

HCI+D: USER INTERFACE DESIGN + PROTOTYPING + EVALUATION


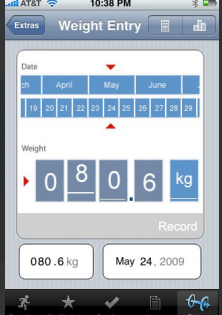
Visual Information Design

Prof. James A. Landay
 Computer Science Department
 Stanford University

Autumn 2014
 October 28, 2014

* Based on slides by Luke Vink


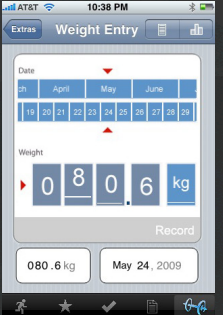
Hall of Fame or Shame?

iFitness iOS App

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Hall of Shame!


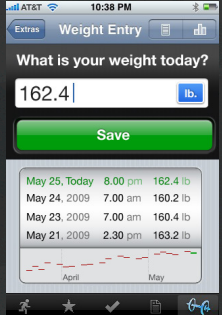
Non-conventional design is a waste resources—iOS has better defaults

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

'Record' button almost invisible

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Hall of Shame!


Possible Re-design

- 1/4 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-visually/

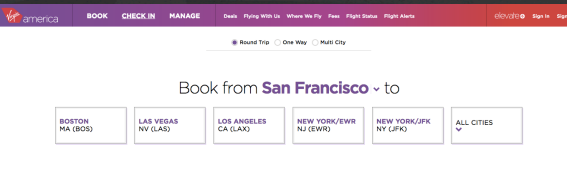
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Hall of Fame or Shame?




Virgin America Website

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



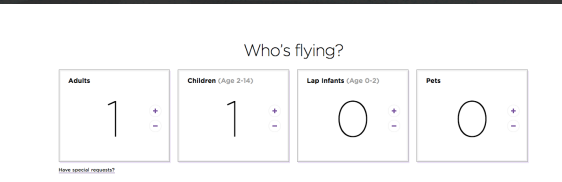
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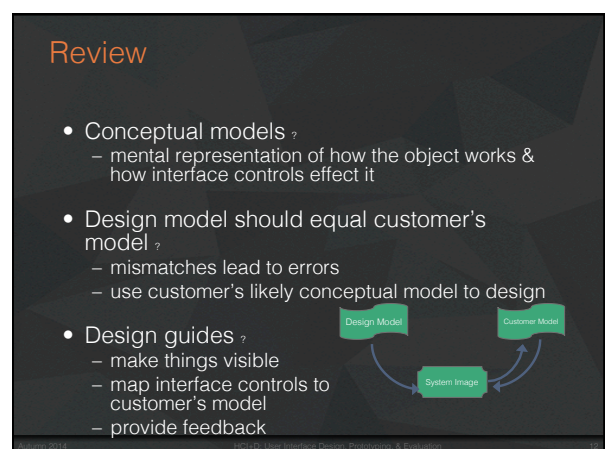
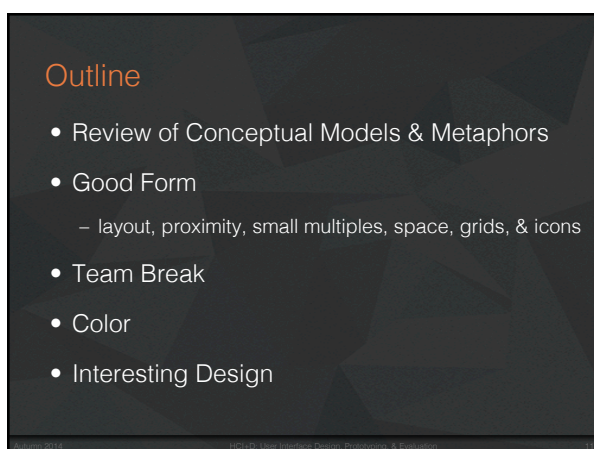
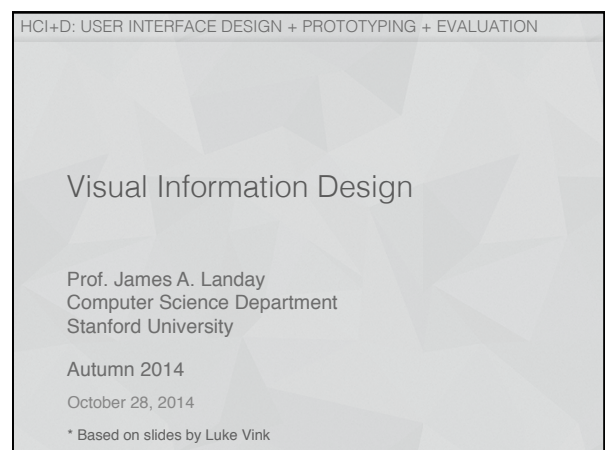
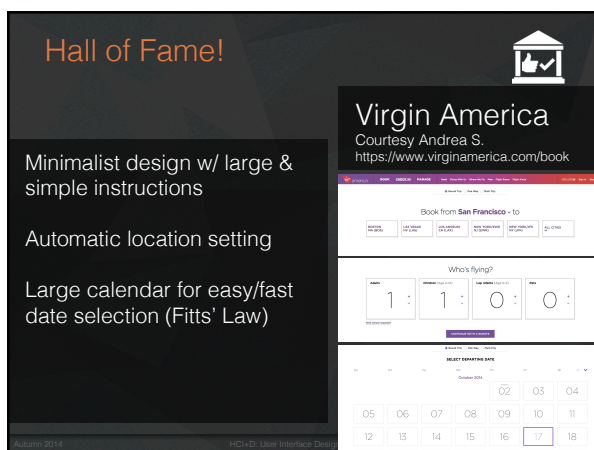
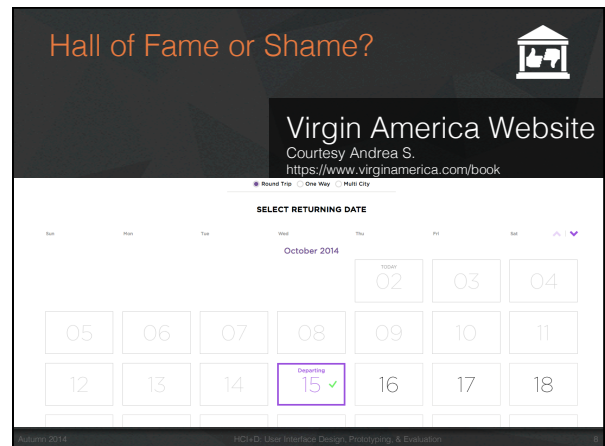
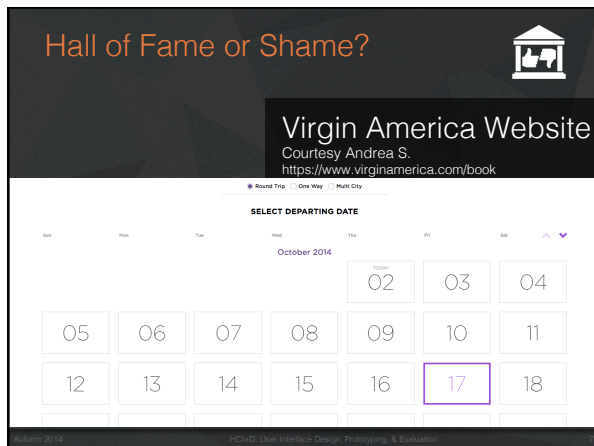


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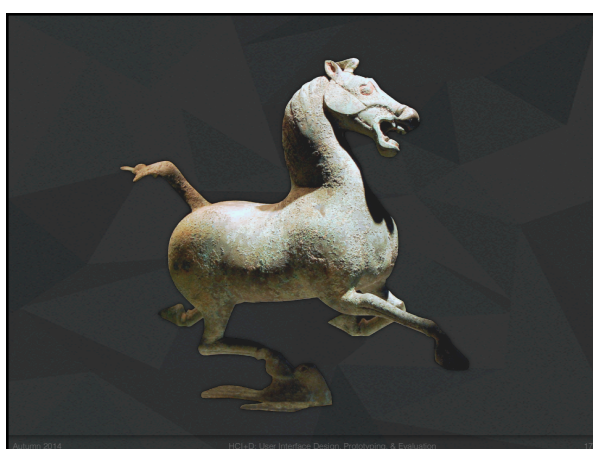
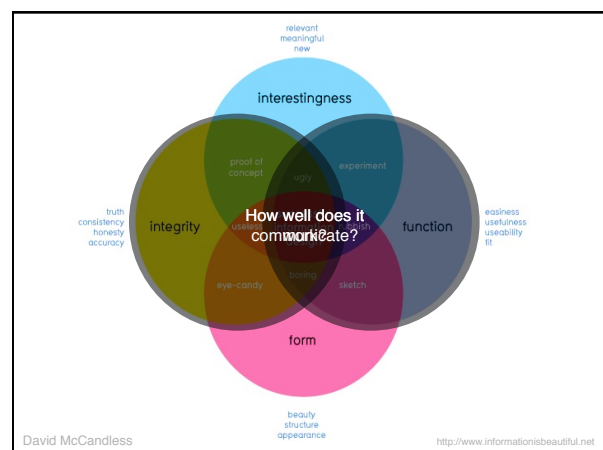
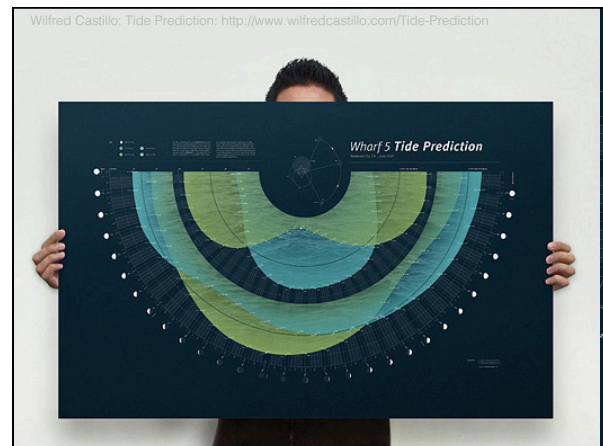
Information is Beautiful



A collection of intriguing visualizations that strike a balance between art and data representation

David McCandless

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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

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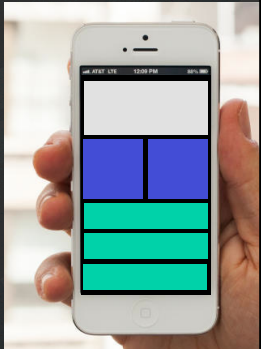
Visual Design that has
Good Form
(Purpose)

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Using Context to determine layouts

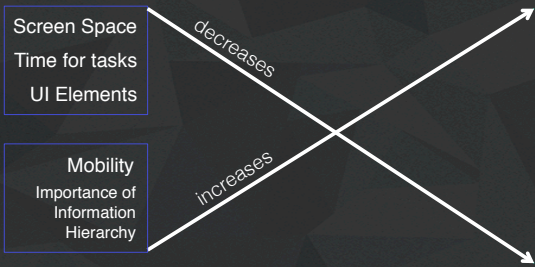
Know Thy Users!
(Design Discovery)

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



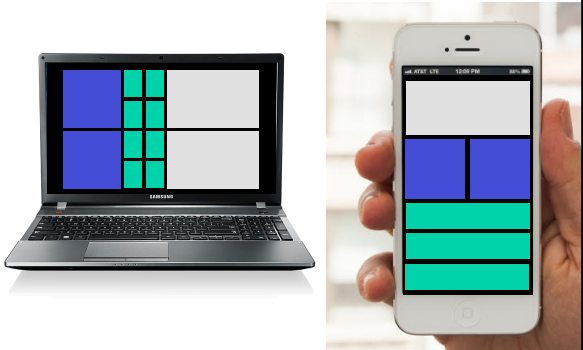
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Using Context to determine layouts



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Responsive Layout Design for Web




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Responsive Layout Design for Web



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Responsive Layout Design for Web



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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.

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Using Proximity to Indicate Relationships



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Using Proximity to Indicate Relationships



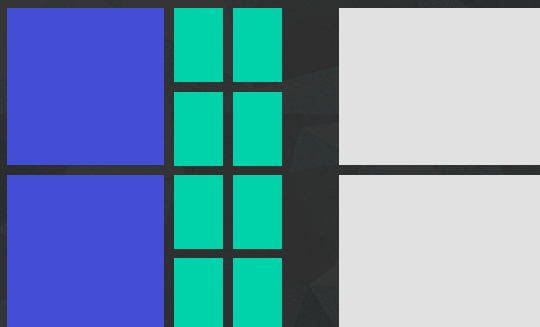
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Using Proximity to Indicate Relationships



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Using Proximity to Indicate Relationships



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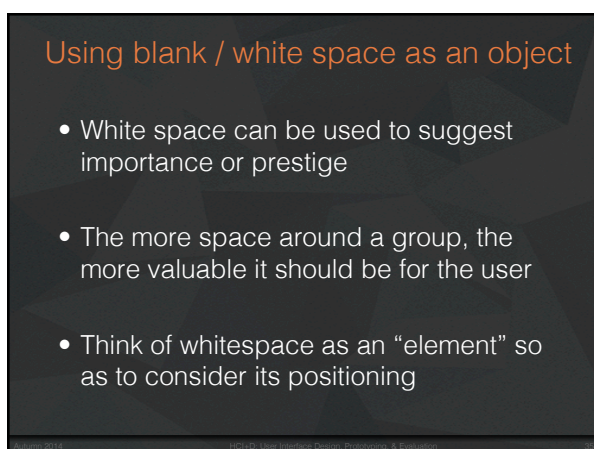
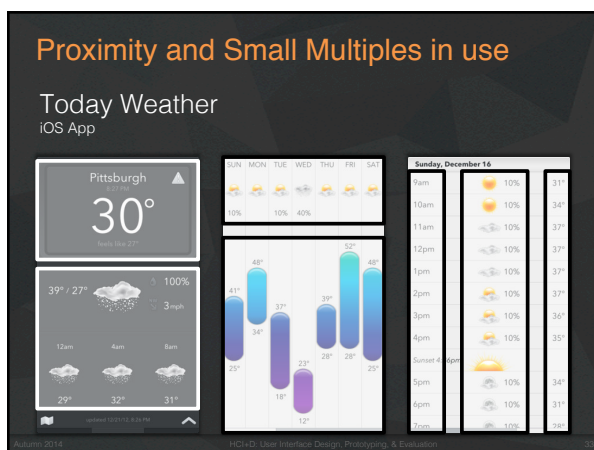
Small Multiples

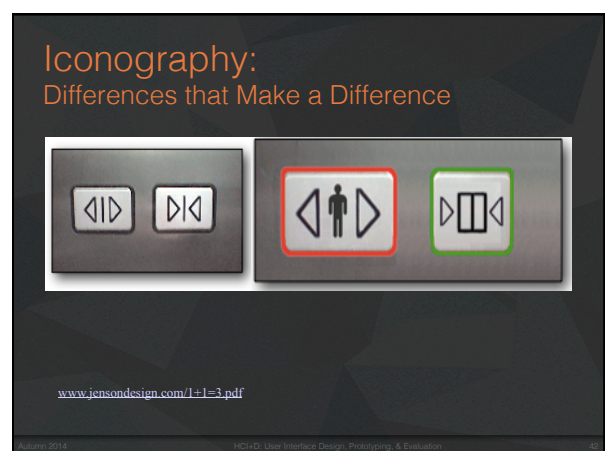
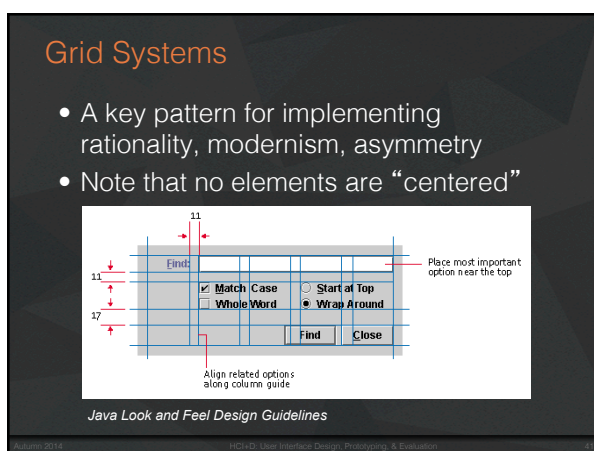
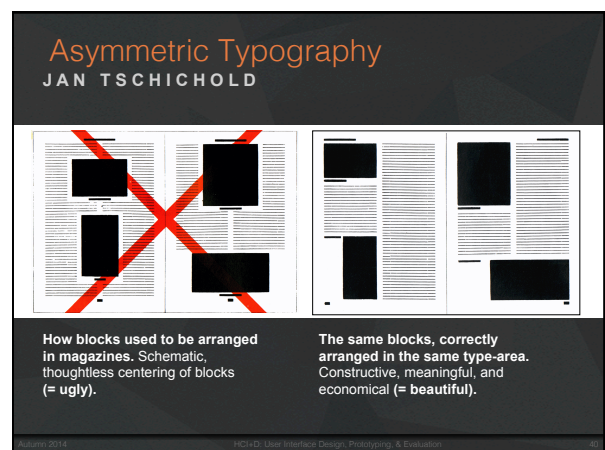
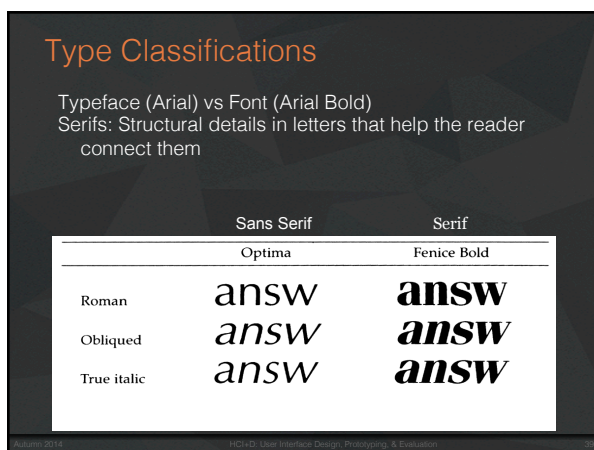
- Economy of line
- Similarities enable us to notice differences

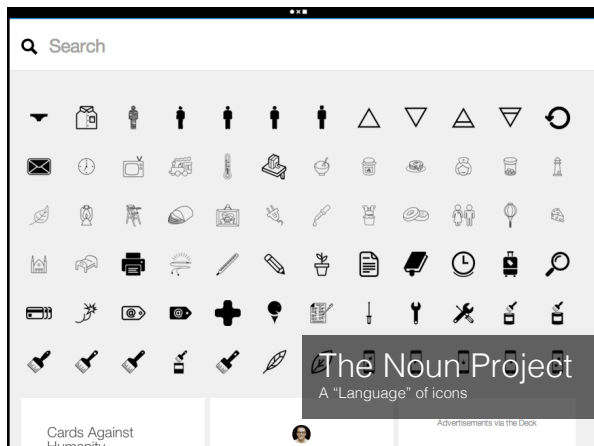
IMAGE REMOVED

Images from Edward Tufte's *Envisioning Information*

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Announcement: Contemplation by Design

CBD: Mindfulness and Design Thinking

Mon 11/03

5:15 pm-6:30 pm

Location: Institute of Design, d.school Atrium

This panel discussion will illuminate how design thinking relates to and incorporates mindfulness and contemplation. The panel will include Professor Bill Burnett from the d.school (Institute of Design at Stanford), a professional who integrates design thinking and mindfulness/contemplation in their professional work, as well as a mindfulness teacher.

<https://healthimprovement.stanford.edu/classes/register/hipClasses.php?i=1ccc34dfd3cbss383d348a508b1be48cc821&cbd=1>

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TEAM BREAK
(25 MINUTES)

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Team Exercise

- What are your goals/deliverables?
- Are you on track to meet your team goals/deliverables?
- If no, why not? What can you change?

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Color

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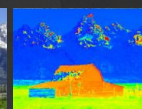
47

Color

- Hue is gradation of color
- Saturation is intensity/purity of the hue
- Luminance is the brightness in an image



Photo



Hue



Saturation

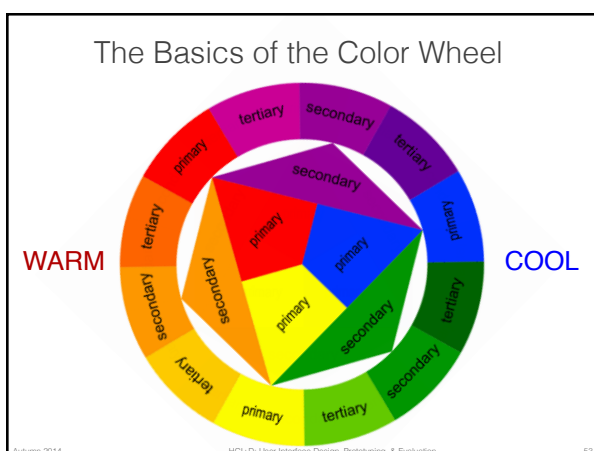
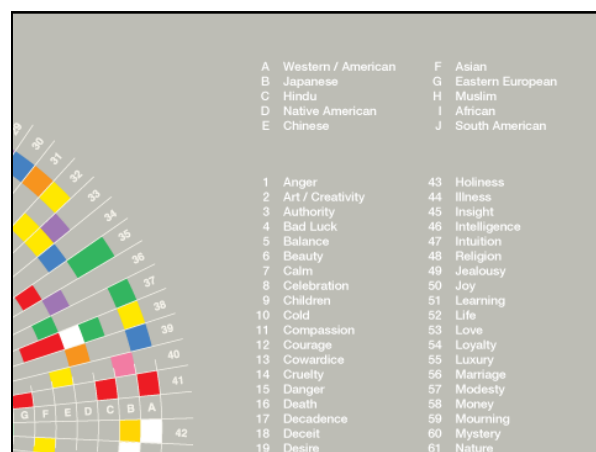
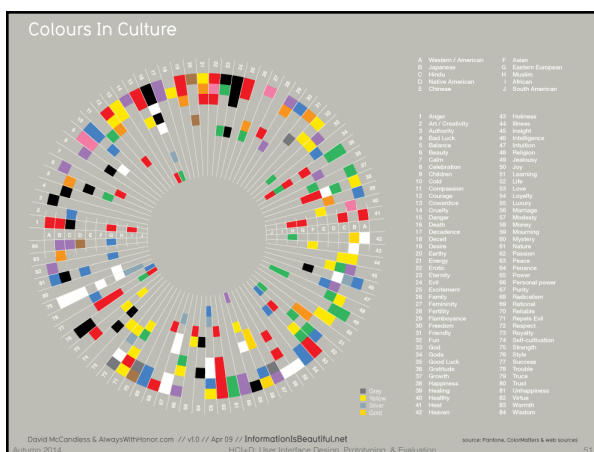
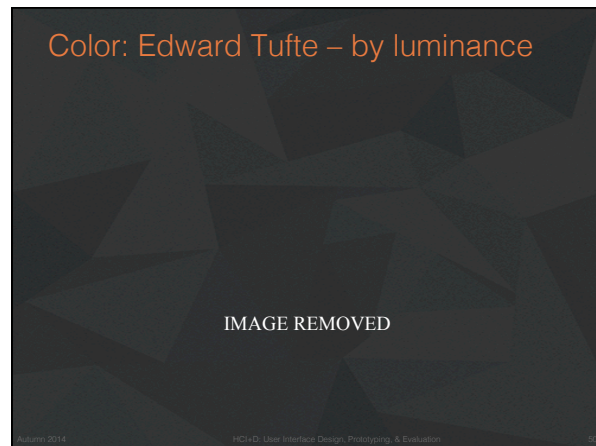


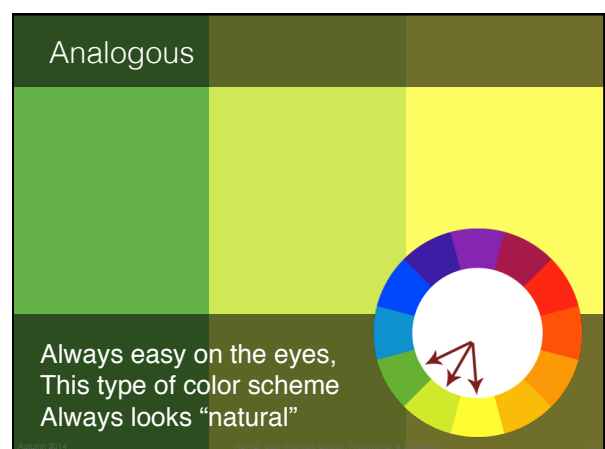
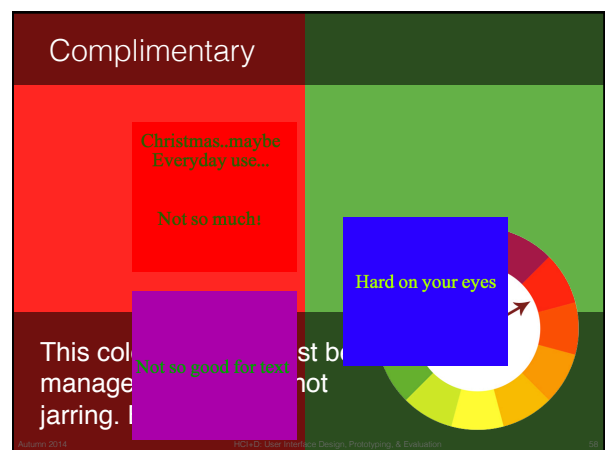
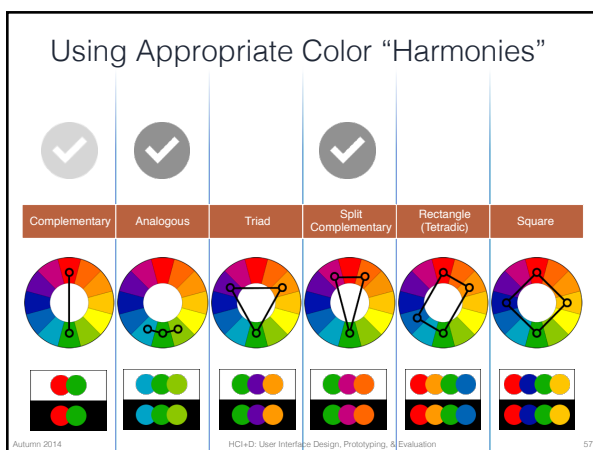
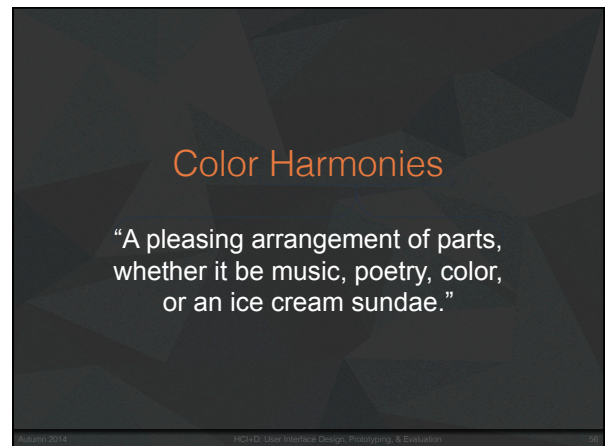
Luminance

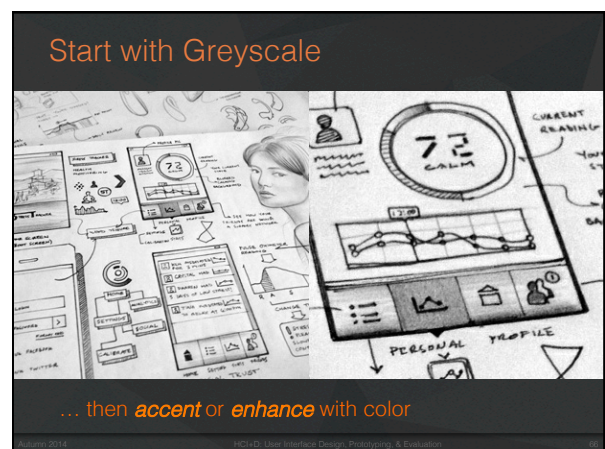
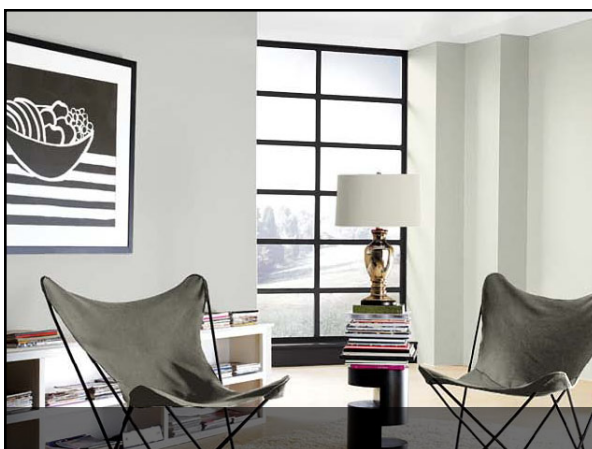
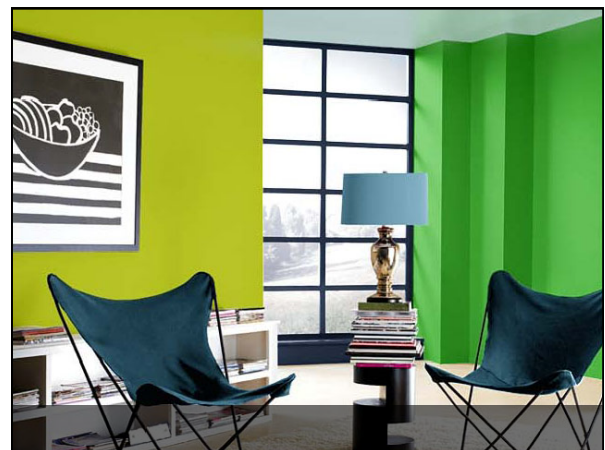
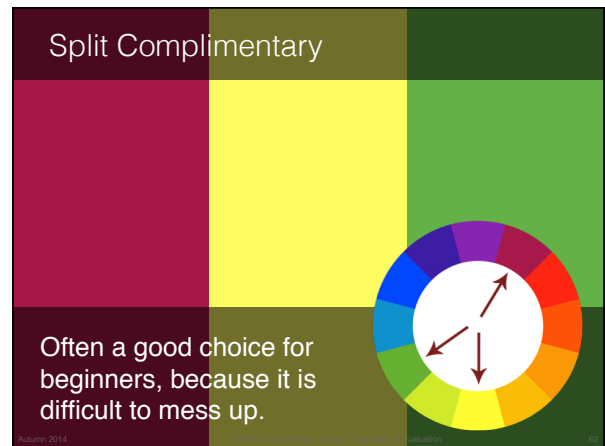
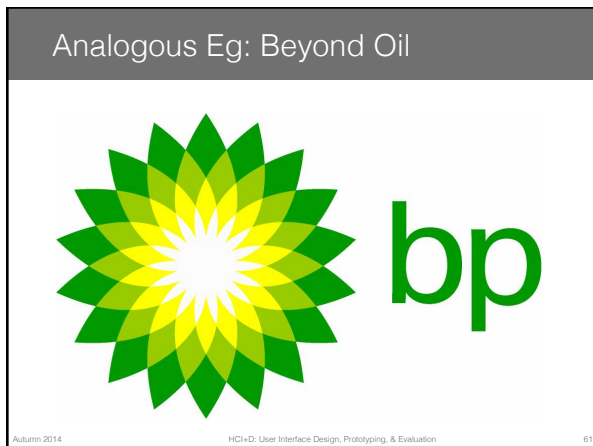
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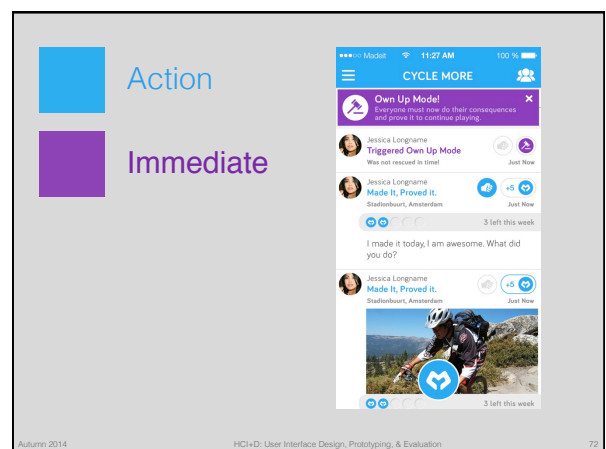
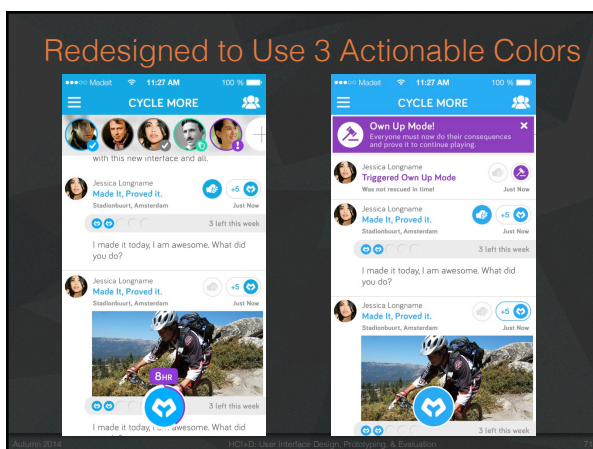
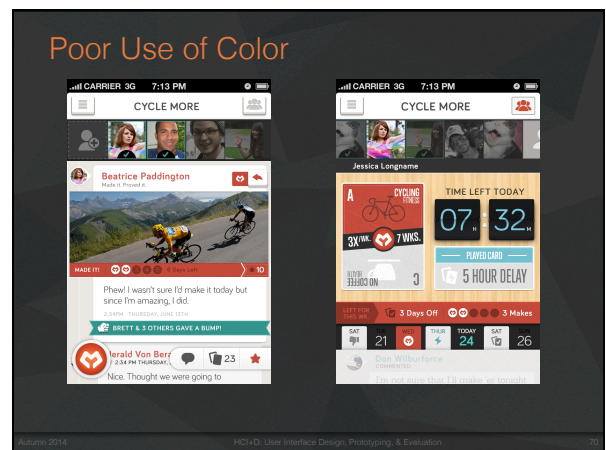
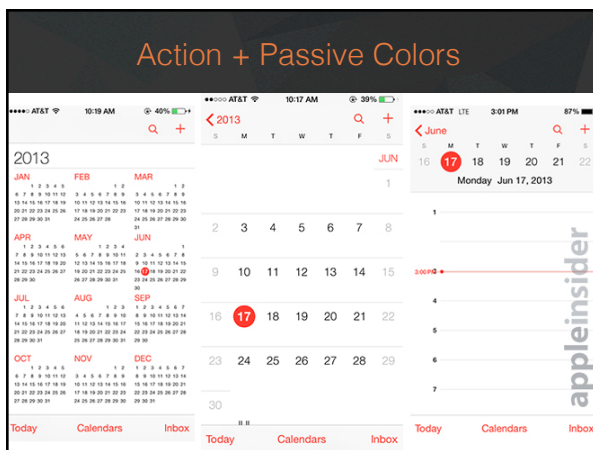
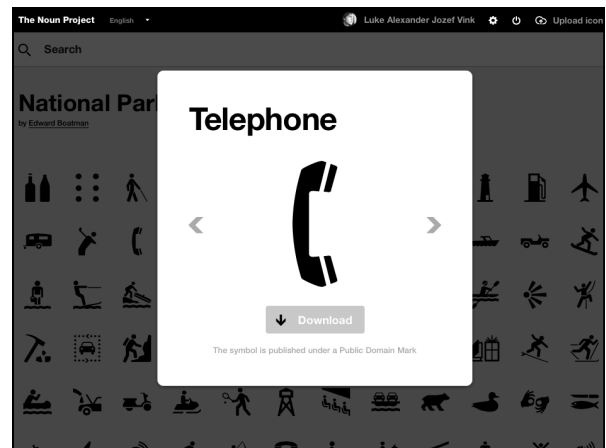
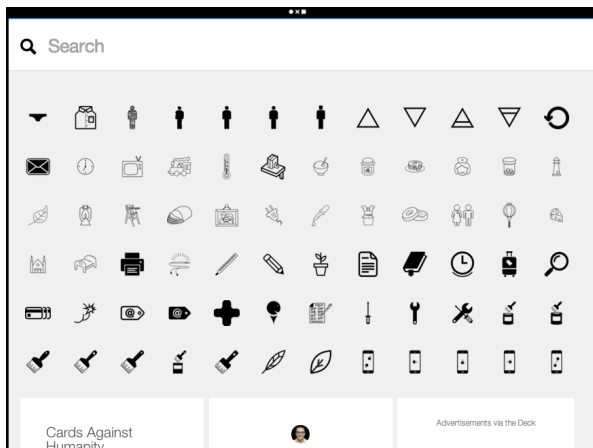
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Tools that help with color selection

- <http://colorshemesdesigner.com/>
- <http://kuler.adobe.com/>
- <http://www.colourlovers.com>

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Visual Design that is
Interesting
 [the wow factor]

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Why making information Interesting?

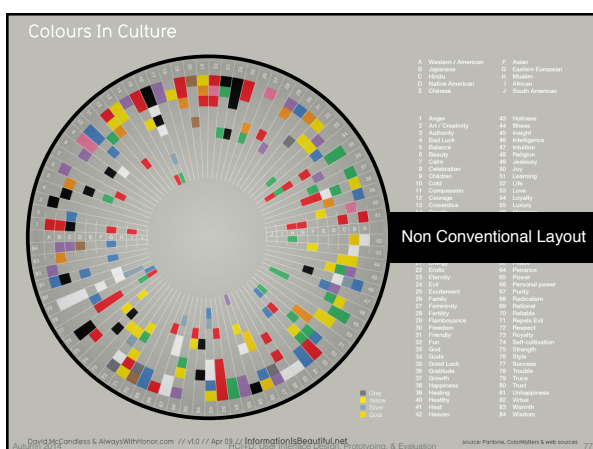
- Differentiation from similar work
- Creates “willful” interaction as opposed to “forced”
- With an interesting interface that is simple to learn, the user will teach themselves

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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

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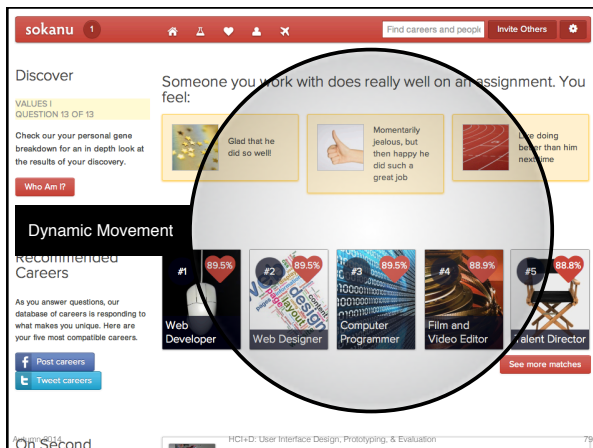


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Dynamic Movement

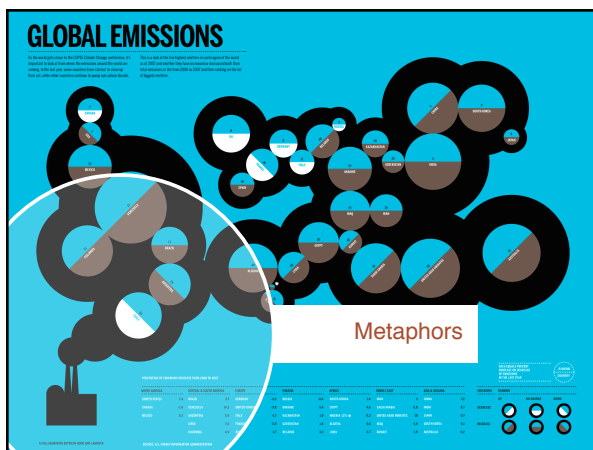
- Hard to get right & easy to overdo!
- Animation is best used to connect information & create “flow”
- Like size, color & unusual shapes, animation draws attention to the eye & suggests importance

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Metaphors (using the real world)

- Hard to get right & easy to get wrong
- Very useful to provide meaning and information to logic
- As you have seen before, the more specific a metaphor, the more relevant it is to a generation



The best designs balance the techniques you have seen

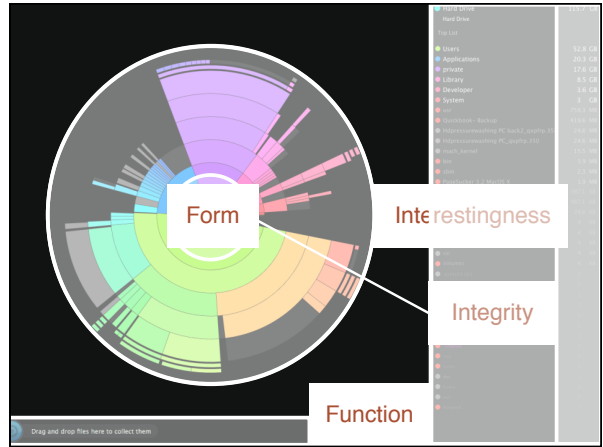
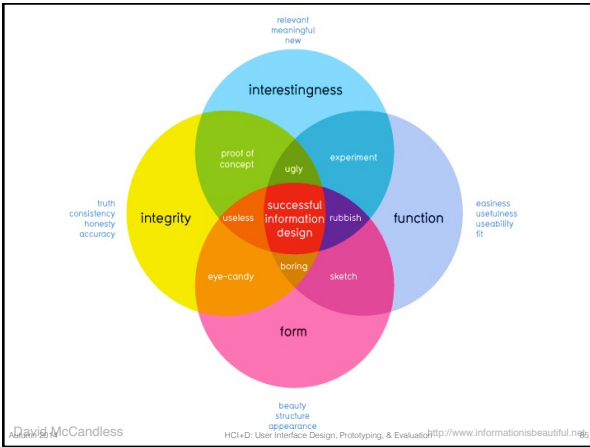
and

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



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 gray scale 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 one or two colors at a time, unless absolutely necessary

Further Reading


- Kevin Mullet and Darrell Sano, *Designing Visual Interfaces*
- Edward Tufte's books and course
- Anne Spalter, *The Computer in the Visual Arts*
- 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

- Color: Charles Poynton, *A Technical Introduction to Digital Video*
 - also his SIGGRAPH course
 - web <http://www.inforamp.net/~poynton/>
- Typography on the web
 - <http://www.pemberley.com/janeinfo/latin1.html>
 - <http://www.microsoft.com/typography/>


Next Time

- Heuristic Evaluation
- Reading
 - [How to Conduct a Heuristic Evaluation](#) by Jakob Nielsen
- Next individual assignment
 - Simple Heuristic Evaluation



Activity:
Essential Design

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Essential Design Activity

- Take a screen design from your project (I suggest the most important screen.. Home screen, first screen etc)
- Figure out the most important elements on the screen. (What do users need to see most?)
- Design a layout with this hierarchy in mind
- Select a color scheme of one or two colors MAX
- Apply color again with a focus on hierarchy

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