Designing Help, Program Flow, and the Web

Material drawn from Tim Wright and Jakob Nielsen

You are not your User

ok-cancel.com
Review: Gestalt Principles

- Figure/ground
- Proximity
- Similarity
- Symmetry
- Connectedness
- Continuity
- Closure
- Common Fate
- Transparency

Errors and Help
Errors and Help

- Exercise (2 minutes):
  - List 4 different errors that can occur in your group’s interface

Types of User Errors

- **Slips** are errors where a user formulated the correct goal, but carried it out incorrectly
- **Mistakes** are a failure to formulate the right intention
Two Types of Mistakes

- **Mistakes** generally fall into two categories:
  - **Knowledge-based mistake:** Incorrect decision/action because of a failure to understand the situation.
  - **Rule-based mistake:** Understand the situation, but making a wrong decision.

Types of User Errors

- **Slips** are errors where a user formulated the correct goal, but carried it out incorrectly
- **Mistakes** are a failure to formulate the right intention
- **Lapses:** Failure to carry out an action. (Often when part of a sequence is skipped)
- **Mode errors:** Action is correct in one mode of action, but wrong in another.

The difference matters because:
- The method used to fix the user interface is different: how?
Possible Causes

- Incorrect cause and effect
- Inadequate background to understand the information
- Unclear understanding of system status
- Misjudging information importance

Preventing Errors

- Exercise (2 minutes):
  - For each of your errors, classify it as a slip, mistake, lapse or mode error and design a way to fix the error

- What is the best way to prevent errors?
System Errors

- Write in the user’s language
  - "winword.exe" caused a segmentation fault at #F34EA01.
  - You need to know the understand the users to do this
- Precisely indicate the problem
- Constructively suggest a solution

Helping Users Learn

- How do we help users learn our system so they make fewer errors?
Help (doesn’t)

- Extra feature that can confuse users
- Spreading expensive jam onto stale toast isn’t going to make it taste better

- In a 1987 study of 52,576 help sessions:
  - 23% of all requests found no help
  - 36% of people who found help reported the help was useful (28% of total requests)

Helping Help Help

- People want answers, and want them quickly
- Descriptive questions; "What is this?"
- Procedural questions; "How do I do this?"
- Guidance questions; “What should I do?”
- Interpretive questions; "Why did that happen?"
- Navigational questions; "Where am I?“, “Where is X?”
Types of Help

- F1 help
- ...?

Cost of Help

- What is the most expensive form of help?
  - Asking a friend

- What is the least expensive form of help?
  - A computer interface that doesn’t need help
Experts and Beginners

- Who are they?
- How do we design for them?

Beginners

- **User Description**
  - System knowledge:
    - None
  - Domain Knowledge:
    - Unknown
  - Proficiency:
    - Low
How Beginners will Behave

- Few tasks
- Many errors
- Dependence on help (not just heavyweight help)
- Limited use of options or alternatives

Supporting Beginners

- Few options
- Visible help
- At most one task per screen
- Wizards
- Provide acquisition facilities
  - Highly visible
  - Aesthetically pleasing
  - Concentrate on ordinary, standard, typical tasks
Experts

User Description
- System knowledge: High
- Domain Knowledge: High
- Proficiency: High

How Experts will Behave
- Many tasks
- Few errors
- Little use for Help
- Idiosyncratic style of interaction
- High use of options or alternatives
- Primary concern is efficiency and productivity
Supporting Experts

- Efficient Interaction
- Fast
- Many tasks per screen
- Provide production facilities
  - Conventional and Familiar techniques to support expert use
    - Ctrl+x, ctrl+c, ctrl+v
  - Uncluttered, customizable workspace
  - Simple icons on toolbars and dockable toolbars
  - Features that rely on user’s memory rather than visibility

Unix-style Command Line

- How many people are beginners?
  - % cp ~/Desktop/myhouse.png ~/Desktop/pictures/myhouse.png

- How many people are experts?
  - % for file in $(find . -name ".*.png" -print ) ; do convert \
    -size 800x800 $file -resize 800x800 $file//.png-small.png \n    ; done

- Most users of software are “perpetual intermediates” or “improving intermediates”
How Intermediates will Behave

- Expanding number of tasks
- System limitations become frustrating
- Intermittent need for help
- More extensive experimentation
- Evolving and changing patterns of interaction

Interfaces for Intermediates

- Allow exploration through interaction
- Show alternate mechanisms to perform tasks
- Provide transitional facilities
  - Visible shortcuts
  - Customizable interface
Aesthetics and Visual Flow

- How do we design something that is aesthetically pleasing?
- How do we make our design easy to comprehend?

Contrast; Repetition; Alignment; Proximity

- **Contrast**
  - Either the same, or *Very Different*
- **Repetition**
  - Repeat visual elements throughout the design (widgets, etc)
- **Alignment**
  - Nothing should be placed arbitrarily
- **Proximity**
  - Keep related items
    - together
Proximity

- Group related items together
- Keep unrelated items apart

Some principles of proximity
- Limit how much you put on one page
- Avoid filling all corners
- Make whitespace unequal, use it to emphasize elements
- Group related things, don’t group unrelated things
Alignment

- Visually connect elements to something else in the design

**Some principles of Alignment**
- Find a **strong line and use it**
- Align with something else
  - Even if it is far away
- Avoid combining multiple alignments
  - Left, centered, right, justified
- Use centered alignments sparingly
Alignment

- Some principles of Alignment
  - Find a strong line and use it
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  - Avoid combining multiple alignments
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Repetition

- Repeat aspects throughout your design
  - Layouts, fonts, grids
Look and Feel

- Consistent, repeated elements of software or web site design
  - Interaction design, and visual design
- Consistency gives a sense of “place”
  - You know where you are
  - You know which program you are using
  - You don’t have to learn new pages from scratch
- Increases learnability and thus usability

Contrast

- If two items are not the same, you can make them Really Different
Contrast

- Concord – typefaces drawn from the same type family
- Conflict – typefaces drawn from very similar type families
- Contrast – typefaces drawn from very different type families

- Avoid conflict: choose concord or contrast
- No more than two type families per screen (this slide has too many)

Contrast; Repetition; Alignment; Proximity
**Color**

- Use color to reinforce, not as primary code
- ~10% of males (<1% females) have some form of color-blindness
- Keep in mind that color contrast affects readability

<table>
<thead>
<tr>
<th>Color Combination</th>
</tr>
</thead>
<tbody>
<tr>
<td>black on cream works well</td>
</tr>
<tr>
<td>white on black can too</td>
</tr>
<tr>
<td>blue on cream is pretty safe</td>
</tr>
<tr>
<td>red text can be painful</td>
</tr>
<tr>
<td>colors opposite on the color wheel</td>
</tr>
<tr>
<td>or fatigue</td>
</tr>
<tr>
<td>avoid similar colors</td>
</tr>
</tbody>
</table>

**Visual Flow**

- Programs have a visual flow
Visual Flow

- Programs have a visual flow

This is especially important when designing for the web

How do you determine the flow people draw from your design?

- Observe!
Visual Design for the Web

- People read webpages in an “F-Shaped” pattern

Implications of the F Pattern

- People won't read your text thoroughly
  - Word-by-word and exhaustive reading is rare.

- The first two paragraphs must state the most important information

- Start subheadings, paragraphs, and bullet points with information-carrying words
“Banner Blindness”

- Scanning is more common than reading
- People ignore things that look like ads

Implications of Banner Blindness

- Avoid putting important information in the header or side bars
- Assume that users will not see most of the fancy details you put at the top and sides
- Corollary: people consider pages that appear to have ads less reliable and authoritative
Representing Numbers

- **Show numbers as numerals**
  - Numerals catch the wandering eye
    - Numbers represent facts
    - Numbers look different than the surrounding text
      - 2415 looks different than two thousand fifteen in a block of text

- **Numbers larger than a million are special**
  - Represent one million as 1,000,000
  - Represent two trillion as 2 trillion, not 2,000,000,000,000
  - Generally, explain numbers over a billion
    - “1 trillion (or 1 million millions)”

Formatting

- **Fancy and non-standard formatting is often counter-productive**
  - Over-emphasis causes data to be perceived as decoration
“Breadcrumbs” are a way to show system status

Term comes from Hansel and Gretel

- More than just being able to backtrack, shows where the user is in the hierarchy
- Allow people to get to something else they saw
- Gives people an idea of how they got there
Conclusion

- Next time: Interactive Prototype presentations
  - You will be reviewing other groups to give feedback
- Enjoy your break