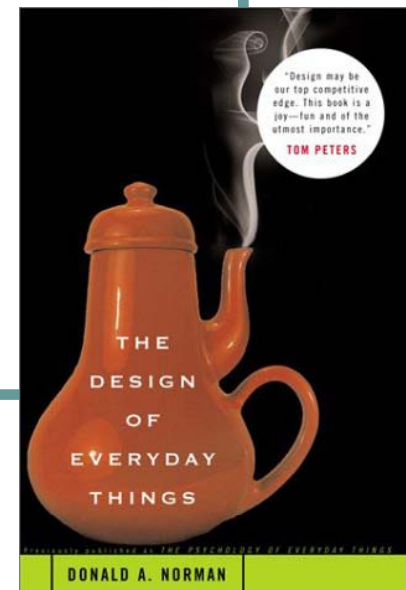# User Centered Design

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
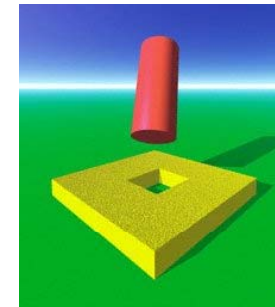
7 Principles of UCD (3)

- **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 ⇒ 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
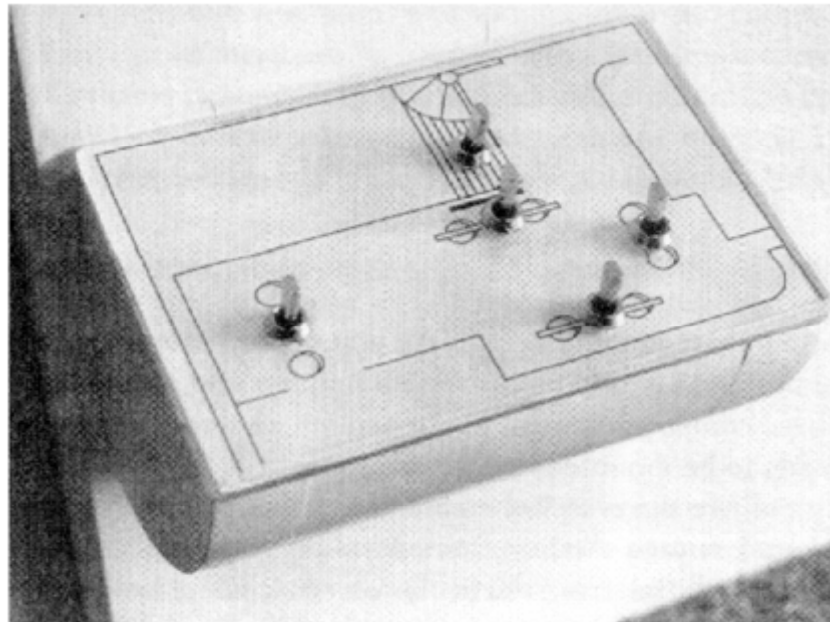
- コンビニ Sandwich Wrappers
  - Bad

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)

Bad Examples

The End

- Thanks