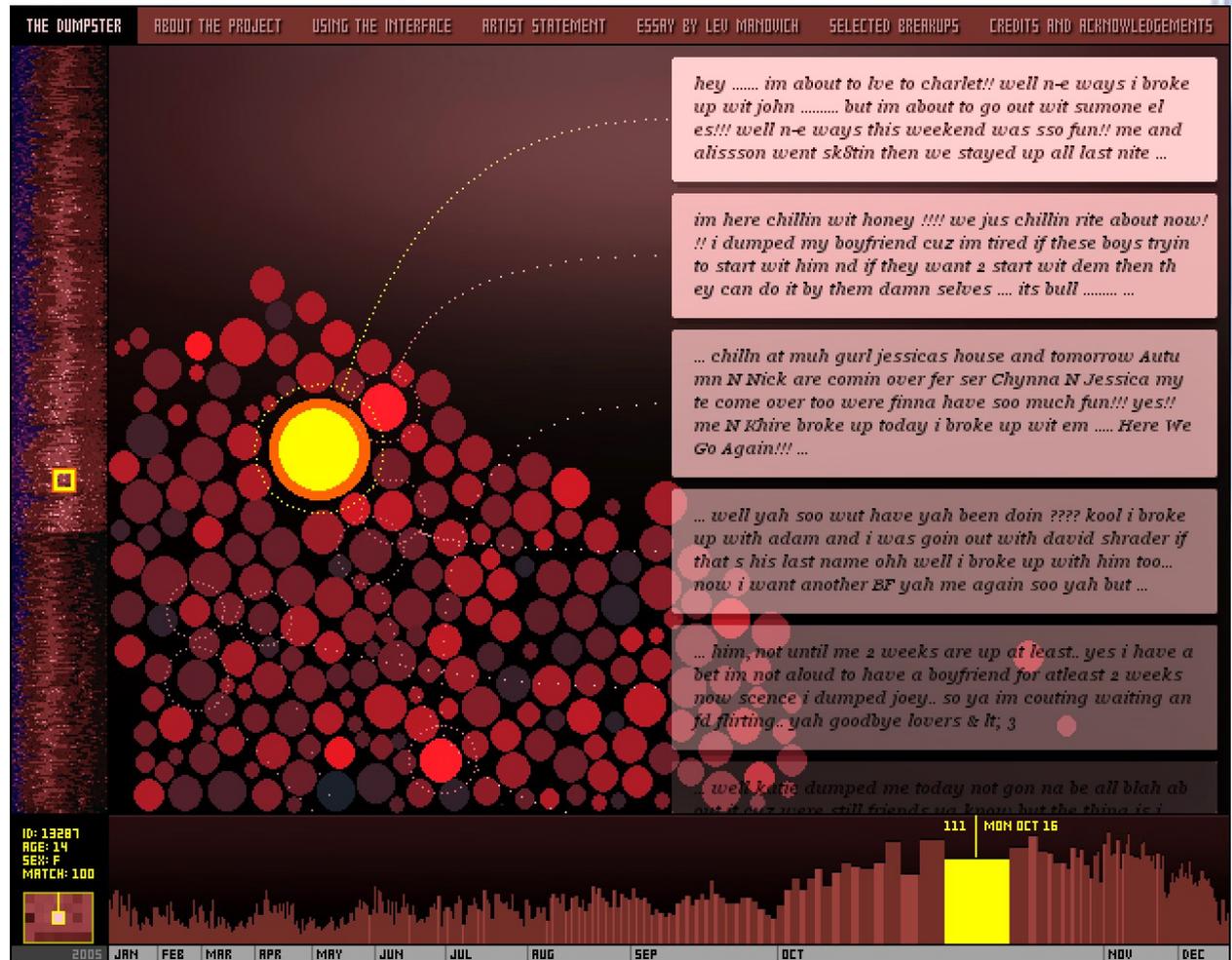


Exploring the VALUE of Casual Infovis

Casual Infovis is
non-expert users
consuming or creating
images created from
large amounts of information
for the purpose of insight
(or other purposes).

Project Presentation: Harriet King CS 5090 – Data Visualization, December 2010

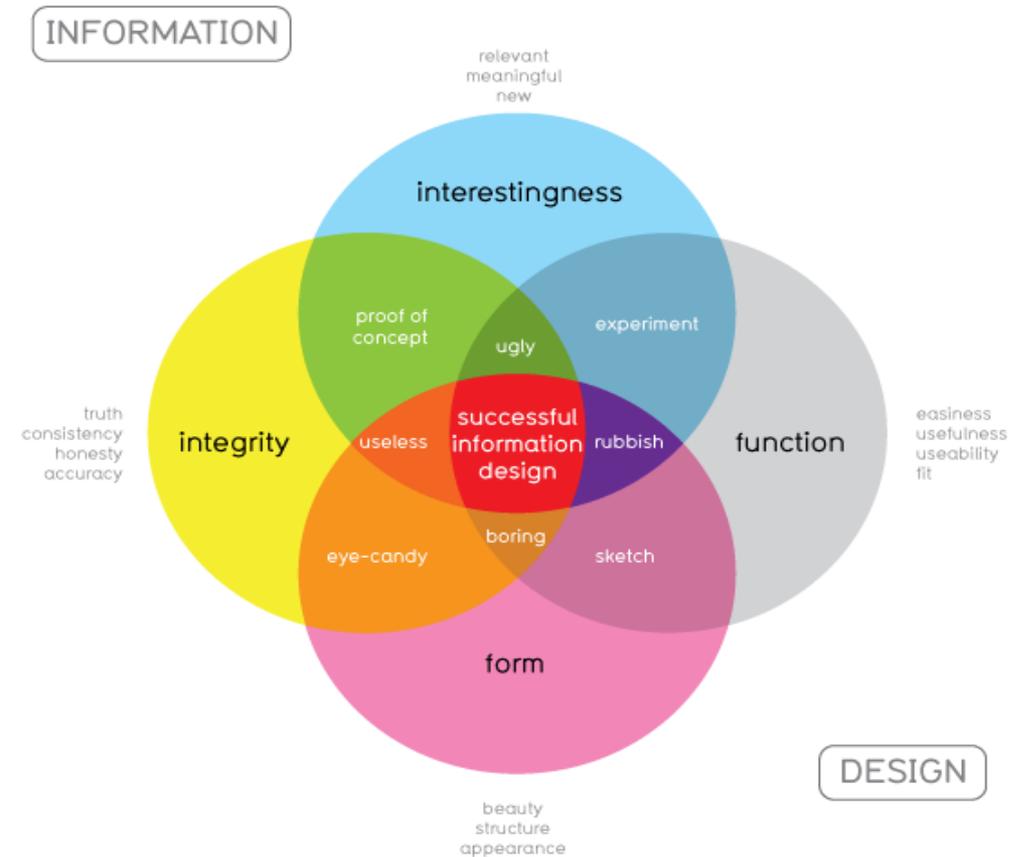


"the dumpster": 20,000 breakup blogs from 2005, commissioned by the Whitney Museum, NYC

Presentation Outline

- Review & Introduction
- Excluded Topics
- Diversity of Types
- Overview of Value
- Findings
- Outlook for Casual Infovis
- Concerns
- Conclusion
- Sources

What Makes Good Information Design?



Review and Introduction



South Kensington, London



BBC 2, Golf



Big Brother, Channel 4

“Last Clock”: video surveillance in public area capturing time and motion and mapping seconds, minutes, hours, completely non-utilitarian, intended as art

- New opportunities to explore “edge cases”:
 - art, non-expert public use, online accessibility, ambient infovis, education, journalism, community collaborative infovis, and more
- Casual could be in purpose, audience, or context
- Who has tools, data, skills? What purposes for casual infovis? What makes it valuable?
- Usability and accessibility concerns are crucial in attracting non-expert public users
- Casual infovis producers and consumers need to use critical thinking and beware false influence

Types of Infovis and Examples, page 1/3

Ambient

- ambient orb or Skog's bus schedule



Skog, Ambient Infovis of bus schedule, styled after Mondrian

Personal data & finance

- Smartmoney's Map of the Market
- Digg.com's "Stack", "Swarm", and "Arc" visualizations
- Slife (spend time)
- photomesa
- Nicholas Felton's Annual Reports

Journalism (an entire field by itself)

World trends and education, e.g. gapminder.org



"Wealth and Health of Nations", gapminder.org

Types of Infovis and Examples, page 2/3

Artistic work that visualize information

- “Artifacts of the Presence Era”
- “Tableaux Machine” surveillance as art
- Ray’s Visitor.Files: data gathered by hand, painted strict mapping by hand



Ray, “Visitor.Files”: hand gathered traffic and weather data mapped and hand painted as visualization



“Tableaux Machine”: in home surveillance cameras using AI to report the “mood” of the home via screen art display

A “measuring” topic, e.g. energy use (vampireenergy), diet, exercise

Persuasive visualization:
Persuasive Mirror

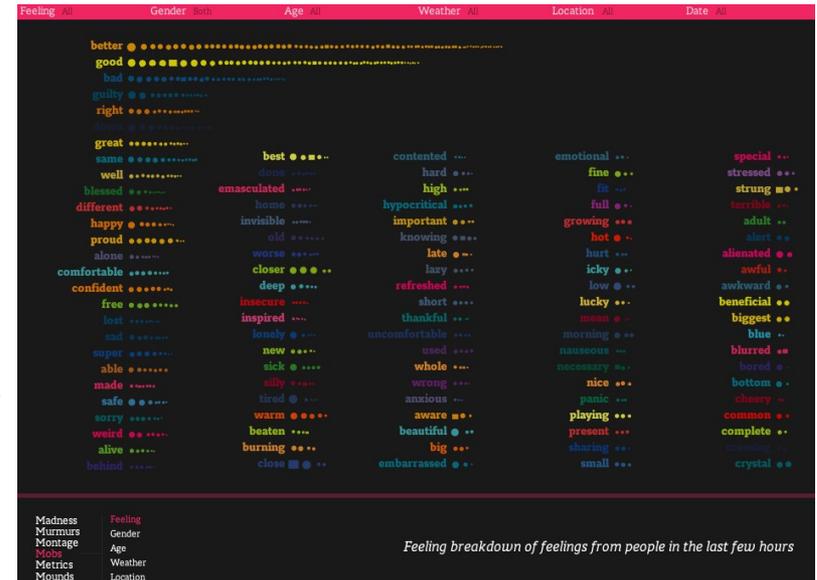


“Persuasive Mirror”: screen showing future self, recently purchased by Accenture

Types of Infovis and Examples, page 3/3

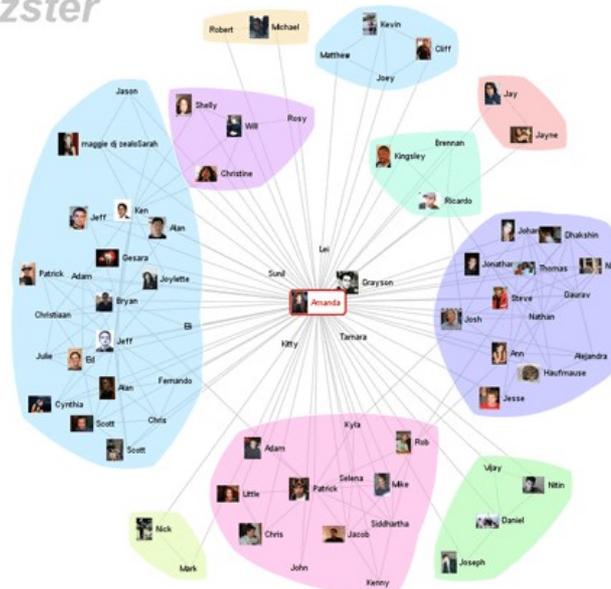
Social Visualization & Collaboration

- “PeopleGardens”
- “The Dumpster”
- “wefeelfine.org”
- “vizster”, social network graph
- “themail”
- tagging of digital artifacts
- collaborative web bookmarking, e.g. del.icio.us
- news, e.g. digg.com
- public space, e.g. plazes.com, yellowarrow.org



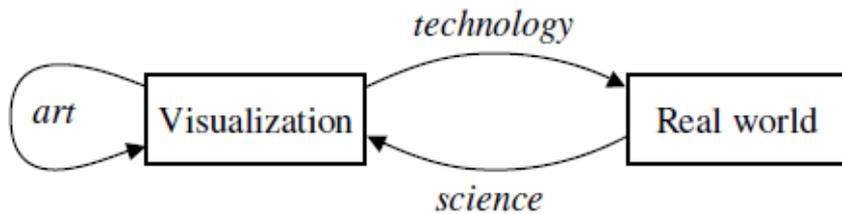
“wefeelfine.org”: mines for “I feel..” and visualizes in real time

vizster



“vizster”: graph of “friendster” social network

Discussion of Value

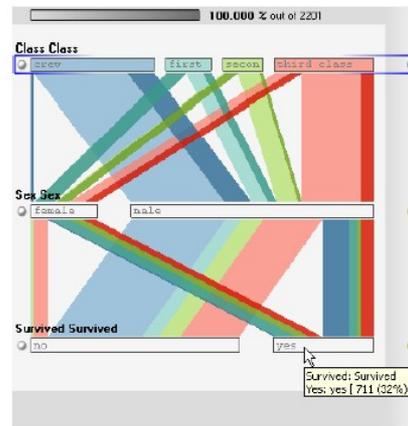


$$F = nm(W(\Delta K) - C_s - kC_e) - C_i - nC_u.$$

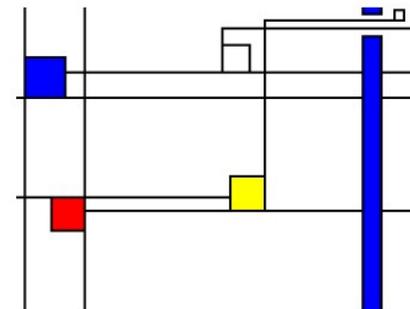
Van Wijk, model for infovis (left) and formula for cost benefit of infovis (right)

Value can be objectified, quantified, measured, and abstracted to fit a variety of infovis and measured with cost benefit formulas

Value can be non-utilitarian, subjective, aesthetic, sublime



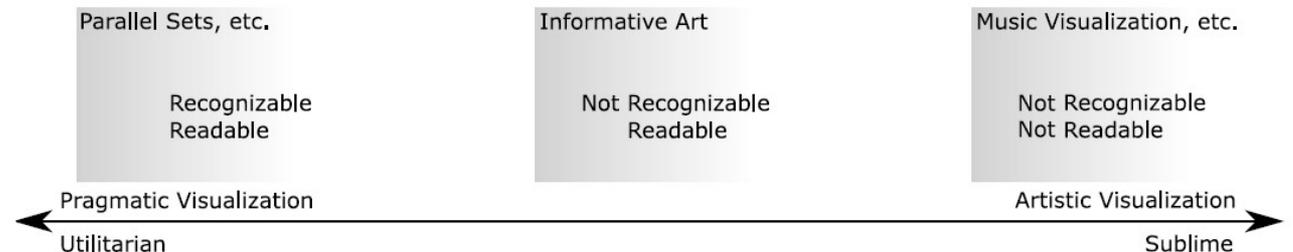
a)



b)



c)



Kosara, examples of utilitarian to the sublime in infovis

Attributes & Elements

Attributes:

1. Design Principles & Choices
2. Objective or Subjective
3. Interaction or Not
4. Functional, Physical, & Qualitative Requirements
5. Individual & Social Aspects

Outcomes

- Accomplishing the Purpose
- Measuring Value

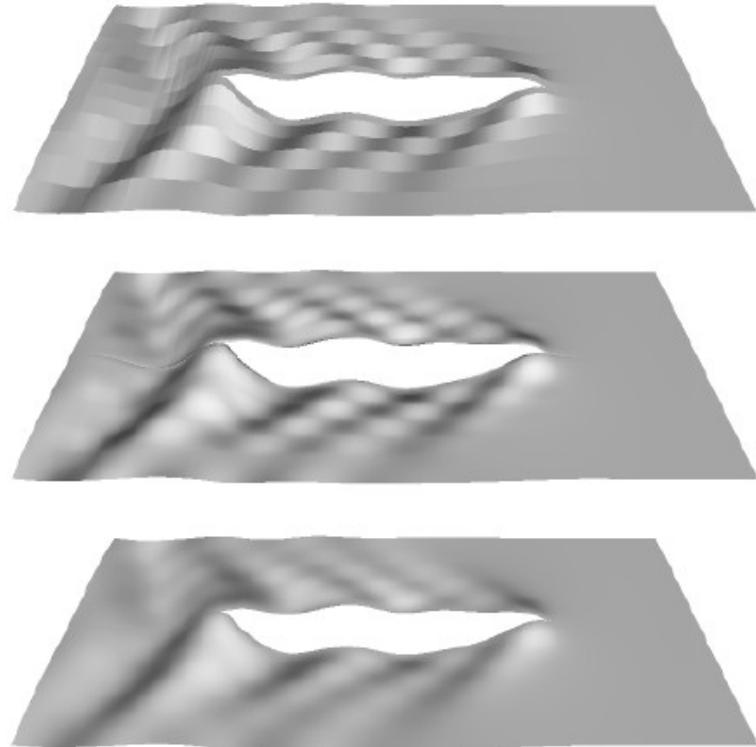


Figure 3: Wave surface, from top to bottom (a) bilinear interpolation, (b) cubic interpolation, (c) cubic approximation. Incorrect interpolation leads to artifacts.

Van Wijk, demonstrating errors experts can make using common interpolation method that caused erroneous results, a lesson learned

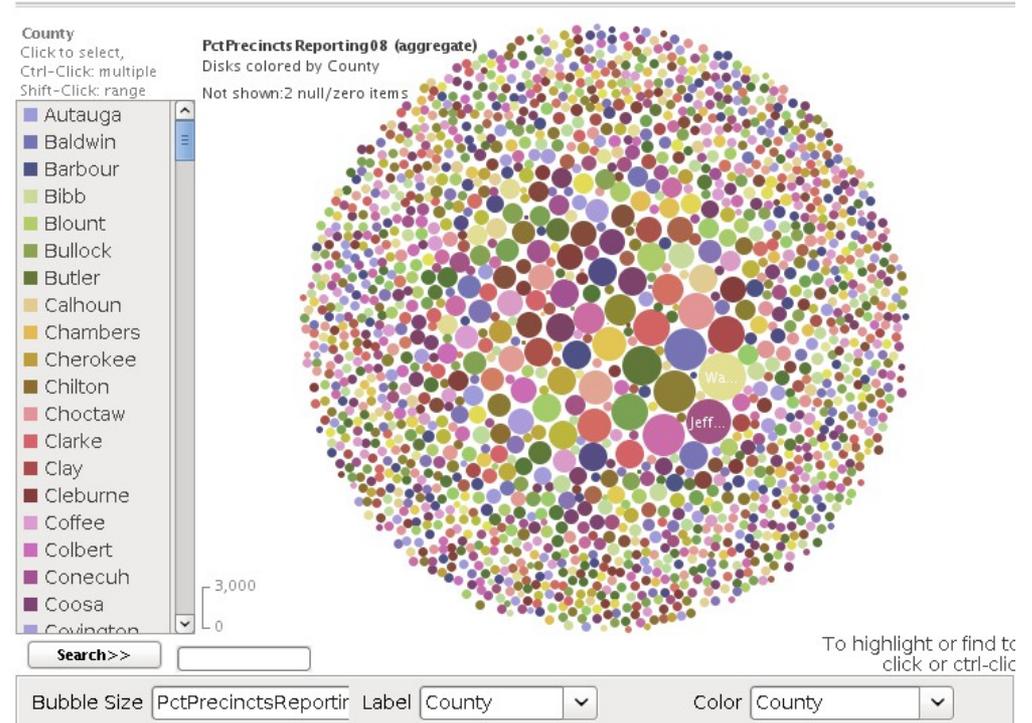
Findings – Overview page 1/2

- Casual infovis encourages non-expert public to be users and creators, but it is not mainstream yet
- Value includes serving a purpose, solving a problem, being usable and accessible, & also the sublime aesthetic, building community, and many other individual values
- Casual infovis is as subjectively valued as any other art or entertainment

Bubble Chart of County level 2008 presidential election returns with demographics

Created by an anonymous user

[Browse All Visualizations »](#)



NY Times online visualization: 2008 county presidential elections returns

Findings – Overview page 2/2



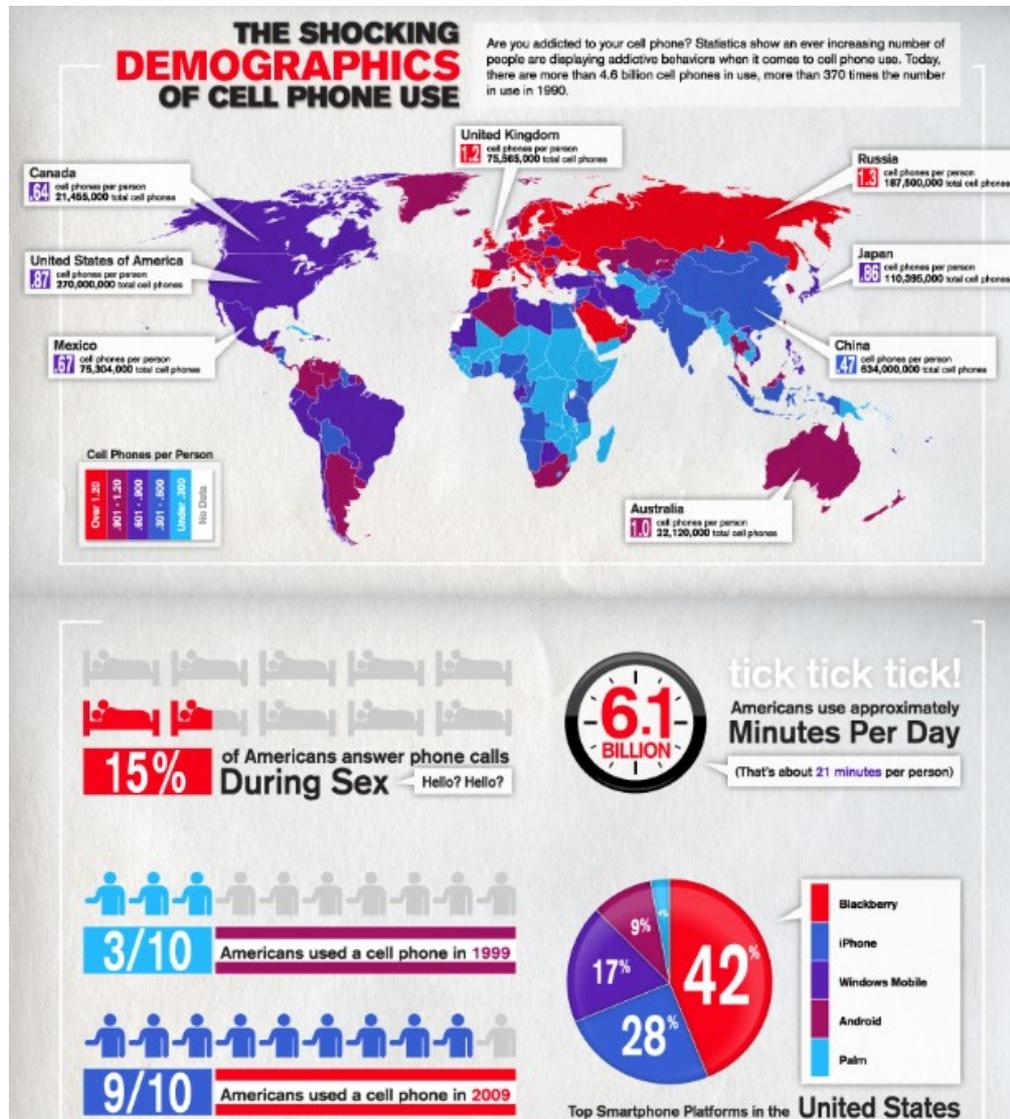
“PeopleGardens”, 1999: flower = user, height = number of messages posted to message board

- No widespread effort to create public demand for infovis tools
- No clear problem for an infovis to solve, then no incentive for the public to be bothered with casual infovis
- Wrong assumption that individuals have piles of data, time, or problems to solve with infovis
- Service industries fill the gap, e.g. bank graphs & power company statistics
- Attempts to commercialize infovis services have recently failed, e.g. swivel.com & verifiable.com

<http://www-958.ibm.com/software/data/cognos/manyeyes/>

1 2 3 4 5!!

Findings: Outlook for Casual Infovis, 1/2



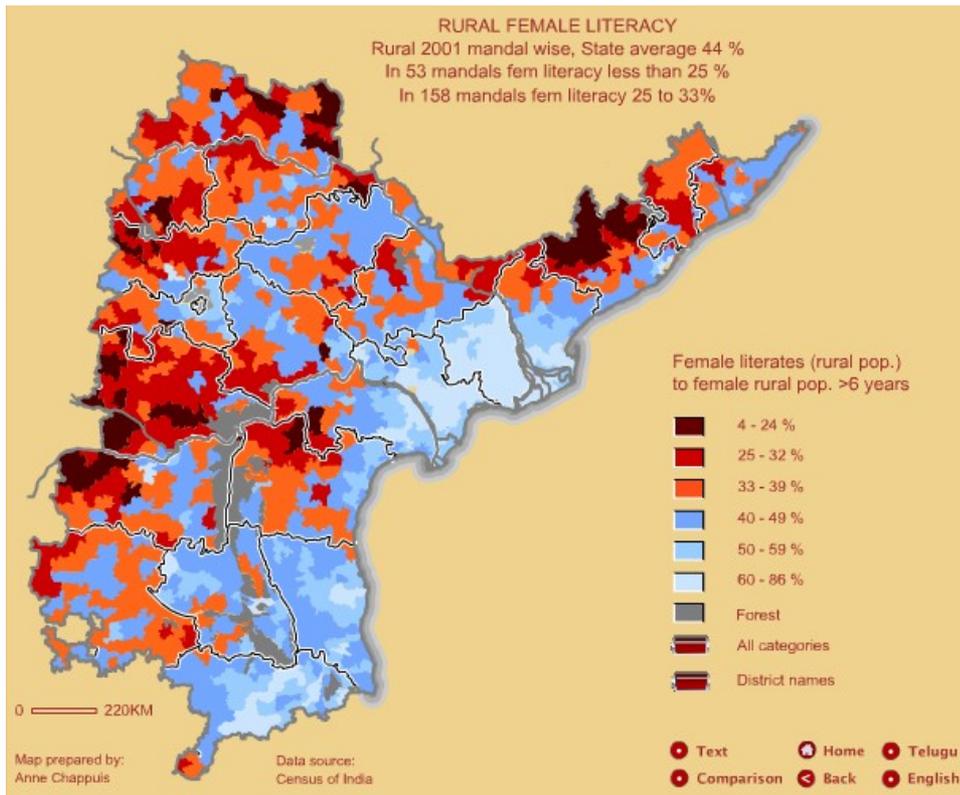
Mashable.com: 2010 cell phone usage

- Analogy of photography: broaden producers, consumers, manipulation tools, develop critical thinking
- Journalism infovis is effective in attracting the public's interest in infovis in general and driving innovation and advancement of casual infovis
- Popularizing casual infovis requires: free, online, easy, effective, sharing and community, import/export control, hidden technical details, choices in usability

Findings: Outlook for Casual Infovis, 2/2

Increase exposure through:

- blogs, product marketing, journalism
- “visualati” like Hans Rosling, Edward Tufte, or Al Gore
- social and collaborative visualizations
- Ambient intelligence & data mining infovis, e.g. “Tableaux Machine”, “wefeelfine.org”
- Information Is Power: infovis used to eradicate poverty, e.g. rural Indian villagers infovis of Anne Chappuis



Anne Chappuis: “Rural Female Literacy” (India, 2001),
vista-info.net: “We believe that the villagers, even if
illiterate, are clever and capable of analyzing their situation
and planning for their future if they are provided with
information, and specially with visual information.”

Findings: Concerns

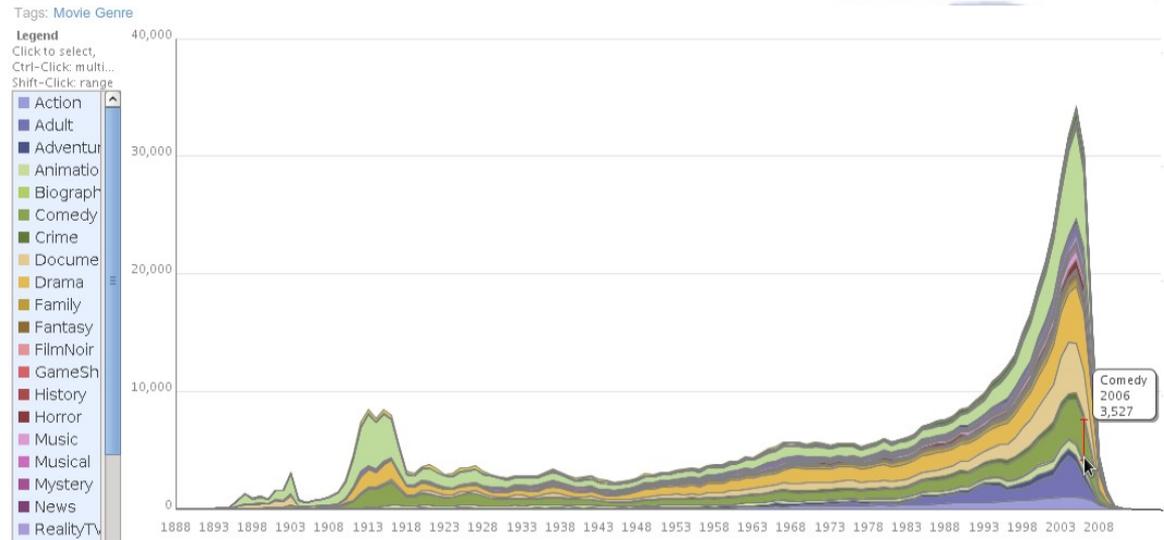


Fernanda Viegas, "Artifacts of the Presence Era: Using Information Visualization to Create an Evocative Souvenir", 2003, Institute of Contemporary Art

- Avoid abuses of casual infovis
 - build a savvy public who understand that not all infovis is legitimate
 - public provide many-eyes-watching method of checks and balances on infovis legitimacy
- Privacy issues, especially ambient surveillance & data mining e.g. vizster
- Casual infovis assumes computer literacy, access, and desire (no Luddites)
- Casual infovis is too broad, detracts from intentions of data visualization

Conclusion

- Casual infovis is not mainstream
- Value can be functional, subjective, accomplishing any purpose, individual values, aesthetic, and social
- Infovis is for presentation and exploration. Letting the non-expert public use it is a great idea, let's see what innovation arises



Many Eyes website: movie genres from 1900 to present, the epitome of casual information visualized

Encouragement

“Our networks are awash in data. A little of it is information. A smidgen of this shows up as knowledge. Combined with ideas, some of that is actually useful. Mix in experience, context, compassion, discipline, humor, tolerance, and humility, and perhaps knowledge becomes wisdom.”

Turning Numbers into Knowledge, Jonathan G. Koomey, 2001, Analytics Press: Oakland, CA page 5, quoting Clifford Stoll.

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Resources read

Page 1/5

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<http://datajournalism.stanford.edu/>.

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28 A few websites page 1/2

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<http://mashable.com/2010/12/03/cell-phone-mobile-infographic/>

<http://www.huffingtonpost.com/>

<http://www.cs.umd.edu/hcil/photomesa/>

<http://www.slifeweb.com/>

<http://www.youtube.com/watch?v=zgZfry82LC4>

<http://www.gapminder.org/>

<http://r-s-g.org/carnivore/>

<http://blog.blprnt.com/>

<http://www.swivel.com/>

<http://www-958.ibm.com/software/data/cognos/manyeyes/>

<http://www.vista-info.net/pages/home.html>

http://www.youtube.com/watch?v=jbkSRLYSojo&feature=player_embedded

<http://alumni.media.mit.edu/~fviegas/projects/themail/study/index.htm>

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28 A few websites page 2/2

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<http://www.wordle.net/>

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[__DdeLink__ 1415_864627515http://www.wefeelfine.org/](http://www.wefeelfine.org/)

<http://hci.stanford.edu/jheer/projects/vizster/>

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