

## Computer/Human Interaction

### Lecture 19

#### Overview:

- Information design
- Gulf of Evaluation
  - Perception
  - Interpretation
  - Making Sense

Java Prototype assignment is out

## Stages of Action in HCI

- Information Design: Gulf of Evaluation – how users understand tasks
  - Perception
  - Interpretation
  - Making sense
- Interaction Design: Gulf of Execution – how systems support user's task goals
  - System goal
  - Action plan
  - Execution

## Information Design

- Design interface to get from perception to making sense as quickly as possible
- Example
  - Perception – lines, color, shading, spatial organization
  - Interpretation – Excel worksheet, cell, formula
  - Making sense – budget worksheet, grade book sheets

## Perception

- Mind organizes and **encodes** the data it is given into groups
- Generally, no conscious thought involved
- Gestalt ( German for “whole”) principles describe how information is grouped, what is related to each other, what is foreground or background

## Gestalt Principles

- Proximity – elements close together tend to be grouped together.
- Similarity – elements with shared characteristics tend to be grouped together
- Closure – tend to organize elements into closed groups

## Gestalt Principles 2

- Area – tend to organize elements to form smallest group
- Symmetry – tend to group symmetric elements
- Continuity – tend to organize elements into repeating patterns

## Example

- Border and Shading dialog box in Word
- See an immediate sense of organization
- Also see individual control elements
- “Squint test” - close one eye and squint with the other. Is the organization of display apparent?

## Tradeoffs

- Want to display all possible active tasks to understand what is possible, but each display element adds complexity
- Contrasting cues highlight and group elements, but more distinctions will make each one less noticeable
- Elegant designs exploit position, thematic repetition, low-key color schemes and white space. I.e., not at all like the PPP examples...

## Interpretation

- Result of perceptual encoding is **recognition** of the task being performed
- Mixture of bottom-up and top-down processing by user
- Need to anticipate and support users’ reactions to interface elements to speed up process. Leverage familiarity, realism, and affordance

## Familiarity

- Use common vocabulary, even if the words do not convey precisely what task is taking place. Example: “display” vs. “render”; documents are organized into “folders”, not “boxes”
- Caution: some words are ambiguous. Example: enter, check, update, view
- Consider audience. Example: adult vs. child, other cultures
- [www.gui-bloopers.com](http://www.gui-bloopers.com)

## Realism

- Realistic images increase recognition and long-term memory
- But often are more complex, slower to load, and suggest specific instances rather than concepts

## Affordance

- **Affordance** is when characteristics of an object make it obvious how it is used.
- Common in real world. Examples: door knob, steering wheel.
- Examples in HCI: scrollbars, window handles