Storytelling with InfoVis

CS 4460 – Intro. to Information Visualization
October 25, 2017
John Stasko

Learning Objectives

- Define narrative visualization (vis for storytelling) and explain how it differs from analytic/exploratory visualization
- Name and describe different genres and approaches to narrative visualization
- Explain the style, content, and significance of Rosling's GapMinder video
- View and learn from designs of examples
  - Mariano Rivera, What's Warming World?, Home and Away, Bubble Bust to Recovery, Fallen of WWII, ...
Purpose

- Two main uses of infovis
  - Analysis – Understand your data better and act upon that understanding
  - Presentation – Communicate and inform others more effectively

- Today we look at that second one more

Telling Stories

- Data visualization can help to communicate ideas, summarize, influence, unite, explain, persuade

- Visuals can serve as evidence or support
A Famous Example

Hans Rosling
Gapminder

2006


They Had Him Back

2007

Discuss

• Why has this had such a big impact?

InfoGraphics

• See them everywhere today
• Perhaps a good example of infovis for presentation purposes
  – Typically not interactive though

http://www.informationisbeautiful.net/visualizations/left-vs-right-us/
A Lead Paper

- Studied storytelling: Described topics as “Narrative Visualization”
  - How does this differ from traditional forms of storytelling
  - Reviews the design space
  - Characterizes genres
  - Describes a framework

Segel & Heer
TVCG (InfoVis) ’10

http://www.wired.com/2012/07/you-suck-at-infographics
Case Studies

Steroids or Not, the Pursuit Is On

Genres

Seven Genres

Magazine Style

Annotated Chart

Flow Chart

Comic Strip

Slide Show

Film/Video/Animation
Approach

- Author-driven vs. reader-driven
- Common patterns
  - Martini glass
  - Interactive slideshow
  - Drill-down story

http://datadrivenjournalism.net
Some Examples

News Stories

Tufte praises the work of Megan Jaegerman at NY Times

http://www.edwardtufte.com/boards/q-and-a-fetch/msg/msg_id-0002w4
Films

Gore made extensive use of data graphics

Infographics (with a message)

Controversial, see http://soquelbythecreek.blogspot.com/2010/02/what-does-obama-job-chart-really-mean.html
Discuss

http://www.fallen.io/ww2/
Tableau StoryPoints

Textual narrative, slides with titles as breadcrumbs, element highlighting, and textual annotation on the chart


Dot breadcrumbs, interaction on charts, tooltips, ...


Page scroller, text annotations, rearranging glyphs

http://www.nytimes.com/interactive/2015/01/29/sunday-review/road-map-home-values-street-names.html?_r=0

Dynamic query widget embedded in textual narrative
Steps

Linear steps with much interaction, comments


Animated interaction, tooltips, scrolling

http://www.facesoffracking.org/data-visualization/

Scrolling page with geovis updates

http://mbtaviz.github.io/

Visualizing MBTA Data
An interactive exploration of Boston’s subway system

Mike Bostock and Dylan Cruikshank - June 11, 2014

The MBTA, the Massachusetts Bay Transportation Authority, operates the MBTA subway system in the U.S. after New York, Washington, and Chicago. If you live in or around the city, you have probably ridden on it. The MBTA recently began publishing substantial amount of subway data through its Public API. That provides the full schedule in General Transit Feed Specification (GTFS) format which powers Google Transit development. They also publish runtime route frequencies for the Red, Orange, Blue, and Green Lines. The following visualizations are data captured from these feeds for the entire month of February, 2014. Green Line data becomes available in October, since as we have shown, also, working with the MBTA, we were able to request per minute entry and exit counts at each station answered at the formative level by passengers.

We attempt to present this information in a way people in Boston better understand the trains. How people use the trains, how the trains and tracks interact with each other.

Project in WPI infovis class

Scrolling page with many visualizations, much interaction
A Visual Introduction to Machine Learning

To make highly accurate predictions, we will create a machine learning model to analyze real estate data for homes in San Francisco.

http://www.r2d3.us/visual-intro-to-machine-learning-part-1/

Design discussion

https://www.youtube.com/watch?v=24tB6qxyRJA

http://polygraph.cool/films/

http://fivethirtyeight.com/features/gun-deaths/

http://www.georgelmurphy.com/berrics/
Even President Obama Went Interactive

2011 State of Union Address

Side channel data visualizations accompanied speech
Storytelling Scenarios

• Self-running presentations for a large audience
• Live presentations
• Individual or small group presentations
Data Matters


McCandless Website

http://www.informationisbeautiful.net/
Back to Where We Started

http://www.youtube.com/watch?v=jbkSRLYSijo

Changing Trends

http://www.fastcodesign.com/3045201/what-killed-the-infographic
Questions

• How do these types of visualizations differ from “traditional” infovis?

Questions

• Would you characterize all of these as information visualizations?
  – Consider some of the different examples
My Reflections

- InfoVis for analysis and presentation are different
  - Apples & oranges (both fruit though)

- How?

Resources

Learning Objectives

- Define narrative visualization (vis for storytelling) and explain how it differs from analytic/exploratory visualization
- Name and describe different genres and approaches to narrative visualization
- Explain the style, content, and significance of Rosling’s GapMinder video
- View and learn from designs of examples
  - Mariano Rivera, What's Warming World?, Home and Away, Bubble Bust to Recovery, Fallen of WWII, ...

Upcoming

- Lab: D3 – Enter, Update, & Exit
  - Prep: Murray chapter 9
  - Implementation change: Turn in code at end

- Hierarchies & Trees 1