Visual Information Design

Prof. James A. Landay
Computer Science Department
Stanford University
Autumn 2018
October 29, 2018
* Based on slides by Luke Vina, Scott Klemmer, and James Landay

**Hall of Fame or Shame?**

*Palm Beach, Florida*

Eye drawn to the wrong holes
If only 1% error rate, can still change a close election

**One Possible Redesign**


**Hall of Shame!**

Non-conventional design is a waste of resources—iOS has better defaults

Know your users! 99% of users will want to enter today’s weight

‘Record’ button almost invisible due to lack of contrast
One Possible Redesign

Possible Re-design
¾ of the controls
Saved space can be used for statistics
Date and time can be recorded automatically


Virgin America Website
Courtesy Andrea S.
https://www.virginamerica.com/book

Hall of Fame or Shame?

Who's flying?

Virgin America Website
Courtesy Andrea S.
https://www.virginamerica.com/book

Virgin America Website
Courtesy Andrea S.
https://www.virginamerica.com/book

Hall of Fame or Shame?
Hall of Fame!

- Minimalist design w/ large & simple instructions
- Automatic location setting
- Large calendar for easy/fast date selection (Why?)

Virgin America Website
Courtesy Andrea S.
https://www.virginamerica.com/book

2018 CS147 Film Festival Awards

- Best Acting
- Best Music/Soundtrack
- Funniest/Most Humorous
- Best Production Values
- Best Special Effects
- Best Project Concept
- Best Overall Video

Best Acting

Late:ly

Best Music

Craving

Funniest/Most Humorous Video

Pife

Best Production Values

Craving
Outline

- Good Form
  - layout, proximity, small multiples, space, grids, typography & icons
- Team Break
- Color
- "Interesting Design"

Visual Information Design

Prof. James A. Landay
Computer Science Department
Stanford University
Autumn 2018
October 29, 2018
* Based on slides by Luke Vink, Scott Klemmer, and James Landay
The Art of Balance
Promotion & demotion of important objects

First Question for any design
- What are the most important things?

Information should be prioritized based on its importance to the user

Visual Design that has Good Form
(Purpose)

Using Context to Determine Layouts
Know Thy Users! (Design Discovery)

Context is extremely important to how much "Stuff" should be visible

Responsive Layout Design for Web

Screen Space
Time for tasks
UI Elements
Mobility
Importance of Information Hierarchy

Responsive Layout Design for Web
Using Proximity to Indicate Relationships

“The whole is greater than the sum of the parts.”
– David Hothersall

Gestalt Psychology in information design
Information blocks should be grouped together if related, but unrelated elements should be located at some distance from each other.
Small Multiples

- Economy of line
- Similarities enable us to notice differences

Proximity & Small Multiples in Use

Today Weather

iOS App

Proximity & Small Multiples in Use

Today Weather

iOS App

Proximity & Small Multiples in Use

Today Weather

iOS App

Administrivia

- Medium fi prototype & presentations
  - must be on web site by this Friday or grade will be docked
  - problem getting a web site up, talk to your CA
- Web Workshop
  - Thur., Nov. 1st, 7 PM (Gates 219)
- CS 194H
  - Mon/Fri 3:30-5:20 PM
  - continuation of projects from CS147 & advanced techniques
  - need at least 2-3 of a project team to continue, individuals can join another team
  - more iterations - get to release quality
  - no exams - less writing (mainly project presentations) - fewer lectures - individual studio assignments on advanced techniques
  - cap at 28-32 students
TEAM BREAK
(TALK ABOUT MED-FI PROTOTYPE PLANS)

Using Blank / White Space as an Object

- White space can be used to suggest importance or prestige
- The more space around a group, the more valuable it should be for the user
- Think of whitespace as an “element” – consider its position

What Are The Important Things Here?

Jan Tschichold’s Revolution
Champion of Modernist Typography

Type Classifications

<table>
<thead>
<tr>
<th>Sans Serif</th>
<th>Serif</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regular</strong></td>
<td><strong>Regular Bold</strong></td>
</tr>
<tr>
<td><strong>Oblique</strong></td>
<td><strong>Oblique Bold</strong></td>
</tr>
<tr>
<td><strong>Italic</strong></td>
<td><strong>Italic Bold</strong></td>
</tr>
</tbody>
</table>
**Asymmetric Typography**

JAN TSCHICHL0D

How blocks used to be arranged in magazines. Schematic, thoughtless centering of blocks (= ugly).

The same blocks, correctly arranged in the same type area. Constructive, meaningful, and economical (= beautiful).

**Grid Systems**

- A key pattern for implementing rationality, modernism, asymmetry
- Note that no elements are “centered”

**Iconography:**

Differences that Make a Difference

**Color Definitions (digital)**

- **Hue** is gradation of color (i.e., name: “yellow”)
- **Saturation** is purity of the hue (vividness) - how much gray
- **Luminance** is the brightness in an image
The Basics of the Color Wheel

Warm Colors: Triggering / Sensual
“A pleasing arrangement of parts, whether it be music, poetry, color, or an ice cream sundae.”

Complementary (e.g., Children’s Bedroom)

Always easy on the eyes, this type of color scheme always looks “natural.”

Using Appropriate Color “Harmonies”

- Complementary
- Analogous
- Split Complementary
- Triadic
- Tetradic
- Square

This color scheme must be managed well so it is not jarring. Bad with Text!!

Not so good for text

Always easy on the eyes, this type of color scheme always looks “natural.”

Complimentary

Hand on the eye

Always easy on the eyes, this type of color scheme always looks “natural.”
Analogous (e.g., Beyond Oil)

Split Complimentary

Often a good choice for beginners, because it is difficult to mess up.

Start with Greyscale

...then accent or enhance with color.
Action + Passive Colors

Poor Use of Color

Redesigned to Use 3 Actionable Colors

Tools that help with color selection

http://colorschemedesigner.com/
http://color.adobe.com/
http://www.colourlovers.com
Visual Design that is **Interesting**

[the wow factor]

### Why Make Information Interesting?

- Differentiation from similar work
- Creates “willful” interaction as opposed to “forced”
- With an interesting interface that is simple to learn, the user will teach themselves

### Non Conventional Layouts

- Hard to get right & easy to overdo!
- Try new shapes
  - circular charts
  - hexagonal Objects
- Like all techniques (color, etc) – restrict unconventional layouts to the most important information

---


---

Partly Cloudy iOS App

---

Colours in Culture

---

Non Conventional Layout
Dynamic Movement

• Hard to get right & easy to overdo!

• Animation is best used to connect information & create “flow”

• Like size, color & unusual shapes, animation draws attention to the eye & suggests importance

Metaphors (using the real world to describe info)

• Hard to get right & easy to overdo!

• Very useful to provide meaning and connect information to logic

• As you have seen before, the more direct or specific a metaphor, the more contextually relevant it is to a generation or time

The best designs balance the techniques you have seen

and

The less techniques used, the easier it is to balance them

Overwhelming Use of Different Techniques
In other words, **Keep it Focused**

### Summary

- **Start with Context**, what is the nature of the information? What is the most important?
- **Design first in grayscale** to focus on hierarchy
- **Small changes** help us see key differences — e.g., small multiples
- **Avoid clutter**, focus on the essence of your tasks
- **Use color properly** — not for ordering!
- **Only use 1-2 colors** at a time, unless absolutely necessary

### Further Reading

- **Typography on the web**

- **Typography** — Jan Tschichold, *The New Typography*
  - Robert Bringhurst, *The Elements of Typographic Style*
Next Time

- Heuristic Evaluation
  - including an in-class exercise that will be graded

- Reading
  - How to Conduct a Heuristic Evaluation by Jakob Nielsen

- Next assignment
  - Heuristic Evaluation