Semiotics and Icon Design

Part of the Human Computer Interaction Course Notes

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Semiotic

- Definition
  - Semiotics is often called "the study (or theory) of signs." It involves the study not only of what we refer to as 'signs' in everyday speech, but of anything which 'stands for' something else (Chandler, sem01)
  - Peirce defines semiotics as a relationship among a sign, an object, and a meaning (Littlejohn 1999, p62)
- Semiotics focuses on the ways producers create signs and the ways audiences understand those signs (Littlejohn, p330)

Metaphor and semiotics

- Metaphors
  - Definition (The American Heritage Dictionary): A figure of speech in which a word or phrase that ordinarily designates one thing is used to designate another, thus making an implicit comparison
- In this way, the metaphor is itself a semiotic sign providing meaning obtained from what is referenced

Three types of signs

- **Icons** are signs whose signifier bears a close resemblance to the thing they refer to.
  - According to Pierce, icons are "the only means of directly communicating an idea."
  - E.g. A road sign showing the silhouette of a car and a motorbike
- **Symbol** shall mean what they mean and there is no natural relationship between them and their meanings
  - E.g. Most words are symbolic signs.
- **Index**: In a sense, indexes lie between icons and symbols. An index is a sign whose signifier we have learnt to associate with a particular signified.
  - E.g. smoke as an index of 'fire', a thermometer is an index of 'temperature'
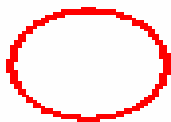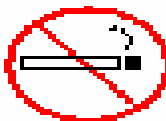
Example
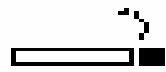
 $\longrightarrow$ Iconic cigarette

$+$
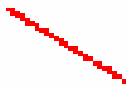
 $\longrightarrow$ Indexical bar ("You can't do this")
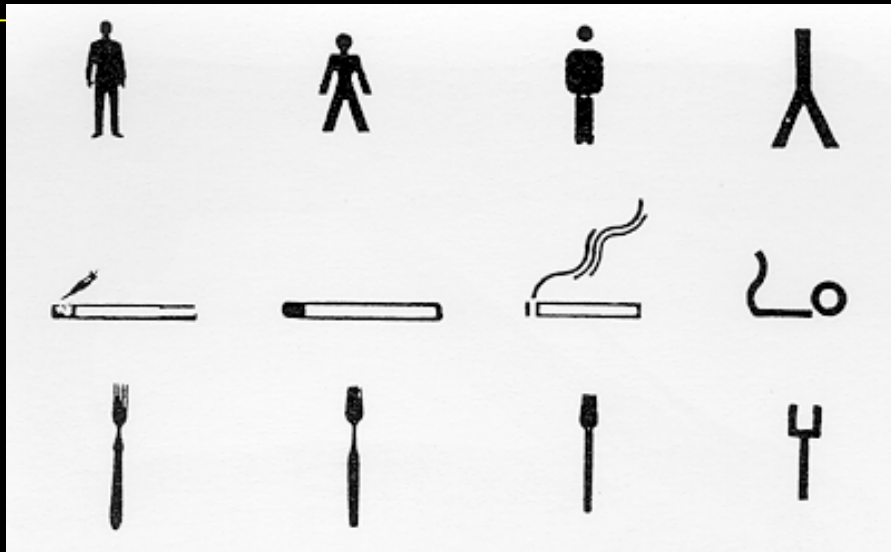
$+$

 $\longrightarrow$ Symbolic red circle on a white background (something is forbidden)
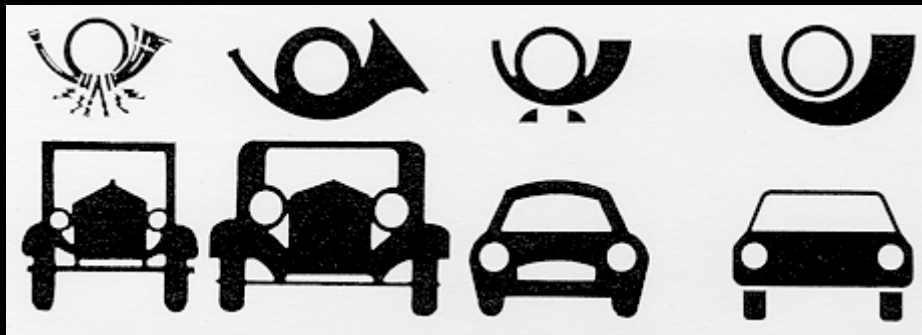
‖

 $\longrightarrow$ The sign of "smoking forbidden"

This kind of pictorial sign is also referred as icon in some cases.
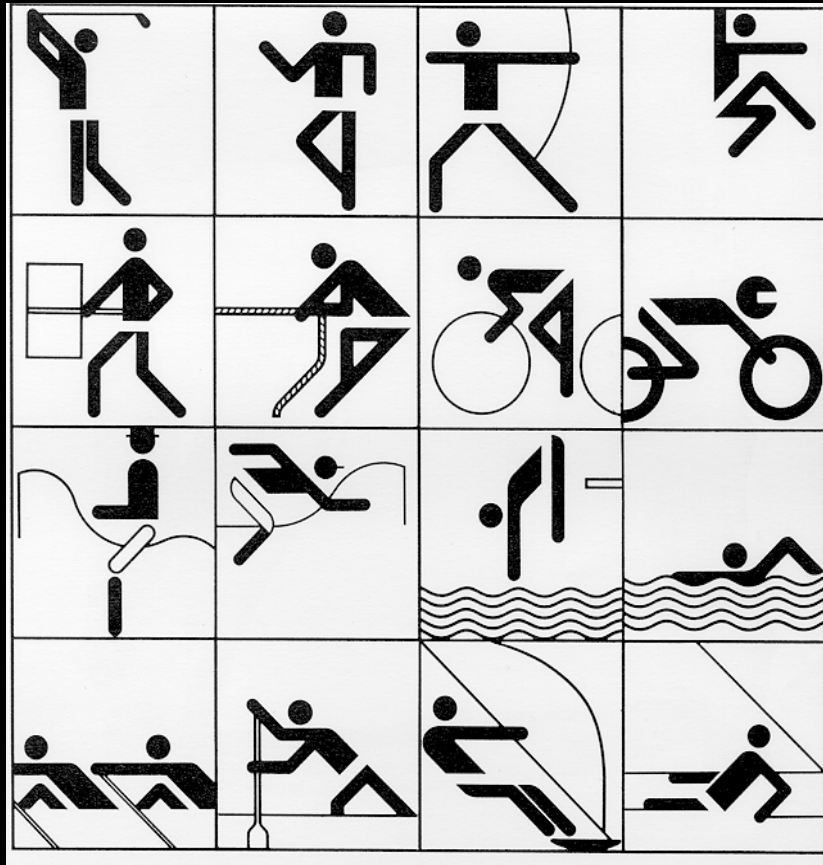
Historical Trends for Icon Design

- Four different levels of abstraction can be found over the last 80 years (most recent on the right).
- Actual icons get more abstract compared to the past.

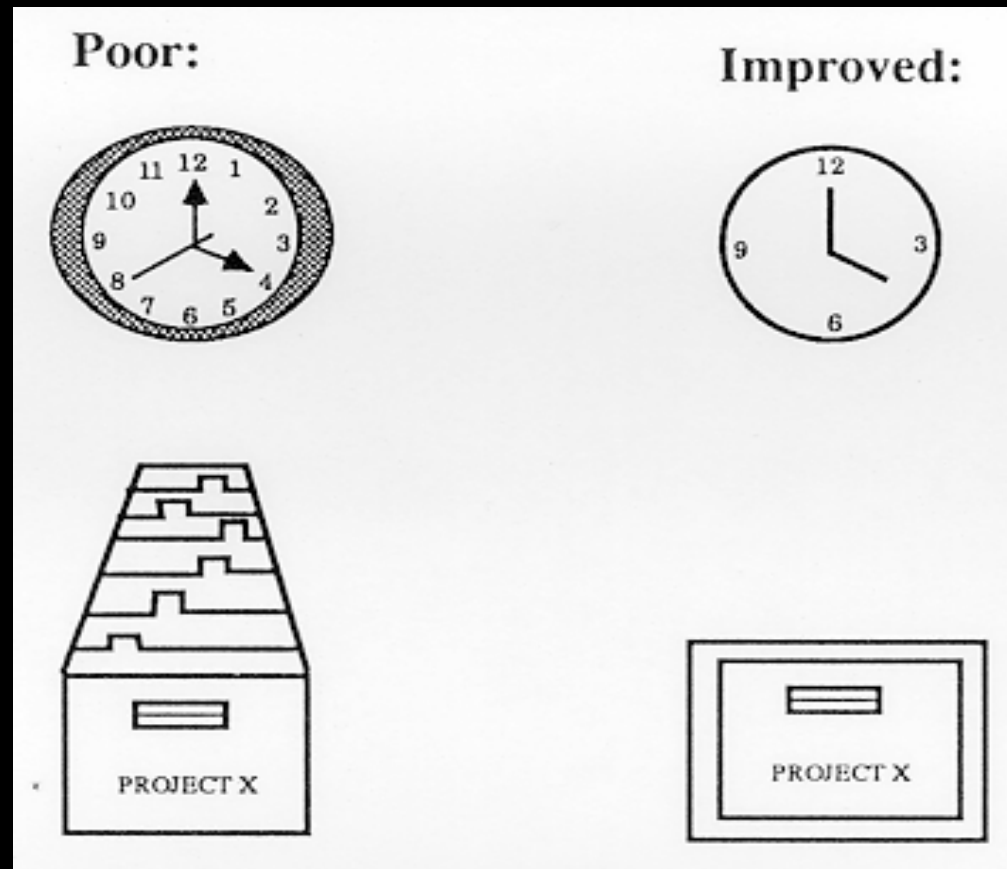Adapted from Matthias Rauterberg

An Icon Set for Different Sports

Exercise:
try to identify the different kinds of sports represented by each icon.

Adapted from Matthias Rauterberg

Redesign of Icons (1)
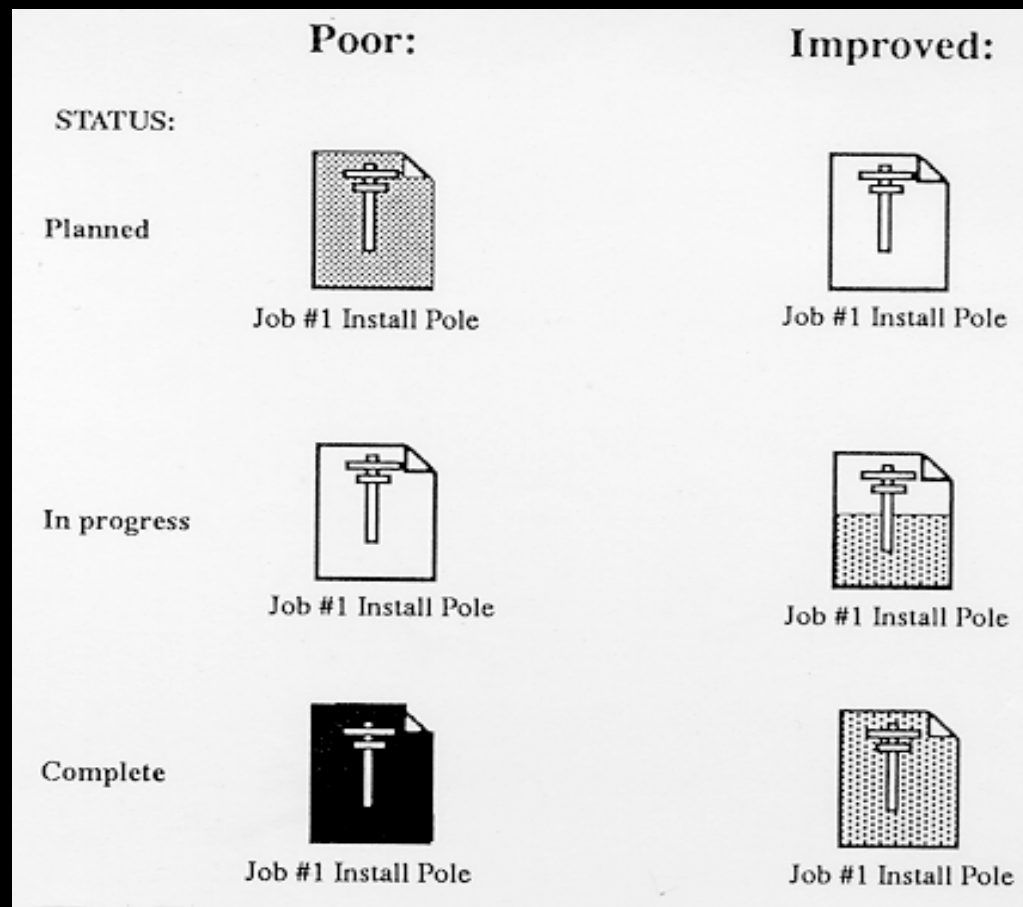

Poor:

Improved:

PROJECT X

PROJECT X

- Design Principle:
  - avoid excessive detail in icon design.

- [see Deborah J. Mayhew, Principles and Guidelines in Software User Interface Design (1992) pp.316-331]

Redesign of Icons (2)

Poor: Improved:

STATUS:

Planned   Job #1 Install Pole   Job #1 Install Pole

In progress Job #1 Install Pole   Job #1 Install Pole

Complete   Job #1 Install Pole   Job #1 Install Pole

- Design Principles:
  - design the icons to communicate object relations and attributes whenever possible;
  - accompany icons with names.

- [see Deborah J. Mayhew, Principles and Guidelines in Software User Interface Design (1992) pp.316-331]

Example: design effective icons

- Design functionally suggestive icons
  - The best icon will suggest to the user the primary purpose of the program or operation without having to read accompanying text
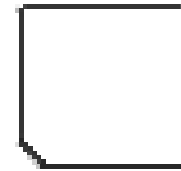
A functionally suggestive icon for word processor

A functionally suggestive icon for underline

Procedure of icon design

1. Draw the basic outline as close to 48x48 pixels as possible

2. Fill in with black and white to create detail

Guidelines for designing the detail (1)

- Analyze the verbal contents and the display environment
  - Determine how icon parts and complete icons should related
  - Too many parts may confuse the viewer
- Design icons to differ in their "global" characteristics.

Location   Building   Floor Plans   Features

Developers   Financing   Guestbook   What's New

Members of this set of icons differ considerably from the others in their "global" shapes

Guidelines for designing the detail (2)

- Design the initial icons by creating quick sketches
  - Not to be too precise or detailed early in the design process
  - More important to explore possible variations
- Evaluate the designs by showing them to potential viewers
  - Which icons seem to meet the needs of the sender, the receiver, the message, and the medium

Guidelines for designing the detail (3)

- Design a layout grid that organizes all major elements of the icons
- Use large objects, bold lines and simple areas to distinguish icons
- Icons should be simple and clear

Procedure of icon design

3. Add color and anti-aliasing (less than five colors)
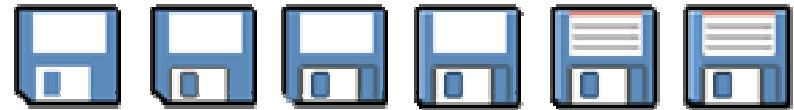
4. Add gradients for a smooth, realistic effect, add a drop shadow

Adapted from GNOME Usability Project icon design
(http://developer.gnome.org/projects/gup/hig/2.0/index.html)

Procedure of icon design

5. Do not include a text string naming the concept

   – Your images alone must be enough to convey the right associations

   – **You may use up to one "iconic word"** (such as "fax" or "loan")

6. Each icon should be prepared as a separate **.gif** or **.jpg** file