

# Questions?

- Project #2
- HW#4 in



The Economist

# Interface metaphors

- **Definition**
  - Use of one kind of object or idea in place of another to suggest a likeness or analogy between them
- **Purposed**
  - Leverages our knowledge of familiar, concrete objects/experiences
  - Transfer this knowledge to abstract computer and task concepts
- **Examples**
  - Desktop, files, folders, trash can...
  - Paintbrush in a painting program

# Metaphors caveats

- Too limited
  - The metaphor restricts interface possibility
- Too powerful
  - The metaphor makes believe that the system can do things it can't
- Too literal or cute
  - Make it difficult to operate
- Mismatched
  - The metaphor makes it difficult to carry out the task

# Direct manipulation: Good or Evil?

- Good for intermediate users
  - Recognition versus recall trade-off
- Explicit versus implicit command
  - “rename each file by adding ‘\_old’ to its name”
- Limit of reification
  - How to align an object?
- Metaphor might be too restrictive
  - WYSIAYG: What You See Is All You Get
- Applications mix
  - Direct manipulation
    - *Tools, drag and drop interactions...*
  - Abstraction
    - *Menus, dialog boxes,...*

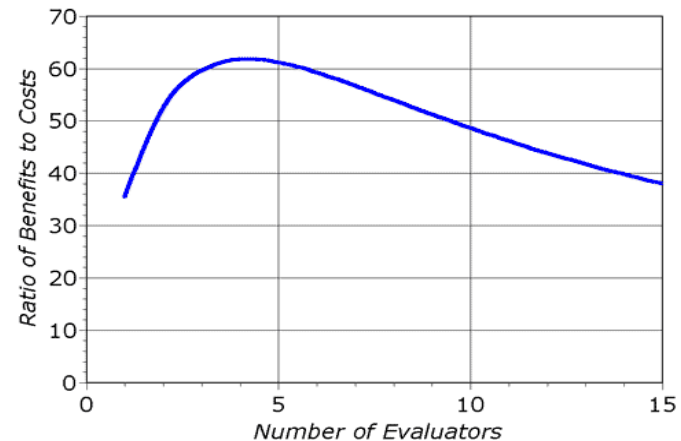
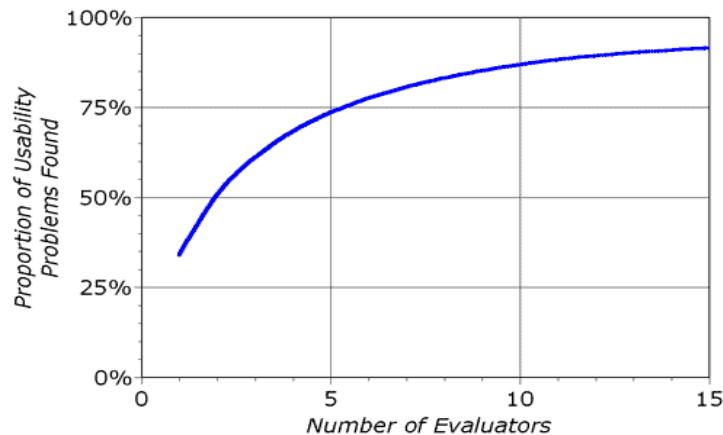


# Usability heuristics

- “Rules of thumb” that describe features of usable systems
  - Can be used as design principles
  - Can be used to evaluate a design
- Pros and cons
  - Easy and inexpensive
    - *Performed by expert*
    - *No users required*
    - *Catch many design flaws*
  - More difficult than it seems
    - *Not a simple checklist*
    - *Cannot assess how well the interface will address user goals*

# Usability Engineering

- Introduced by Nielsen (1994)
- Can be performed on working UI or sketches
- Required a small set (3-5) of evaluators to examine the UI
  - Check compliance with usability principles
    - *Each evaluator works independently*
    - *Go through the interface several times*
  - All reviews are aggregated in one final usability report



# Nielsen's evaluation phases (1-2)

- Pre-evaluation training
  - Provide the evaluator with domain knowledge if needed
- Evaluation
  - First step: get a feel for flow and scope
  - Second step: focus on specific elements
    - *Multiple passes approach is better*
    - *Create a list of all problems*

# Nielsen's evaluation phases (3-4)

- Severity rating
  - Performed after individual evaluations are aggregated
  - Establishes a ranking between problem
  - Reflects frequency, impact and persistence
    - *Cosmetic, minor, major and catastrophic*
- Debriefing
  - Discuss outcome with design team
  - Suggest potential solutions
  - Assess how hard things are to fix

# Neilsen's heuristics

- Simple and natural dialog
- Speak the users' language
- Minimize user memory load
- Consistency
- Feedback
- Clearly marked exits
- Shortcuts
- Prevent errors
- Good error messages
- Provide help and documentation

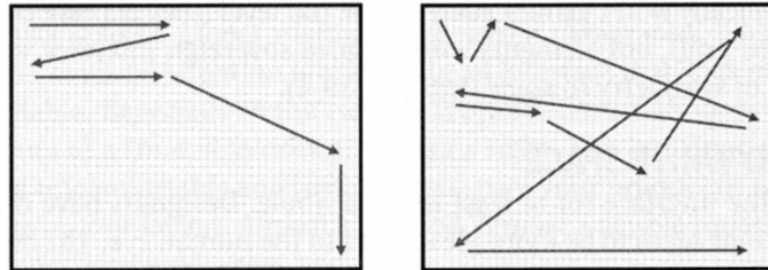
# Simple and natural dialog



From Cooper's "The inmates are running the asylum"

# Simple and natural dialog

- Present information in natural order

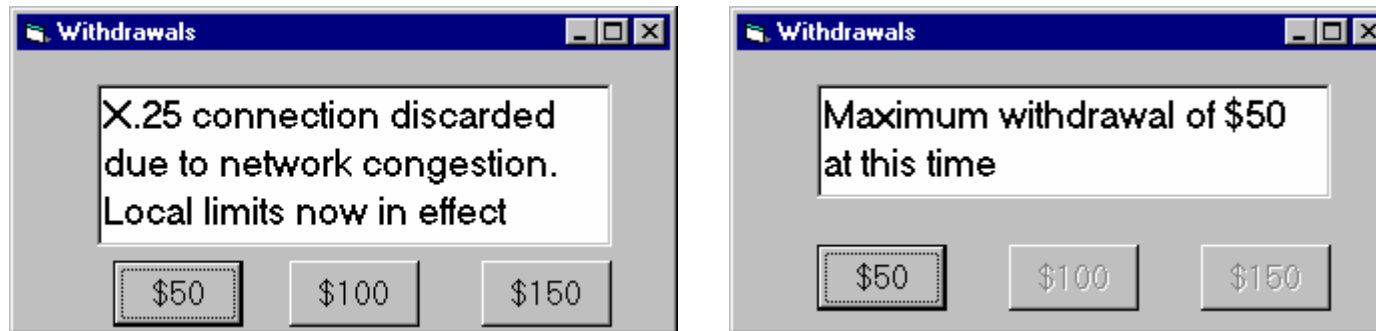


From Cooper's "About face 2.0"

- Occam's razor
  - Remove or hide irrelevant or rarely needed information
    - *They compete with important information on screen*
      - Pro: Palm Pilot
      - Against: Dynamic menus
  - Use windows frugally
    - *Avoid complex window management*

# Speak the users' language

- Use a language compatible with users' conceptual model
  - Example: withdrawing money at an ATM



- Use meaningful mnemonics, icons and abbreviations

