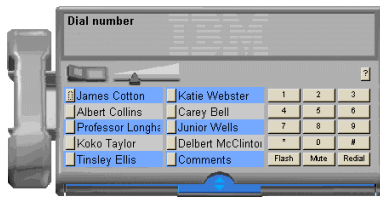


## Metaphor's problems: IBM Real Things series



IBM RealPhone

- to avoid "ruining the metaphor":
  - there is no explicit control button to activate the call (you have to click on the handset)
  - there aren't the usual windows controls: OK, they are not "real" but they have become a standard!

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- but it doesn't replicate things exactly anyway!
  - with real phones, you FIRST pick up the handset, then dial
    - here you have to dial first then click on the handset
  - with real phones, speed numbers work more or less like normal number (lift the handset, and press the speed number button)
    - here, to really speed up things, you only have to click on the speed number, without clicking on the handset
    - lots of inadvertent phone calls that cannot happen with real phones
- the system's functionality is limited just because it is modelled after a real phone (e.g. there are only 10 speed numbers)
  - doesn't exploit the computer based setting fully: can have more numbers, categorise them in sets (e.g. family, friends, office, etc)...



IBM RealCD

- The metaphor of a plastic CD case for a digital audio system
- lot's of space on screen is used for the logo
- ... how do you actually listen to your music??
- you have to "open the CD case"!
  - 3rd button from top: not very intuitive

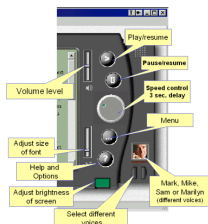
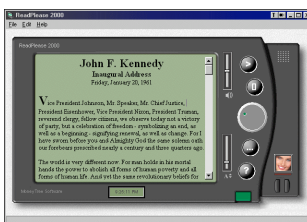
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- the open CD case occupies twice as much space on screen
- as it is a "physical" object", the CD case doesn't move, so the left part can go out of screen
  - doesn't matter, as it does not do anything, but 90% of the users would be tempted to reposition the window (and waste their time)
- and how do you quit?
- .... the **green** light on top, of course!

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## ReadPlease 2000

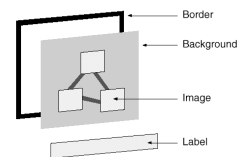


The metaphor of the hand-held personal data assistant (PDA) for a speech processing system: apart from the functionalities, in this case the problem is the *source*!!

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## Icons

- Images, pictures, or a symbols representing a concept.



- Well-designed icons:
  - save screen space
  - are recognised quickly in a busy visual environment
  - are easily remembered
  - help interfaces become international

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## Icon-specific guidelines

- Represent the object or action in a familiar manner
- Limit the number of different icons
- Make icons stand out from the background
- Beware of 3D icons: eye catching but distracting
- Ensure the selected icon is visible from unselected icons
- Consider adding detailed information, e.g. thickness to show the breadth of a directory, or the size of a file
- Consider animations for actions, e.g. printer icon progressively absorbs document icon to show printing status
- Explore combinations of icons to create new objects or actions
- Use concrete objects wherever possible: abstract concepts are difficult to render visually (know of a good icon for "Undo"?)
- Consistency

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## Cultural and International Issues

- do not use text inside an icon (or translate it into different languages)
- do not use hand symbols, facial appearances, etc.: they vary immensely from culture to culture
- do not use metaphors dependent on a particular culture:



a U.S. mailbox



a more widely recognized image

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## Colours

- Use colours sparingly (beware of the *Las Vegas effect*)
- Examples:



CompuServe's *WinCim 2.0*

Images are too distracting. Unprofessional appearance.



Microsoft's *Word*

Word's toolbar relies on shape rather than colours: this provides far more information in less space. More professional appearance, and clearer interpretation.

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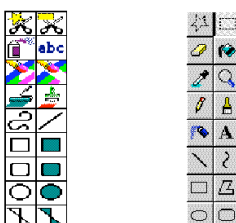
*Zoc* (a communications application)

The first 4 buttons are for: *Send, Send without carriage returns, Send with quotes, Send with CIS quotes*. Differences are almost undetectable, and the blue object in the foreground makes things worse.

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## Consistency

- the set of icons should be seen as a whole
- consistent in terms of size, colours, metaphor, level of realism (photograph, drawing, outline, silhouette), etc.
- the icons in a set should be visually balanced. Compare the old version of Paintbrush and the new icons for MS Paint:



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## Iconic Language

- An iconic language is a systematic way of combining elementary symbols into more complex icons:
  - Vocabulary: set of primitive symbols.
  - Grammar: rules for combining them.
- an example: MS Office












$Document = [ElementSymbol]^* + Application + DocType$

$ElementSymbol = Document \mid Assistant \mid Template$

$DocType = Document + Type$











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## Resulting Iconic Language

Elem. Symbols	Document Types	Applications
 Document	 Text document	 Word
 Assistant	 Spreadsheet document	 Excel
 Template	 Presentation document	 Powerpoint
	 Database document	 Access

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## Generated Icons

Word text document	
Excel spreadsheet document	
Powerpoint presentation document	
Access database document	
Word template	
Powerpoint template	
Access template	
Word template assistant	
Powerpoint template assistant	
Access template assistant	

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## Standards for icons?

- The ISO agency has produced 6 documents (ISO/IEC 11581 1...6) focussing on:
  - General requirements (recommendations applicable to all icons)
  - Object icons (icons that represent functions by association with an object, and that can be moved and opened)
  - Pointer icons (icons that represent a pointer associated with a physical input device)
  - Control icons (icons that enable the user to operate on windows, lists and other graphical elements)
  - Tool icons (icons for tools, and the relationships between tool and pointer icons)
  - Action icons (icons typically used on toolbars that represent actions by association with objects that prompt the user to recall the intended actions)

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## Examples: Action Icons

Action	ISO says it should be:
create new	A sheet of paper, rectangular with the height greater than the width and the top right corner folded down
open	An open folder with an arrow moving from it (Located in the top right corner of the cell, above the folder and pointing upwards and to the right, away from the open folder.)
save	An open folder with an arrow moving into it (Located in the top left corner of the cell, pointing downwards and into the open folder)
print preview	A document with a magnifying glass overlaid (A circle with an adjoining diagonal line at the lower right to signify the handle. The circular part of the magnifying glass overlays the lower right of the document.)
cut	An open pair of scissors (Two open, crossing blades with handles. The open, cutting part of the scissors pointing upwards.)
copy	Two identical objects. <b>Front object:</b> A rectangle with its height greater than its width. Contained within the rectangle are several, equally spaced, horizontal lines, which do not touch the sides of the rectangle. <b>Rear object:</b> Same as the front object, but placed behind it (to the left and above). The front object partially conceals the rear object.
paste	A pot of glue and brush.



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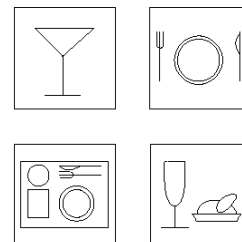
## Test your icon design

- Phase One: drawings on paper
  - test icon's intuitiveness
  - an icon is shown to a small number of users
  - they are asked to state their best guess as to what the icon is supposed to represent
- Phase Two: system's use
  - test icon's usability
  - icons are shown to users as part of the full user interface
  - users are asked to "think aloud" as they use the system to perform set tasks

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## A picture is worth a thousand words

- ... well, sometimes



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SELF SERVICE	SNACKS

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