IDN550-01
Communication Design Workshop
2018 Spring
Institute of Design

Ichikawa | Pino

Census+

Data visualization of Census data and beyond to create compelling stories

Class 10: Narrative visualizations

Exploring

narrative visualizations

or telling stories with data graphics

Edward Segel and Jeffrey Heer, *Narrative Visualization: Telling Stories with Data*, IEEE Transactions on Visualization and Computer Graphics 16(6) 2010

Narrative Visualization: Telling Stories with Data

Edward Segel & Jeffrey Heer / Univ of Washington

Analyzed 58 visualizations from online journalism, graphic design, comics, business, art, and visualization research resulting in three key aspects of narrative visualization:

genres

visual narrative

narrative structure

Fig. 7. Design space analysis of narrative visualization. Columns indicate recurring design elements and selected regions highlight patterns in the data. Region (1) shows clusters of ordering strategies that correspond to distinct genres of visual narration. Region (2) highlights the consistency of interactive designs used by visualizations. Region (3) shows the under-utilization of strategies to engage the user in the interactive functionality. Region (4) shows the under-utilization of common storytelling techniques across narrative visualizations.

Edward Segel and Jeffrey Heer, *Narrative Visualization: Telling Stories with Data*, IEEE Transactions on Visualization and Computer Graphics 16(6) 2010

Narrative Visualization: Telling Stories with Data

Edward Segel & Jeffrey Heer / Univ of Washington

Edward Segel, *How to Tell Stories with Data (Really)*, presentation given at Knight Digital Media Center at UC Berkeley, Graduate School of Journalism, Jan 2012

Genre • Visual narrative • Narrative structure

‘A taxonomy of visual narrative types’

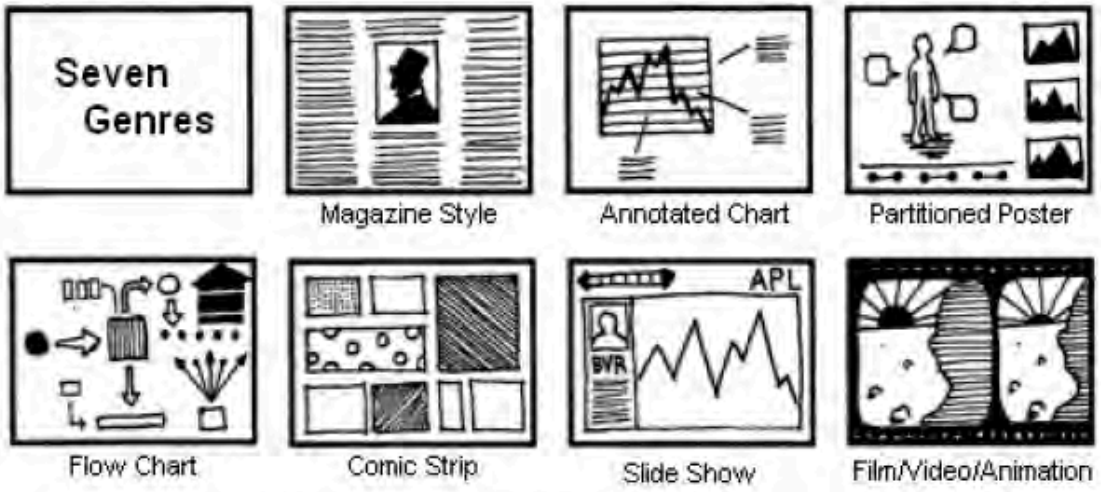


Fig. 8. Genres of Narrative Visualization.

Edward Segel and Jeffrey Heer, *Narrative Visualization: Telling Stories with Data*,
IEEE Transactions on Visualization and Computer Graphics 16(6) 2010

Visual devices that assist and facilitate the narrative.

Visual structuring

"mechanisms that communicate the overall structure of the narrative to the viewer and allow him to identify his position within the larger organization of the visualization"

establishing shot, checklist, consistent visual platform, progress bar, timeline slider

Where are you in the story?

Highlighting

"visual mechanisms that help direct the viewer's attention to particular elements in the display"

color, motion, framing, size, audio

Look here!

Transition guidance

"techniques for moving within or between visual scenes without disorienting the viewer"

continuity editing, animated transitions, object continuity, camera motion

Move through the story *this* way...

Edward Segel and Jeffrey Heer, *Narrative Visualization: Telling Stories with Data*, IEEE Transactions on Visualization and Computer Graphics 16(6) 2010

Tactics used by each visualization, or non-visual mechanisms that assist and facilitate the narrative.

Ordering

"the ways of arranging the path viewers take through the visualization"

Linear, random access, user-directed

Interactivity

"the different ways a user can manipulate the visualization … and also how the user learns those methods."

filtering, selecting, searching, navigating, explicit instruction, tacit tutorial, initial configuration

Messaging

"the ways a visualization communicates observations and commentary to the viewer."

labels, captions, headlines, annotations, articles, introductions, summaries

Edward Segel and Jeffrey Heer, *Narrative Visualization: Telling Stories with Data*, IEEE Transactions on Visualization and Computer Graphics 16(6) 2010

Genre
1/7 Magazine Style

Efforts to Rescue Migrants Caused Deadly, Unexpected Consequences

By STUART A. THOMPSON and ANJALI SINGHVI JUNE 14, 2017

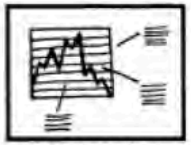
Strategies to rescue migrants in the Mediterranean Sea and disrupt smuggling networks have had deadly, unexpected consequences, according to aid groups monitoring the

Edward Segel and Jeffrey Heer, *Narrative Visualization: Telling Stories with Data*, IEEE Transactions on Visualization and Computer Graphics 16(6) 2010

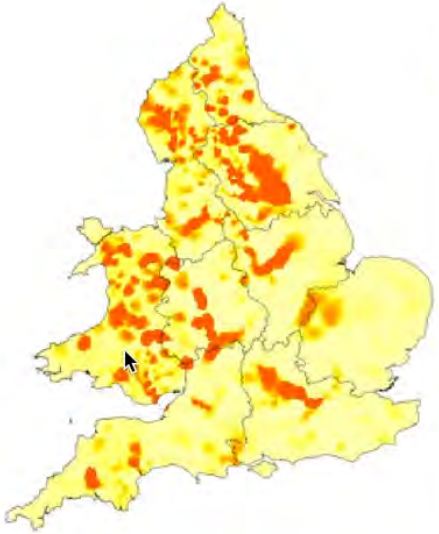
https://www.nytimes.com/interactive/2017/06/14/world/europe/migrant-rescue-efforts-deadly.html

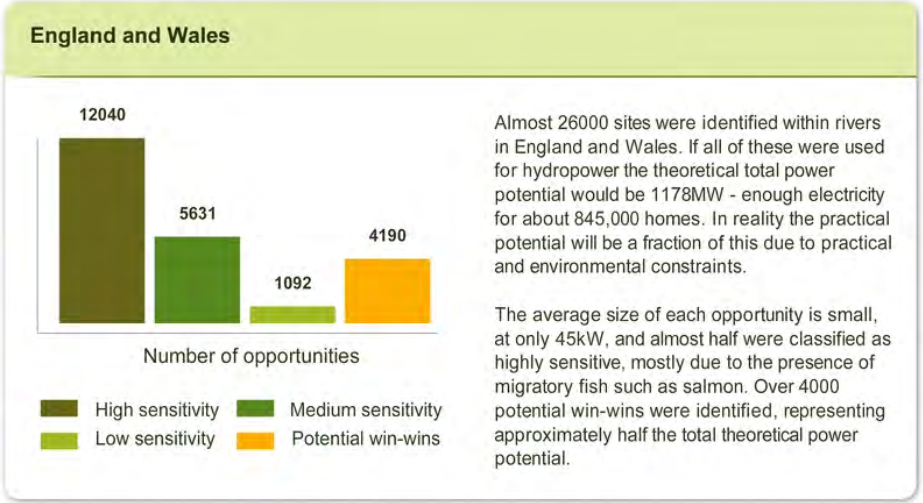
Genre

2/7 Annotated Graph / Map



Annotated Chart

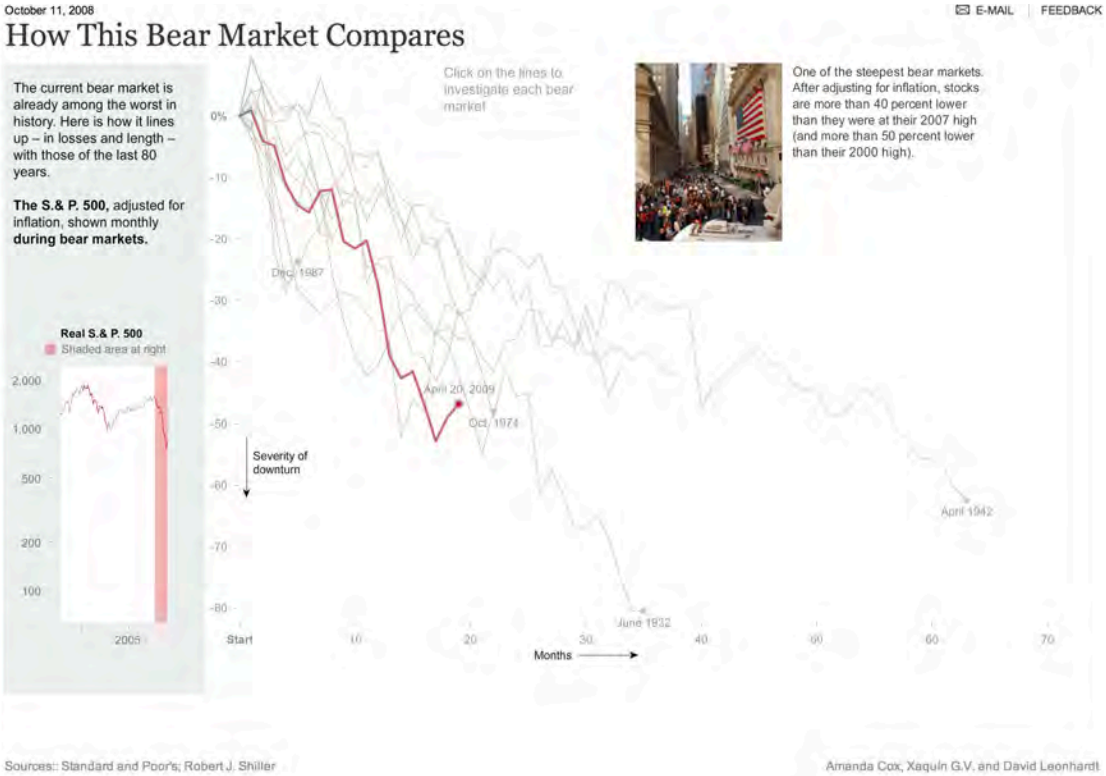




Edward Segel and Jeffrey Heer, *Narrative Visualization: Telling Stories with Data*, IEEE Transactions on Visualization and Computer Graphics 16(6) 2010

http://www.theguardian.com/environment/interactive/2010/mar/09/map-hydropower-hotspots-uk

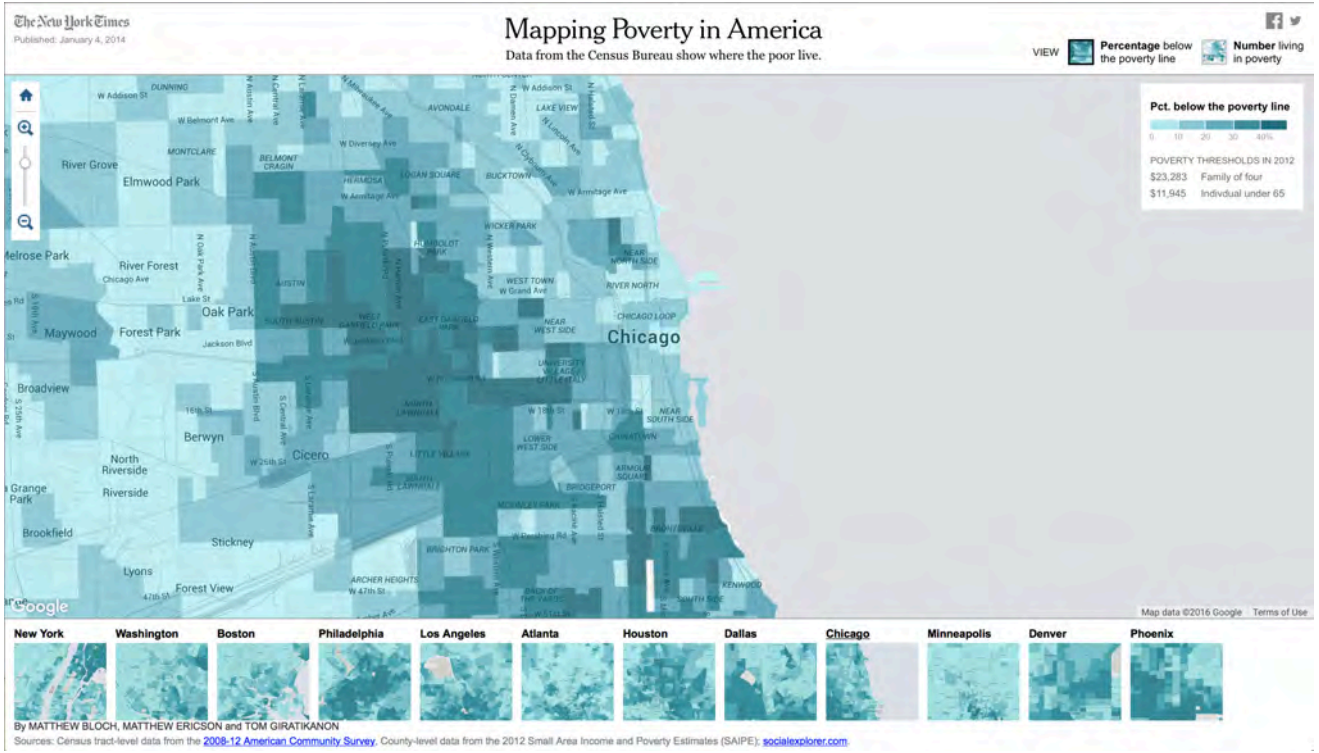
Genre
3/7 Partitioned Poster



http://www.nytimes.com/interactive/2008/10/11/business/20081011_BEAR_MARKETS.html

Edward Segel and Jeffrey Heer, *Narrative Visualization: Telling Stories with Data*, IEEE Transactions on Visualization and Computer Graphics 16(6) 2010

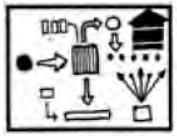
Genre
3/7 Partitioned Poster



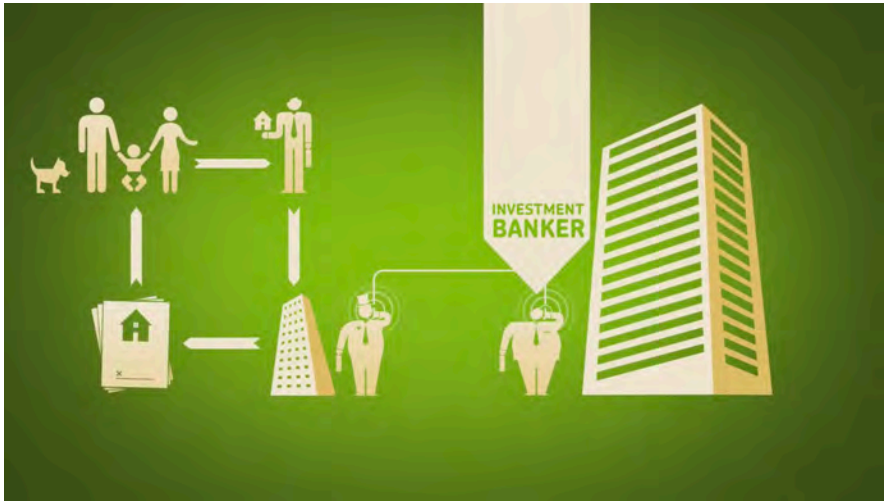
http://www.nytimes.com/newsgraphics/2014/01/05/poverty-map/index.html

Edward Segel and Jeffrey Heer, *Narrative Visualization: Telling Stories with Data*, IEEE Transactions on Visualization and Computer Graphics 16(6) 2010

Genre
4/7 Flow Chart



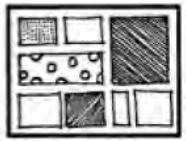
http://blog.mint.com/blog/finance-core/a-visual-guide-to-the-financial-crisis/

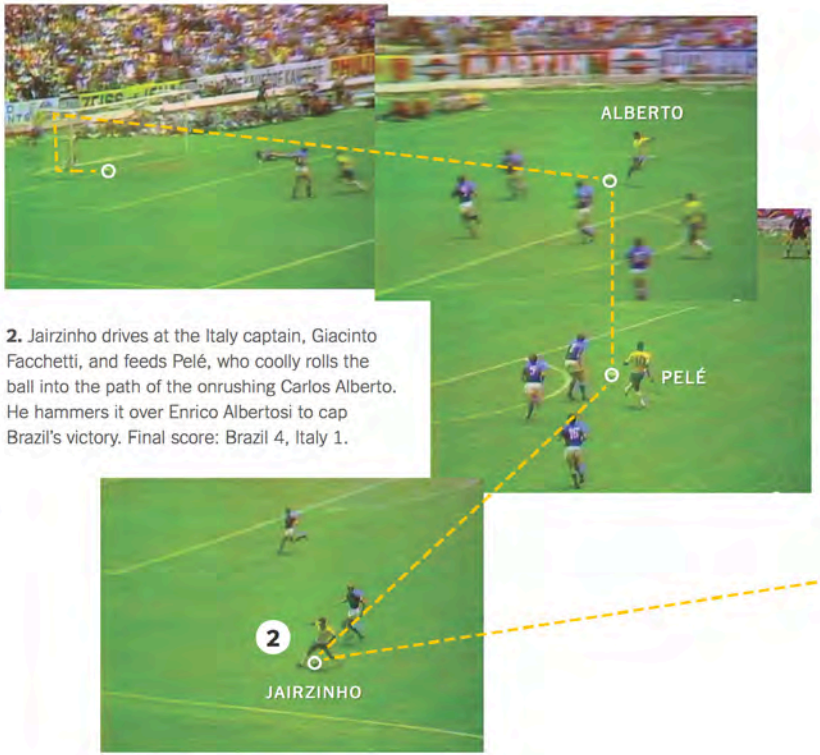


http://crisisofcredit.com/

Edward Segel and Jeffrey Heer, *Narrative Visualization: Telling Stories with Data*, IEEE Transactions on Visualization and Computer Graphics 16(6) 2010

Genre
5/7 Comic Strip



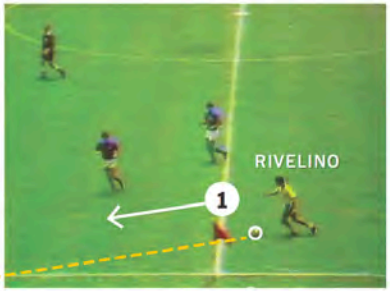


2. Jairzinho drives at the Italy captain, Giacinto Facchetti, and feeds Pelé, who coolly rolls the ball into the path of the onrushing Carlos Alberto. He hammers it over Enrico Albertosi to cap Brazil's victory. Final score: Brazil 4, Italy 1.

1970 CLASSIC GOAL

BRAZIL vs. ITALY

Brazil's last goal in the World Cup final, one of the most famous in the tournament's history, showcased the Seleção at its fluid best. ANDREW DAS

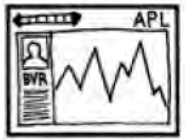


1. The nine-pass move is just a series of short exchanges until Roberto Rivelino's sharp pass to Jairzinho suddenly makes it dangerous.

Edward Segel and Jeffrey Heer, *Narrative Visualization: Telling Stories with Data*, IEEE Transactions on Visualization and Computer Graphics 16(6) 2010

http://www.nytimes.com/interactive/2014/06/15/sports/worldcup/how-we-play.html

Genre
6/7 Slide Show



Slide Show

Shaun White's Double McTwist

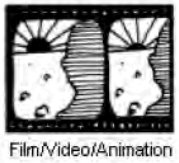
The 23-year-old American successfully defended his gold medal in the men's half-pipe event at the Winter Olympics with a move that requires immense technical skill

theguardian.com, Friday 19 February 2010 07.42 GMT

Edward Segel and Jeffrey Heer, *Narrative Visualization: Telling Stories with Data*, IEEE Transactions on Visualization and Computer Graphics 16(6) 2010

http://www.theguardian.com/sport/interactive/2010/feb/19/winterolympics2010-vancouver

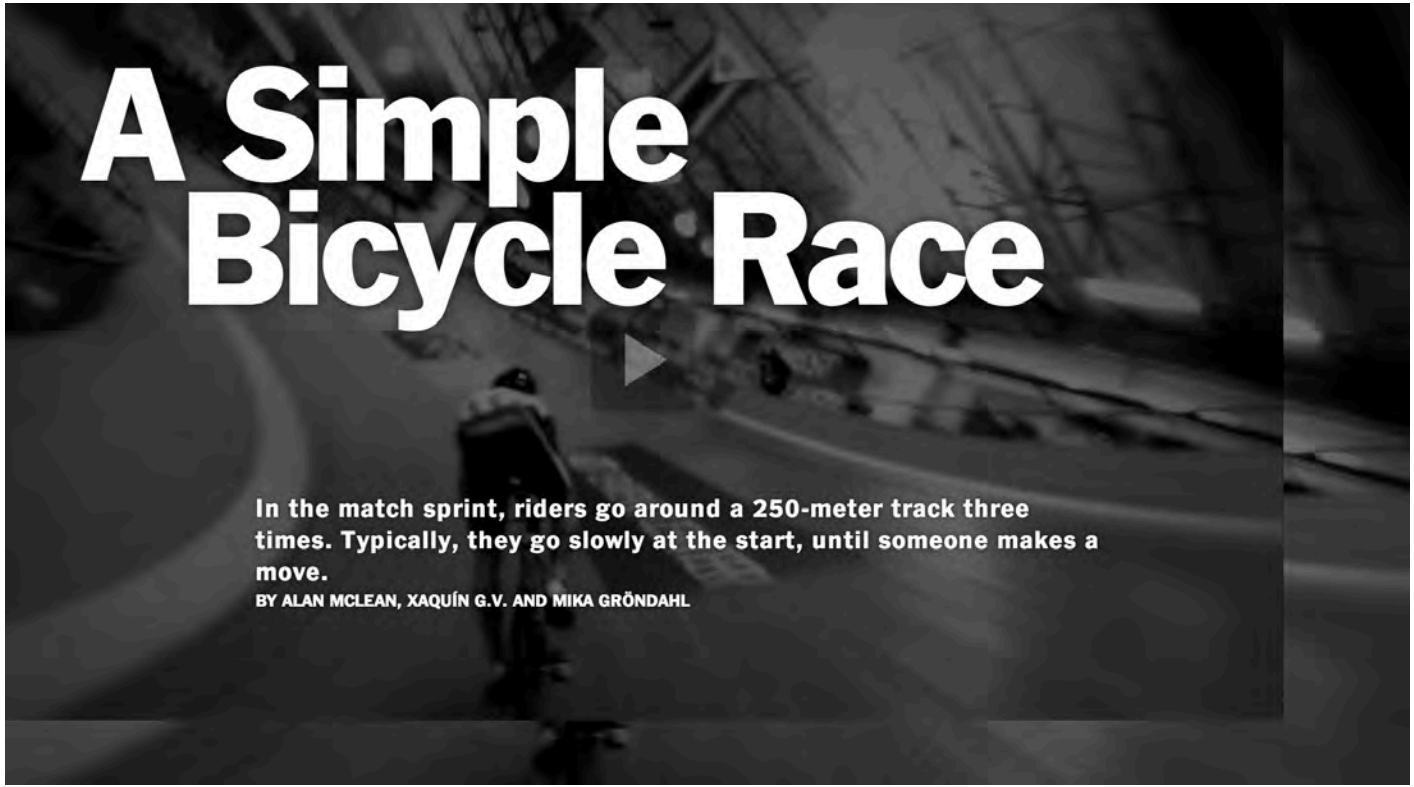
Genre
7/7 Film/Video/Animation



Edward Segel and Jeffrey Heer, *Narrative Visualization: Telling Stories with Data*, IEEE Transactions on Visualization and Computer Graphics 16(6) 2010

http://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-economic-essentials-of-digital-strategy

Emerging genre
Layered annotated video

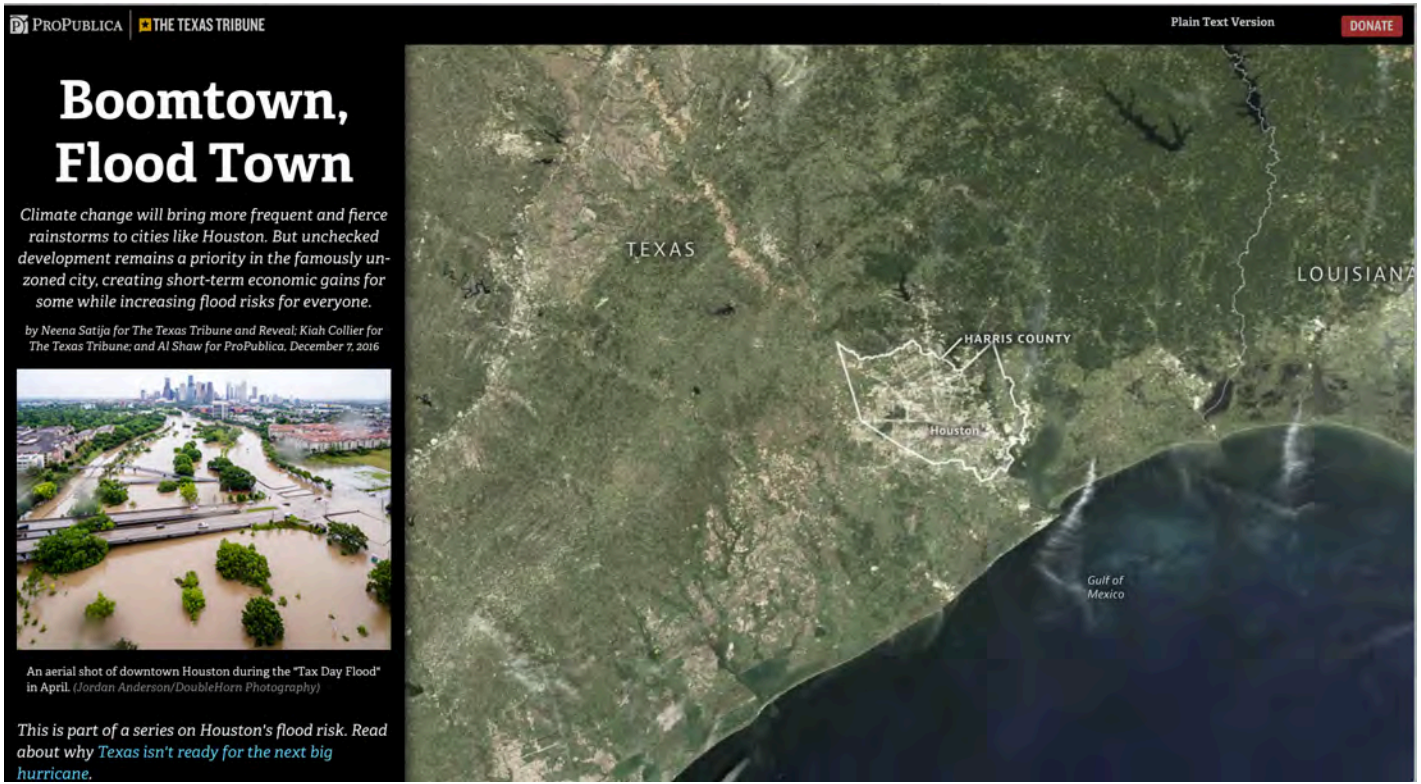


http://www.nytimes.com/interactive/2012/08/03/sports/olympics/olympics-cycling-track-sprint-how-to-win.html

Emerging genre
Layered annotated video

http://www.nytimes.com/newsgraphics/2014/sochi-olympics/giant-slalom.html

Emerging genre
Dynamic magazine style



https://projects.propublica.org/houston-cypress/

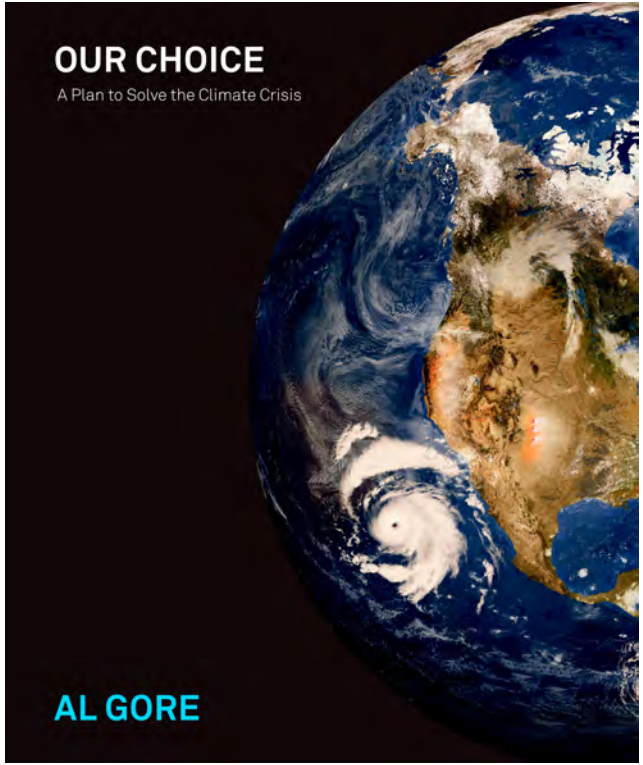
Author-driven and reader-driven stories

Author-Driven	Reader-Driven
Linear ordering of scenes	No prescribed ordering
Heavy messaging	No messaging
No interactivity	Free interactivity

Edward Segel and Jeffrey Heer, *Narrative Visualization: Telling Stories with Data*, IEEE Transactions on Visualization and Computer Graphics 16(6) 2010

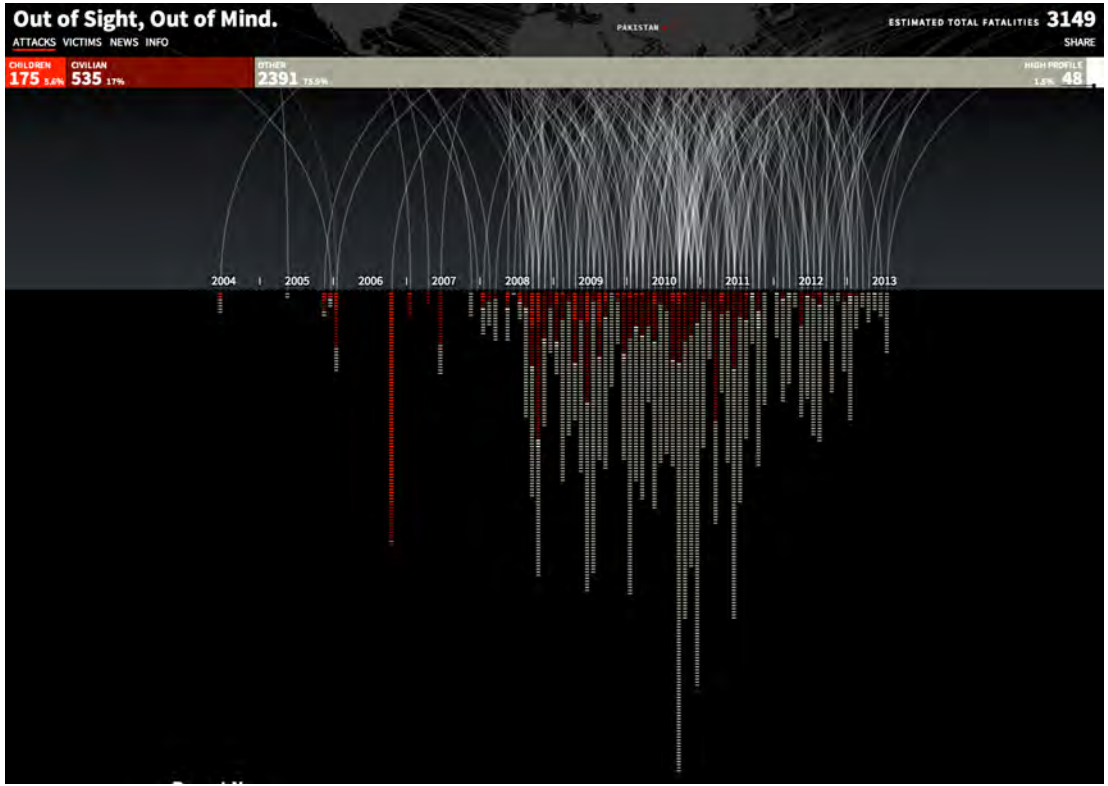
Author-driven stories

Traditional book structure in new media



Hybrid structures balancing author- and reader-driven approaches
Martini glass structure

Initially author-driven with strong linearity, then opens to reader exploration

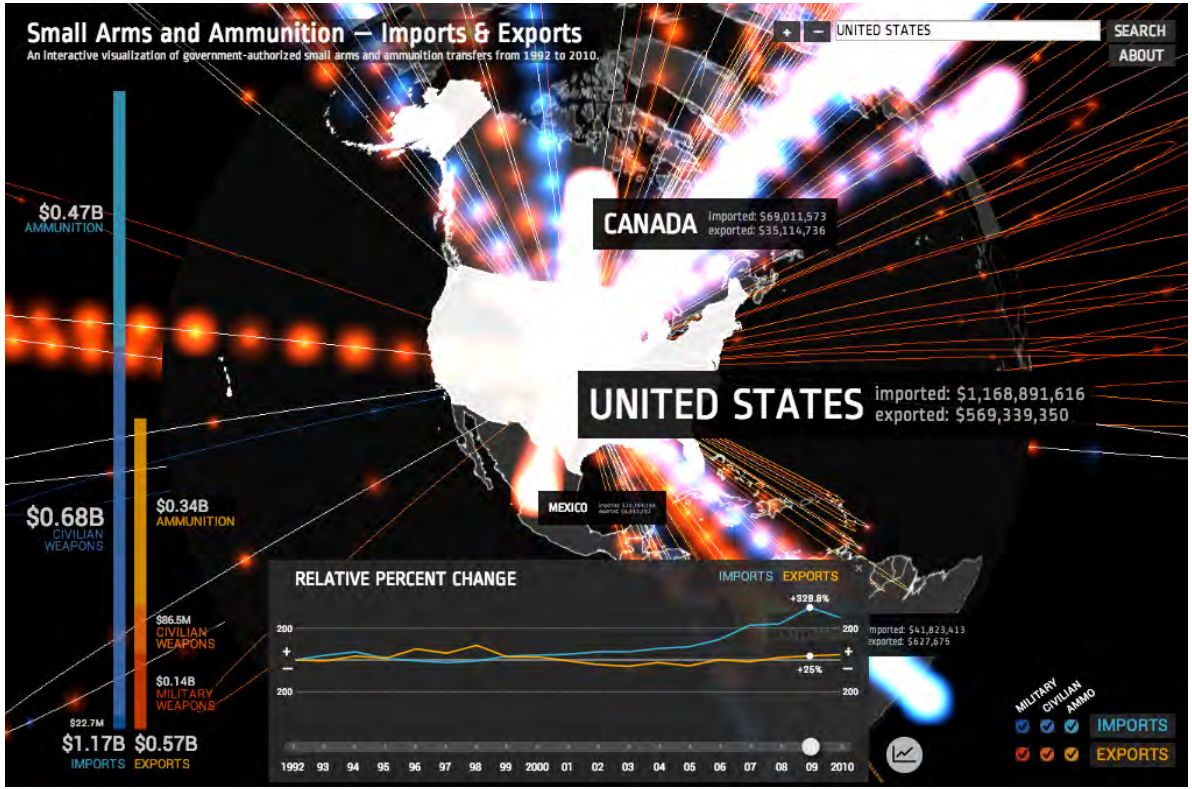


http://drones.pitchinteractive.com/

Edward Segel and Jeffrey Heer, *Narrative Visualization: Telling Stories with Data*, IEEE Transactions on Visualization and Computer Graphics 16(6) 2010

Hybrid structures that balance author- and reader-driven approaches
Interactive slideshow

Interlaces mid-narrative interactions with slideshow-like linear structure

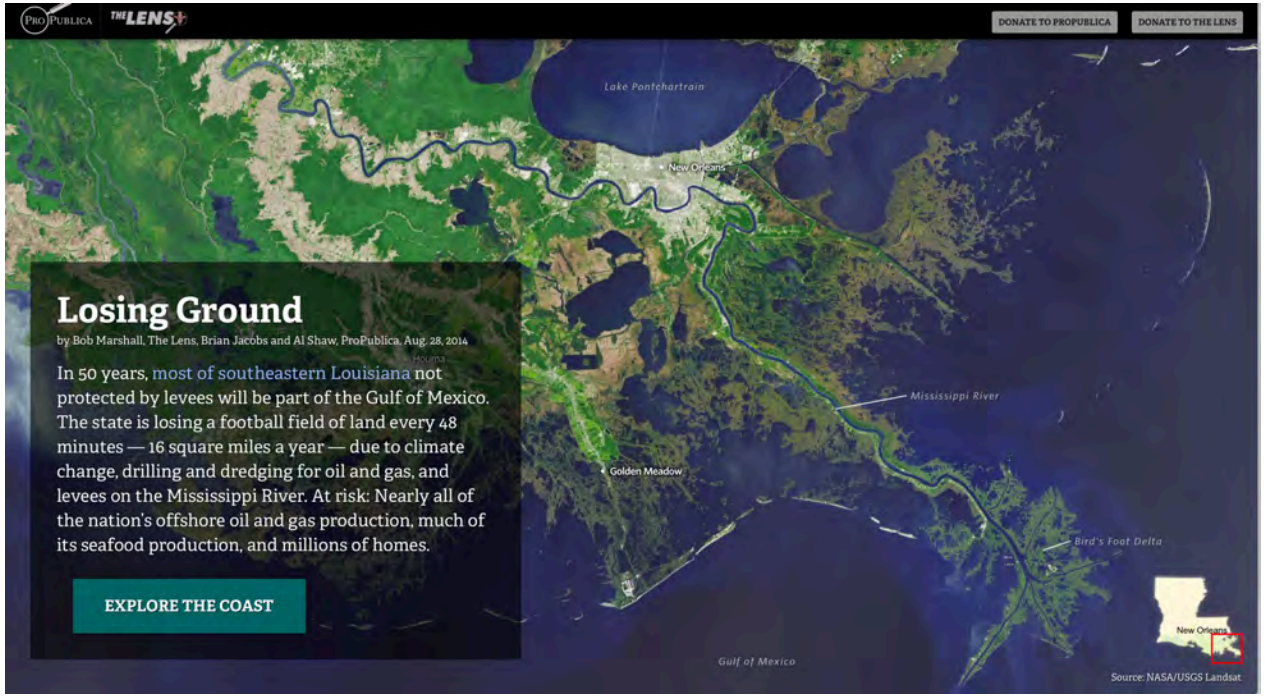


Edward Segel and Jeffrey Heer, *Narrative Visualization: Telling Stories with Data*, IEEE Transactions on Visualization and Computer Graphics 16(6) 2010

http://armsglobe.chromeexperiments.com/

Hybrid structures that balance author- and reader-driven approaches
Drill-down story

General theme presentation, then reader decides path for additional details



http://projects.propublica.org/louisiana/

Edward Segel and Jeffrey Heer, *Narrative Visualization: Telling Stories with Data*, IEEE Transactions on Visualization and Computer Graphics 16(6) 2010

Additional reference by Edward Segel

How to Tell Stories with Data (Really)

Presentation for Knight Digital Media Center at UC Berkeley, Graduate School of Journalism, Jan 2012

https://vimeo.com/34876955

Interesting visualizations

The Next America
http://www.pewresearch.org/next-america/#Two-Dramas-in-Slow-Motion

Boom town, Floodtown
https://projects.propublica.org/houston-cypress/

How Harvey Hurt Houston, in 10 Maps
https://projects.propublica.org/graphics/harvey-maps

Daily routines of creative people
https://podio.com/site/creative-routines

What's warming the world?
https://www.bloomberg.com/graphics/2015-whats-warming-the-world/

How the Recession Reshaped the Economy, in 255 Charts
https://www.nytimes.com/interactive/2014/06/05/upshot/how-the-recession-reshaped-the-economy-in-255-charts.html

Thanksgiving flights
https://bit.ly/1XsL1JO

Wall Street messaging on climate activism
https://www.axios.com/wall-street-asset-management-climate-change-activism-19fe3b28-eab2-4b1c-951b-1c1c2ebe8f33.html

Every Men's Figure Skating Jump, on One Page
https://www.nytimes.com/interactive/2014/02/14/sports/olympics/mens-figure-skating-jumps.html

References

Edward Segel and Jeffrey Heer, *Narrative Visualization: Telling Stories with Data*, IEEE Transactions on Visualization and Computer Graphics 16(6) 2010