Color, Typography, and Gestalt

No screens

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COMS 4170
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Goal 1
Build websites that suit the needs and abilities of users

The main goal of many websites is to display information users need.
Tools for indicating importance in the visual information hierarchy

• Conceptual grouping
• Location
• Whitespace
• Size
• Images
• Contrast
• Color
In addition to indicating importance, the colors and fonts you pick will have meaning to users.
What meaning will these colors have to users? (in addition to importance)
What meaning will these fonts have to users? (in addition to importance)
What meaning will these fonts, colors and design have to users?
What meaning does this **font** have?

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**About CERN**

What is the universe made of? How did it start? Physicists at CERN are seeking answers, using some of the world’s most powerful particle accelerators.

At CERN, the European Organization for Nuclear Research, physicists and engineers are probing the fundamental structure of the universe. They use the world’s largest and most complex scientific instruments to study the basic constituents of matter - the fundamental particles. The particles are made to collide together at close to the speed of light. The process gives the physicists clues about how the particles interact, and provides insights into the fundamental laws of nature.
The human brain is always perceiving meaning (even when it is not intended)

3 dots means "to be continued," 4 dots it's a typo, but 5 dots means: "wow, don't make me say what I want to say, 'cause if I did, it will blow your mind, dot, dot, dot, dot, dot, dot"
The human brain is always perceiving meaning (even when it is not intended)

Use color, typography, and design carefully to convey your intended meaning
Color
On the web, we mostly use RGB color.

**RGB**
Mixing amounts of Red, Green and Blue light
There are three perceptual dimensions of color:

- **HUE**: A spectrum of colors from red to violet.
- **SATURATION**: A range from pure hues to desaturated grays.
- **VALUE**: A gradient from bright to dark shades.
Every color is a point in the HSV space.
How would we find this color?
From Yellow, how do we get Brown?
## Color Schemes

**complementary colors**
- Hues opposite on the color wheel.
- Complementary colors are more intense, and "vibrate" when placed next to each other as they compete for your attention.

**split complementary colors**
- One of the complementary colors is split off into a pair of neighboring hues.

**analogous colors**
- Colors that neighbor one another on the color wheel.
- Hues appear to "push" at each other, creating an optical illusion where each zone appears larger when it has your attention.

**triad colors**
- Hues equidistant on the color wheel.

### Color Wheel

- **Y** - yellow
- **YG** - yellow green
- **G** - green
- **BG** - blue green
- **C** - cyan
- **B** - blue
- **VB** - violet blue
- **V** - violet
- **Y** - magenta
- **M** - magenta
- **RM** - red magenta

- **complementary contrasting color**
- **split complementary color**
- **analogous color**
- **triad color**
Choosing colors

- Start in grayscale, then keep the luminance values
- Common schemes: analogous, split complement
Benefit from others

- Adobe Color CC  http://color.adobe.com
- Fork popular schemes https://color.adobe.com/explore/most-popular
Cultural Differences in Color Interpretation

<table>
<thead>
<tr>
<th></th>
<th>Red</th>
<th>Blue</th>
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<th>Yellow</th>
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<tbody>
<tr>
<td><strong>U.S.</strong></td>
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<td>Safety</td>
<td>Cowardice</td>
<td>Purity</td>
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<td><strong>France</strong></td>
<td>Aristocracy</td>
<td>Freedom Peace</td>
<td>Criminality</td>
<td>Temporary</td>
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<td>Birth</td>
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*Cultural differences: color
P. Russo & S. Boor, How fluent is your interface? Proc. INTERCHI '93*
What cultural connections do these colors have?
Are color meaning arbitrary?

### Cultural differences: color

P. Russo & S. Boor, *How fluent is your Interface? Proc. INTERCHI '93*

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The color meanings vary significantly across different cultures, as illustrated in the cultural differences chart. The image on the left depicts a map of the United States, color-coded to reflect cultural perceptions of colors, highlighting how these perceptions can differ across regions and countries.
Are color meanings arbitrary?

Color meanings are not absolute.

But at any time and place, they may mean something you don’t intend.
Typography
Gill Sans, designed by Eric Gill and released by the Monotype Corporation in 1928
Six Typographic Terms
Typographic Terms

Gill Sans  Calibri
Six Typographic Terms

Leading
Typefaces with high x-height: easier to read at small point size

Typefaces with low x-height: harder to read at small point size
Six Typographic Terms

ascenders

descenders
Six Typographic Terms

light  regular  bold

weight
Weights and Styles

Roboto Thin & Thin Oblique
Roboto Light & Light Oblique
Roboto Regular & Oblique
Roboto Medium & Medium Oblique
Roboto Bold & Bold Oblique
Roboto Black & Black Oblique
Roboto Condensed Light & Condensed Light Oblique
Roboto Condensed & Condensed Oblique
Roboto Condensed Bold & Condensed Bold Oblique

http://developer.android.com/design/style/typography.html
Six Typographic Terms: Serif

Oldstyle

Serif
(pronounced
“sair iff,” not
“suh reef”)

Goudy Palatino Times
Baskerville Garamond

Source: R. Williams
The Non-Designers Design Book
Six Typographic Terms: Serif

Oldstyle

Goudy  Palatino  Times

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Goudy Palatino Times

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Serif (pronounced “sair iff,” not “suh reef”)

Diagonal stress

Source: R. Williams
The Non-Designers Design Book
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Oldstyle

Goudy, Palatino, Times
Baskerville, Garamond

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Six Typographic Terms: Serif

Oldstyle

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

Diagonal stress

Serifs on lowercase letters are slanted

Goudy  Palatino  Times  Baskerville  Garamond

Source: R. Williams
The Non-Designers Design Book
Six Typographic Terms: Serif

Diagonal stress

Serif (pronounced “sair iff,” not “suh reef”)

Serifs on lowercase letters are slanted

Moderate thick/thin transition in the strokes

Oldstyle

Goudy  Palatino  Times

Baskerville  Garamond

Source: R. Williams
The Non-Designers Design Book
Six Typographic Terms: Sans Serif

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

Sans serif

Antique Olive  Formata
Gill Sans  Franklin Gothic
Folio  Syntax

Source: R. Williams
The Non-Designers Design Book
Small caps, lowercase
Small caps, lowercase

Numbers:
Lowercase 1234567890
Uppercase 1234567890
The Serif Hypothesis

• Serif typefaces are easier to read -- and thereby preferable for long stretches of text -- because the serifs provide anchors that guide the reader's eye. Sans serif fonts lack these anchors and are therefore inappropriate for long stretches of text.
Challenges

- Individual differences dwarf manipulation effects
  - *i.e.*, some people read faster than others. If there is an effect, it’s very small

- Confound: Reading requires familiarity

- Dependent Variable? Speed? Comprehension? ...

“Legibility, in practice, amounts simply to what one is accustomed to” — Eric Gill, 1931
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).
Combining Type: Contrasting

Typography

From Wikipedia, the free encyclopedia

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Combining Type: Conflicting

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Typefaces, like everything, build reputations

Baskerville

The Literary Magazine for Gifted Kids & Their Families

Optima

POUR HOMME

AFTER SHAVE BALM BAUME APRES RASAGE
Gestalt

noun
an organized whole that is perceived as more than a sum of its parts
What pattern do you see here?
What pattern do you see here?
Proximity
Proximity
How is proximity used?

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 barbeque sauce with potato purée and greens
Apple and raspberry pecan crisp with vanilla ice cream

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 barbeque sauce with potato purée and greens
Apple and raspberry pecan crisp with vanilla ice cream
What pattern do you see here?
How is similarity used?

AN AMERICAN MENU  $75

Caesar salad
with anchovies, egg, and Parmesan cheese

Clam chowder
with Maine lobster and pancetta

Grilled chicken
with house-made barbeque sauce with potato purée and greens

Apple and raspberry pecan crisp
with vanilla ice cream
What pattern do you see here?
What pattern do you see here?

How are proximity and similarity used?
Connectedness

Connection overrules proximity and similarity
What **literal** difference do you see between A B and C?
What perceptual difference do you see between A, B, and C?
Symmetry

Bilateral symmetry gives strong sense of figure
Which paths are easier to follow?
Continuity

We prefer smooth not abrupt changes
Connections are clearer with smooth contours
What is the literal difference between a and b?
What is the *perceived* difference between a and b?
Closure
Illusory contours
What do you see?
Figure/Ground

Principle of Relative Size
Figure/Ground
Figure/Ground

Principle of Surroundedness
8 Gestalt Principles
Summary
The human brain is always perceiving meaning (even when it is not intended)
As a designer, you have to know how these principles are represented by the system, and how they are interpreted by the user.

**Color**

![Color Palette](image)

**Font**

- Adobe Caslon Semibold: 48 pt
- Adobe Caslon Smallcaps: 14 pt
- Adobe Caslon Regular: 12 pt

**Gestalt**

a. ![Gestalt a](image)
b. ![Gestalt b](image)
c. ![Gestalt c](image)
d. ![Gestalt d](image)

**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).