On Teaching Narrative Infographics in an Infoviz Course

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UC Berkeley

Infoviz Workshop on Pedagogy
October 1, 2017
4 Units of Conceptual Material

4 Larger Assignments & Software Tools

Perceptual / Cognitive principles
Charting basics
Data types
Narrative
Saliency
Gestalt Properties
Data Wrangling
Exploratory Data Analysis
Multidimensional Vis
Animation
Advanced Topics

Highcharts.js
Illustrator
Tableau
d3.js
Final Projects Unite
These Concepts and Skills

Jeopardy!

Infoviz Poster 2015, Appleman et al.
Narrative Infographics Assignment
Narrative Infographics Assignment

- I’ve taught this 4 times
- The paper in the proceedings covers:
  - Topics (Iconography, Isotypes, Color, Narrative, vs Tufte, vs ChartJunk)
  - Readings
  - Exercises
  - Feedback Rubric
  - Difficulties and how I overcame them
  - Approaches that didn’t work
Narrative Infographics Assignment

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• This talk covers:
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  • Difficulties and how I overcame them
  • Approaches that didn’t work.
How to Design a Good Narrative Infographic

• Choose a point to make
• Make sure the design has “flow”
  • There is a natural way to read the information, top to bottom
  • Organize around Gestalt properties
• Images are there for a reason
  • Advance the story, enhance the message
  • Don’t be gratuitous … NO CHART JUNK
• Use a harmonious design
  • Chose a small color palette and stick with it
    • One or two colors for highlights
    • Choose a few fonts with a bit of contrast and emphasis
• Be sure to include some data / numbers / stats
The Role of Iconography
The role of ISOTYPES

ISOTYPES can tell a story
ISOTYPE Study Results

Benefits immediate recall, but not long-term recall
Did not speed up data extraction
Don’t use more than 4-5 segments

Images not used to depict data are a distraction.
In this case, short term retention dropped 40%,
And speed of finding information dropped dramatically.

Roadblocks
Roadblocks

• **ANCHORING**
  • Students stayed in their safe zone of charts and graphs
  • Did not create a true narrative

• **DESIGN / USABILITY ISSUES**
  • Need more HCI background, design practice, etc.
Roadblocks

• ANCHORING
  • Students stayed in their safe zone of charts and graphs
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Solution 1: Before and After exercise

• DESIGN / USABILITY ISSUES
  • Need more HCI background, design practice, etc.

Solution 2: Bring in partially completed design to class; get feedback
Solution 1: Before and After Exercise
(Images not shown to preserve re-use value; instructors may write to me for them)
Results

• **NOT** what I expected

• Most students didn’t really produce what I wanted / expected

• **HOWEVER**, after I showed the “solution”, **THEN** they **REALLY** got it.
Solution 2: Feedback in Class on Intermediate Solution
Initial Lo-fi Sketch and Hi-fi Design

Michelle Carney
Revised Sketches After In-Class Coaching

Michelle Carney
School to Prison Pipeline

The rise in "zero tolerance" policies in schools and the "War on Drugs" have led to a spike in incarceration. America’s dependency on inexpensive labor relies on a steady prison populations, leading to a "school to prison pipeline" that’s hard to escape.

"Zero Tolerance" policies have led to School Resource Officers ("SRO") onsite at schools.

70% "in school" arrests by law enforcement are Black or Latino students.

Over 57,000 people under the age of 18 in juvenile detention.

2x Black and Latino students are 2x more likely to not graduate high school than white peers.

Male Lifetime Likelihood of Imprisonment:
- 1 in 3 Black
- 1 in 6 Latino
- 1 in 17 White

2.12x Higher rate of recidivism when assigned to a probation camp.

25% of foster care children will be incarcerated within a few years after turning 18.

Prison labor accounts for $500 million in sales every year, paying as little as $0.23 per hour.

Common products include:
- Uniforms
- Furniture
- Food

"Prison relieves us of the responsibility of engaging with problems of our society, especially those produced by racism and global capitalism." - Angela Davis

1 in 5 incarcerated people are locked up for non-violent drug offenses.

68% of males in prison do not have a high school diploma.

Three non-violent felonies can result in imprisonment for life.

Providing inmates with a secondary education decreases recidivism by 30%.

Growth of Incarceration
US Incarceration growth has increased 700% since the "War on Drugs" declared in 1970.

USA is #1 for most prisoners
For only have 5% of the world’s population, USA has 25% of the world’s prisoners.
Sample Results
CLOSING GITMO...

The prison at Guantanamo Bay is a 45-square-mile American enclave in the darkest symbol of US anti-terrorist efforts post 9/11. Against the background of debilitating operating expenses and international criticism for the interrogation techniques used on detainees, President Obama has been promising to shut down the prison since his presidential campaign in 2008.

In February 2016, President Obama, eager to fulfill his 7 yr old promise before leaving office, sent Congress a final plan to close the prison. Sadly, it does not look like his plan will achieve any success despite the strong argument for shutting down Gitmo.

2001 - Prison opens under Bush. Outsourcing likely
2003 - Prison population reaches an all-time high of 646 detainees
2008 - Obama declares intent to close the prison during presidential campaign
2014 - President Obama's order to close the prison fails to Congress
2016 - Obama enacts plan to close the prison to Congress

35 men have been 'approved for transfer', some years after deciding that they are being held for no good reason. Finding a place to send them has been a challenge

10 men have been charged and are in various stages of being tried by a military commission
22 men have been identified as 'candidates' for prosecution
24 men are called 'guaranteed prisoners' by the Pentagon. The government is not willing to put them on trial, either because it thinks that it would lose or because the cases are tainted by torture

Gitmo is stuck in the crosshairs of Republican politics with Republicans treating it like a national treasure

Through the majority of Americans are afraid of the consequences of bringing Gitmo detainees to US soil, closing down the prison will save $454 million of taxpayer money every year that can be put to better use to tackle the problems of healthcare, education and unemployment within the country.

Statistics:
- Average annual cost per prisoner in different US prisons:
  - Gitmo: $3,300,000
  - SuperMax security: $78,000
  - Max security: $24,000

Public Poll: "...should the Guantanamo prison be closed?"
- 54% said yes
- 45% said no

Don't shut down Gitmo, expand it - Ted Cruz
We're going to load it up with some bad dudes. We're going to load it up - Donald Trump

Reema Naqvi
SHOULD ORCAS LIVE IN CAPTIVITY?

Orcas are popular attractions at aquariums and marine parks. Captured young, or born in captivity, these majestic mammals spend their entire lives in an unnatural environment leading to aggressive behavior.

**Maximum lifespan**
- Wild orca: Male 50 - 60 years, Female 80 - 90 years
- Captive Orca: Disputed accounts, Average age of death - 13 years

**Confinement**
- Wild Orcas swim 100 miles a day
- Captive Orca need to swim the perimeter of their tanks 200 times a day to equal this

**Societies**
- Wild Orcas live in complex societies with their own culture
- Captive Orcas are forced to fit into tanks with other orcas

**Attacks on Humans**
- Wild Orcas: 6 attacks
- Captive Orcas: 151 attacks on humans & 15 on animals

**Dorsal Fin Collapse**
- 90 - 95% of the orcas in captivity have collapsed dorsal fins
- In the wild, it is <1%

**Tilikum: A 'Killer' Whale**
- Largest male in captivity, has a 100% collapsed dorsal fin, responsible for 3 human deaths:
  - May 1983: Captured in North Atlantic
  - Nov 1981: Born in the wild
  - Feb 1991: Killed trainer along with 2 female orcas in SeaLand, British Columbia
  - Jan 1999: Dead man found over Tilikum’s back
  - Mar 2011: Tilikum resumes performing

**Sources**
- [Wikipedia](https://en.wikipedia.org/wiki/Orca)
- [Human Orca.org](http://www.humanorca.org)
- [Krill-shark.org](http://www.krill-shark.org)
- [Wikipedia](https://en.wikipedia.org/wiki/Tilikum)

Deepa Kalpathi
A BRIEF HISTORY OF BOBA MILK TEA (BMT)
Boba Milk Tea was invented in Taichung, Taiwan by Lin Hsia Hui, when she poured tapioca dessert balls into her milk tea during a business meeting.

WHAT’S IN BMT?
- Sugar
- Milk
- Tea
- Tapioca balls
- 45° Diameter Straw

There are over 50,000 teashops in Taiwan!

WHY DO PEOPLE IN TAIWAN DRINK BMT?

<table>
<thead>
<tr>
<th>Reason</th>
<th>% of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spare Time</td>
<td>40%</td>
</tr>
<tr>
<td>Shopping</td>
<td>36%</td>
</tr>
<tr>
<td>Special Event</td>
<td>19%</td>
</tr>
<tr>
<td>Thirst</td>
<td>15%</td>
</tr>
</tbody>
</table>

WHO IN TAIWAN DRINKS BMT?

<table>
<thead>
<tr>
<th>Age Range (Yrs)</th>
<th>% of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>10-19 yrs</td>
<td>70%</td>
</tr>
<tr>
<td>20-29 yrs</td>
<td>18%</td>
</tr>
<tr>
<td>30-49 yrs</td>
<td>8%</td>
</tr>
<tr>
<td>50+ yrs</td>
<td>4%</td>
</tr>
</tbody>
</table>

SO HOW MUCH BMT DOES TAIWAN CONSUME PER YEAR?

1.5 BILLION CUPS/YEAR!

That’s 65 cups per person per year!

... and enough BMT to fill 400 Olympic-size swimming pools!


Edward Yip
The Big Game is a college football rivalry game between the Golden Bears of the University of California, Berkeley and the Cardinal of Stanford University.

The first game between California and Stanford was played on March 19th, 1892. Stanford won 14 - 10. Future U.S. President Herbert Hoover was Stanford Team Manager for the game.

There were no Big Games from 1915 to 1918 because Stanford had not resumed its Football Program.

In 1934 Stanford hired former Cornell and Pittsburgh Head Coach Glenn Scobey 'Pop' Warner. Two years after being hired, Pop Warner led Stanford to their only National Championship in 1926. He stayed at Stanford for 9 years playing in 3 Rose Bowls during that period. The popular and national youth football program Pop Warner Little Scholars is named after him.

The Stanford Axe made its first appearance in 1933. It is awarded to the team that wins the Big Game every year.

In his four seasons (1979–1982) at Stanford, John Elway was the quarterback for the Cardinal. His time there was marked by numerous records and championships, solidifying Stanford's position as a top-tier football program.

The 1920s saw the first golden age of California football, as the Golden Bears went 50 straight games without a defeat from 1920 to 1925. The 1920-1924 squads were so dominant that they were nicknamed The Wonder Teams, and were coached by Andy Smith (picture).

California won 4 National Championships in this period.

In 1947 Lynn 'Pappy' Waldorf became the Head Coach. Known as Pappy's Boys, Cal teams of 47 to 50 won 33 consecutive regular season games earning 3 Rose Bowl berths. Cal lost all three Rose Bowls.

Pappy left in 1956 with a record of 67-32-4, and won all but one Big Games in that time.

In 1910, during the Big Game, students from California performed the first ever Card Stunt. It was a Big blue 'C'.

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Remaining Question

• How to scale?
Thank you!

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