Design Issues

Andrej Ferko

Comenius University, Bratislava, ferko@fmph.uniba.sk

www.sccg.sk/~wega

Hot News

- **MIDTERM – November 15, 2007**

- **SOFTIP 2008 – November 22, 2007**

Midterm Sources & Rules

- Glassner, Mitchell, FrontPage Help

- Logo, Design, Color, Navigation

- www.sccg.sk/~WEGA→ PPT

- NO REPEAT!!!

- 15 minutes = 15 points

- select 15 from 30, maybe bonus

Logo Design (Glassner 98)
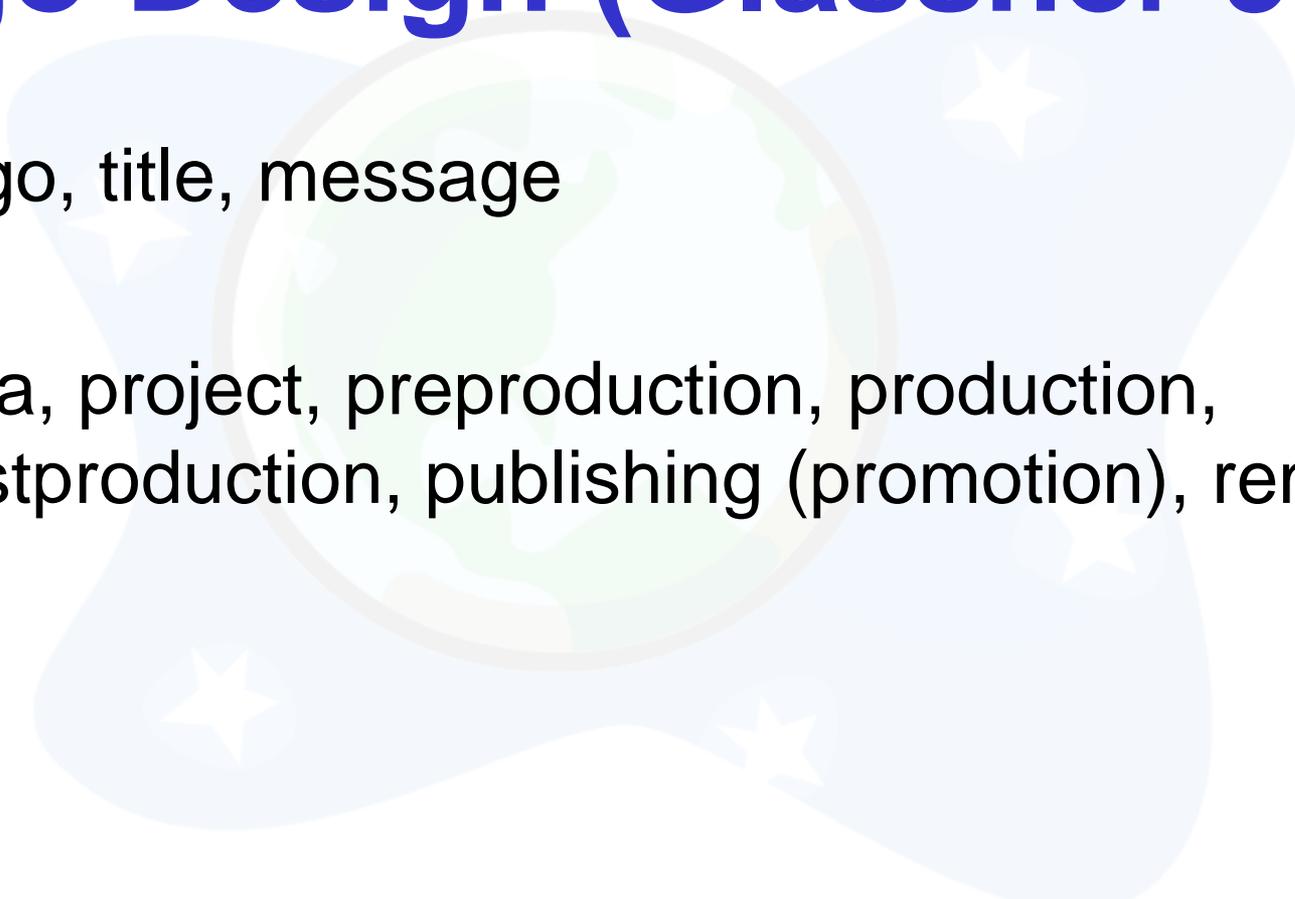
- Logo, title, message

- Idea, project, preproduction, production, postproduction, publishing (promotion), remake

-

Art for Computer Graphicists

- Andrew Glassner, SIGGRAPH 1998 CN
- *http://www.siggraph.org/education/materials/siggraph_courses/S98/30/c30.pdf*

- Logo Design
- Color and Art Techniques
- What we could know more ?

Creating Webpages

- Content
- Context
- Message
- Visualization and Sonification
- Hierarchical Creation of the Picture 2D
- Fun and humor
- USER mystery (population stereotypes, rules of sensing…)

Key Source for Today

- WWW design issues by B. Mitchell, SIGGRAPH 96 Course Notes

- *http://www.siggraph.org/education/materials/graphics_design/mitchell_S96/chapter1.htm*

- **Easy access -> WEGA page, AF page**

WWW Definitions by MS

- ***FrontPage Help says:***

- **World Wide Web**
- The total set of interlinked hypertext documents residing on HTTP servers all over the world. Documents on the World Wide Web are called pages or Web pages, which are written in HTML (Hypertext Markup Language). Web pages are identified by URLs (Uniform Resource Locators) that specify the particular computer and path name by which a file can be accessed, and transmitted from node to node to the end user under HTTP (Hypertext Transfer Protocol). …

- **World Wide Web Consortium**
- (W3C) A consortium of commercial and educational institutions that oversees research and promotes standards in all areas related to the World Wide Web.

Selected Links

- www.w3.org/XML

- www.w3.org/Math

- www.w3.org… VRML, X3D…

- www.w3.org… anything else

- … WWW Consortium

- Easy access from AF page

The GIF News

- Inspired by Mr. Michal Kevicky's note

  - *FrontPage Help says:*

- **GIF**
- (Graphics Interchange Format) A graphics file format commonly used to display indexed-color graphics on the World Wide Web. GIF is a compressed format, designed to minimize file transfer time over standard phone lines. FrontPage can import and export GIF files. See also *interlaced GIF*.

- **graphics file formats**
- FrontPage can import the following graphics file formats: BMP, EPS, GIF, JPEG, PCD, PCX, PNG, RAS, TGA, TIFF, and WMF. When you save your web, FrontPage converts these graphics (if necessary) to GIF, JPEG, or PNG file formats, based on their original color depth.

The GIF News 2

- Inspired by Mr. Michal Kevicky's note

  - *FrontPage Help says:*

- **interlaced GIF**

- A picture in GIF format that is gradually displayed in a Web browser, showing increasingly detailed versions of the picture until the entire file has finished downloading. See also *GIF*.

- **animated GIF**

- A file containing a series of GIF (Graphics Interchange Format) graphics that are displayed in rapid sequence in a Web browser, giving the appearance of a moving picture. See also *GIF*.

The GIF News 3

- Inspired by Mr. Michal Kevicky's note

  - *www.burnallgifs.org says:*

- **GIF patent**
- Compuserve, LZW compression, PNG, Burn All Gifs Initiative

- **Software patents debate**
- Software communism (Morus utopy vs. Matrix dystopy), software capitalism (Florence…), left/right wing, Your opinion?

- BTW Ortega y Gasset on left/right wing… 2 forms of moral paralyse

Design Fundamentals
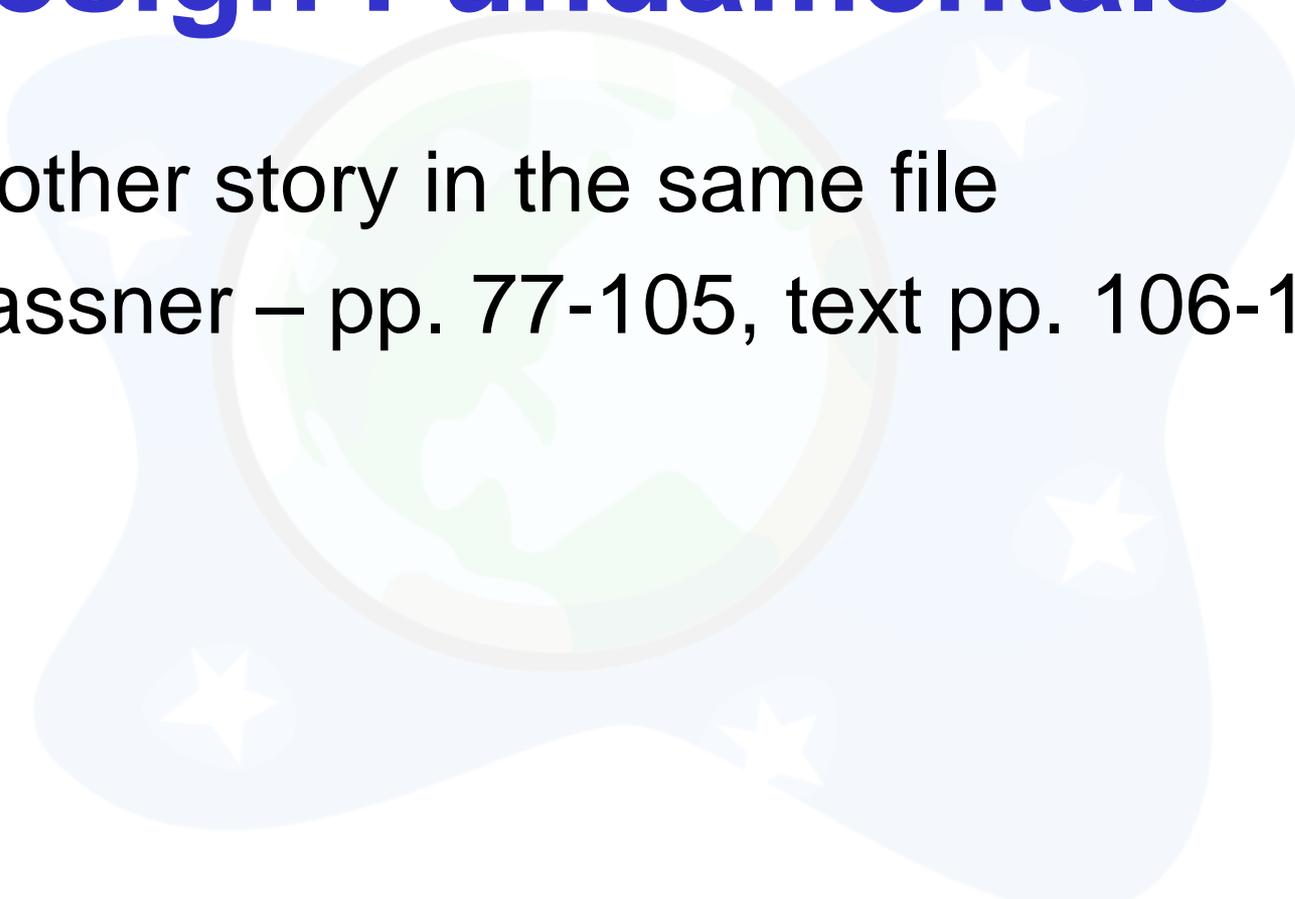
- Another story in the same file
- Glassner – pp. 77-105, text pp. 106-147

Web Page Design Issues

- Mitchell SIGGRAPH98 Course Notes

- Intent and Audience

- Type 1 of Site: information-based

- Type 2 of Site: offer experiences, emotion

General Issues
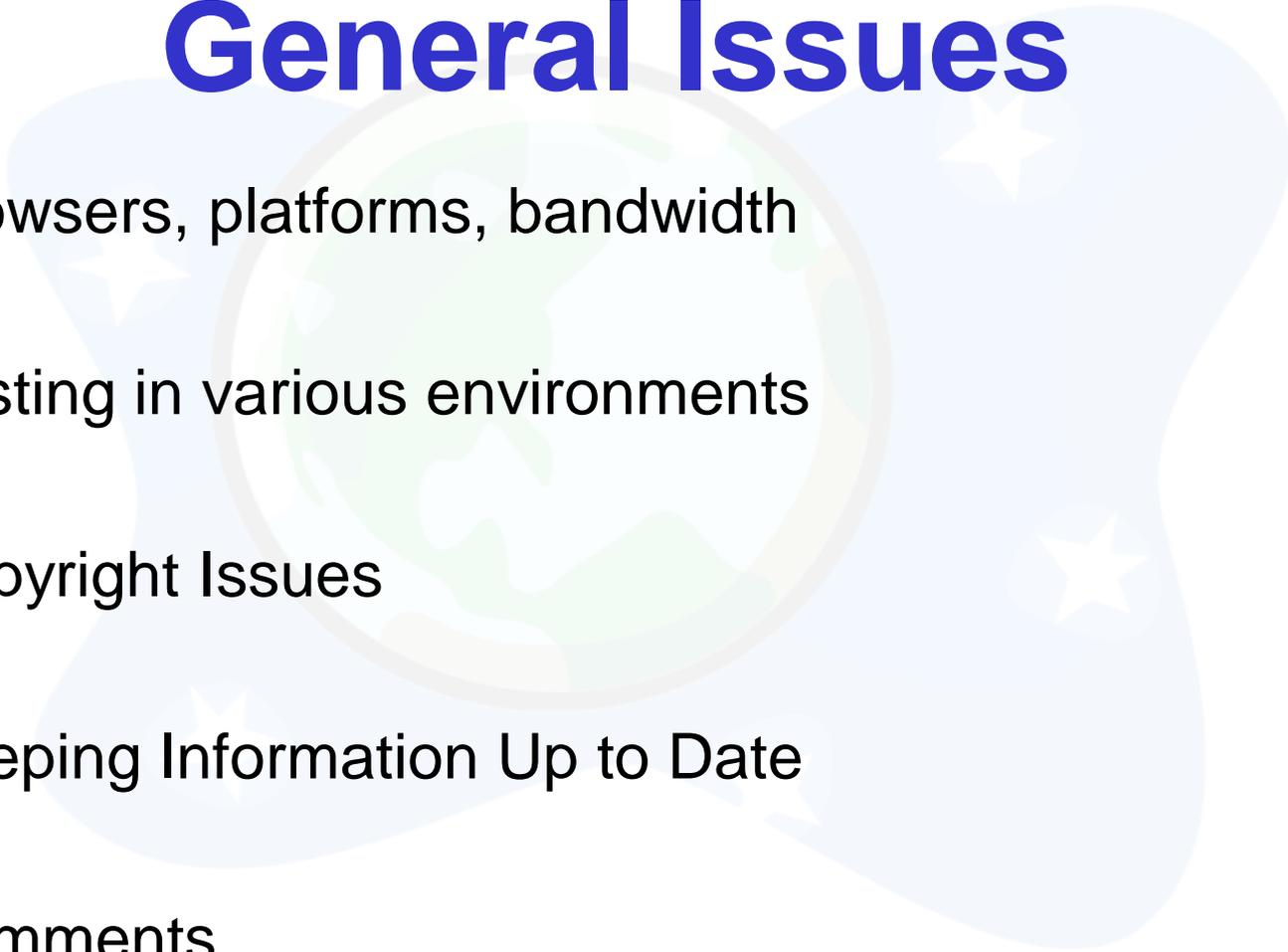
- Browsers, platforms, bandwidth

- Testing in various environments

- Copyright Issues

- Keeping Information Up to Date

- Comments

Principles of Design & Page Layout

- Stucturing Whitespace
- Balance, visual weight: size, value, density
- Symmetrical Balance
- Lack of Balance
- Consistency Across Pages
- Designing for Paper or WWW: safe area
- Using Grids
- Focal Point and Path

3D online

- 3D graphics online
- For example – www.vhce.info

- Games, CPL - www.thecpl.com
- No. 1..3: Counter-Strike 1.6, Quake 3, Internet petition 4 Warcraft III (Defense of the Ancients - DotA)

cyberathlete professional★league®

Virtual Heart of Central Europe

- Awarded by EuroPrix Quality Seal

www.VHCE.info

- 330 kEUR, 150 kEUR from EC, submitted – Pirelli Award, AE
- follow-up 2005-2006 (SK, SI, PL, CZ), submitted,?, 256 kEUR

Color Perception

Checker-shadow illusion:
The squares marked A and B
are the same shade of gray.
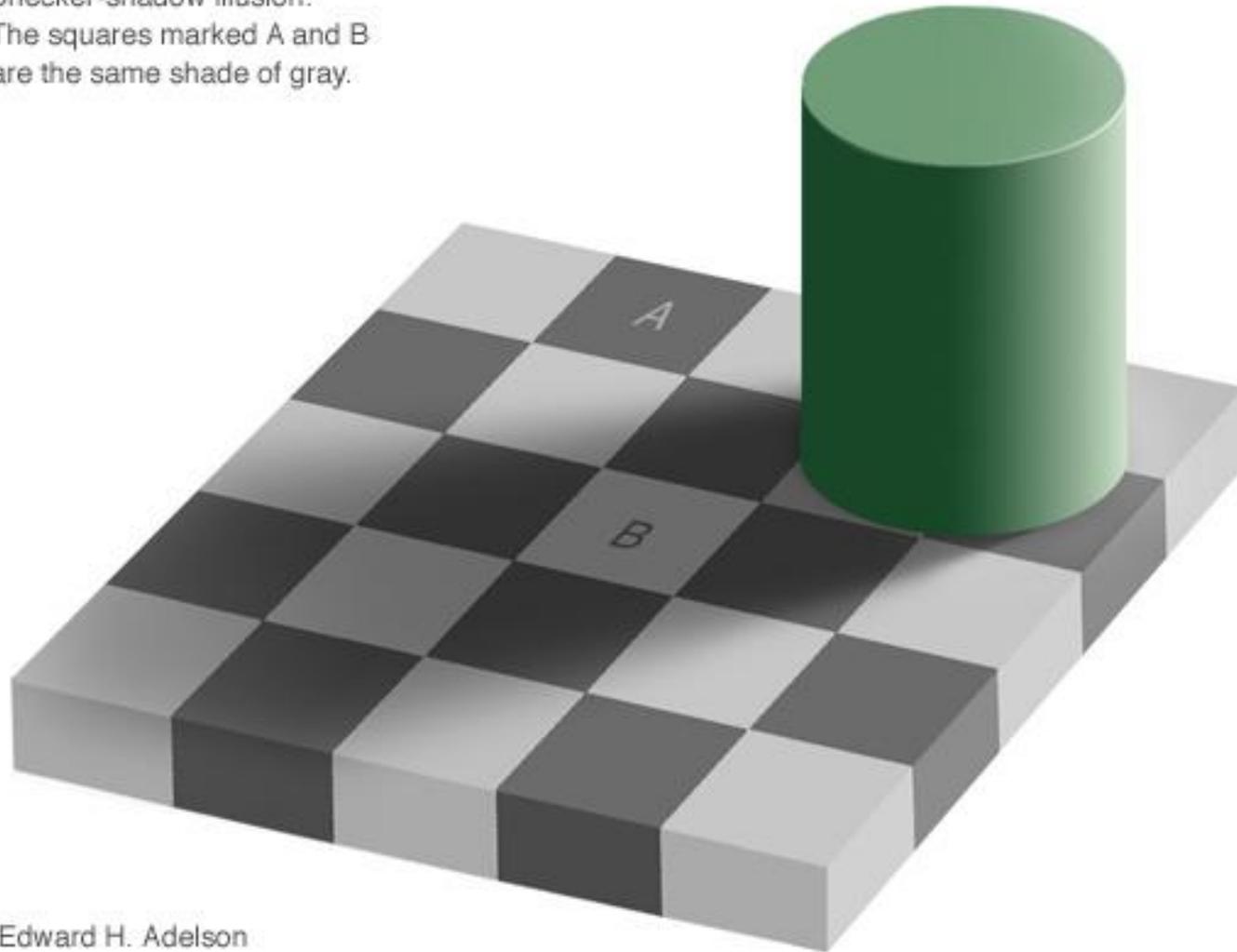
Edward H. Adelson

Color Perception 2 – E. Wenner

Color Perception 3 – E. Wenner

Creative Use of Color in Page Design

- By Bonnie Mitchell
- Color - an important help to support your intent
- Color - Too Much vs. Not Enough

Web Graphics – Design Issues
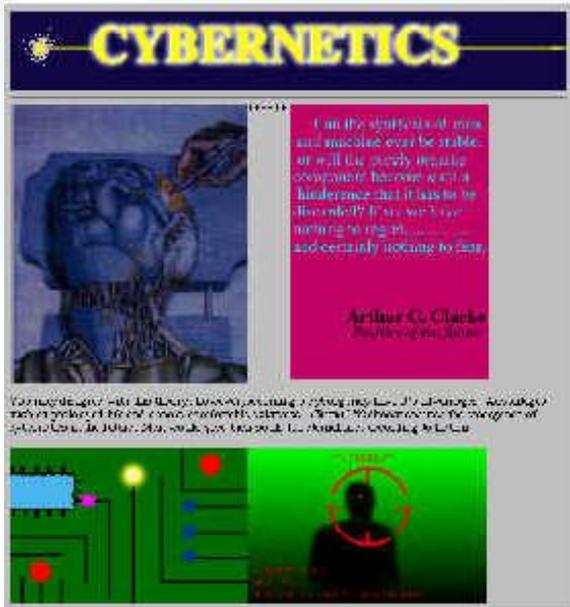
figure 1-21 Colorful graphics used
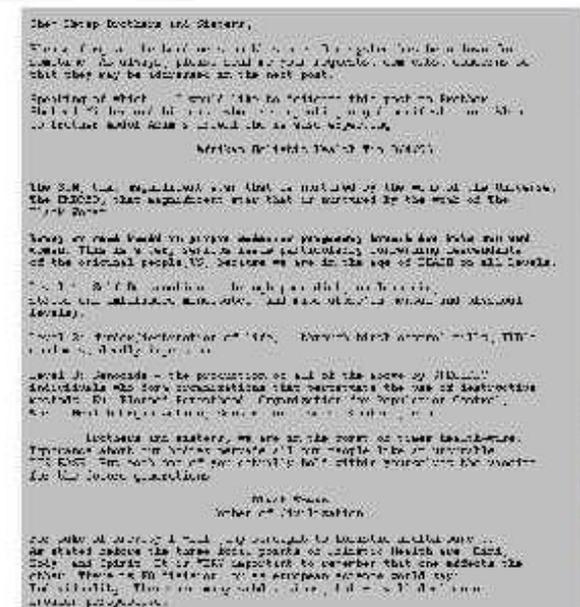
figure 1-22 No color or graphics used

Key Source for Today

- WWW design issues by B. Mitchell, SIGGRAPH 96 Course Notes

- *http://www.siggraph.org/education/materials/graphics_design/mitchell_S96/chapter1.htm*

- **Easy access -> WEGA page, AF page**

Art for Computer Graphicists

- Andrew Glassner, SIGGRAPH 1998 CN
- *http://www.siggraph.org/education/materials/siggraph_courses/S98/30/c30.pdf*

- Logo Design
- Color and Art Techniques
- What we could know more ?

WWW Definitions by MS

- *FrontPage Help says:*

- **World Wide Web**
- The total set of interlinked hypertext documents residing on HTTP servers all over the world. Documents on the World Wide Web are called pages or Web pages, which are written in HTML (Hypertext Markup Language). Web pages are identified by URLs (Uniform Resource Locators) that specify the particular computer and path name by which a file can be accessed, and transmitted from node to node to the end user under HTTP (Hypertext Transfer Protocol). …

- **World Wide Web Consortium**
- (W3C) A consortium of commercial and educational institutions that oversees research and promotes standards in all areas related to the World Wide Web.

WWW Definitions by MS

- *FrontPage Help says:*

- **hypertext**
- Originally, any textual information on a computer containing jumps to other information. The hypertext jumps are called hyperlinks. On the World Wide Web, hypertext is the primary way to navigate between pages and among Web sites. Hypertext on Web pages has been expanded to include hyperlinks from text, from a picture or a graphic, and from image maps.

WWW Definitions by MS
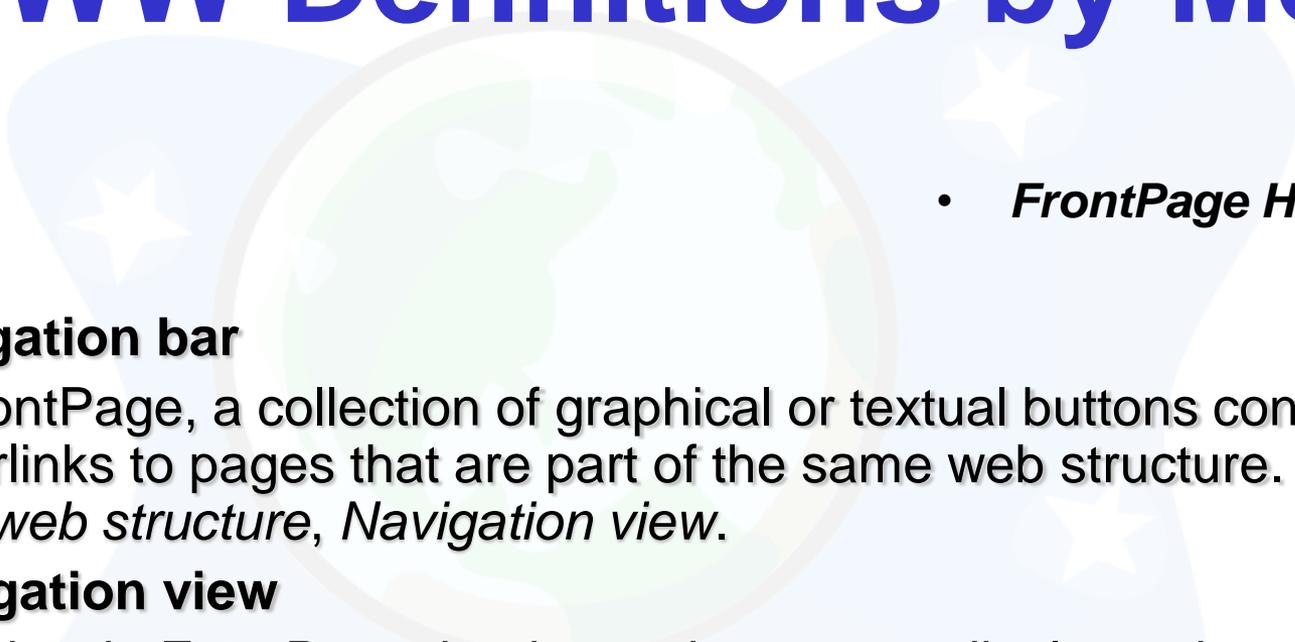
- *FrontPage Help says:*

- **navigation bar**
- In FrontPage, a collection of graphical or textual buttons containing hyperlinks to pages that are part of the same web structure. See also *web structure*, *Navigation view*.
- **Navigation view**
- The view in FrontPage that is used to create, display, print, and change the navigation structure of a web. Navigation view includes a folder-like view, from which you can drag and drop pages into your site structure. Views in FrontPage provide different ways of looking at the information in your web, so that you can effectively manage your site.

WWW Definitions by MS

- *FrontPage Help says:*

- **web structure**
- The set of relationships among the pages in a FrontPage-based web as defined in Navigation view. A well-defined structure gives a site visitor a sense of position in a web. When a navigation bar is inserted on a page that is part of a web's structure, FrontPage automatically creates hyperlinks to the pages that are below that page in the structure (child level), above that page in the structure (parent level) and equal to that page in the structure (same level). See also *navigation bar*, *Navigation view*.

-

WWW Definitions by MS

- *FrontPage Help says:*

- **HTTP**
- (Hypertext Transfer Protocol) The Internet protocol that enables Web browsers to retrieve information from World Wide Web servers.
- **hyperlink**
- A pointer from text, from a picture or a graphic, or from an image map to a page or file on the World Wide Web. On the World Wide Web, hyperlinks are the primary way to navigate between pages and among Web sites. Also called link.
- **navigation bar**
- In FrontPage, a collection of graphical or textual buttons containing hyperlinks to pages that are part of the same web structure. See also *web structure*, *Navigation view*.
- **Navigation view**
- The view in FrontPage that is used to create, display, print, and

Web Page Design Issues

- ● **Mitchell SIGGRAPH98 Course Notes**

- ● Intent and Audience

- ● Type 1 of Site: information-based

- ● Type 2 of Site: offer experiences, emotion

Creative Use of Color in Page Design

- By Bonnie Mitchell
- Color - an important help to support your intent
- Color - Too Much vs. Not Enough

Web Graphics – Design Issues
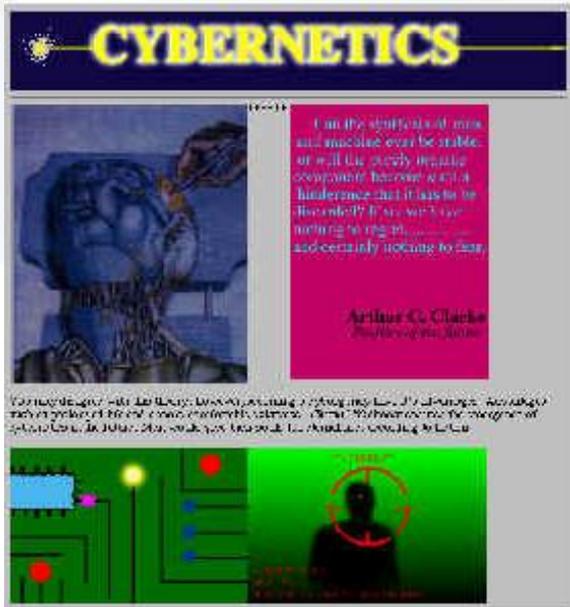
figure 1-21 Colorful graphics used
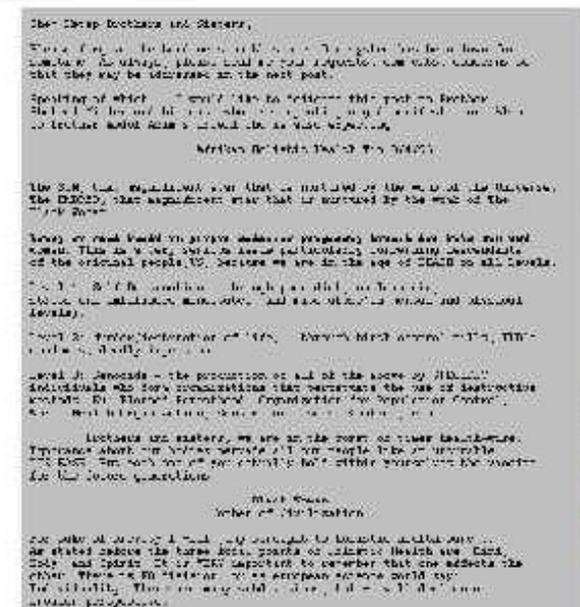
figure 1-22 No color or graphics used

Use of Color 2

- By Bonnie Mitchell

- Limited Palette - Selected color scheme

- Complex Palette

figure 1-24 Limited use of color to create color unity on the page

figure 1-25 Page using losts of different colors but dominant colors help create color unity

Use of Color 3

- By Bonnie Mitchell

- Color Contrast (Background Images)
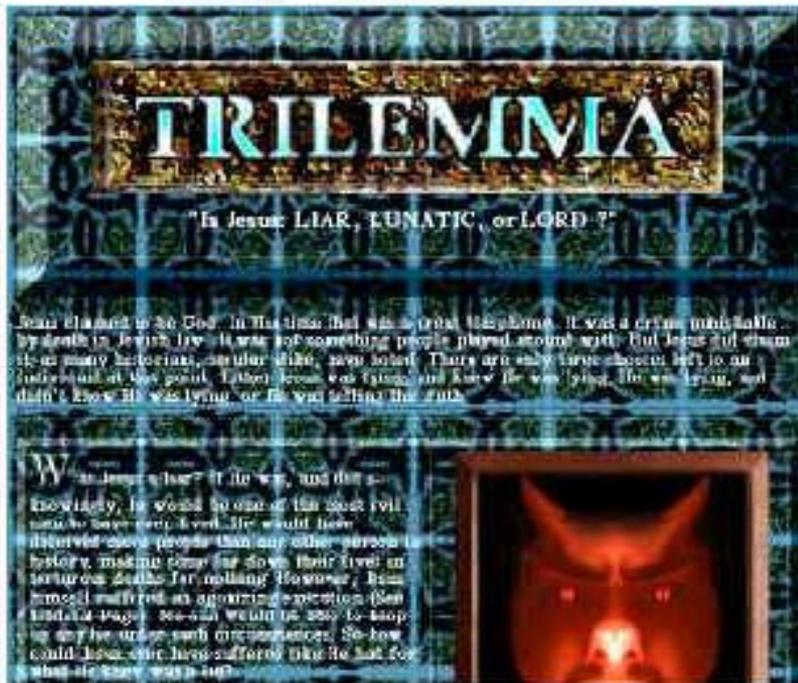
figure 1-26
Readability of
text affected by
the pattern of
the background

figure 1-27
Readability of
text affected by
lack of contrast

fig.1-26

fig.1-27

Use of Color 3

- By Bonnie Mitchell

- Variation: Newspapers ... varying the font size
- Graphics ... distinguish important images from supplementary ones

- Page Hierarchy
- "Back to the Home Page" error

Come on in and raid the fridge.

figure 1-6 Raid the Fridge, an interactive experience-based site

Creating Effective Graphics

- By Bonnie Mitchell

- Aesthetics and Graphics - a number of tricks

- A Critical Eye - recognize shortcomings

- Technical Art Skills – draw & study

- Sharing Graphic Qualities (Devising a Formula)

Creating Effective Graphics 2

- By Bonnie Mitchell

- Formulas (Shadows) - an illusion of depth

- Formulas (Sizes) - very important to agree on a uniform size

- Formulas (Alignment) – look chaotic if the graphics are not aligned creatively, use grid => structure

- Simulate other media (Devising a Formula)

Creating Effective Graphics 3

- By Bonnie Mitchell

figure 1-14 Orange Source, an asymmetrically balanced page

Web Graphics – Design Issues

figure 1-42 Creating the illusion of 3D through use of shadows and overlapping

Creating Effective Graphics 4

- List of tricks by Bonnie Mitchell

- Linear perspective/Foreshortening (converging lines - vanishing point)
- Overlapping of shapes (shape on top appears closer)
- Atmospheric perspective (less saturated color and detail in the distance)
- Size relationship (large objects appear closer)
- Modeling/Shading/Gradients (adding virtual 3d form to objects)
- Shadows/Directional lighting (emphasize the distance of object to surface)
- Placement in the picture plane (higher in picture is further away)
- Heavy lines (appear to come forward)
- Colors (bright/warm colors come forward -cool/dark colors recede)

Creating Effective Graphics 5

- By Bonnie Mitchell

- Filters and Simulation – misuse & overuse

- Defying the frame – break out of the rectilinear frame

- Animating Graphics - slow download
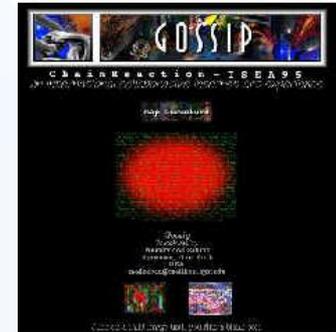
figure 1-17 Consistency from page to page – note that the layout has changed from the previous example but the header unites the two pages

figure 1-18 Consistency from page to page – note that the layout is similar to the previous example

Web Graphics – Design Issues

Color in Graphics

- By Bonnie Mitchell

- Color and Emotive Effects

- Color and Symbolism

- Color (Warm and Cold)

figure 1-21 Colorful graphics used

figure 1-22 No color or graphics used

- Technical Issues Associated with Color: JPG, GIF, SVG, PNG, SWF...

Effective Graphics

- By Bonnie Mitchell

- Consider the whole WWW site – Gestalt

- No graphics?

- Graphics can be an effective way of conveying your concept

Working with Text

- By Bonnie Mitchell

- Another time

Designing Interaction & Exploration

- By Bonnie Mitchell

- Sublevels and Mapping the Structure

figure 3-1 AMS-Latex, diagram of the structure

Designing Interaction & Exploration

- By Bonnie Mitchell

- Hierarchy charts or maps to assist with the navigation
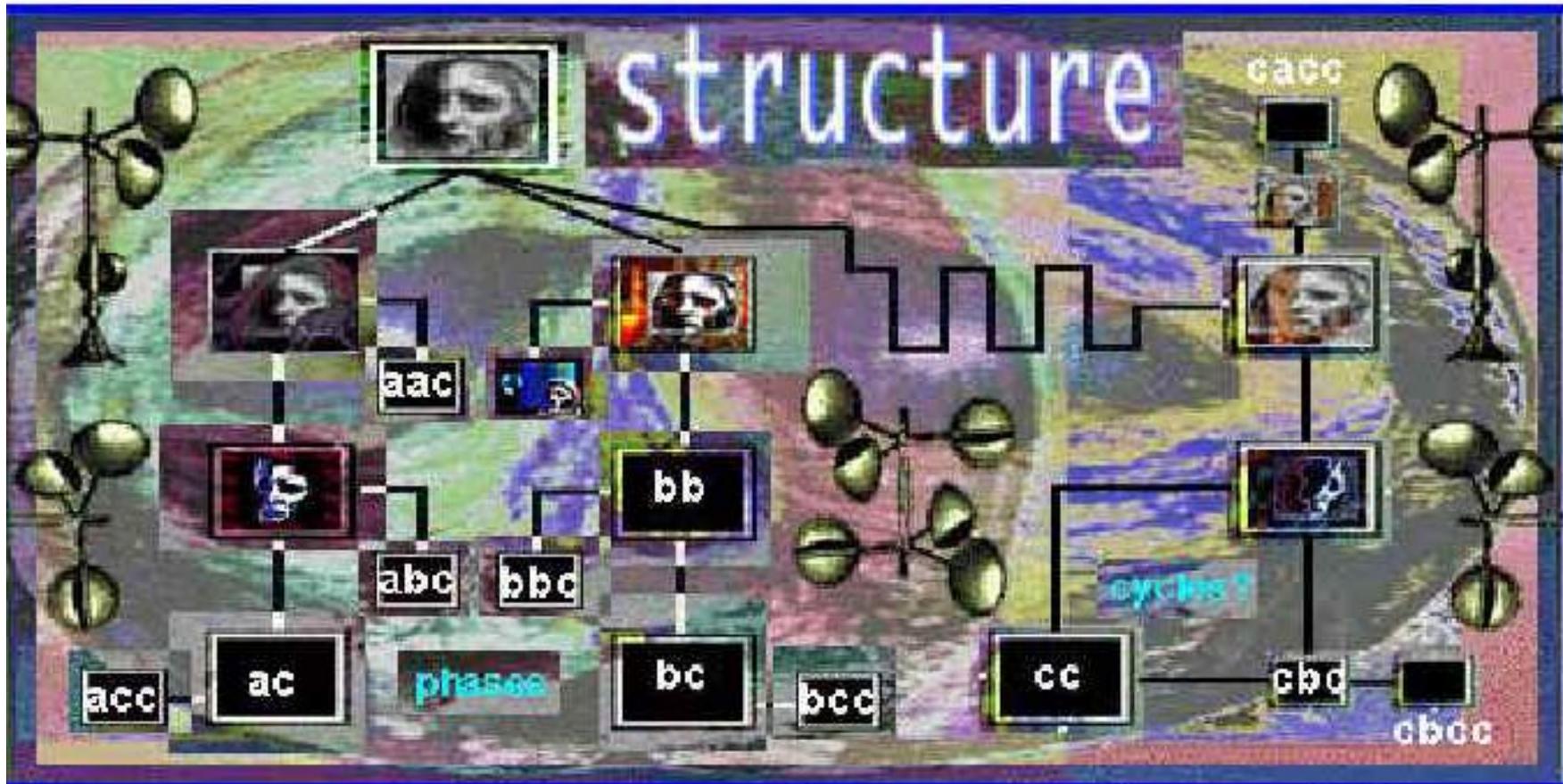
figure 3-2 Diversive Paths, copasetic facial structure map

Designing Interaction & Exploration

- By Bonnie Mitchell

- Hierarchy charts or maps to assist with the navigation

figure 3-3 ChainReaction structure map
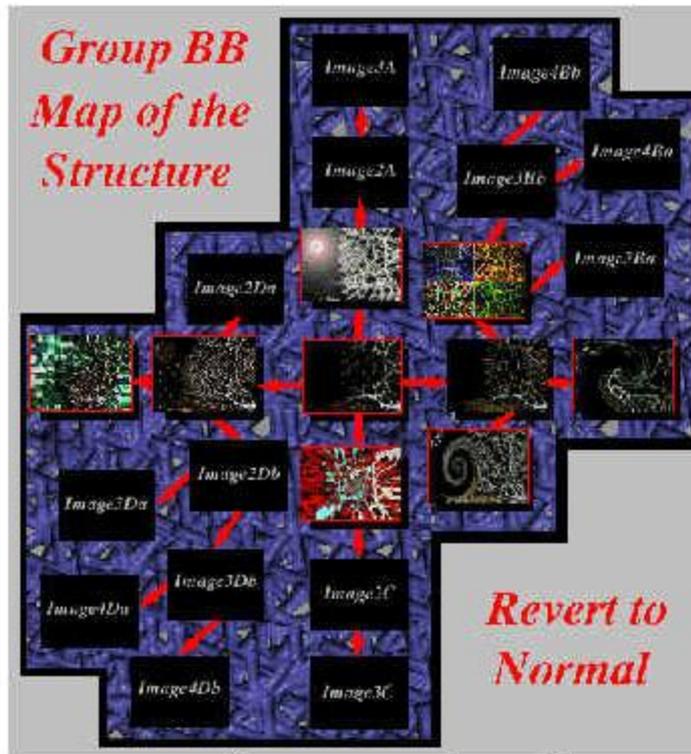
figure 3-4 Diversive Paths, revert to normal map of the structure

figure 3-5 Note that there are Anchors (links) to all sections of the resume

Designing Interaction & Exploration

- By Bonnie Mitchell

- Structuring Navigation (Anchors)
- Intuitive vs. Exploratory:
  - Links should be easy to identify (this includes graphics)
  - Graphic icons should use commonly understood metaphors
  - There should be consistency in the placement of key navigational devices
  - Use color to indicate important navigation elements
  - Specify what the link connects to (label your icons)

- Exploratory Interfaces

Complex or Confusing Interfaces

- By Bonnie Mitchell

- Too much information
- Not enough information
- Too many links
- Not enough links

Navigational Graphics

- By Bonnie Mitchell

- Icons - typically small graphics that represent
- a concept,
- place,
- or thing

figure 3-6 Icons that resemble the characters in a newspaper cartoon

Larry the Egg   BoyScout Egg   Cherry   Insane Carrot

Kinky Coconut   Paul the Pepper

figure 3-7 Icons that are intuitive based on the content of the site

Crayola   Crayola

figure 3-8 Icons that need text to clarify the meaning

ChainReaction   Diversive Paths   Digital Journeys   ChainArt Project
Sum/Fall 1995   Spring 1995   Spring 1994   Spring 1993

Navigational Graphics 2

- Imagemaps
- Clickable
- Specific picture areas

- By Bonnie Mitchell

figure 3-10 Imagemap of the ChainReaction starter images

figure 3-11 Imagemap used as a navigation bar

figure 3-12 Imagemap with text used for navigation in ChainReaction

Navigational Graphics 3

- By Bonnie Mitchell

- Linked Graphics
- Beveled edge or a short text caption near it

figure 3-13
Clickable
images with
beveled edges

Events Calendar

On-Line Gallery

Interactive Dialogue

Internet Art Guide

Educational Programs

Artist's Book Shelf

Navigational Graphics 4

- By Bonnie Mitchell

- Placement of Navigational Graphics

- - navigational devices should not overpower the content of the page

- Most important ones should be placed to the top of the page where they could be easily found

- Don't Forget the User

- E.g. on every page, the "go to next page„ should not be placed randomly

Bad Design Examples

- www.baddesigns.org

- www.sigchi.org

Usability Guru – Useit
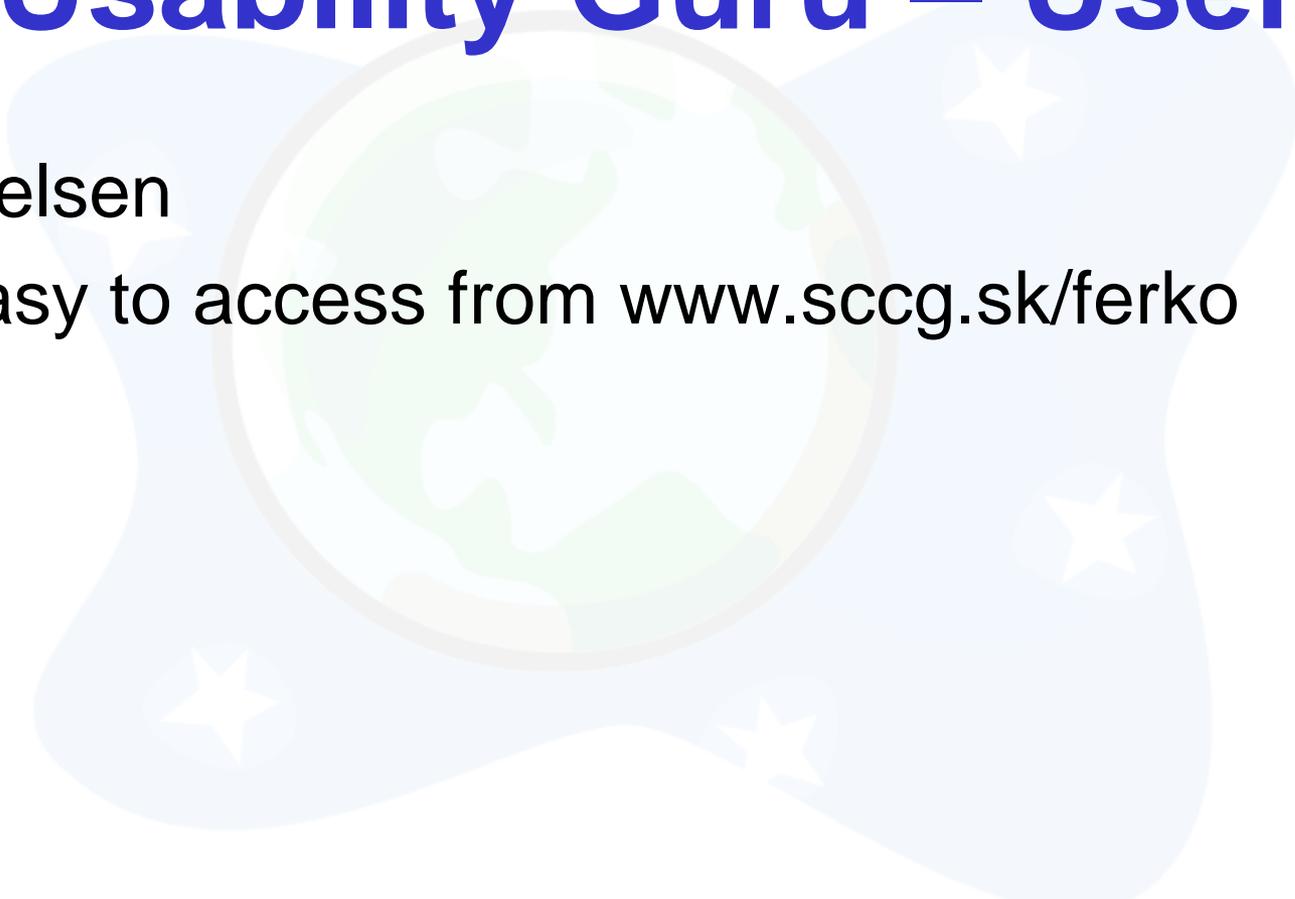
- Nielsen

- Easy to access from www.sccg.sk/ferko

Internet before Computers

- IDEA,
- METHODOLOGY,
- TECHNOLOGY (Hyper-G example)
- _____

- Computer in 19th Century: Ch. Babbage
- Sofware Idea: Ada Lovelace
- Internet Idea - smoke and mirror signals, bird postman

Communication Interfaces

- Author - Application Programmer - GS Author - User

WWW ⟷ [**APP**] ⟷ [**GS**] ⟷ [**WS**]

Eg. OpenGL   Workstation
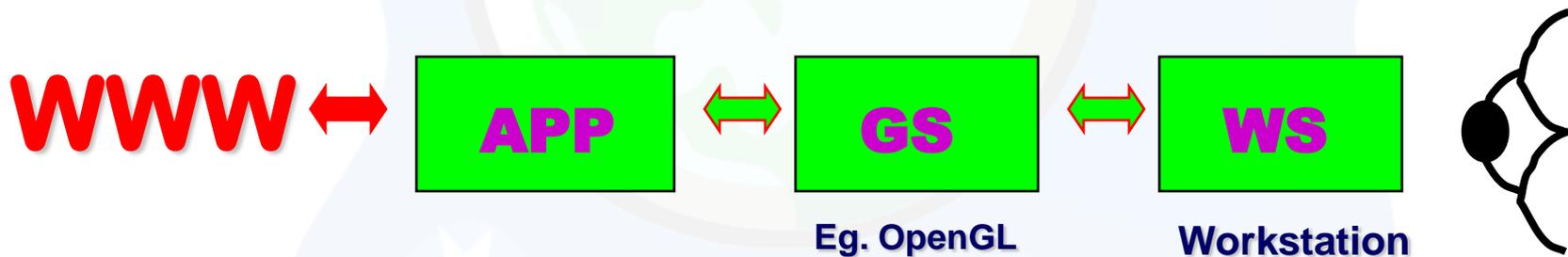
- What is interesting for users?

Creating Webpages

- Content
- Context
- Message
- Visualization and Sonification
- Hierarchical Creation of the Picture 2D
- Fun and humor
- USER mystery (population stereotypes, rules of sensing…)

Web Page Life Cycle
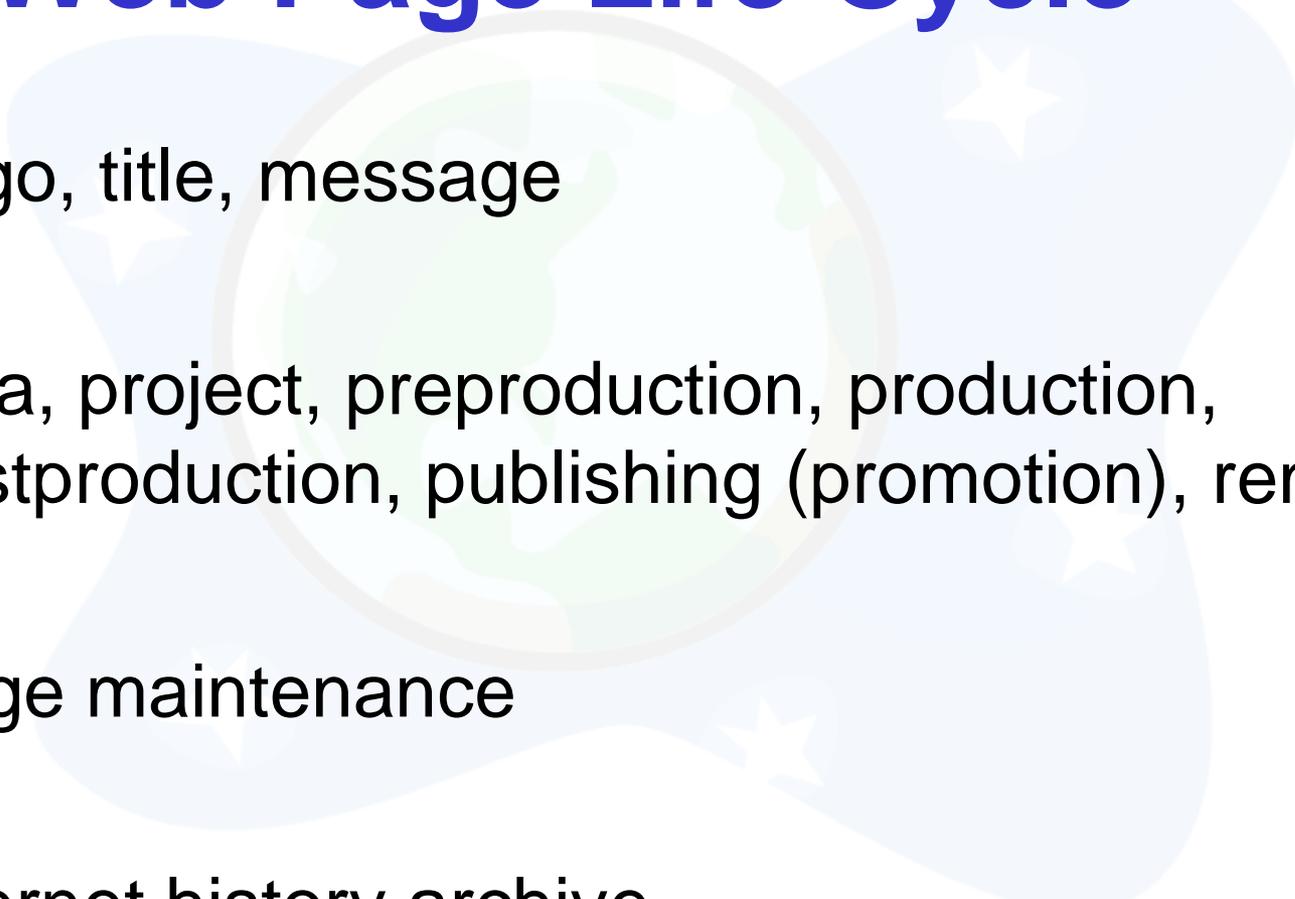
- Logo, title, message

- Idea, project, preproduction, production, postproduction, publishing (promotion), remake

- Page maintenance

- Internet history archive

Web Page Perception
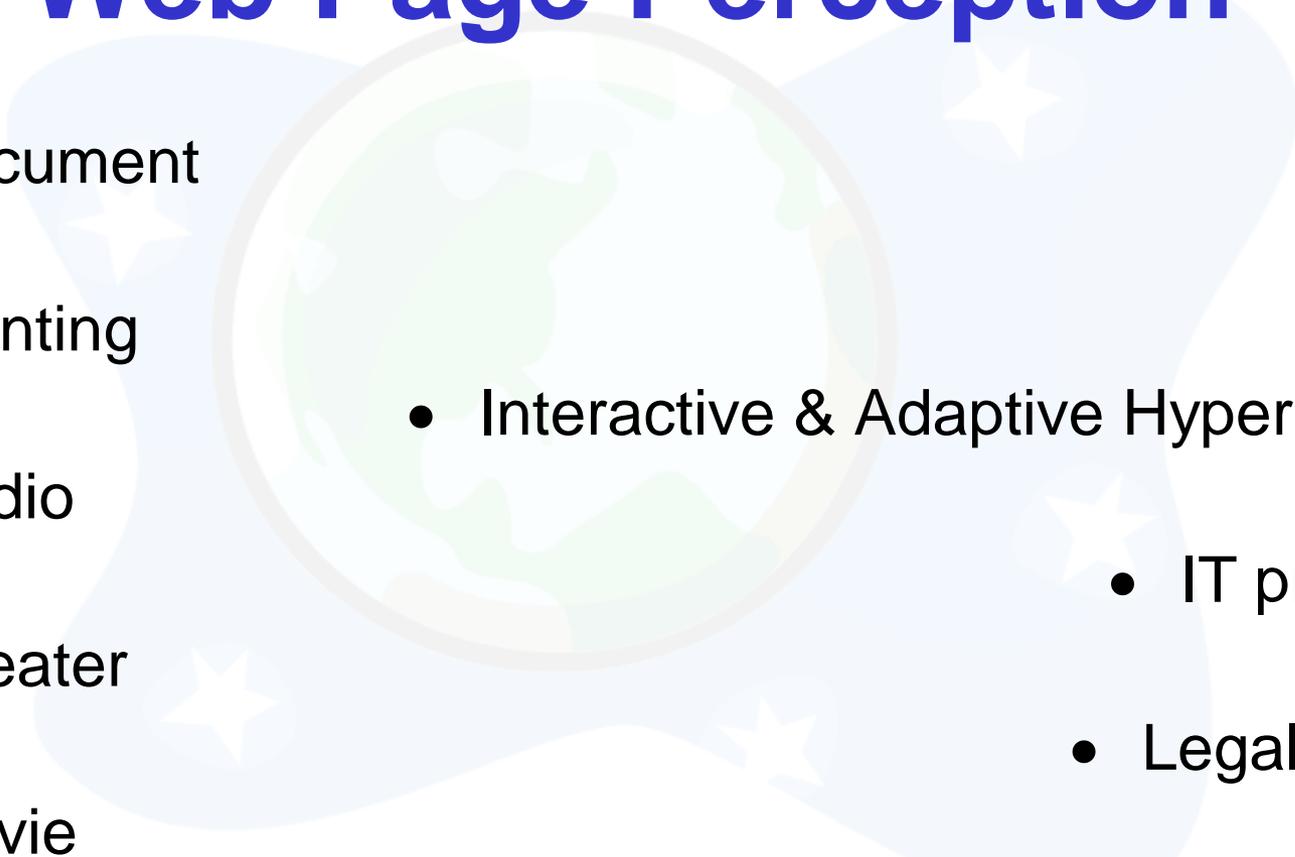
- Document

- Painting

- Radio

- Theater

- Movie

- Human (audio)visual system

- VR

- Interactive & Adaptive Hypermedia

- IT product

- Legal entity

- Future avatar

Communication - Semiotics

- Original <---> Recipient
- Original … Two recipients
- Incomplete original
- Two parts of original, two recipients
- No original => Model, representation
- No model => Darstellung, Ostension
- Knowledge direct or indirect
- Metacommunication, semiotics

Conclusions
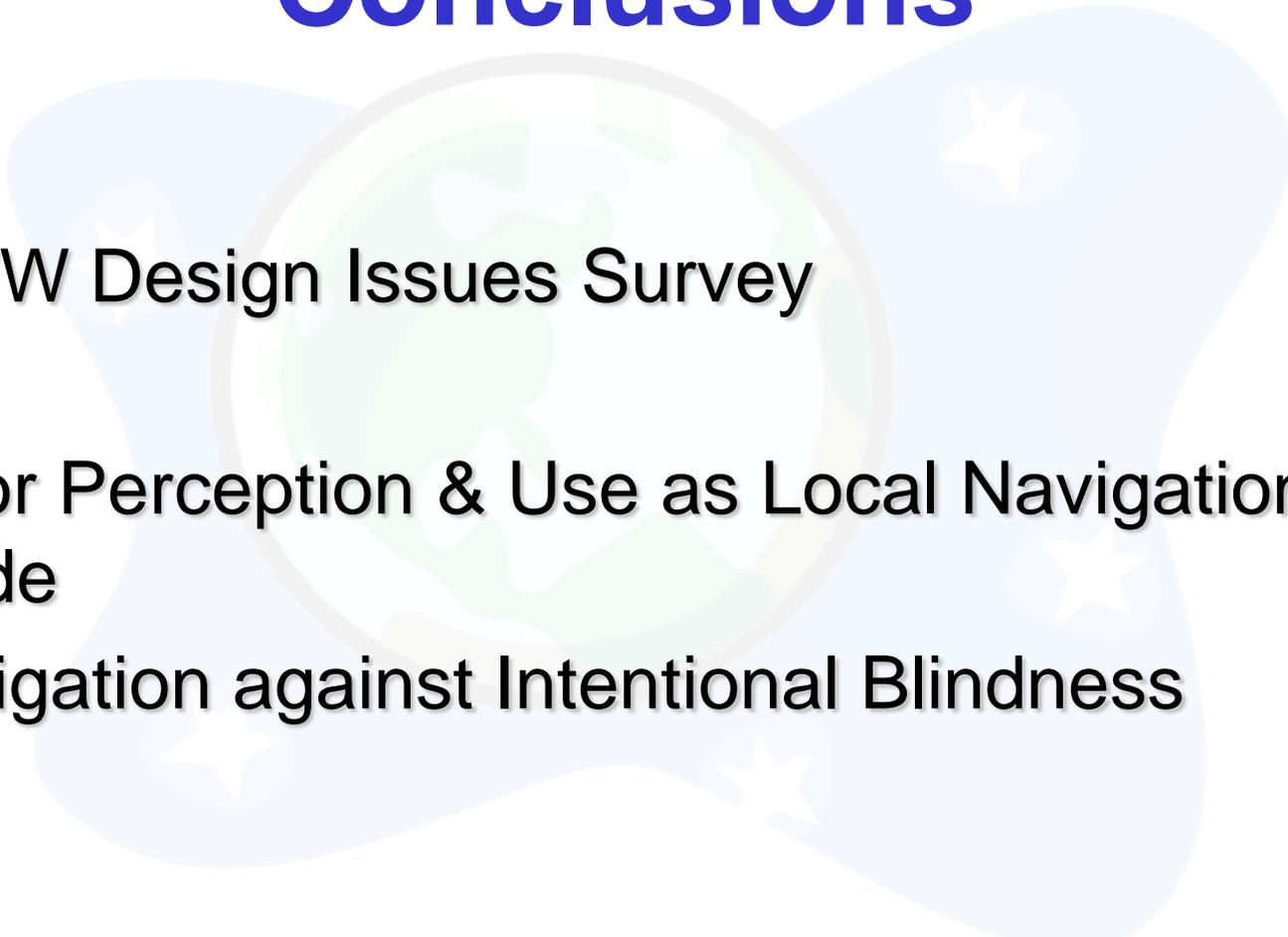
- WWW Design Issues Survey

- Color Perception & Use as Local Navigation Inside
- Navigation against Intentional Blindness

Thank You
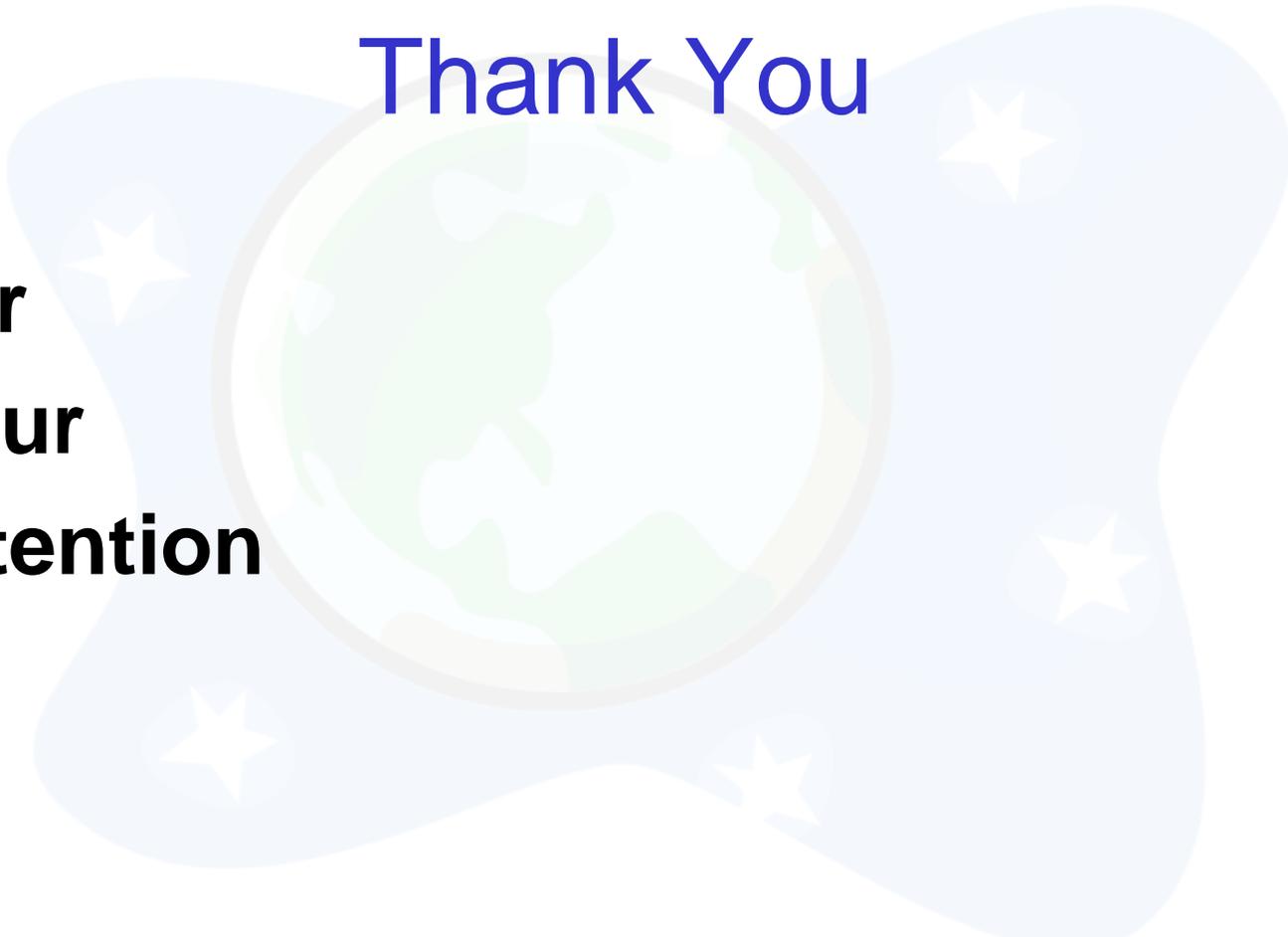
- **For**
- **Your**
- **Attention**
-

Design Issues

Andrej Ferko

Comenius University, Bratislava, ferko@fmph.uniba.sk

www.sccg.sk/~wega