# Color, Typography, Gestalt 

Prof. Lydia Chilton<br>COMS 4170<br>26 February 2024

The human brain is always interpreting meaning.


Color and Meaning

## In addition to signaling importance, colors have meaning.



## Where is color used? What does it mean?



## Where is color used? What does it mean?



## What are your associations with these colors?



## And the associations in France?

| Culture |  | Red | Blue | Green | Yellow |
| :---: | :--- | :--- | :--- | :---: | :---: |
| United States | Danger | Masculinity | Safety | Cowardice | Purity |
| France | Aristocracy | Freedom <br> Peace | Criminality | Temporary | Neutrality |

## Do you see any contradictions?

| Culture | Red | Blue | Green | Yellow | White |
| :---: | :---: | :---: | :---: | :---: | :---: |
| United States | Danger | Masculinity | Safety | Cowardice | Purity |
| France | Aristocracy | Freedom Peace | Criminality | Temporary | Neutrality |
| Egypt | Death | Virtue <br> Faith <br> Truth | Fertility Strength | Happiness Prosperity | Joy |
| India | Life Creativity |  | Prosperity Fertility | Success | Death Purity |
| Japan | Anger Danger | Villainy | Future Youth Energy | Grace Nobility | Death |
| China | Happiness | Heavens Clouds | Ming Dynasty Heavens Clouds | Birth Wealth Power | Death Purity |

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## What does blue mean in India?

| Culture | Red | Blue | Green | Yellow | White |
| :---: | :---: | :---: | :---: | :---: | :---: |
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## COLOR EMOTION GUIDE

|  |
| :---: |
|  |  |



Probably not. Don't rely on it in a design.


## What cultural associations do these colors have?



## When did the "red state" association start?



2016
1992

## Are color meanings arbitrary?

Colormeanings are not absolute

In your designs, stick to simple color meanings.


Don't use color as the only way to convey meaning. Use grouping, whitespace, position, size, contrast,

## Color Representation

There are three perceptual dimensions of color: HSV - Hue, Saturation, Value (Brightness)

Hue Changes


Saturation Changes

Brightness Changes


## There are many ways to represent color



Hue, Saturation, Value



Red, Green, Blue

CMYK


Cyan, Magenta, Yellow
(Key = Black)
Subtractive color model


Luminosity, $\mathrm{a}, \mathrm{b}$

## The web uses represents color in RGB



If you have have
Red: 0, Green: 0, Blue: 0
Black What color will you get?

If you have have
Red: 100\%
Green: 100\%
Blue: 100\%
What color will you get?

## Ways to specify a color in HTML

```
.blue_text{
    color: blue;
}
.blue_text{
        color: rgb(0,0, 255);
}
.blue_text{
        color: #0000FF;
}
.blue_transparent_text{
        color: rgba(0,0, 255, 0.5);
}
```


## Choosing color combinations

## Color Schemes

| complementary colors <br> hues opposite the color wheel <br> complementary colors are <br> more intense, and "vibrate" <br> when placed next to each other <br> as they compete for your attention |
| :--- |
| split complementary colors <br> one of the complementary colors <br> is spit off inta a pair of <br> neighboring hues |
| analogous colors <br> colors that neighbor one another <br> on the color wheel <br> hues appear to "push" at each <br> other, creating an optical illusion <br> where each zone appeeras sarger <br> when it has your attention |
| triad colors <br> hues equidistant on the color <br> wheel |

## If you are not a color expert, get inspiration from experts.



Basic Web Color Advice

## Pick four colors (and a white background)

- A base color
- An accent color
- A light grey
- A dark grey



## There are tools to help pick base colors



Make your design in greyscale first!


## What are the 4170 site colors?

- A base color
- An accent color
- A light grey
- A dark grey

I also use a texture/image for the hero


# User Interface Design 

COMS $4170 \cdot$ Spring 2022


Our Goals

1. Undergtand users and build websites that suit the needs and abilities.
2. Design useable systems through iteration and feedback.

INSTRUCTOR
Prof. Lydia Chilton
OH: Tuesday 11-12, zoom
Please contact staff through Ed or Slack

## TA OFFICE HOURS

The list of TA office hours is here
To attend office hours, hang out in the Slack channel "oh-waiting-room".
Add yourself to the OH queue here (and pinned to the oh-waiting-room slack channel. A TA will ping you on slack when they're ready for you. Feel free to chat with other students in the waiting room channel.


- A base color
- An accent color
- A light grey
- A dark grey


Image

- A base color
- An accent color
- A light grey
- A dark grey



O2ccesbymaNiven
Froaty creskedwth Wecern

- A base color
- An accent color
- A light grey

HTML Business Templates -

- A dark grey

Find a quality and right headphones not easy


Business HTML Templates Free Download

Image
Hottest headphones of the month


These rules are trickier for dark backgrounds. Please stick to a white background for now.


## Pick four colors (and a white background)

- A base color
- An accent color
- A light grey
- A dark grey



## Typography

## Typography is an art form



Gill Sans, designed by Eric Gill and released
by the Monotype Corporation in 1928

## Six Typographic terms



## S\} Point size



## Gill Sans Calibri

## S

\} Leading

## SiX $\}$ x-height



Lucida Bright high x-height


Baskerville Low x-height

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 <br> descenders

## Six Typographic Terms <br> regh reglar <br> bold

weight

## Weights and Styles

Roboto Thin \& Thin Oblique<br>Roboto Light \& Light Oblique<br>Roboto Regular \& Oblique<br>Roboto Medium \& Medium Oblique<br>Roboto Bold \& Bold Oblique<br>Roboto Black \& Black Oblique<br>Roboto Condensed Light \& Condensed Light Oblique<br>Roboto Condensed \& Condensed Oblique<br>Roboto Condensed Bold \& Condensed Bold Oblique

What indicates a serif font?


## Serifs - there's more!



## Serif vs.

Sans serifs


## The Serif Hypothesis

## Serif fonts are faster to read. The little hooks indicate where your eyes should move next.

## There is no evidence to support this.

Any differences in reading speed are dwarfed by individual differences, or familiarity.

## Who follows the Serif Hypothesis?

Ebe Ate Hork Eimes

LONDON - The stage filled with women in Princess Diana masks, smashing VHS cassettes with hammers. A dancer wove her way through a bar, muttering about kittens. A figure wrapped in a filthy comforter emerged from a tent, crawling among clubbers dressed in
fetish gear.


## Like colors, fonts have cultural connotations

## CTB Video Podcasts News Treh music Food Healkh Money Druse + More

## MOTHERBOARD

techby vice

## Scientists Found Breathable C Another Galaxy for the First Ti

## The Alw Hork Times

## Microbes Point the Way to

 ShipwrecksDistinct microbiomes flourish around sunken ships as they become artificial reefs, new research in the Gulf of Mexico reveals.

## San Serif = <br> Modern, simple

Serif =

## Mixing fonts: Concordant fonts

## 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

## Mixing fonts of the same font-family is great.

## Mixing fonts: Contrasting fonts

## Typography <br> 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
Gill Sans Light, 16 pt
UC Berkeley OldStyle, I2 pt

Mixing San Serif and Serif is ok. (But edgier)

## BAD font mix: Conflicting fonts

## Typography

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Futura Medium, 14 pt
Myriad Regular, 12 pt

## Mixing multi San Serif or Serif fonts is considered bad. It doesn't look intentional.

## What connotation does this font have?

##  <br> Open Letter to Fans from Cavaliers Majority Owner Dan Gilbert <br> Status of Standard Model Higgs searches in ATLAS <br> Dear Cleveland, All Of Northeast Ohio and Cleveland Cavaliers Supporters Whereve

 Your font should not detract from your message.Fobiolal Gianotti (CERN), representing the ATLAS Collaboration

$0 \pi$
 is no longer a Cleveland Cavalier

## You're an idiot.

Eight Gestalt Principles

## ge•stalt

/gə'SHtält/ 4)
noun PSYCHOLOGY
an organized whole that is perceived as more than the sum of its parts.

```
German *
```

Y $\rightarrow$ English • $\square$
gestalt
shape

## Proximity

## 

Dots appear as columns


Dots appear as rows

## Gestalt Principle \#1

## Proximity



Dots appear as two groups
$X$ is in group a.


## How is similarity used to convey meaning?

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

## Similarity

How many green circles are there?

Gestalt Principle \#2:
Similarity


## Similarity

## How many green circles are there?



Colors are easy to scan for

## Similarity

## How many rectangles are there?

Gestalt Principle \#2:
Similarity


## Similarity

## How many rectangles are there?



Shapes are hard to scan for

## Similarity

How many triangles are there?

Gestalt Principle \#2:

## Similarity

- 
- 



## Similarity

How many triangles are there?


Size is easy to scan for

What properties are easy to scan for similarity?


Color and Size scans better than shape

Gestalt Principle \#3:
Enclosure


Gestalt Principle \#3:

## Enclosure



## Symmetry

## [ K H ]

## 110

Proximity indicates 4 groups



Symmetry indicates 3 groups

Gestalt Principle \#5:
Closure


Gestalt Principle \#6:

## Continuity



Gestalt Principle \#6:
Continuity

$$
\stackrel{\bullet \bullet \bullet}{\bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet}
$$

## Gestalt Principle \#7 <br> Connection

## $a \quad \varnothing$

- 


## Gestalt Principle \#7:

## Connection

'11

## Gestalt Principle \#7:

## Connection

a
b


## Gestalt Principle \#7:

## Connection

## !.



## Gestalt Principle \#7

## Connection


$c \square$


## Gestalt Principle \#7

## Connection



## Gestalt Principle \#7

## Connection

".
b

d

- $\square$


## Gestalt Principle \#7

## Connection



Figure and Ground




## 8 Gestalt Principles

Proximity

## 2 Gestalt Principles I actually use



## I use proximity and similarity (contrast)

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## Quiz: 8 Gestalt Principles

Proximity

## Quiz: what property is being used here?

## For other uses, see Design (disambiguation)

Design can have different connotations in different fields of application (see design disciplines below), but there are two basic meanings of design: as a verb and as a noun.
Design (as a verb: to design) is the intentional creation of a plan or specification for the construction of an object or system or for the implementation of an activity or process.
Design (as a noun: a design) can refer to such a plan or specification (e.g. a drawing or other document) or to the created object, etc., and features of it such as aesthetic, functional, economic or socio-political.
The process of creating a design can be brief (a quick sketch) or lengthy and complicated, involving considerable research negotiation, reflection, modelling, interactive adjustment and re-design. In some cases, the direct construction of an object without an explicit prior plan (such as in craftwork and some engineering, coding, and graphic design) is also considered to be a design activity.

Contents [hide]
1 Definitions
2 Design as a process
2.1 The rational model
2.1.1 Example sequence of stages
2.1.2 Criticism of the rational model
2.2 The action-centric model
2.2.1 Descriptions of design activities

3 Design disciplines
4 Philosophies and studies of design
4.1 Philosophies for guiding design
4.2 Approaches to design

## Similarity of Color

It is easy to scan for color

## Quiz: what property is being used here?



Continuity
Our minds perceive lines and curves as continuing on their trajectory

Quiz:
what property is being used on the right?


## Closure

Our minds fill in missing details

Quiz:
what property is being used here?


## Proximity

Similar data are close to each other

## Summary

The human brain is always interpreting meaning.


## Color Meaning and Representation

|  |  |  |  |  |  |  |
| :---: | :--- | :--- | :--- | :---: | :---: | :---: |
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| India | Life <br> Creativity |  | Prosperity <br> Fertility |  |  |  |
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## Are color meanings arbitrary?

Color meanings are not absolute

In your designs, stick to simple color meanings.


Don't use color as the only way to convey meaning. Use grouping, whitespace, position, size, contrast,

## Typography Terms and Meaning



Microbes Point the
Way to Shipwrecks

Scientists Found Breathable C Another Galaxy for the First Ti

Molecular oxygen is a key component of the air humans breathe, and
now astronomers have spocted ita half-bilion light years avay. But
don't hold your breath for quasar whippets.

Status of Standard Model Higgs searches in ATLAS Using the full datasets recorded in 2011 at $\sqrt{ } s=7 \mathrm{TeV}$
and 2012 at $\sqrt{ } \mathrm{s}=8 \mathrm{TeV}$ : up to $10.7 \mathrm{fb} \mathrm{b}^{-1}$ Fabiola Gianott i (CERN). representing the ATLAS

San Serifs = "Modern, simple"
Serifs = "Intellectual, elite"

Comic Sans = "Idiotic"

## Your font should enhance your message, not detract from it.

## 8 Gestalt Principles



## Pick four colors (and a white background)

- A base color
- An accent color
- A light grey
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