UI of the day: Color

http://www.youtube.com/watch?v=8AS3IAUthSY
Results: IPA3 (20 pts)

Stats: with Zeros
Num: 87
Mean: 18.21
Median: 19.0
Stddev: 4.8

Stats: w/o Zeros
Num: 83
Mean: 19.10
Median: 19.0
Stddev: 2.78

Grades on bSpace now
Regrades: Write down where you think you deserve more points and submit physical copy to us. We will regrade entire assignment. Your grade can decrease during regrading.

Results: Lo-Fi Video (55 pts)

Stats: with Zeros
Num: 87
Mean: 49.97
Median: 50.0
Stddev: 2.61

Stats: w/o Zeros
Num: 83
Mean: 50.0
Median: 50.0
Stddev: 2.61

Grades on bSpace now
Regrades: Write down where you think you deserve more points and submit physical copy to us. We will regrade entire assignment. Your grade can decrease during regrading.
Example: Group APK

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

David Squeri
Shuqun Zhang
Arturo Wu-Zhou

Assignment: Interactive Prototype

Interactive Prototype (due Apr 9)
Redesign interface based on low-fidelity feedback
Create first working implementation on device
Can include Wizard of Oz parts where justified
Can include pre-built functionality but only if heavily justified

In class Presentations (Apr 9 & 11)
5 min presentation (short! be careful about timing)
Focus on two items:
  - tell the high-level story
  - show the prototype (live may not be best idea)
Feedback from class
(you will provide feedback on each presentation)
Results: Midterm (125 pts)

Stats:
Num: 87
Mean: 83.07
Median: 84.0
Stddev: 14.94

Handed back at end of class
Grades on bSpace now
Regrades: Write down where you think you deserve more points and submit physical copy to us. We will regrade entire assignment. Your grade can decrease during regrading.

Midterm: Review hard questions

Will go over in section
Assignment: Mid-Semester Feedback

Due Wed 3/21

Google form online

Help us improve the course. Tell us what is good and not so good about the course.

Assignment: Peer Review

Due Wed 3/21

Feedback will determine whether you score higher or lower than your group average.

There will be a 2nd round of feedback later.
Topics

1. Brief History of Graphic & Product Design
2. Simplicity and Elegance
3. Color
4. Gestalt Principles
5. Typography
6. Composition
Graphic Design is about Communication

Graphic Design is also about Interpretation
A Brief History of Graphic Design

Images from:
E. Lupton, Thinking With Type, Princeton 2004
A Brief History of Graphic Design

Aldus Manutius, Hypnerotomachia Poliphili, 1499
L. R. Luce, J. Barbou, Essai d’une nouvelle typographie, 1771

19th Century: Advertising

Letterpress poster, 1875
James Reilly, Poster for O’Brien’s Circus, 1866
Modern Design: Bauhaus
Bauhaus

Joost Schmidt, Exhibition Poster, 1923

Herbert Bayer, Exhibition Poster, 1926


Grid-Based Design

Josef Müller-Brockmann
Exhibition Poster, 1980
Detour: The mid-1990s

Product Design is about Form and Function

David Carson, Ray Gun magazine, 1994

Philippe Starck, juicer for Alessi

Oxo Angled Measuring Cup
Early Mass Production

Unknown, Mimeograph, 1918

Advertisement, Popular Mechanics, Oct 1923
Bauhaus Again

Le Corbusier
Grand Confort, 1928

Marcel Breuer
Wassily Chair, 1925
Streamlining

Raymond Loewy, from: hyperakt.com

Streamlining

Pennsylvania Railroad S1, 1939 (Wikipedia)
Streamlining gone too far…

Form Follows Function

It is the pervading law of all things organic and inorganic,  
Of all things physical and metaphysical,  
Of all things human and all things super-human,  
Of all true manifestations of the head,  
Of the heart, of the soul,  
That the life is recognizable in its expression,  
That form ever follows function. This is the law.  
- Louis Sullivan
Henry Dreyfuss: Human Factors

Dreyfuss: Model 500 phone
Excess of Form Follows Function

Centre Georges Pompidou, Paris
All infrastructure (ducts, vents, stairs) on outside of building

Simplicity and Elegance
Steal Good Design Ideas

“Good artists borrow (from other artists), but great artists steal!” - Pablo Picasso

Compelling visual design takes practice and experience – a natural part of which is study and critique of other’s work.

Simplicity

Simple, minimalist, designs are often most effective.
Elegance

Reduction: Only include essential elements
Regularization: Use one set of shapes, colors, forms etc.
Leverage: Use elements in multiple roles
scrollbar allows scrolling and indicates position in document

Benefit: Approachability

Visual elements rapidly understood - invite further exploration
Benefit: Recognizability

Less visual clutter makes it easier to recognize what is there

Benefit: Immediacy

Eye is immediately drawn to important visual elements
Details that remain are more prominent
Unity

One path to simplicity & elegance is through unifying themes:
Forms, colors, components with like qualities

Refinement

Draw viewers’ attention to essential information
Straighten subway lines to emphasize sequence of stops
Mistakes: Clutter & Noise

Mistakes: Interference

Shortcuts interfere with menu labels in (a) not in (b). Different shapes cause confusion in alignment tools (c).
Mistakes: Too Much Structure

Bounding boxes in (a) adds unnecessary structural information. Simpler structure in (b) using space rather than lines is better.

Mistakes: Belaboring the Obvious
Mistakes: Gratuitous use of 3D

Mistakes: Excessive Embellishment

Minimalists hate it, but sometimes users like embellishment
Color

Color Spaces

RGB
Additive
Electronic Media

CMY
Subtractive
Printed Media

Parameters of color space driven by technology
Technology-Centered Colors

Nice RGB Hex codes, “evenly” distributed
But, lime green and hot pink?

Perceptual Organization

Parameters of color space driven by perception
Munsell Color Space

Perceptually uniform book of painted chips

Hue

Chroma vs. Value

Tips for Picking Colors

Use a limited palette (e.g., 6 colors in Java look and feel)

Don’t rely on fully saturated colors

Ensure good color contrast for text
Let Someone Else Pick For You

Let Someone Else Pick For You
Let Someone Else Pick For You

**ColorBrewer.org**

Gestalt Principles
Principles

- figure/ground
- proximity
- similarity
- symmetry
- connectedness
- continuity
- closure
- common fate
- transparency

Figure/Ground

http://www.aber.ac.uk/media/Modules/MC10220/visper06.html

Ambiguous

Principle of surroundedness

Principle of relative size
Figure/Ground

http://www.aber.ac.uk/media/Modules/MC10220/visper06.html

Unambiguous

Dots that are near one another are grouped
Dots that are concentrated are grouped

[from Ware 00]

Proximity
Proximity

<table>
<thead>
<tr>
<th>Tuesday, November 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Election Day</td>
</tr>
<tr>
<td>An American Menu $75</td>
</tr>
<tr>
<td>Caesar salad with anchovies, egg, and Parmesan cheese</td>
</tr>
<tr>
<td>Clam chowder with Maine lobster and pancetta</td>
</tr>
<tr>
<td>Grilled chicken with house-made barbeque sauce with potato purée and greens</td>
</tr>
<tr>
<td>Apple and raspberry pecan crisp with vanilla ice cream</td>
</tr>
</tbody>
</table>
Rows dominate due to similarity [from Ware 04]

Similarity

TUESDAY, NOVEMBER 4 — ELECTION DAY

AN AMERICAN MENU $75

Caesar salad with anchovies, egg, and Parmesan cheese
Clam chowder with Maine lobster and pancetta
Grilled chicken with house-made barbecue sauce with potato purée and greens
Apple and raspberry pecan crisp with vanilla ice cream
Symmetry

Bilateral symmetry gives strong sense of figure [from Ware 04]

Connectedness

Connectedness overrules proximity, size, color shape [from Ware 04]
Continuity

We prefer smooth not abrupt changes [from Ware 04]

Connections are clearer with smooth contours [from Ware 04]

Closure

We see a circle behind a rectangle, not a broken circle [from Ware 04]

Illusory contours [from Durand 02]
Common Fate

Dots moving together are grouped

http://coe.sdsu.edu/eet/articles/visualperc1/start.htm

Typography
Principles (from R. Bringhurst)

Typography exists to honor content

Read the text before designing it

Choose a typeface that matches character of text

Type Categories: Oldstyle (Humanist)

Oldstyle

Goudy
Palatino
Times
Baskerville
Garamond

Serif (pronounced "sair if", not "suh reef")

Serifs on lowercase letters are slanted

Moderate thick/thin transition in the strokes

Source: R. Williams
The Non-Designers Design Book
Type Categories: Modern

<table>
<thead>
<tr>
<th>Vertical stress</th>
<th>Serifs on lowercase letters are thin and horizontal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modern</td>
<td></td>
</tr>
<tr>
<td>Bodoni</td>
<td>Times Bold</td>
</tr>
<tr>
<td>Fenice, Ultra</td>
<td>Walbaum</td>
</tr>
</tbody>
</table>

Source: R. Williams
The Non-Designers Design Book

Type Categories: Slab Serif

<table>
<thead>
<tr>
<th>Serifs on lowercase letters are horizontal and thick (slabs)</th>
<th>Vertical stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slab serif</td>
<td></td>
</tr>
<tr>
<td>Very little or no thick/thin transition, or contrast, in the strokes</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Clarendon</th>
<th>Memphis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memphis Extra Bold</td>
<td></td>
</tr>
<tr>
<td>New Century Schoolbook</td>
<td></td>
</tr>
</tbody>
</table>

Source: R. Williams
The Non-Designers Design Book
Type Categories: Sans Serif

Sans serif

No serifs anywhere
No thick/thin transition in the strokes
No stress because there’s no thick/thin

Antique Olive  Formata
Gill Sans  Franklin Gothic
Folio  Syntax

Source: R. Williams
The Non-Designers Design Book

Combining Type: Concordant

Typography

FROM WIKIPEDIA, THE FREE ENCYCLOPEDIA

Typography is the art and technique of arranging type, type design, and modifying type glyphs. Type glyphs are created and modified using a variety of illustration techniques. The arrangement of type involves the selection of typefaces, point size, line length, leading (line spacing), adjusting the spaces between groups of letters (tracking) and adjusting the space between pairs of letters (kerning).

Adobe Caslon Semibold
48 pt

Adobe Caslon Smallcaps, 14 pt

Adobe Caslon Regular, 12 pt
Combining Type: Contrasting

Typography

From Wikipedia, the free encyclopedia

Typography is the art and technique of arranging type, type design, and modifying type glyphs. Type glyphs are created and modified using a variety of illustration techniques. The arrangement of type involves the selection of typefaces, point size, line length, leading (line spacing), adjusting the spaces between groups of letters (tracking) and adjusting the space between pairs of letters (kerning).

- Gill Sans Light
  - 48 pt

- UC Berkeley OldStyle
  - 12 pt

Combining Type: Conflicting

Typography

From Wikipedia, the free encyclopedia

Typography is the art and technique of arranging type, type design, and modifying type glyphs. Type glyphs are created and modified using a variety of illustration techniques. The arrangement of type involves the selection of typefaces, point size, line length, leading (line spacing), adjusting the spaces between groups of letters (tracking) and adjusting the space between pairs of letters (kerning).

- Arial
  - 36 pt

- Futura Medium
  - 14 pt

- Myriad Regular
  - 12 pt
Composition

Principles

Contrast
(don’t be a wimp)
Repetition
Alignment
Back to the Bauhaus…

The New Typography
Diagram, 1938
(Hand draw)
Designer and author: Jan Tschichold

Tschichold's diagrams of good and bad magazine design advocate staggering images in relation to content instead of forcing text to wrap around blocks moored at the center of the page. Explaining this experiment, Tschichold wrote that his redesigns would look “even more effective if the photographic half-images (called ‘blocks’) were produced in fixed rather than arbitrary sizes.”
Grid Systems

Grids can shape layout without over constraining it

- Grid is not always obvious from page layout
- Produces good repetition of size and shape
Alignment

Every item on a screen has a relationship to the other items. Elements that are almost collinear should be aligned.

Left, right and both-justified alignments create strong boundaries around a piece of text.

It’s best to stick with one kind of justification within a page.
Alignment

Common Mistakes

Arbitrary component positions and dimensions
Random window sizes and layouts
Unrelated icon sizes and imagery
Poor alignment
Summary

Design is about communication, form and function
Simplicity and elegance are keys to good design
Minimalism constrains you and reduces chances of bad design
Use a small palette of colors
Let others pick them for you (colorbrewer.org)
Human vision is organized by Gestalt Principles
Be aware of these principles as you design the visual look
Avoid common layout mistakes by using grid-based design

Next Time

Visual Information Design
Information Visualization, Readings in Information Visualization.
Chap 1. Card, Mackinlay, Schneiderman.