

Vorlesung 8, den 9. Dezember 1999

Donnerstag, den 9. Dezember 1999

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Einführung in die Kognitive Ergonomie

Wintersemester 1999/2000

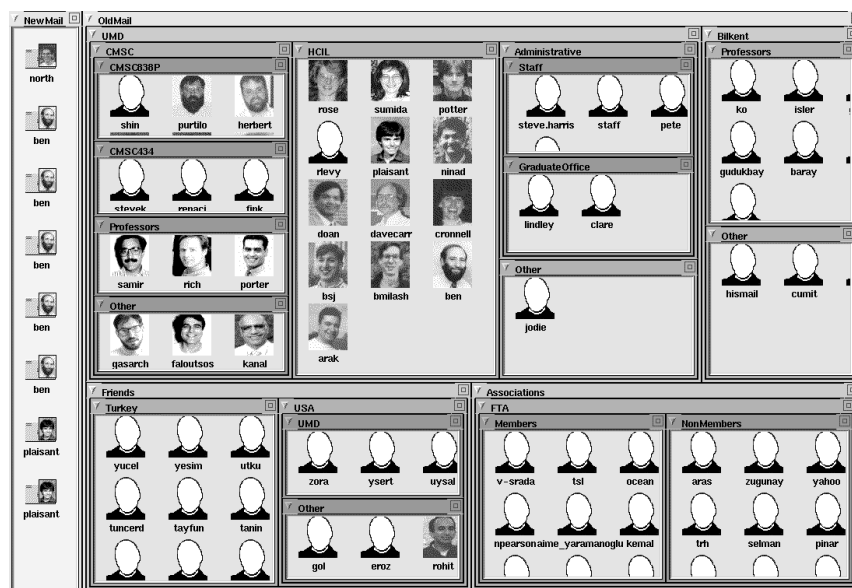
1. Direct Manipulation and the Exploitation of Perceptual Capabilities: Examples and Discussion
2. Uses of Metaphor

WWW-Seite: <http://www.cs.uni-sb.de/users/jameson/ke/>

Elastic Windows

Non-Web Use of Elastic Windows (1)

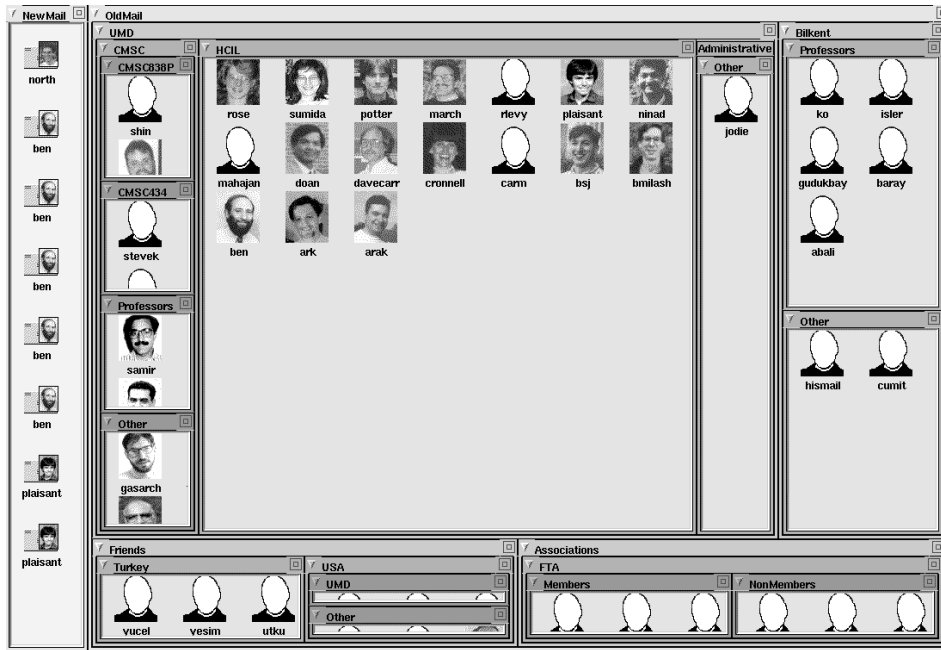
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Organisation of correspondence in a hierarchical layout gives \mathcal{U} an overview

Kandogan, E., & Shneiderman, B. (1996). Elastic windows: Improved spatial layout and rapid multiple window operations. *AVI'96, Advanced Visual Interfaces*, Gubbio, Italy, June 1996.

Non-Web Use of Elastic Windows (2)



Elastic resizing of the HCIL window in the space-filling tiled layout of elastic windows

Visualization of Web Sites WebToc Screen Shot



Questions About WebToc Video

1. What decisions that Web surfers need to make are facilitated by WebToc?
2. What general Web design issues are addressed by WebToc?
3. Could similar functions also be served by more conventional Web design techniques?

Previews and Overviews (1)

The screenshot shows the 'American Memory Introduction' page. On the left is a vertical navigation menu with icons and text for: Library of Congress, American Memory, Browse & Select Collections, Search (Quick, Enter phrases below, Search All Collections, Search's Selected Collections), Enhanced, Information, Information for Life-long Learners, Special Presentations, and New Arrivals. The main content area features the American Memory logo, a title 'American Memory Introduction', and links for 'Text-only version', 'ShockWave Version', and 'Prototype Notes'. Below this is the heading 'Historical Collections for the National Digital Library' and a grid of collection thumbnails: Continental Congress, Folklore, Coolidge Consumerism, Civil War Photos, African American Pamphlets, and Nation's Forum. A 'Collection Samples' section follows, describing the collections as primary-source and archival materials. At the bottom, 'Sample Special Presentations' are listed, including 'The Progress of a People: Special Presentation from the African-American Pamphlets from the Daniel A. P. Murray Collection, 1880-1920' and 'Become a Historical Detective'.

Previews and Overviews (2)

On this and the following pages, note the novel techniques that are provided to improve access to the huge document collection

C. Plaisant, G. Marchionini, and A. Komioli (1998). Bringing treasures to the surface: Previews and overviews in a prototype for the Library of Congress National Digital Library. CHI/98 Video.

Previews and Overviews (3)

The screenshot displays the 'Library of Congress American Memory' interface. It features a navigation sidebar on the left with sections like 'Search', 'Information for Life-long Learners', and 'Special Presentations'. The main content area is titled 'Browse & Select Collections' and includes a 'Collection Overview' with a timeline chart from 1880 to 1980. Below the chart is a 'Collection List' with a table of filters for Topic, Format, and Place. The list shows 19 collections, with 19 visible and 19 selected. The list includes items like 'Ara Shmian collection (Fake)', 'Bill Grant Architectural collection (Fake)', and 'Life History Manuscripts from the Folklore Project, WPA Federal Writers' Project, 1936-1940'.

Collection Overview

Collection Filters

Topic	Format	Place
Regional	Movie	All World
Government and Law	Sound	Canada
Language and Literature	Map	South Emphasis
Fine and Decorative Arts	Photograph	Northeast Emphasis
Business and Economics	Manuscript	Mexico
History		Midwest Emphasis
Health and Medicine		Caribbean
Production and Applied Sciences		Europe
All	All	All

Collection List

Order Collections by: Title Time Topic Format Place # Collections: 19 # Visible : 19 # Selected : 19

To browse a Collection, click on its title

Checked Collections are selected for Quick and Enhanced searches

- A - F
- Ara Shmian collection (Fake)
- Bill Grant Architectural collection (Fake)
- Bruns Boating Collection (Fake)
- Coolidge-Consumerism Collection
- Earl Jones collection (Fake)
- Emma Johnson clothing collection (Fake)
- Ford Automobile History Collection (Fake)
- G - L
- Gary Jones - Railroad safety Collection (Fake)
- Jones music collection (Fake)
- Life History Manuscripts from the Folklore Project, WPA Federal Writers' Project, 1936-1940
- M - R

Previews and Overviews (4)

Library of Congress
American Memory
 Browse & Select Collections [\[Prototype Note\]](#)

Collection Overview
 Time: 1880 - 1980

Collection Filters

Topic	Format	Place
Regional	Movie	Northeast Emphasis
Government and Law	Sound	Mexico
Language and Literature	Map	Midwest Emphasis
Fine and Decorative Arts	Photograph	Caribbean
Business and Economics	Manuscript	France
History		Northeast Emphasis
Health and Medicine		West Emphasis
Technology and Applied Sciences		All US
All	All	All

Collection List
 Order Collections by: Title Time Topic Format Place # Collections: 19 # Visible: 7 # Selected: 12

To browse a Collection, click on its title

Checked Collections are selected for Quick and Enhanced searches

- A - F
- Ara Shirinian collection (Fake)
- Coolidge-Consumerism Collection
- Earl Jones collection (Fake)
- Ford Automobile History Collection (Fake)
- G - L**
- Gary Jones - Railroad safety Collection (Fake)
- M - R**
- Marchionni-History of Browning Collection (Fake)
- Pleasant Publishing Company collection (Fake)
- S - Z**

The Coolidge-Consumerism collection assembles a wide array of LC primary-source materials from the 1920s, some 17,000 pages reflecting the prosperity of the Coolidge years, the nation's transition to a mass-consumer economy, and the role of government in this transition. The selective thematic focus and range of formats in this collection represent an effort to assemble topical bodies of material as opposed to reproducing preestablished collection entities.

Previews and Overviews (5)

LIBRARY OF CONGRESS AMERICAN MEMORY COOLIDGE COLLECTION

Search Results for: **automobile** Items 1 through 10 of 25

Next:

5 items are currently selected

Metaphors

Conveying Mental Models (Revisited)

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Design model

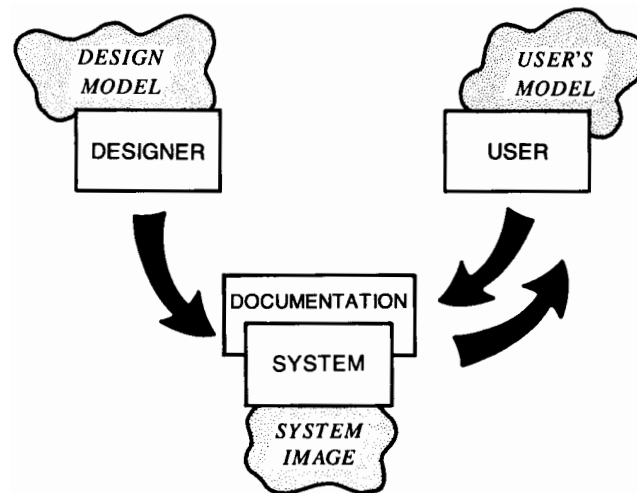
The designer's conceptual model, on which the design of \mathcal{S} is based

User's model

The model that \mathcal{U} develops on the basis of experience with \mathcal{S}

System image

All aspects of \mathcal{S} that \mathcal{U} experiences



Norman, D. (1986). Cognitive engineering. In D. A. Norman & S. W. Draper (Eds.), *User-centered system design* (pp. 31-61). Hillsdale: Erlbaum.

Pros and Cons of Metaphors

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Potential advantages

- Help \mathcal{U} to form a mental model of \mathcal{S}
- Make \mathcal{S} (initially) more attractive to \mathcal{U}

Potential problems

- Create false expectations in \mathcal{U} which cannot (or should not) be fulfilled by \mathcal{S}
- Restrict the functionality of \mathcal{S} by encouraging the designer to imitate familiar objects

Alternative conceptions

- *User illusion* (Alan Kay)
- *Well-thought-out unifying idea* (Ted Nelson)

Questions for Evaluating Metaphors (1)

The following questions should be borne in mind when evaluating an interface metaphor M :

1. What real-world knowledge and experience of \mathcal{U} does M draw upon?
2. Where (if at all) does \mathcal{U} still need to rely on abstract thinking?
3. What visual elements and labels help to convey the metaphor?

Questions for Evaluating Metaphors (2)

4. Are there deviations from M that might be confusing or misleading to \mathcal{U} ?
5. Does \mathcal{S} go beyond M , offering more power and "magic" than the corresponding real-world objects?
 - Or is \mathcal{S} unnecessarily restricted by M ?

Work for Class 9

Reading for Class 9

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Chapter 15 - Out of the Glass Box

15.11 Information and Data Visualisation, pp. 583–590

This section concerns the general approach that was illustrated in the videos discussed in Class 8: Using sophisticated visual representations to present a large amount of information in a comprehensible way

Chapter 4 - Usability Paradigms and Principles

4.3 Principles to Support Usability, pp. 162–175

In Class 9, we will look at these principles in turn, applying them to an example system: the email system of an internet provider

The discussion in the book is a bit abstract in itself, but it is worth looking at before arrow the class, even if it is not read thoroughly

Homework for Class 9

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Answer both of the following questions:

1. To what extent does your system \mathcal{S} exploit the capabilities of human perception that people use in everyday life?

In particular:

 - a. Does \mathcal{S} use 3D representations of visual information in a functional (as opposed to a merely decorative) way?
 - b. Does \mathcal{S} use any modality other than the visual modality in a nontrivial way (e.g., sounds that go beyond mere beeps)?
2. Is \mathcal{S} based in part on some metaphor?
 - If so, consider the questions about metaphors listed on the Slides 159–160 and make a note of the most important points that occur to you
 - If you can detect no metaphor at all underlying the design of \mathcal{S} , think of some metaphor that might make it easier for new users to learn (some aspect of) \mathcal{S}

Consider how the design of \mathcal{S} could be based on this metaphor, taking into account the questions listed in Slides 159–160