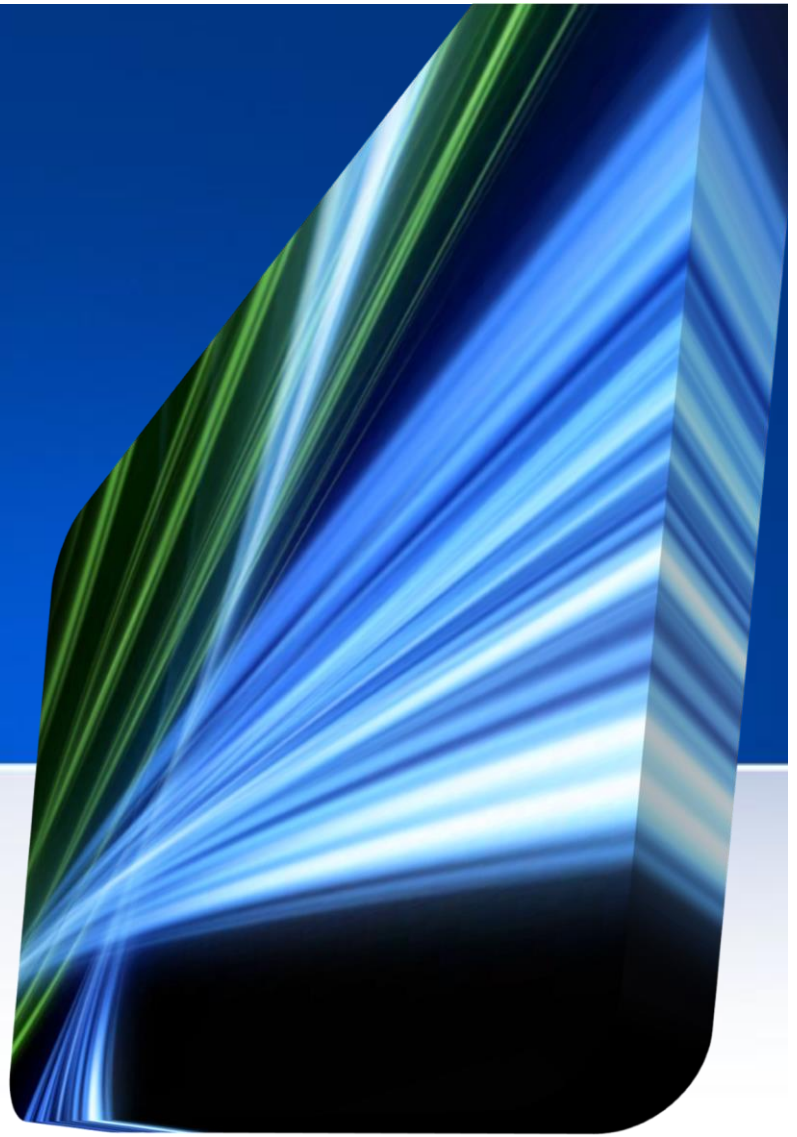
Visual Design

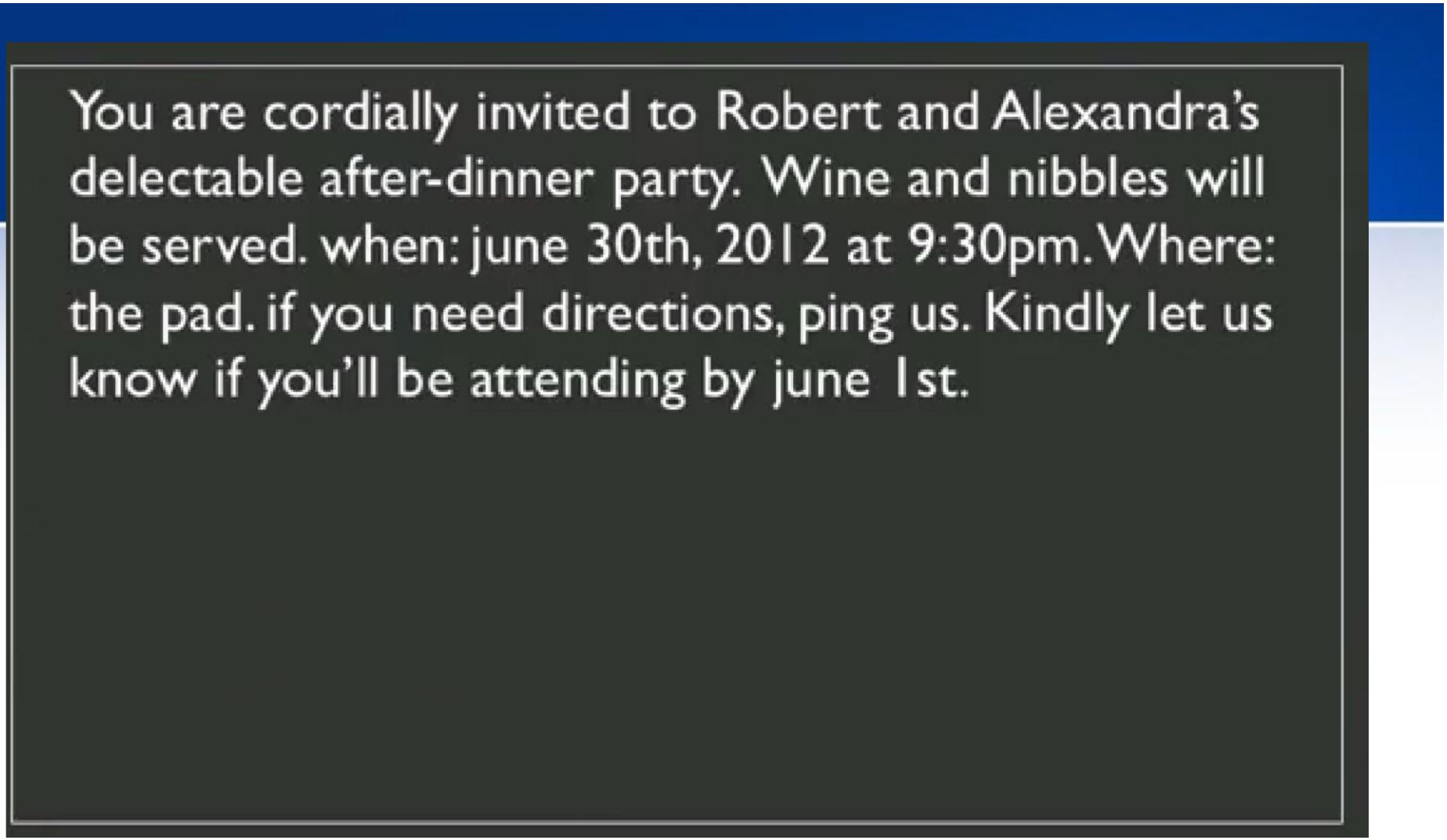


HCI

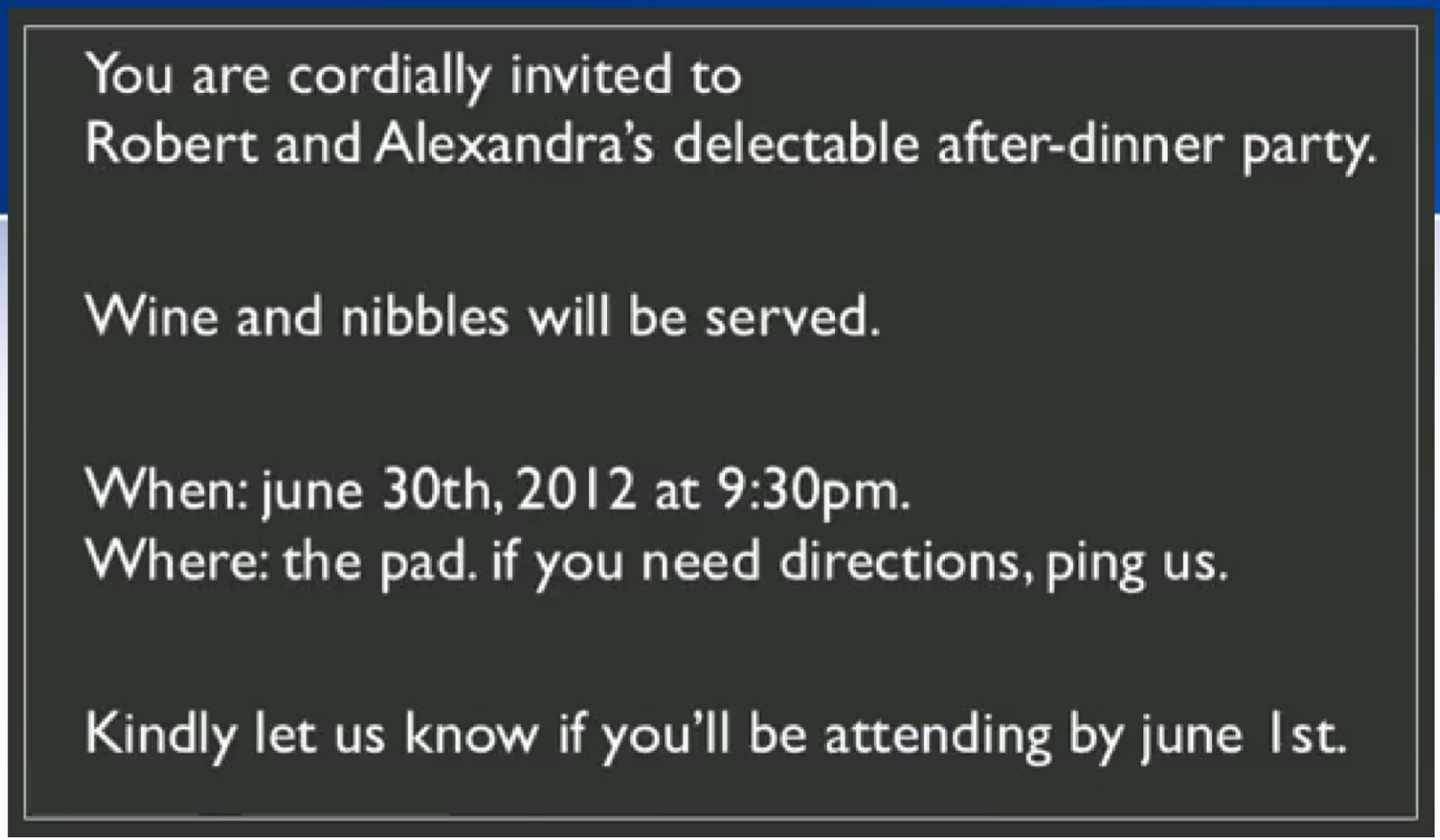
- **The *Human* – user – Focus on People**
- ***Computer*** – machine that runs the system
- **Interaction** – interface

"Human–computer interaction (**HCI**) involves the study, planning, design and uses of the interfaces between people and computers."

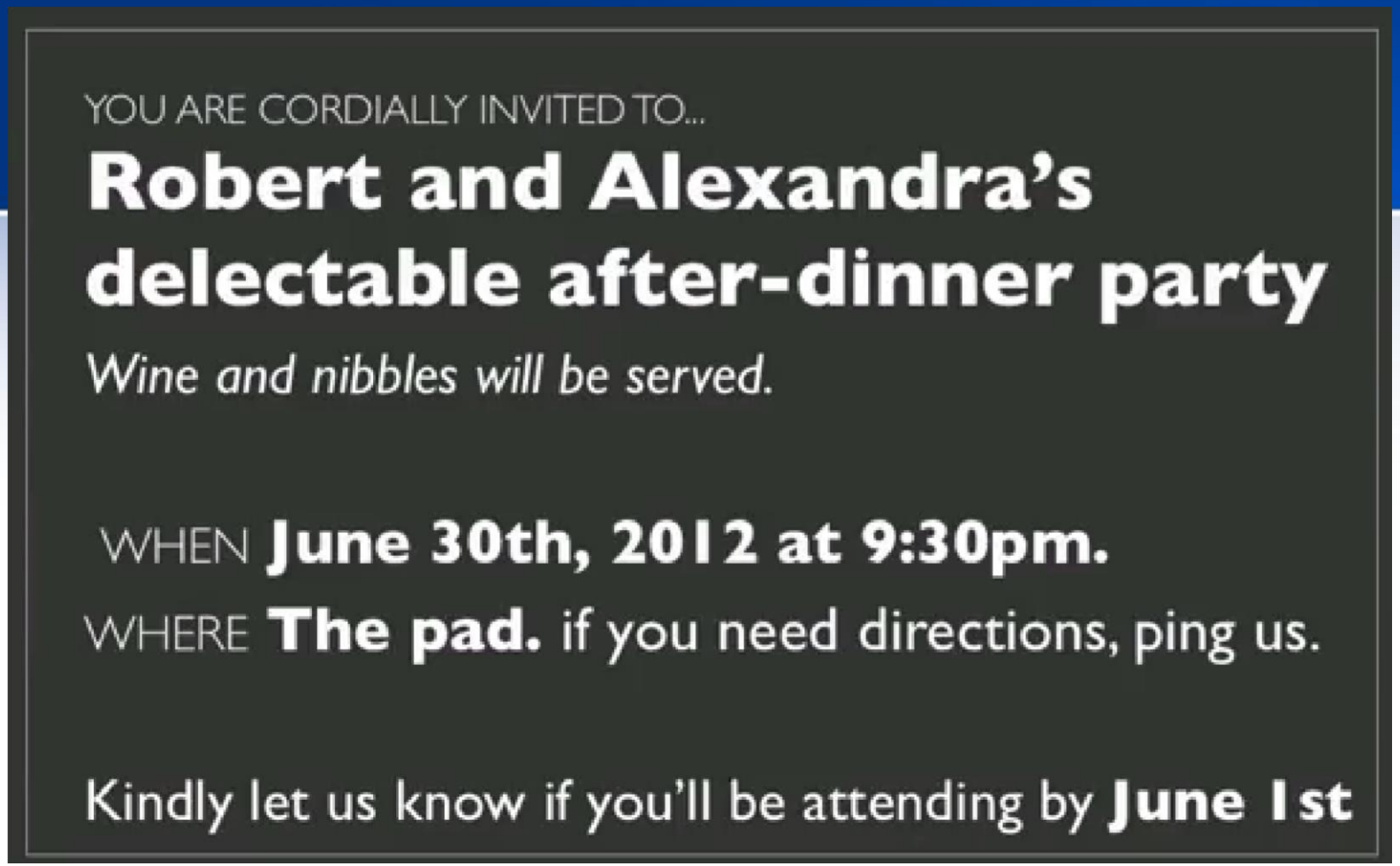
-Wikipedia



**from Scott Klemmor hci-class.org*



**from Scott Klemmor hci-class.org*



Scott Klemmor hci-class.org

Which is nicer?

AIKIDO

Aikido is a unique martial art that integrates body, mind and spirit. Graceful and powerful, it emphasizes peace and harmony over aggression and violence.

BEGINNER CLASS

Starts Sunday, April 27, 2008
1:00 - 2:00 p.m.

8-week course – $95

Adult class (12 and older).
No martial arts experience necessary.
Call to reserve a space.

Regular Classes
Tuesday 7:30 p.m.
Thursday 7:45 p.m.
Sundays, 1:00 & 2:15 p.m.

PLEASE COME AND VISIT ANY OF OUR CLASSES TO DETERMINE IF AIKIDO IS RIGHT FOR YOU!

PORTSMOUTH AIKIDO
at the Seacoast Family Y
550 Peverly Hill Road
Portsmouth, NH

CALL 603-431-8560
www.PortsmouthAikido.com

AIKIDO

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Come Visit

Please come and visit any of our classes to determine if Aikido is right for you!

Portsmouth Aikido
at the Seacoast Family Y
550 Peverly Hill Road
603-431-8560
www.portsmouthaikido.com

http://www.visualmess.com/

Goals for Visual Design

- Convey structure
- Draw people in, provide hooks

*from Scott Klemmor hci-class.org

Another Example: Google

Search- know what to do when go there.
Logo reads loud and clear.
Google page is famous for its minimalism

*from Scott Klemmor hci-class.org

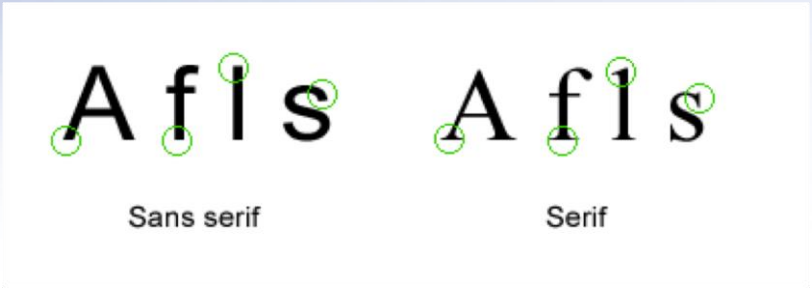
Visual Tools

- 3 basic visual tools for organization and hierarchy:

1. Typography
2. Layout
3. Color

*from Scott Klemmor hci-class.org

Typographic Terms: Sans Serif vs. Serif



HCI HCI

Many say

Texts:

Serif – body in text (easier to read)

Sans Serif – use for Headers

Online:

Some say that sans serif can be easier to read on the web.

Not bad advice, but reading is also familiarity – if read with one style may be faster with that style.

In practice – it's what you're accustomed to.

What does this say?

**from Scott Klemmor hci-class.org*

What does this say? Cont.

**from Scott Klemmor hci-class.org*

Answers

- The second one was harder:

1. I am a jelly donut
2. jfk spoke in berlin

- More information coded in top half than bottom half of text.

TAE CAT

Scott Klemmor hci-class.org

- More people would say THE CAT rather than TAE CHT

- Expectation plays an important role.

Another Example

**Human-Computer Interaction 3rd edition by Alan Dix, Janet Finlay, Gregory D. Abowd, Russel Beale.*

- What is this?

- Ambiguous?

*Human-Computer Interaction 3rd edition by Alan Dix, Janet Finlay, Gregory D. Abowd, Russel Beale.

Context helps

*Human-Computer Interaction 3rd edition by Alan Dix, Janet Finlay, Gregory D. Abowd, Russel Beale.

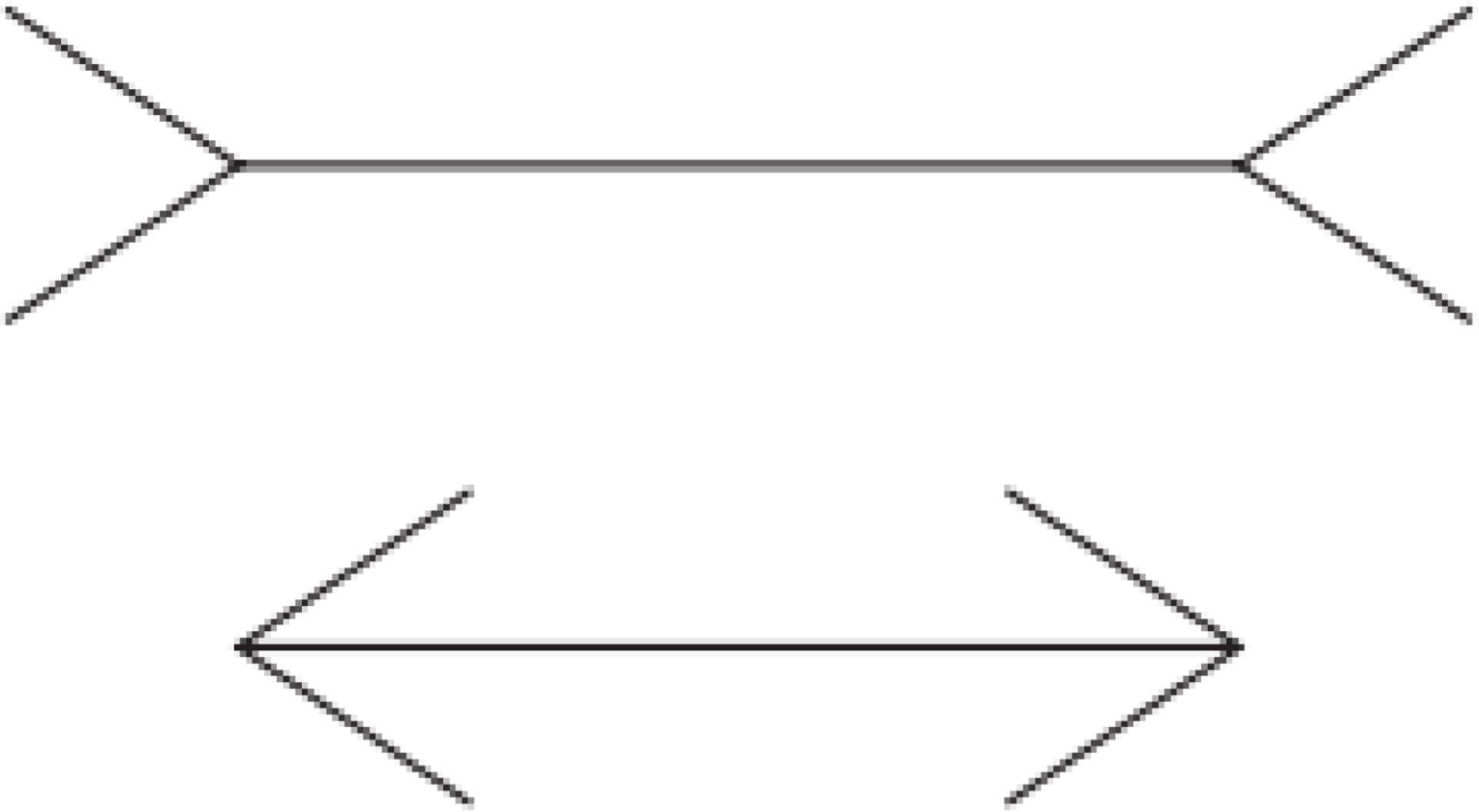
Context Helps: Our expectations help

**Human-Computer Interaction 3rd edition by Alan Dix, Janet Finlay, Gregory D. Abowd, Russel Beale.*

to disambiguate

**Human-Computer Interaction 3rd edition by Alan Dix, Janet Finlay, Gregory D. Abowd, Russel Beale.*

Which line is longer?



*Human-Computer Interaction 3rd edition by Alan Dix, Janet Finlay, Gregory D. Abowd, Russel Beale.

Expectations

- Our Expectations can also create optical illusions.

Another Example of expectations

- Read the below:

The quick brown

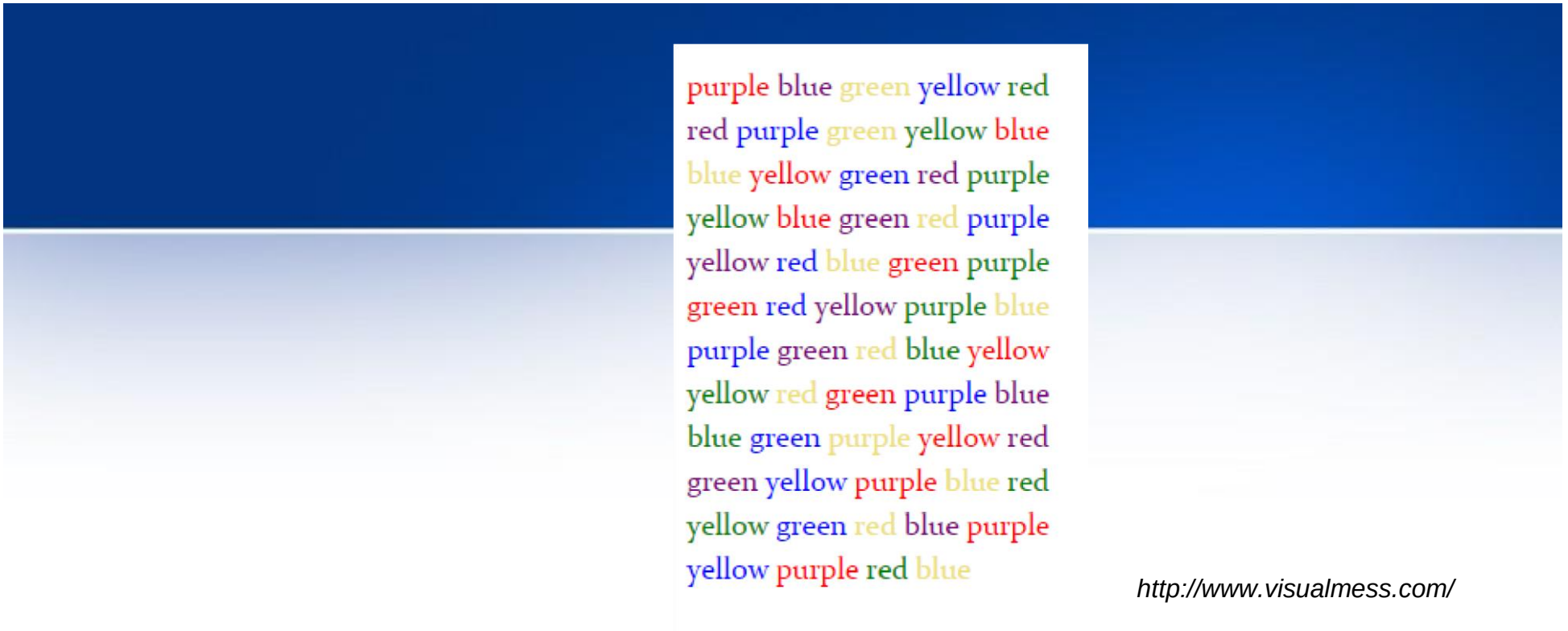
fox jumps over the

the lazy dog.

*Human-Computer Interaction 3rd edition by Alan Dix, Janet Finlay, Gregory D. Abowd, Russel Beale.

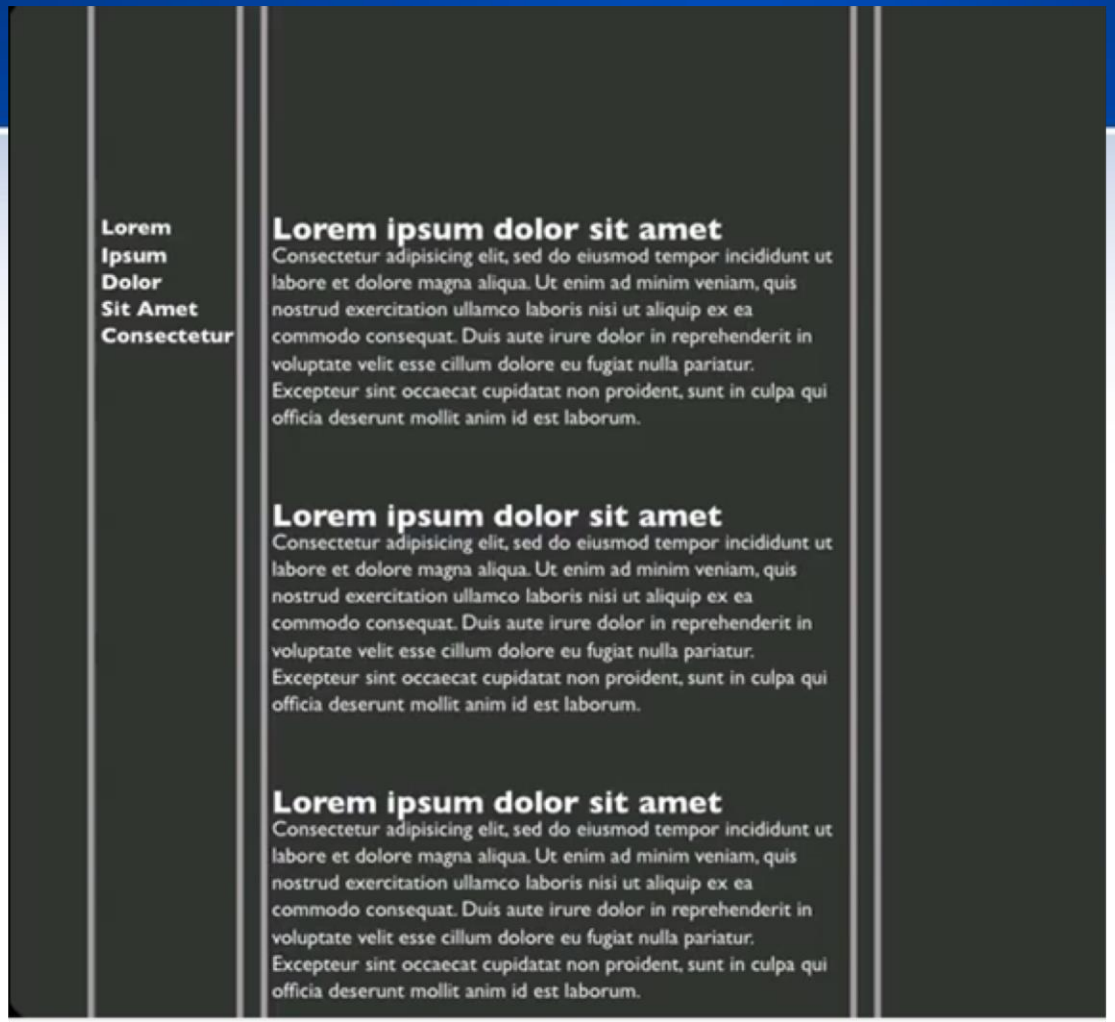
Expectations and Meanings

- When you're creating a document, you want to eliminate conflicts between automatically perceived meaning and actual meaning.
- Try saying the below colors.



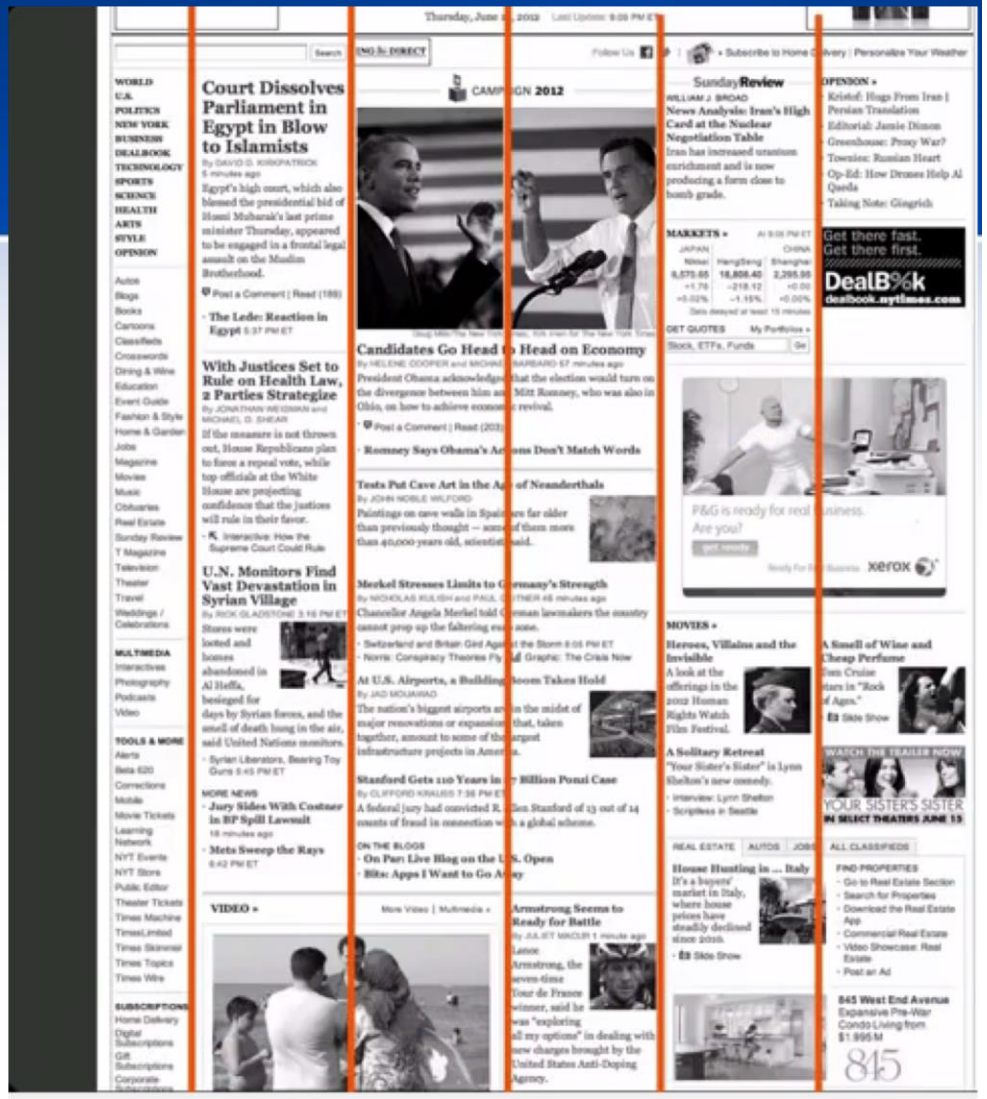
http://www.visualmess.com/

- Grid – perhaps a narrow left side is for navigation and wide main section for body/content



**from Scott Klemmor hci-class.org*

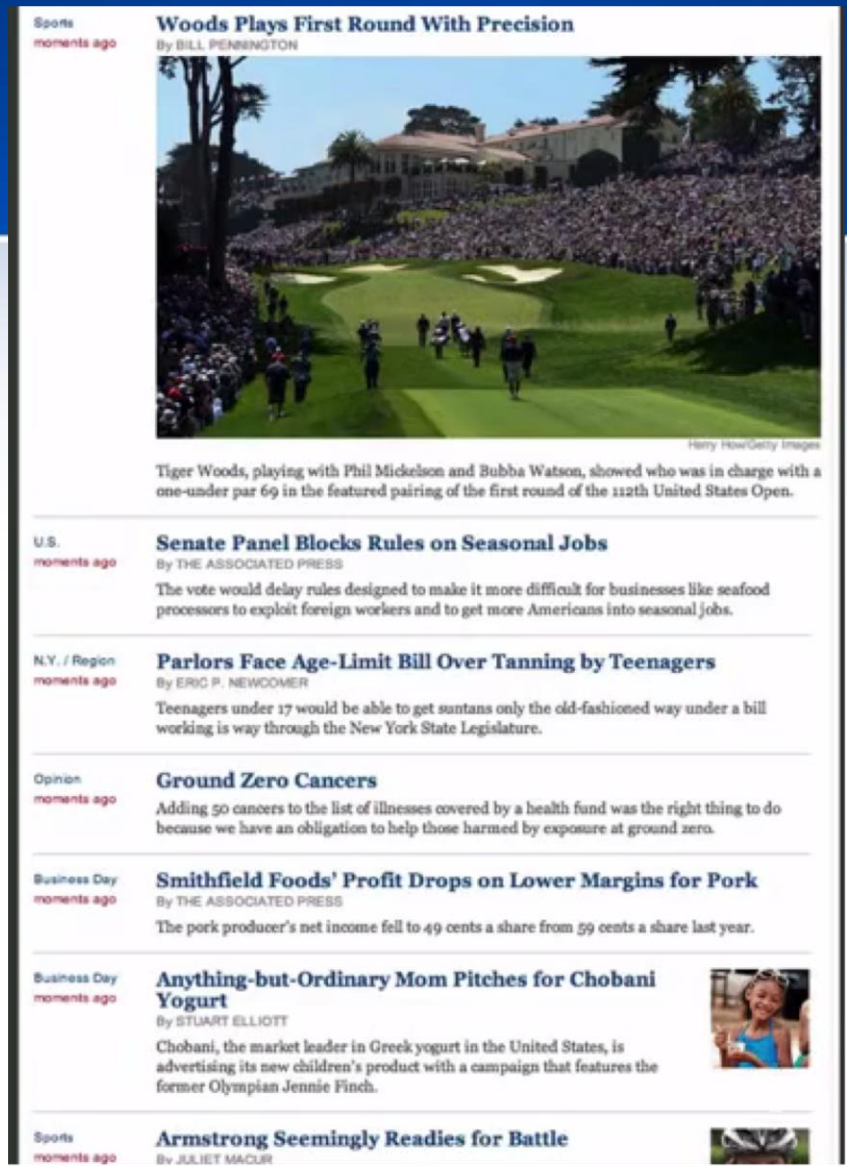
- Newspapers, books, and the Web use grids.
- NYTimes – 5 column for content with 6th for navigation.
- Some are 2 columns wide to make it dynamic.



**from Scott Klemmor hci-class.org*

Context-View

- Context view - Most recent article on top and bigger.



Sports
moments ago

Woods Plays First Round With Precision

By BILL PENNINGTON

Harry How/Getty Images

Tiger Woods, playing with Phil Mickelson and Bubba Watson, showed who was in charge with a one-under par 69 in the featured pairing of the first round of the 112th United States Open.

U.S.
moments ago

Senate Panel Blocks Rules on Seasonal Jobs

By THE ASSOCIATED PRESS

The vote would delay rules designed to make it more difficult for businesses like seafood processors to exploit foreign workers and to get more Americans into seasonal jobs.

N.Y. / Region
moments ago

Parlors Face Age-Limit Bill Over Tanning by Teenagers

By ERIC P. NEWCOMER

Teenagers under 17 would be able to get suntans only the old-fashioned way under a bill working is way through the New York State Legislature.

Opinion
moments ago

Ground Zero Cancers

Adding 50 cancers to the list of illnesses covered by a health fund was the right thing to do because we have an obligation to help those harmed by exposure at ground zero.

Business Day
moments ago

Smithfield Foods' Profit Drops on Lower Margins for Pork

By THE ASSOCIATED PRESS

The pork producer's net income fell to 49 cents a share from 59 cents a share last year.

Business Day
moments ago

Anything-but-Ordinary Mom Pitches for Chobani Yogurt

By STUART ELLIOTT

Chobani, the market leader in Greek yogurt in the United States, is advertising its new children's product with a campaign that features the former Olympian Jennie Finch.

Sports
moments ago

Armstrong Seemingly Readies for Battle

By JULIET MACUR

**from Scott Klemmor hci-class.org*

Alignment

- Alignment styles:
  - Left-alignment is faster for skimming.
  - If centered – a little slower since not aligned.
  - right-aligned – can be clearer in cases (ex. form)

- Use scale – important parts put bigger, less important smaller – so people know what's more and less important in a page.

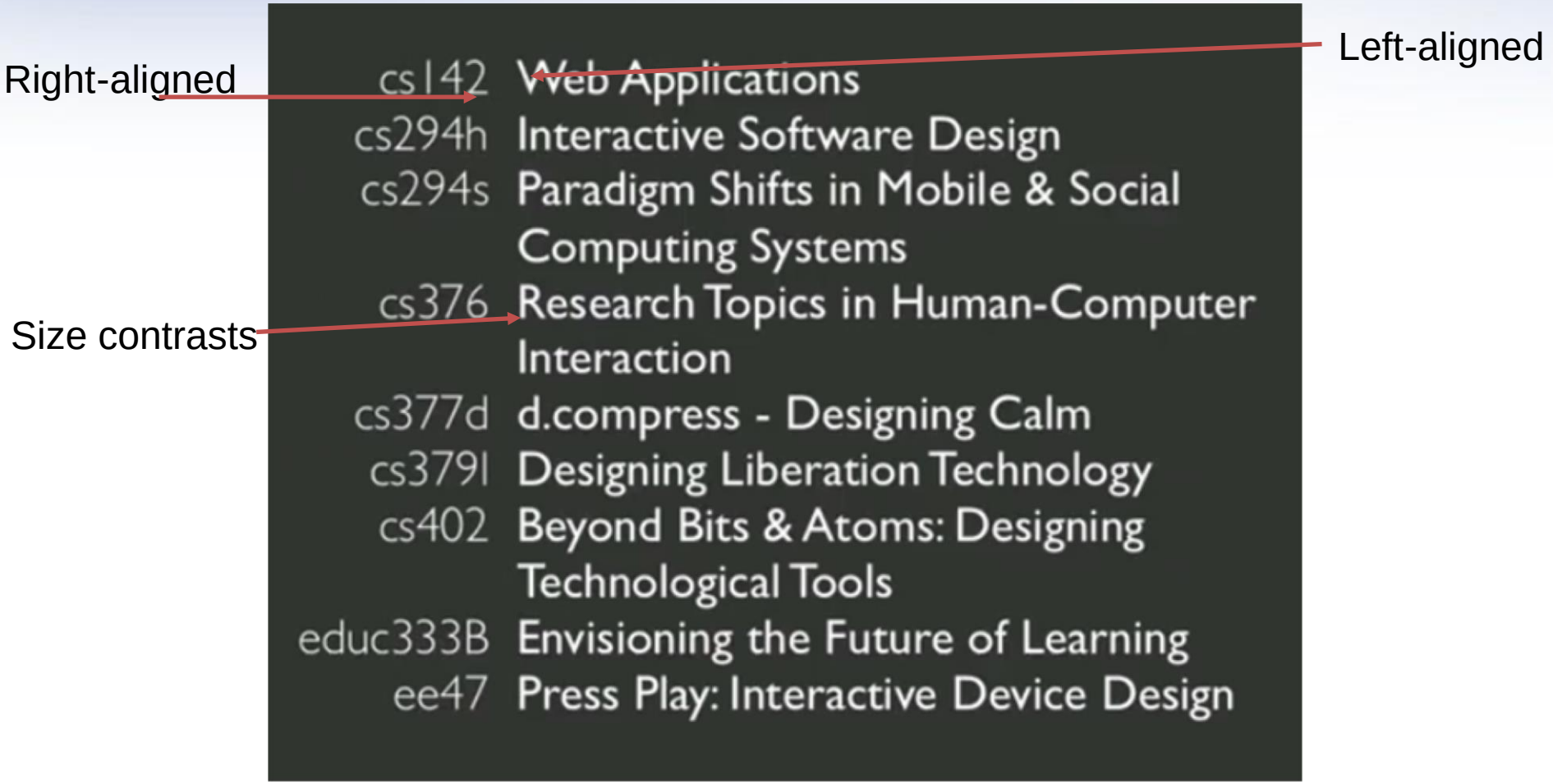
- Let’s improve this:

Web Applications.....cs142
Interactive Software Design.....cs294h
Paradigm Shifts in Mobile & Social Computing Systems.....cs294s
Research Topics in Human-Computer Interaction....cs376

**from Scott Klemmor hci-class.org*

Table of Contents, cont.

- Can make whichever side you want stand out:

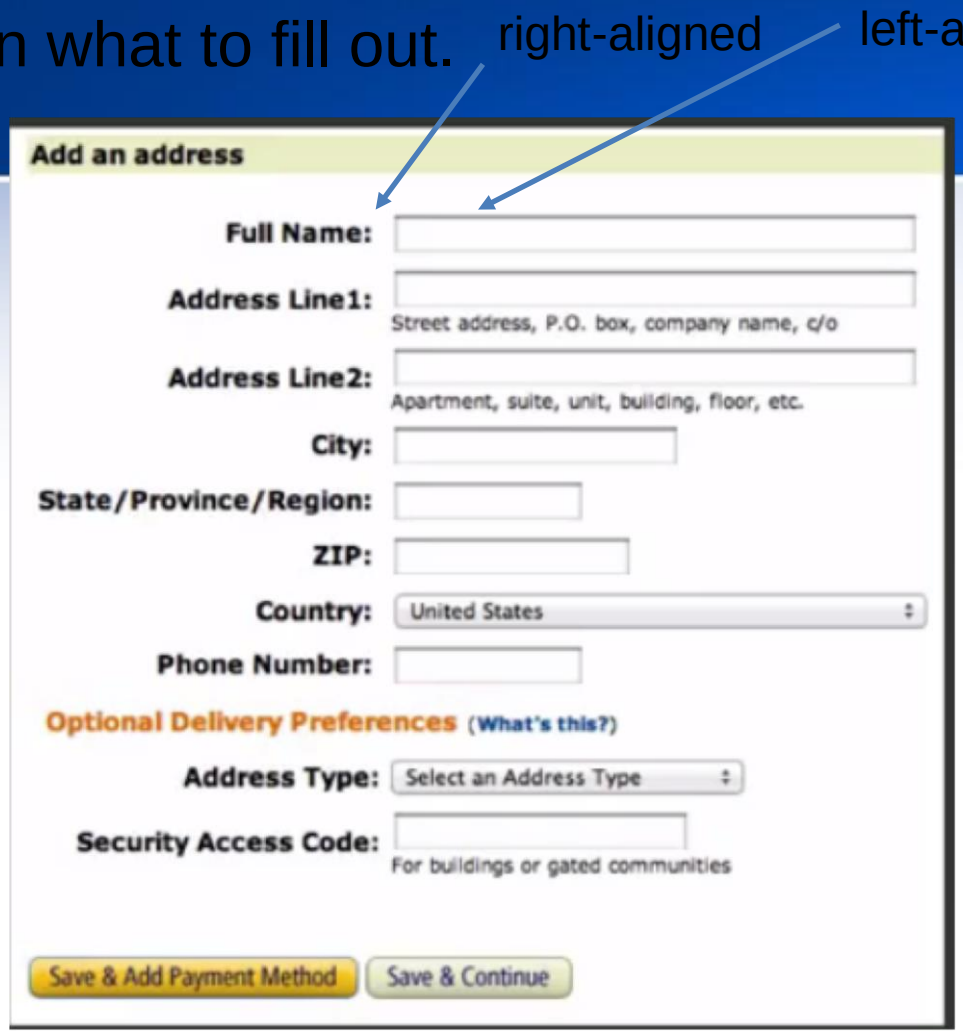


**from Scott Klemmor hci-class.org*

Amazon: Right-Alignment

**from Scott Klemmor hci-class.org*

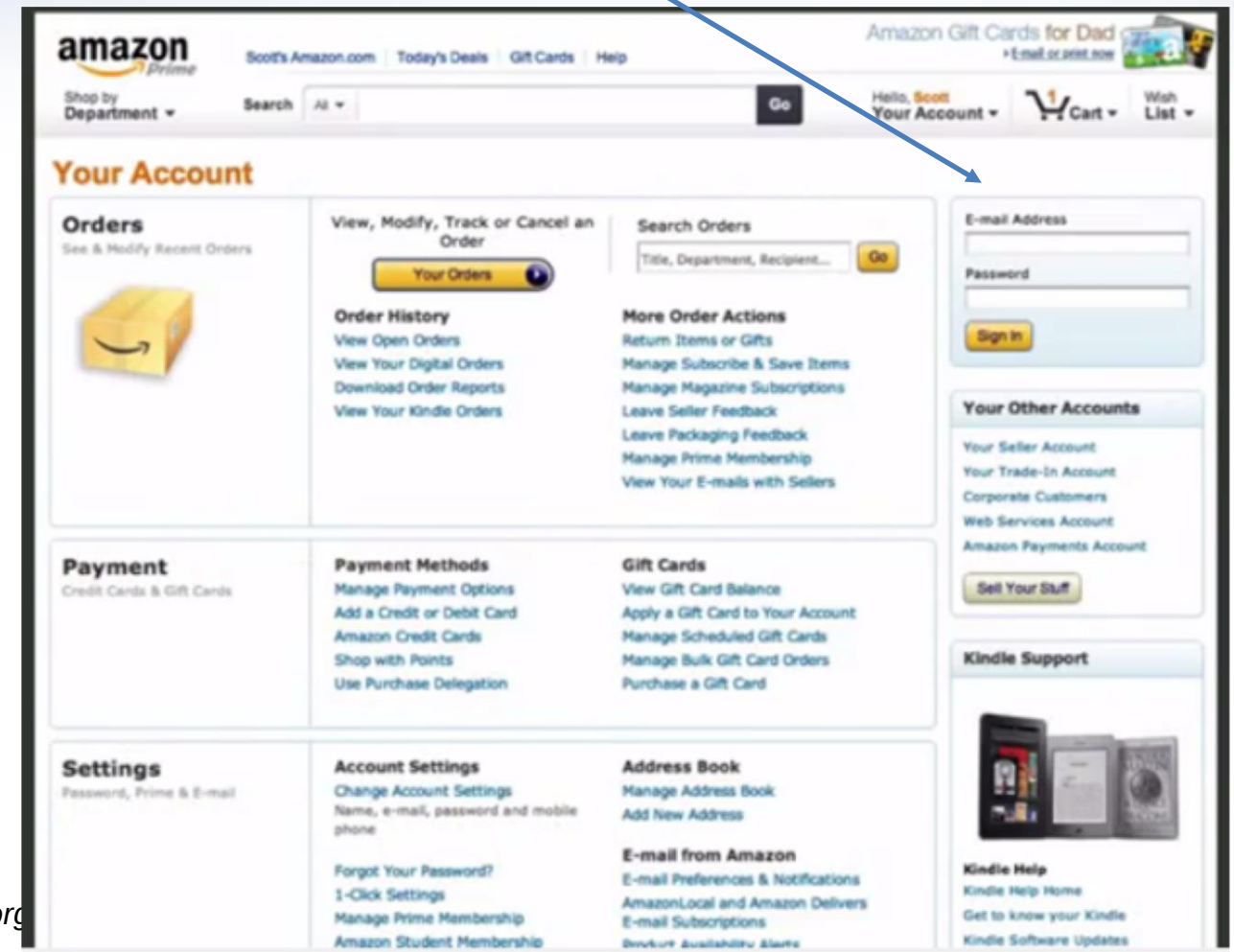
Very clear on what to fill out.



**from Scott Klemmor hci-class.org*

Header for form (on top right) label on top.

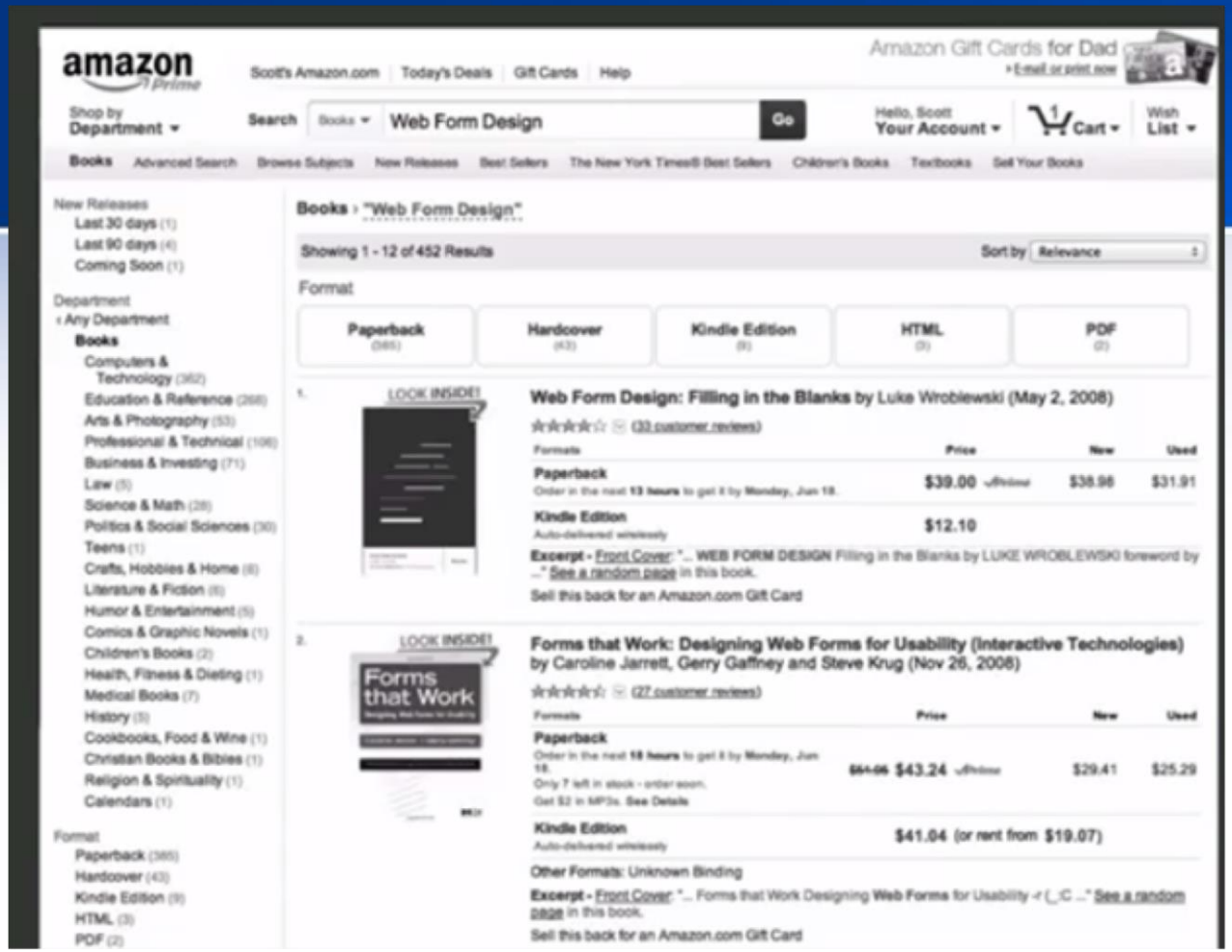
Header less important when familiar with fields, can stick out less.



**from Scott Klemmor hci-class.org*

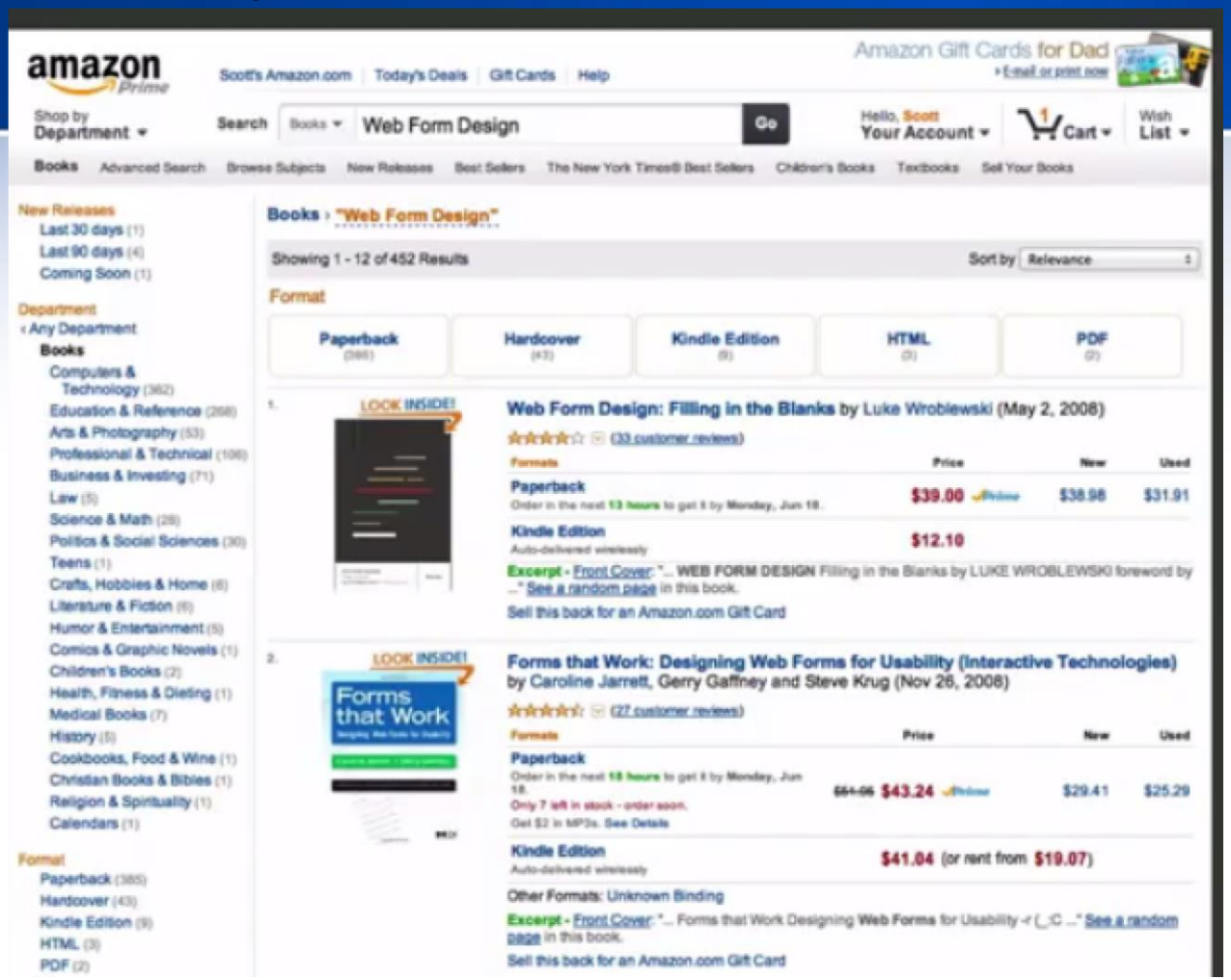
Color

- Color –rely on other tools first.
- After scale, and layout, use black/white/grayscale.
- After you have a good greyscale in black and white – add color.



**from Scott Klemmor hci-class.org*

- It all worked, but if you use color better.



*from Scott Klemmor hci-class.org

- Don’t overdo color. Fewer is more powerful.

Color is good…

- Color can
  - Soothe
  - Add accents to an uninteresting display
  - Facilitate subtle discriminations in complex displays
  - Emphasize the logical organization of information
  - Draw attention to warnings
  - Evoke strong emotional reactions of joy, excitement, fear, or anger

- **Guidelines**
  - Use color conservatively
  - Limit the number and amount of colors
  - Color coding should support the task
  - Consider the needs of color-deficient users
  - Be consistent in color coding
  - Be alert to common expectations about color codes
  - Be alert to problems with color pairings

Color Guidelines

Guidelines for using color

- Use color conservatively: Limit the number and amount of colors.
- Recognize the power of color to speed or slow tasks.
- Ensure that color coding supports the task.
- Make color coding appear with minimal user effort.
- Keep color coding under user control.
- Design for monochrome first.
- Consider the needs of color-deficient users.
- Use color to help in formatting.
- Be consistent in color coding.
- Be alert to common expectations about color codes.
- Be alert to problems with color pairings.
- Use color changes to indicate status changes.
- Use color in graphic displays for greater information density.

Benefits of using color

- Various colors are soothing or striking to the eye.
- Color can improve an uninteresting display.
- Color facilitates subtle discriminations in complex displays.
- A color code can emphasize the logical organization of information.
- Certain colors can draw attention to warnings.
- Color coding can evoke more emotional reactions of joy, excitement, fear, or anger.

Dangers of using color

- Color pairings may cause problems.
- Color fidelity may degrade on other hardware.
- Printing or conversion to other media may be a problem.

Designing the User Interface: Strategies for Effective Human Computer Interaction 5th edition by Ben Shneiderman and Catherine Plaisant.

Affordances

- **Affordances** – perceived and actual properties of an object.
- A chair affords (“is for”) support, therefore sitting.
- Glass is for seeing through.
- Wood is used for solidity, opacity, support, or carving.
- Flat smooth surfaces are for writing on.
- So wood is also for writing on.

*Design of Everyday Things

Affordance Example

The handles on a tea set provide an obvious affordance for holding.

*wikipedia

Perceived Affordance

- Perceived affordance – action a user *perceives* as being possible based on how the object is being presented:
- For example, if your design includes a “button” make that button look pushable.

ATM example - many users try to press these buttons, only to realize after a few attempts that the buttons are actually to the right and left of each label. In this case, objects give off an inaccurate perceived affordance.

http://johnnyholland.org/2010/04/perceived-affordances-and-designing-for-task-flow/

Affordances, cont.

- Affordances provide clues to the operations of things. Knobs are for turning. Slots are for insert things. Balls are for throwing or bouncing.
- When affordances are taken advantage of, the user knows what to do just by looking. No picture, label, or instruction is required.
- Complex things may require instruction, but simple things should not.

- When simple things need pictures, labels, or instructions, the design has failed.

**Design of Everyday Things*

Digital affordances

Amazon's "add to cart" button provides a cue to initiate a buying experience.

Cultural Constraints, Cultural Conventions

- Convention constrains creativity.
- However, unless we follow the major conventions, we are doomed to fail.
- You cannot successfully introduce:
  - a non-qwerty keyboard today – Scrollbars not on the right-hand side – Or require double-clicking on web links.
- For better or for worse, human culture changes slowly, if at all.

*http://www.jnd.org/dn.mss/affordances_and_design.html

Cultural constraints and conventions, cont.

- Cultural constraints and conventions are about what people believe and do.
- The way to find out what people do is to go out and watch them.
- Not in the laboratories, not in the usability testing rooms, but in their normal environment.

http://www.jnd.org/dn.mss/affordance_conv.html

What Designers Should Do

1. **Visibility** – Any function that a user can do - make it visible.
2. Provide user with clear **feedback** so they know what's happening.
3. Be **consistent** with existing standards and platform conventions.
4. Make them able to **undo**.
5. Provide a **systematic** way to discover all functionality.
   – Example: a new website – rollover all menu bar should show you every option
6. **Reliable** – random things shouldn't happen, what's supposed to happen should.

GUI vs. Command-line

- Which is better?
- It depends

- Based on the 6 principles, GUI is better – visibility, feedback, consistency, non-destructive, discoverability
  - GUI – move file – drop and drag
  - Command-line – need to know name of the command, minimal feedback, don't know if worked, easy to make errors. – Either can be reliable.

- Command-line is better sometimes, when is that?
  - Like programming, power when you can express things abstractly and work more efficiently.

Example: move all files that match a certain criteria from one place to another.

Scott Klemmor hci-class.org

Information

- People want information quickly.
- Watch users use the site:
- Do they know where to go or flail around?
- Look at their confidence before and after.
- Back Button - lots of use of the back button means there are issues with the navigation.

*from Scott Klemmor hci-class.org

Tips

- Generic icons rarely help, use specific icons.
- Icons help when:
  - Show what you expect
  - When you know what something looks like but not what it's called.
  - Good redundant coding can help – picture and word example: (can mouseover volume icon)

*from Scott Klemmor hci-class.org

More Tips

- Improve website:
  - Lengthen link – don't use one short word
  - Long titles (7/8 words)
  - also helps accessibility – if using screen reader
- Example:
  - You can find the video *here* Or better yet:
  - *Here is a video on HCI Design.*

*from Scott Klemmor hci-class.org

Location

- Does the location of a link matter?

- YES!

Eye Tracking Studies

- Eye Tracking Studies show there are places on the screen where the users look most often:

*from Scott class.org Klemmor hci-Ed Cutrell – Microsoft Research.

Eye Trackers

- Eye Tracker Video

Cristiano Ronaldo

Eye tracking studies, cont.

The heatmaps from the eyetracking study. Red indicates the area where the user looked most, yellow indicates fewer views, and blue indicates the fewest views. Gray is used for areas that were not viewed. The image on the left is from an article in the “About us” section of a corporate web site, the center image is a product page on an e-commerce web site, and the image on the right is from a search engine results page (Jakob Nielson).

Where do people most often look?

Know where good stuff often is.

Poynter Institute: Where people mostly look in English language websites (left to right)

**from Scott Klemmor hci-class.org*

Scrolling

- People are more likely to scroll if they think it’s worthwhile.
- If the content above doesn’t look good, people won’t scroll down.
- If the content on top is really good then people will scroll.

*from Scott Klemmor hci-class.org

How do people read online?

- Usability Expert Jakob Nielson studied how people read online.
- The answer:
  - They don't

- Web Browsing –people don't stay on one site – they have many tabs open and switch between them.
- Therefore:
  - concise text
  - Scannable: subheadings, bulleted lists, short paragraphs

*from Scott Klemmor hci-class.org