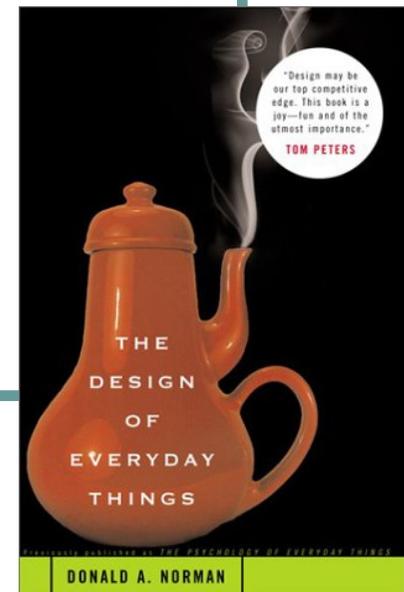


# User Centered Design

## The Design of Everyday Things

by: Donald Norman

presented by: Joe Novak

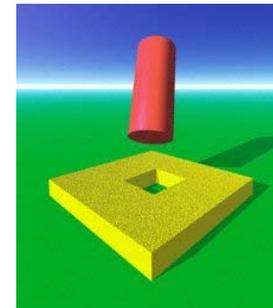


# 7 Principles of UCD

- Use both knowledge in the world and knowledge in the head
- Simplify the structure of tasks
- Make things visible
- Get the mappings right
- Exploit the power of constraints - natural and artificial
- Design for error
- When all else fails, standardize

# 7 Principles of UCD (2)

- Use both knowledge in the world and knowledge in the head
  - Information is in the world
    - keyboard
  - Natural constraints are present in the environment
    - round pegs and square holes
  - Great precision is not required
- Simplify the structure of tasks
  - Use technological aids to reduce the burden
    - engine crank on automobiles
  - Visual feedback or other memory cues
    - computer monitor



# 7 Principles of UCD (3)

- **Make things visible**
  - Make sure the set of available (relevant) actions are always clearly visible
  - Provide information regarding system state
- **Get the mappings right**
  - Minimize the ambiguity between controls and the objects they operate on
    - stove top controls and light switches
  - Eliminate ambiguous natural mappings
    - door handles that might be pushed or pulled
- **Exploit the power of constraints**
  - Use natural and artificial constraints to limit the number of perceived available actions
  - Control affordances
    - door handles that can only be pushed



# 7 Principles of UCD (4)

- Design for error
  - Design the system with the understanding that users will make any and all possible errors
    - `root$ cd /; rm -rf *` (doh!)
  - Make it easy for users to revise or correct actions
    - modern word processor 'undo'
  - Use forcing functions
    - ignition key  $\Rightarrow$  start car
- When all else fails, standardize
  - Arbitrary mappings need only be learned once
    - QWERTY keyboard
    - programming language syntax
    - 漢字、alphabet
    - analog clocks



# Bad Examples, Good Examples

- コンビニ Sandwich Wrappers
  - Good



# Bad Examples, Good Examples

- コンビニ Sandwich Wrappers
  - Bad



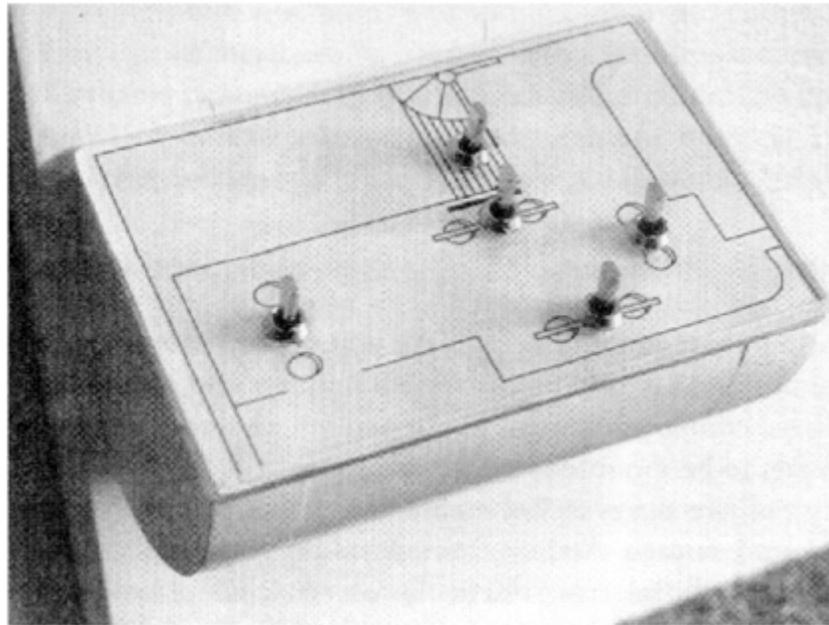
# Bad Examples, Good Examples

- Light Switches
  - Bad (my house)



# Good Examples, Bad Examples

- Light Switches
  - Good (from POET)



# Bad Examples, Good Examples

- Water Faucet
  - Bad (my house)



# The End

- Thanks

