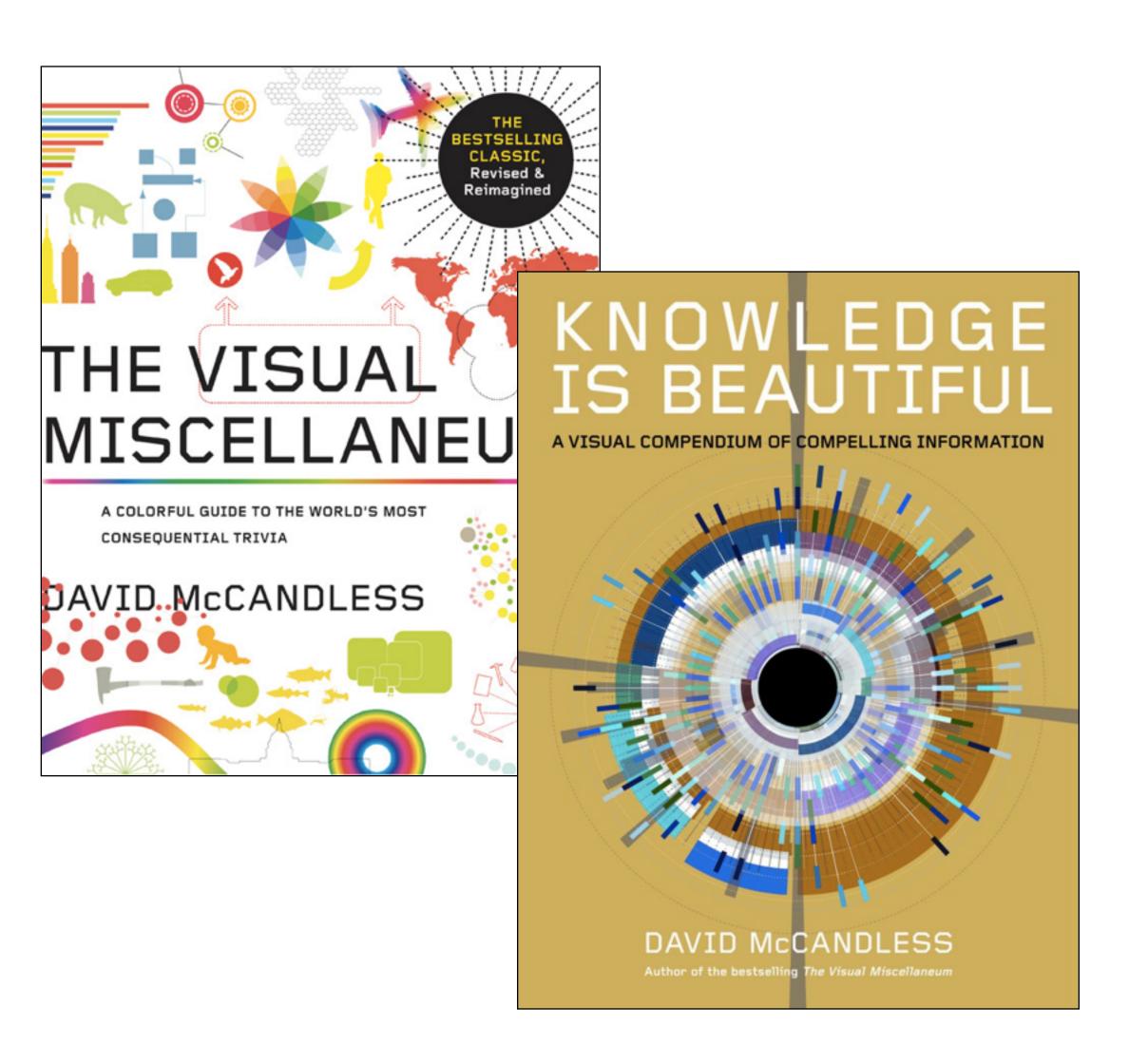




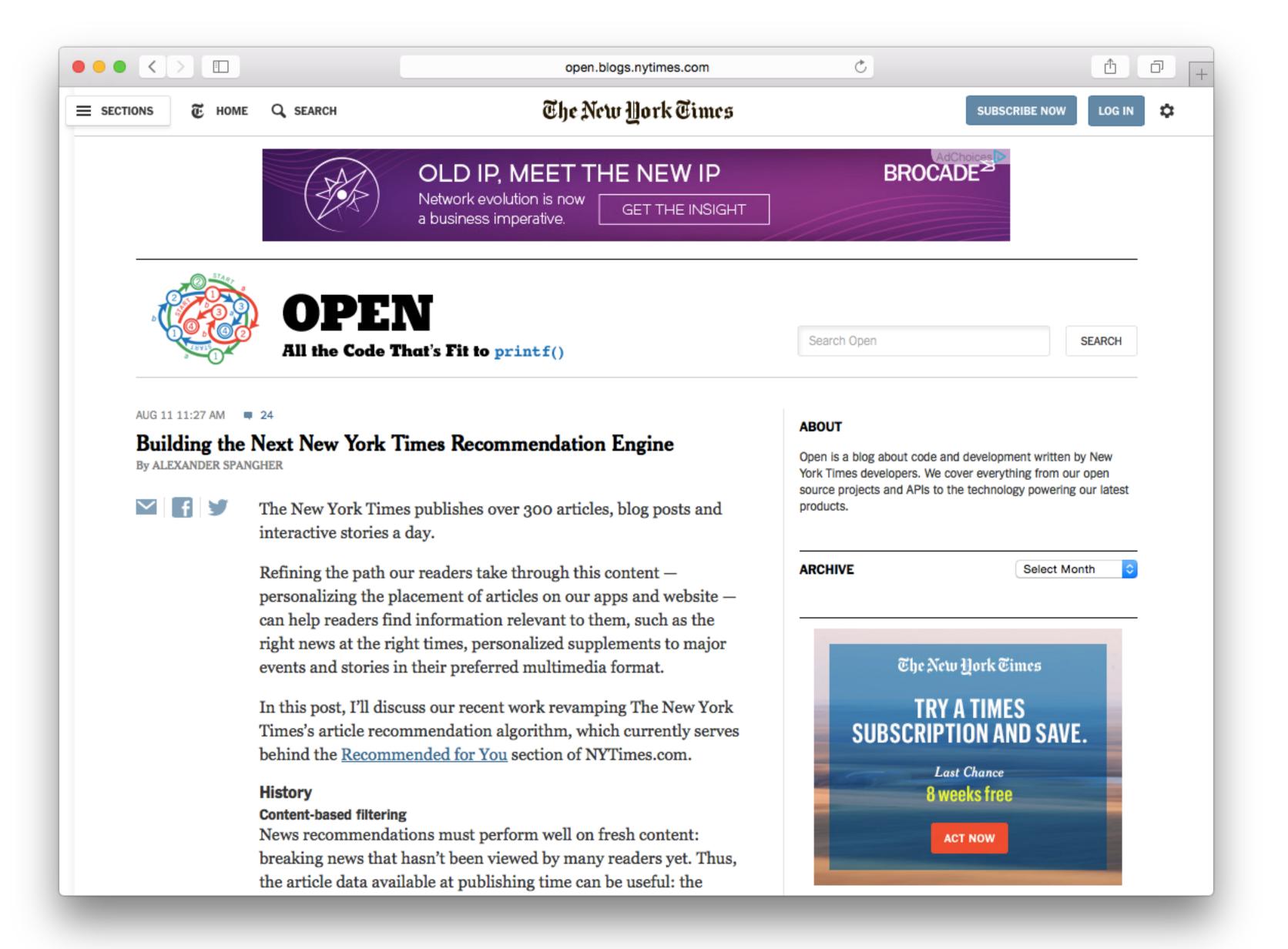
Yes



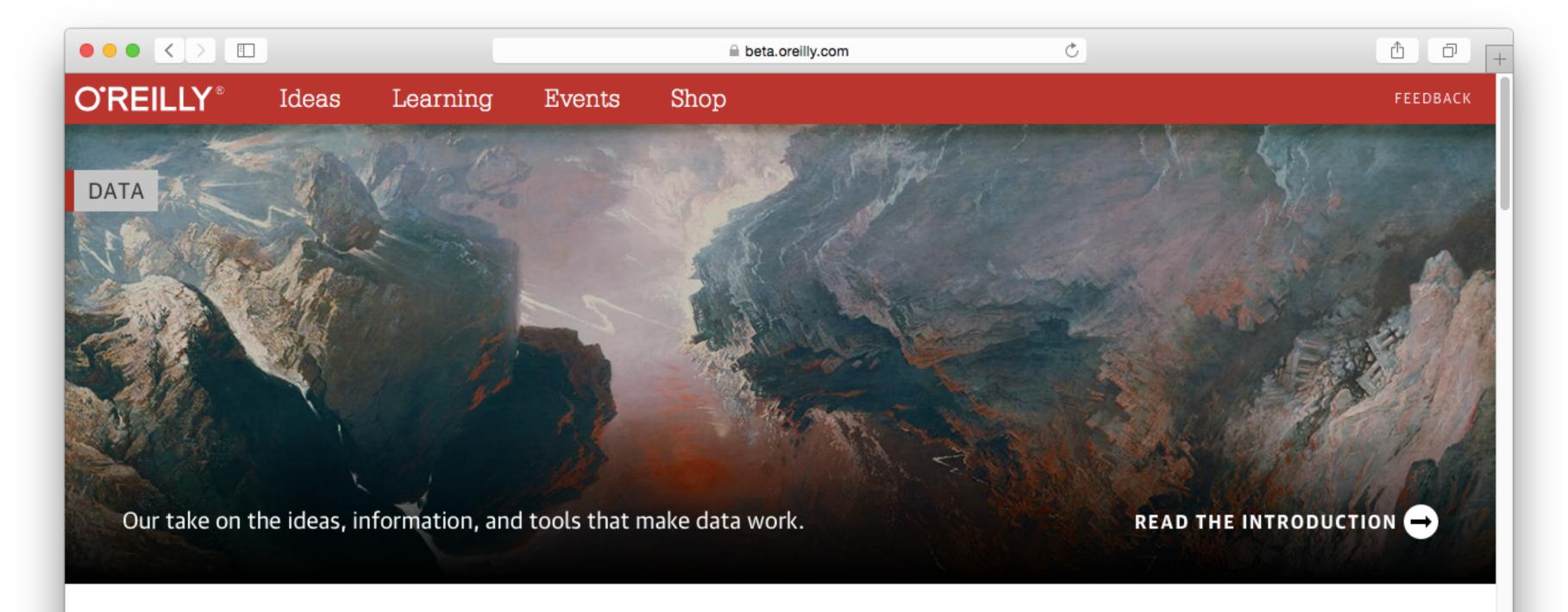
No



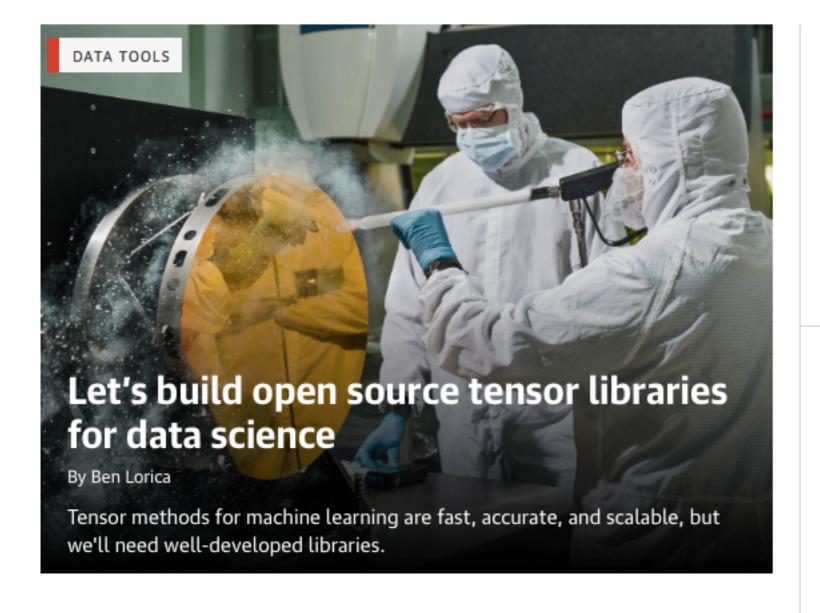
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Ideas



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By Pete Warden

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By Jay Kreps

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