dt + UX DESIGN THINKING FOR USER EXPERIENCE DESIGN + PROTOTYPING + EVALUATION

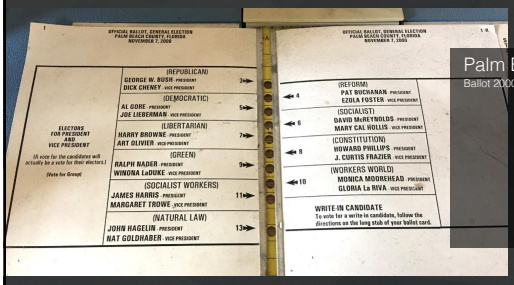
Visual Information Design

Prof. James A. Landay
Computer Science Department
Stanford University

Autumn 2018
October 29, 2018

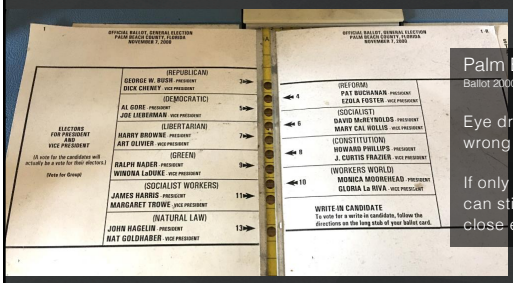
* Based on slides by Luke Vink, Scott Klemmer, and James Landay

Hall of Fame or Shame?



Palm Beach, Florida
Ballot 2000

Hall of Shame!

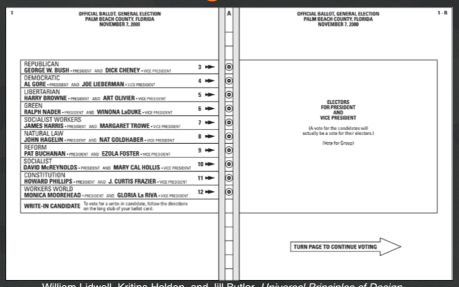


Palm Beach, Florida
Ballot 2000

Eye drawn to the wrong holes

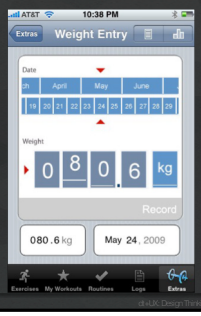
If only 1% error rate, can still change a close election

One Possible Redesign



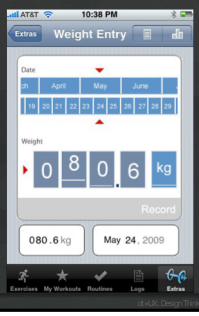
William Lidwell, Kritina Holden, and Jill Butler *Universal Principles of Design*

Hall of Fame or Shame?



iFitness
iOS App

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

¼ of the controls

Saved space can be used for statistics

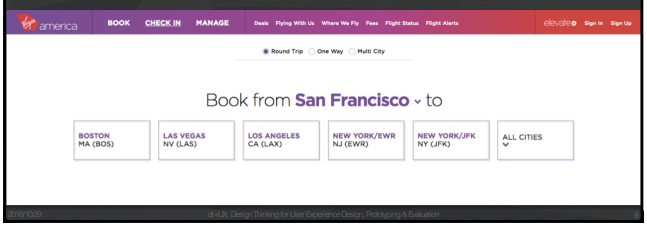
Date and time can be recorded automatically

Source: smashingmagazine.com/2009/07/21/iphone-apps-design-mistakes-overblown-visuals/

Hall of Fame or Shame?

Virgin America Website

Courtesy Andrea S.
https://www.virginamerica.com/book



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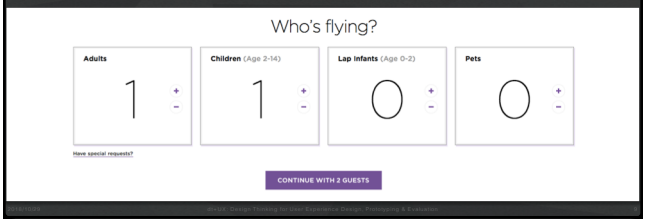

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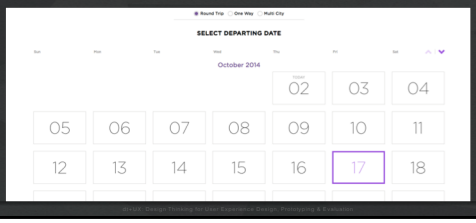

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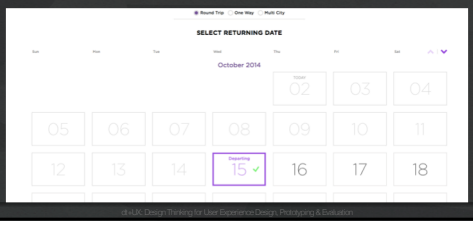


Hall of Fame or Shame?

Virgin America Website

Courtesy Andrea S.
https://www.virginamerica.com/book

Hall of Fame!

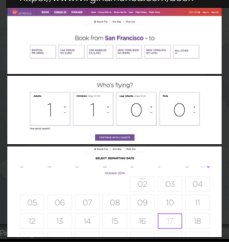
Minimalist design w/ large & simple instructions

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

Best Special Effects

PiggyBag

Best Project Concept

MotiVote

Best Overall Video

PiggyBag

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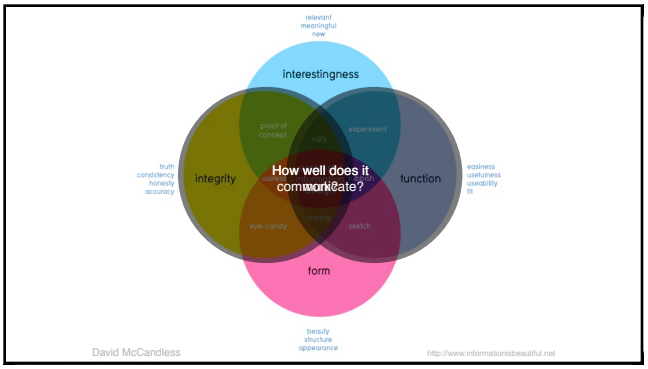
Outline

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



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

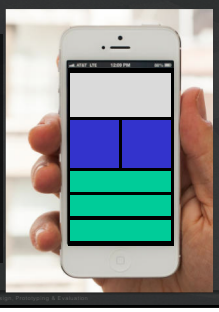
Good Form

(Purpose)

Using Context to Determine Layouts

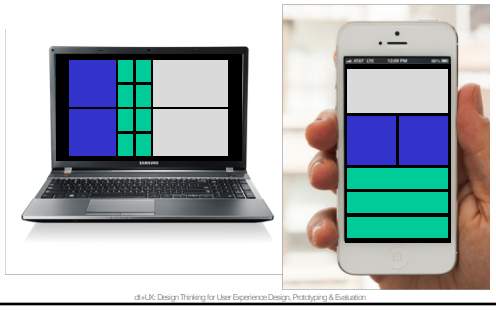
Know Thy Users! (Design Discovery)

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

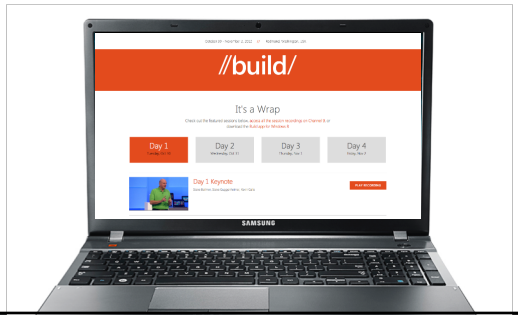


Using Context to Determine Layouts

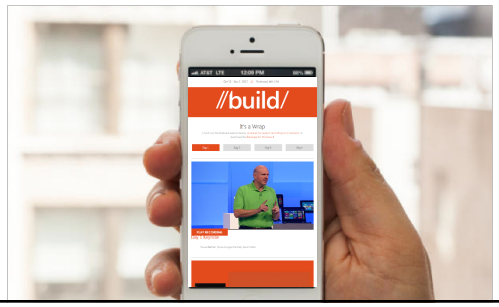
Responsive Layout Design for Web



Responsive Layout Design for Web



Responsive Layout Design for Web

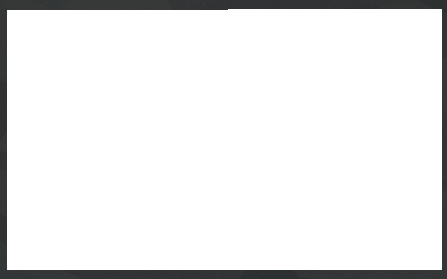


Using Proximity to Indicate Relationships

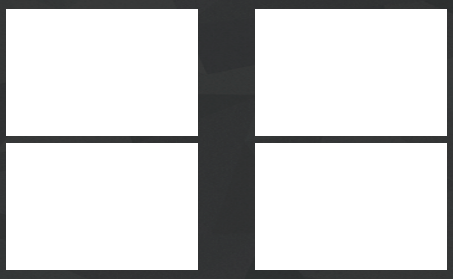
"The whole is greater than the sum of the parts."
– David Hothersall

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.

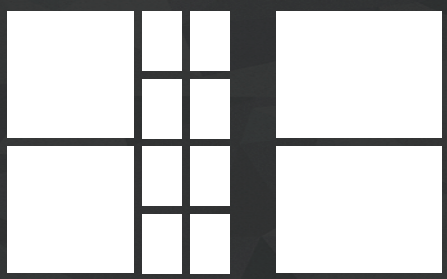
Using Proximity to Indicate Relationships



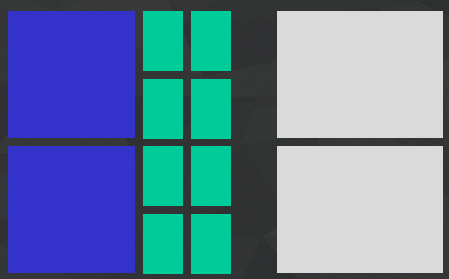
Using Proximity to Indicate Relationships



Using Proximity to Indicate Relationships

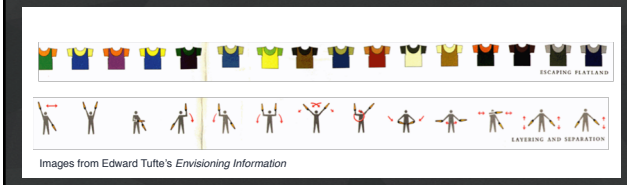


Using Proximity to Indicate Relationships



Small Multiples

- Economy of line
- Similarities enable us to notice differences



Images from Edward Tufte's *Envisioning Information*

International Women's Day

SMALL MULTIPLES

Echeverria, Heriberto 1971
March 8 - International Women's Day

Diaz, Estela 1974
March 8 - International Women's Day

Revolucion!: Cuban Poster Art by Lincoln Cushing
http://www.amazon.com/Revolucion-Cuban-Poster-Lincoln-Cushing/dp/0811835820

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)

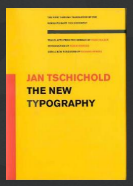
Using Blank / White Space as an Object

- 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



Die Neue Typographie
Berlin, 1928

Bauhaus school
Dessau, 1925-26

Type Classifications

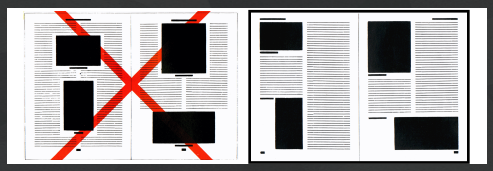
Typeface (Arial) vs **Font** (Arial Bold)

Serifs: Structural details in letters that (may) help the reader connect them

	Sans Serif	Serif
	Optima	Fenice Bold
Roman	answ	answ
Obliqued	answ	answ
True italic	answ	answ

Asymmetric Typography

JAN TSCHICHOLD

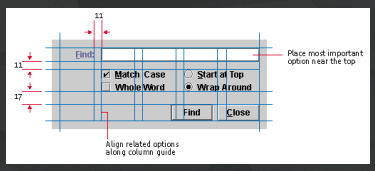


How blocks used to be arranged in magazines. Schematic, thoughtless centering of blocks **(= ugly).**

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"

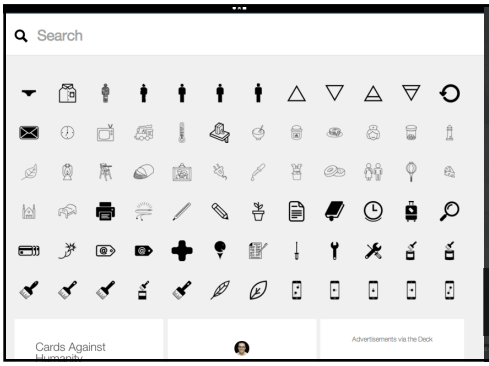


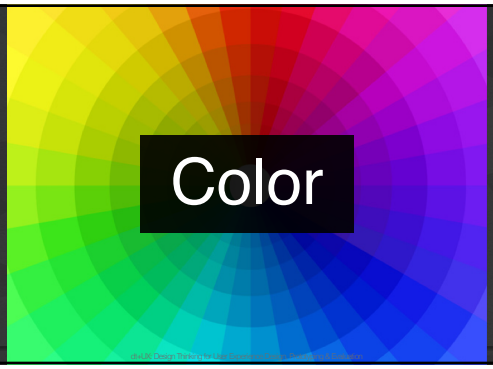
Java Look and Feel Design Guidelines

Iconography:
Differences that Make a Difference

www.jensondesign.com/1+1=3.pdf

The Noun Project
A "Language" of icons





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

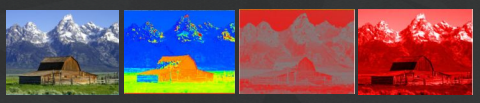


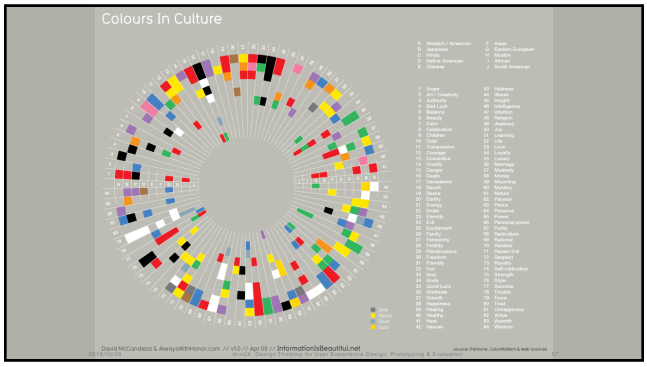
Photo Hue Saturation Luminance

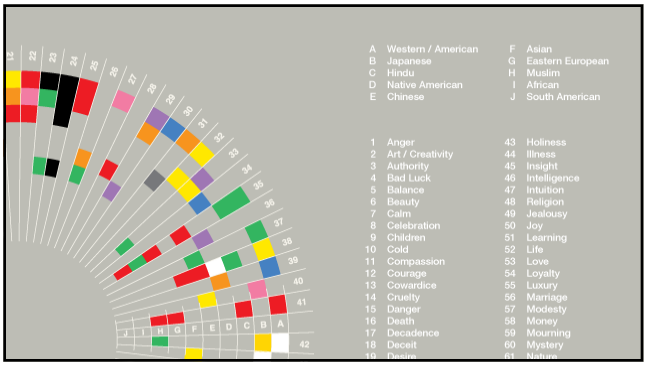
Color: Edward Tufte – by hue

IMAGE REMOVED DUE TO COPYRIGHT

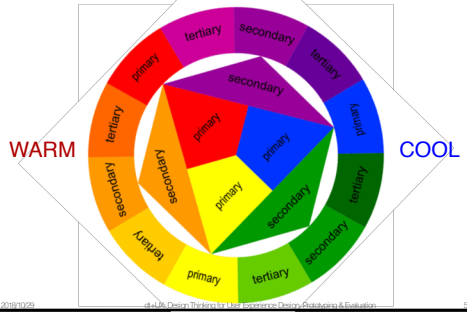
Color: Edward Tufte – by luminance

IMAGE REMOVED DUE TO COPYRIGHT

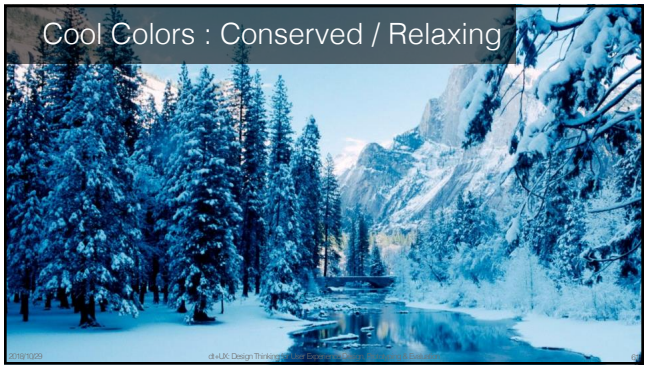




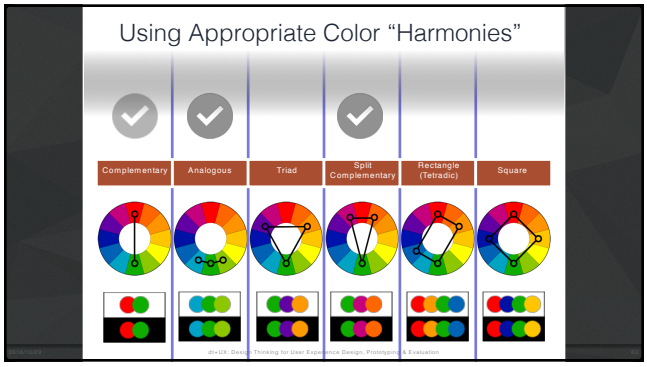
The Basics of the Color Wheel

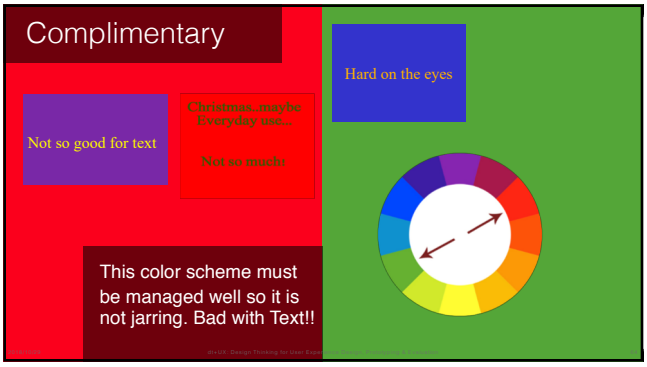


Warm Colors : Triggering / Sensual

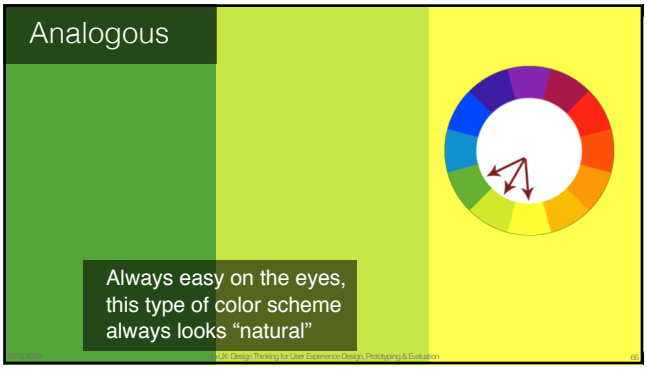

Cool Colors : Conserved / Relaxing

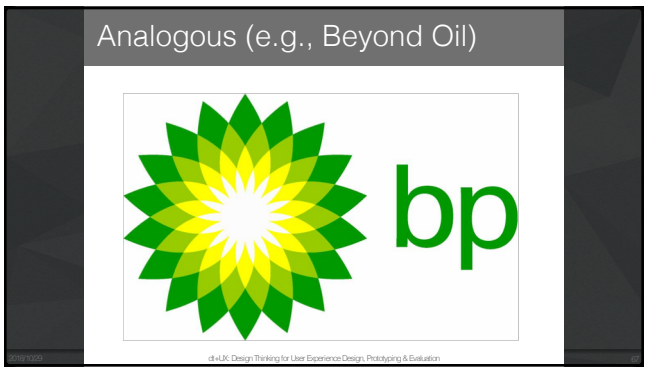
Color Harmonies
"A pleasing arrangement of parts, whether it be music, poetry, color, or an ice cream sundae."

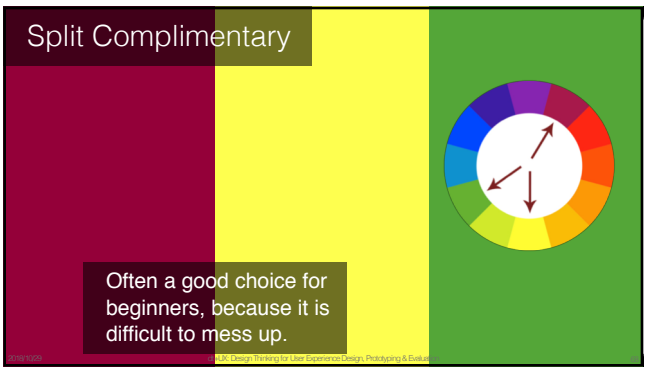

Using Appropriate Color "Harmonies"
Complementary
Analogous
Triad
Split Complementary
Rectangle (Tetradic)
Square


Complimentary
Hard on the eyes
Not so good for text
Christmas..maybe Everyday use...
Not so much!
This color scheme must be managed well so it is not jarring. Bad with Text!!

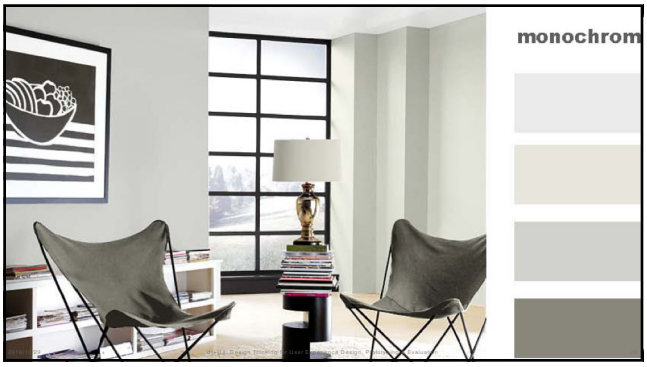
Complimentary (e.g., Children's Bedroom)

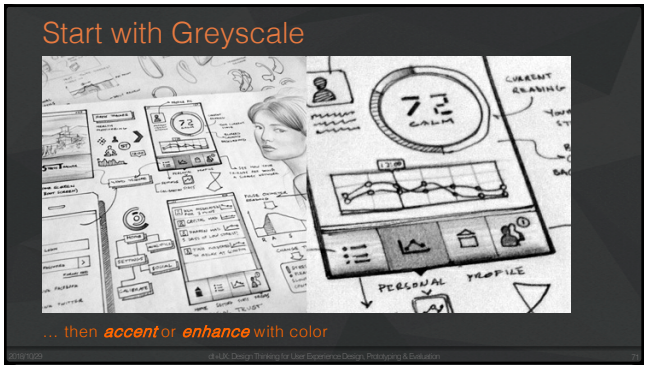

Analogous
Always easy on the eyes, this type of color scheme always looks "natural"

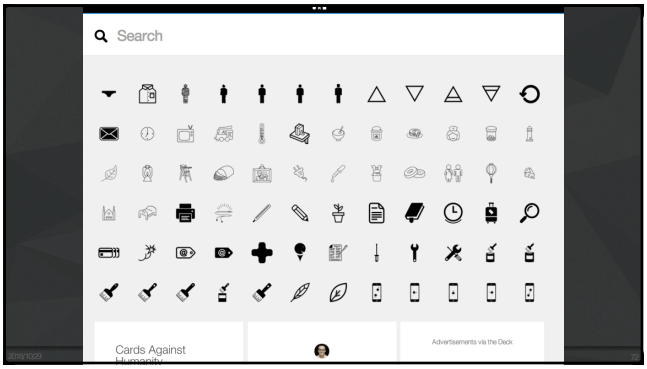

Analogous (e.g., Beyond Oil)
bp

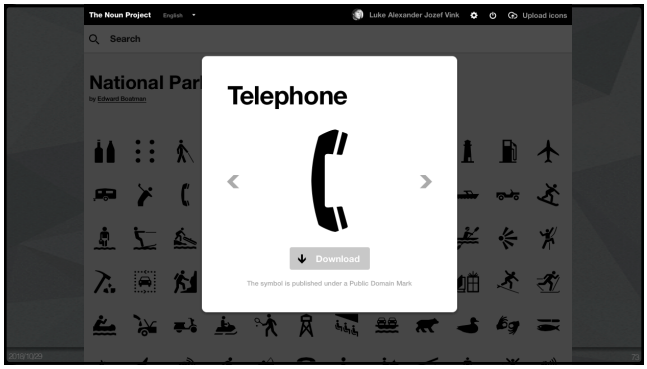

Split Complimentary
Often a good choice for beginners, because it is difficult to mess up.

split-comple

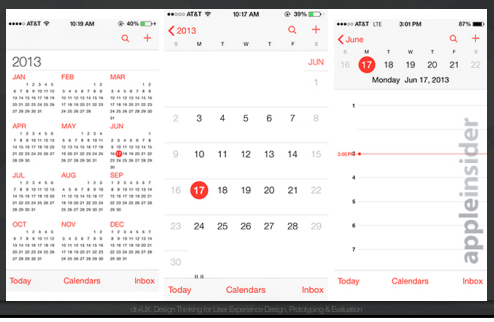

monochrom


Start with Greyscale
… then accent or enhance with color

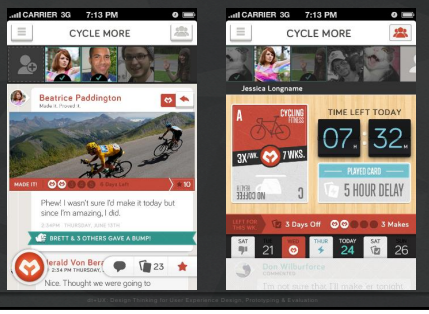

Search
Cards Against Humanity



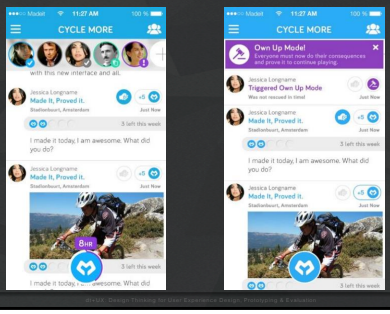
Action + Passive Colors



Poor Use of Color



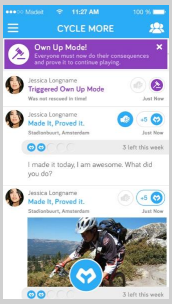
Redesigned to Use 3 Actionable Colors



Action

Immediate

Analogous



Tools that help with color selection

http://colorschemedesigner.com/

http://color.adobe.com/

http://www.colourlovers.com

Visual Design that is

Interesting

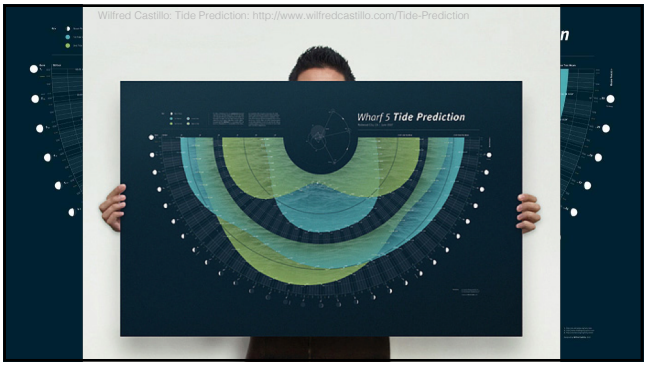
[the wow factor]

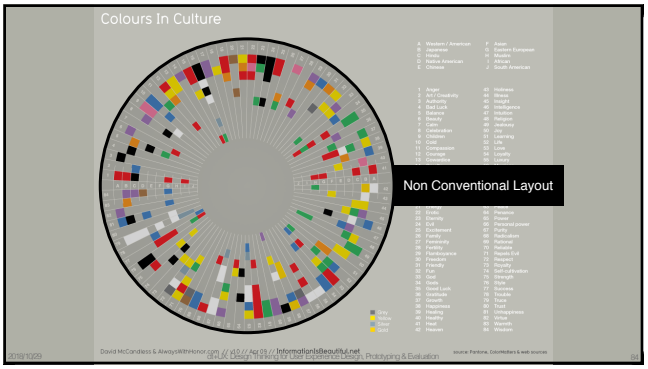
Why Make Information Interesting?

- 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

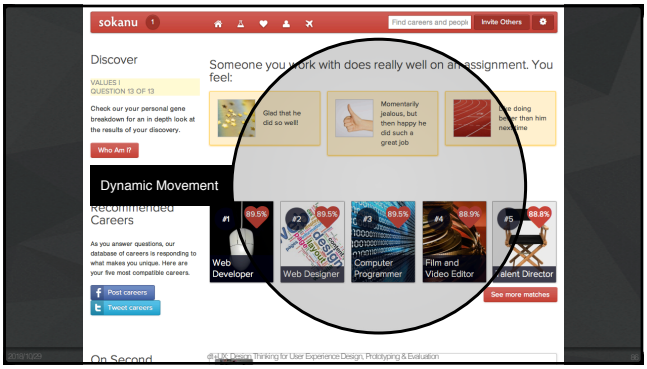
- Hard to get right & easy to overdo!
- Try new shapes
  - circular charts
  - hexagonal Objects
- Like all techniques (color, etc) – restrict unconventional layouts to the most important information





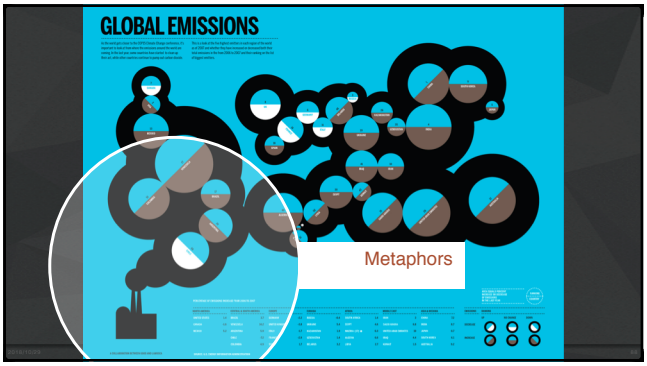
Dynamic Movement

- 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

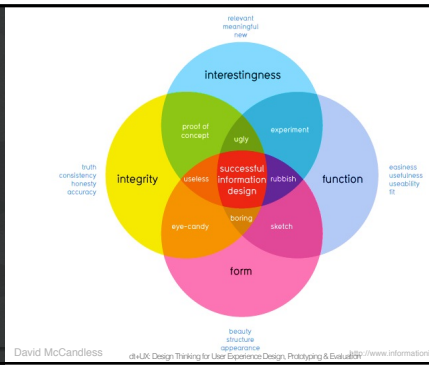
and

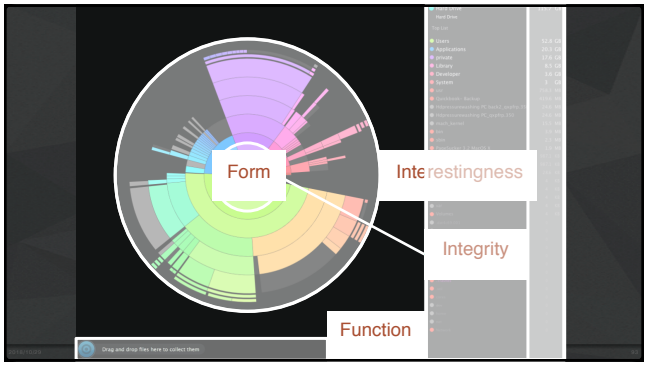
The **less** techniques used, the easier it is to balance them

Overwhelming Use of Different Techniques

In other words,

Keep it Focused





Summary

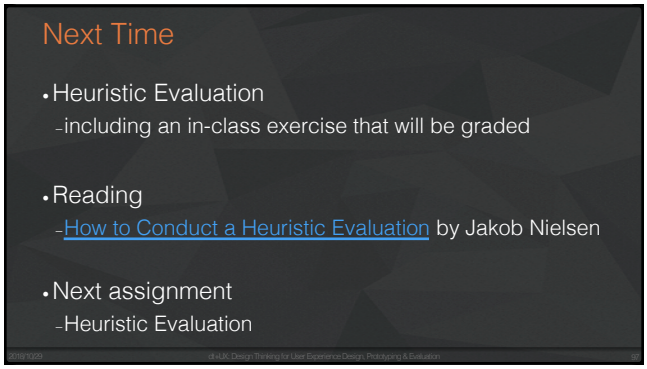
- Start with Context, what is the nature of the information? What is the most important?
- Design first in grayscale to focus on hierarchy
- Small changes help us see key differences
  - e.g., small multiples
- Avoid clutter, focus on the essence of your tasks
- Use color properly – not for ordering!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

Further Reading

- Kevin Mullet and Darrell Sano, *Designing Visual Interfaces*
- Edward Tufte's books and course
- Robin Williams, *The Non-Designer's Design Book*
- Typography
  - Jan Tschichold, *The New Typography*
  - Robert Bringhurst, *The Elements of Typographic Style*
  - http://www.adobe.com/type/

Further Reading

- Typography on the web
  - http://www.pemberley.com/janeinfo/latin1.html
  - http://www.microsoft.com/typography/


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
2018/10/29
dt+UX: Design Thinking for User Experience Design, Prototyping & Evaluation
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