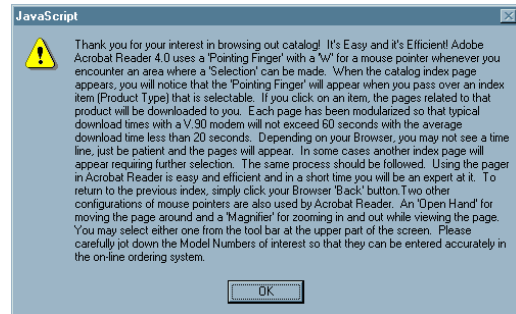


## Lecture 11: Graphic Design

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## UI Hall of Fame or Shame?

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Source: Interface Hall of Shame

## Guidelines for Good Graphic Design

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- Simplicity
- Contrast
- White space
- Balance
- Alignment

## Simplicity

---

- "Perfection is achieved not when there is nothing more to add, but when there is nothing left to take away." (Antoine de St-Exupery)
- "Simplicity does not mean the absence of any decor... It only means that the decor should belong intimately to the design proper, and that anything foreign to it should be taken away." (Paul Jacques Grillo)
- "Keep it simple, stupid." (KISS)
- "Less is more."
- "When in doubt, leave it out."

## Techniques for Simplicity: Reduction

- Remove inessential elements



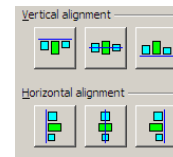
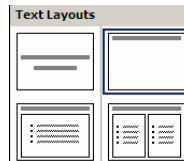
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## Techniques for Simplicity: Regularity

- Use a regular pattern
- Limit inessential variation among elements



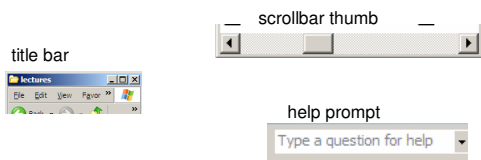
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## Techniques for Simplicity: Double-Duty

- Combine elements for leverage
  - Find a way for one element to play multiple roles



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## Contrast & Visual Variables

- Contrast encodes information along visual dimensions

value	hue	texture	shape	position	orientation	size
●	●	○	△	○	⊖	○
●	●	○	□	○	⊗	○
●	●	○	+	○	⊕	○

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## Characteristics of Visual Variables

- Scale = kinds of comparisons possible
  - Nominal (=)
    - All variables
  - Ordered (<, >)
    - Ordered: position, size, value, texture granularity
    - Not ordered: orientation, hue, shape
  - Quantitative (amount of difference)
    - Quantitative: position, size
    - Not quantitative: value, texture, orientation, hue, shape
- Length = number of distinguishable levels
  - Shape is very long (infinite variety)
  - Position is long and fine-grained
  - Orientation is very short (~ 4 levels)
  - Other variables are in between (~ 10 levels)

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## Attention

- Recall the spotlight metaphor
  - Attention spotlight moves serially from one input channel to another
  - All stimuli within spotlighted channel are processed in parallel
- Input channel = one or more visual variables
  - e.g., position, hue

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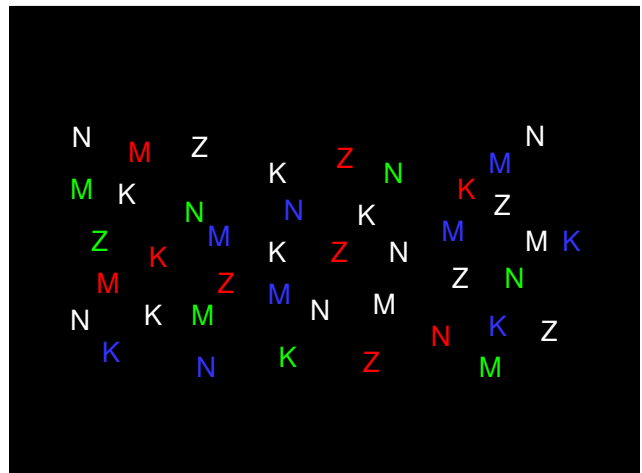
## Selectivity

- Selective perception: can attention be focused on one value of the variable, excluding other variables and values?
  - Selective: position, size, orientation, hue, value, texture
  - **Not selective:** shape

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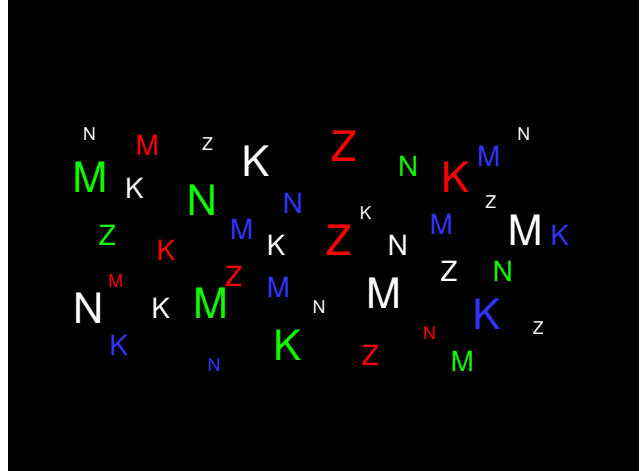
## Associativity

- Associative perception: can variable be ignored when looking at other variables?
  - Associative: position, hue, value, texture, shape, orientation
  - **Not associative:** size, value
    - Small size and low value interfere with ability to perceive hue, value, texture, and shape

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## Recall the Stroop Effect

Green  
Orange  
Red  
Black  
Pink  
Blue

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## Techniques for Contrast

- Choose appropriate visual variables
- Use as much length as possible
- Sharpen distinctions for easier perception
  - Multiplicative scaling, not additive
  - Redundant coding where needed
  - Cartoonish exaggeration where needed
- Use the “squint test”

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## Choosing Visual Variables for a Display

Subject	Sender	Date
Содействие в трудоустройстве.	chao	10/15/2004 4:26...
Автоладелец	Автогранд	10/15/2004 4:45...
Обучение теннису	elot	10/15/2004 7:16 AM
PITTSBURGH PA Silverton Home Services for...	Erica Gallenbeck	10/15/2004 7:21...
156 - 00 - 00 &#1085;&#1072;&#1096; &#1...	XjFXLxmXgX@tdb.com	10/15/2004 10:4...
156-00-00	hucksterEOPIN	10/15/2004 11:12 ...
A Library A Dream...	Arthur GuoBin Yin	10/15/2004 6:38...
SAVE 20% on holiday cards by shopping early	Snapfish	5:18 AM
How are you	Антониов К.И.	11:24 AM

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## Designing Information Displays

Title: HCI Bibliography : Human-Computer Interaction / User Interface ...  
 Summary: The HCI Bibliography (HCIBIB) is a free-access bibliography on Human-Computer Interaction, with over 20000 records in a searchable database. ... Learn about HCI. ...

Keywords: HCI

URL: www.hcibib.org/

Size: 14k

[HCI Bibliography : Human-Computer Interaction / User Interface ...](#)

The HCI Bibliography (HCIBIB) is a free-access bibliography on Human-Computer Interaction, with over 20000 records in a searchable database. ... Learn about HCI. ...  
[www.hcibib.org/ - 14k - Cached - Similar pages](#)

[Human-Computer Interaction Resources on the Net](#)

... This is a collection of information related to Human-Computer Interaction (HCI). ...  
 Collections of resources for HCI researchers and practitioners. ...  
[www.ida.liu.se/labs/aslab/groups/um/hci/ - 9k - Cached - Similar pages](#)

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## Contrast in Publication Styles

### Title

#### Heading

This is body text. It's smaller than the heading, lighter in weight, and longer in line length. We've also changed its shape to a serif font, because serifs make small text easier to read. Redundant encoding produces an effective contrast that makes it easy to scan the headings and distinguish headings from body text.<sup>1</sup>



Figure 1. This is a caption, which is smaller than body text, and set off by position, centering, and line length.

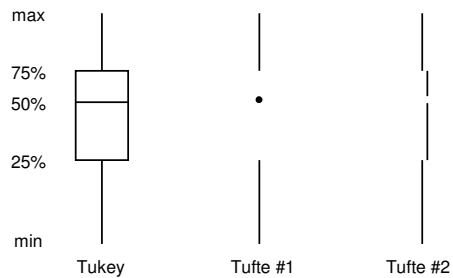
<sup>1</sup>This is a footnote. It's even smaller, and positioned at the bottom of the page.

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## Simplicity vs. Contrast



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## Contrast Problems

The screenshot shows a web form with several fields and buttons. The text is black on a light gray background, which is difficult to read. The form includes fields for 'Form Title', 'Form Heading', 'E-Mail responses to', 'Text to appear in Submit button', 'Send Order', and 'Scrolling Status Bar Message'. There are also buttons for 'Clear Form', 'Mailto', and 'Next Tab >>'. The overall appearance is cluttered and lacks sufficient contrast for readability.

Source: Interface Hall of Shame

## White Space

- Use white space for grouping, instead of lines
- Use margins to draw eye around design
- Integrate figure and ground
  - Object should be scaled proportionally to its background
- Don't crowd controls together
  - Crowding creates spatial tension and inhibits scanning

## Crowded Dialog

The screenshot shows a dialog box titled 'Section' with a 'Start: New Page' button and an 'Include Endnotes' checkbox. The dialog is divided into several sections: 'Page Number' with 'Auto' and 'Restart at 1' options; 'Line Numbers' with 'By Page' and 'Count by' options; 'From Top' and 'From Right' settings; 'Columns' with 'Number' and 'Spacing' settings; and 'Header/Footer' with 'From Top', 'From Bottom', and 'First Page Special' options. The controls are packed closely together, making the dialog look cluttered and difficult to navigate.

Source: Mullet & Sano, p. 110

## Using White Space to Set Off Labels

The image shows two versions of a 'Composite' dialog box. Screenshot (a) shows a cluttered version where labels and controls are packed together. Screenshot (b) shows a cleaner version where white space is used to set off labels, making the dialog easier to read and use. The labels in (b) are clearly separated from the controls, and the overall layout is more organized.

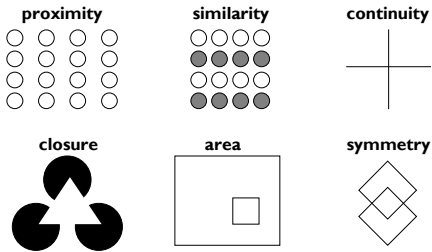
(a)

(b)

Source: Mullet & Sano, p. 96

## The Gestalt Principles of Grouping

- Gestalt principles explain how eye creates a whole (*gestalt*) from parts

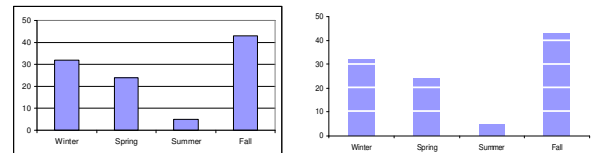


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## White Space Avoids Visual Noise



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## Balance & Symmetry

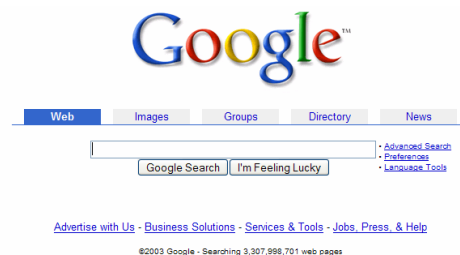
- Choose an axis (usually vertical)
- Distribute elements equally around the axis
  - Equalize both mass and extent

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## Symmetry Example



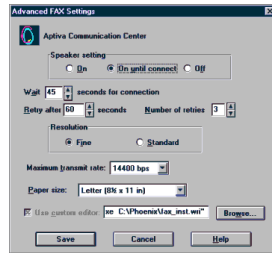
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## Alignment

- Align labels on left or right
- Align controls on left *and* right
  - Expand as needed
- Align text baselines

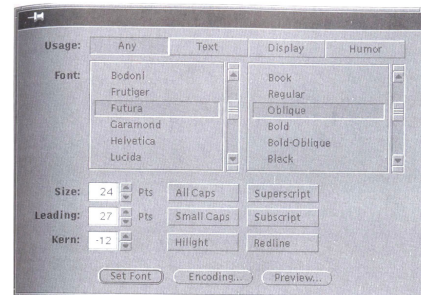


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## Grids Are Effective



Source: Mullet & Sano, p. 165

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