Metaphor and the World Wide Web

Presented at the University of Twente

by David K. Farkas, Professor

University of Washington, Seattle (USA)

farkas@u.washington.edu

11 May 1999

Some professional context

Department of Technical Communication (TC)

- Technical communication is equivalent to “information design.”
- TC is part of the University of Washington College of Engineering.
- TC graduates create corporate Websites, online help systems, and print manuals. They conduct usability tests, design Human-Computer Interfaces, etc.

Some professional context

Today's topic (very new work) belongs to an area of study I would call hypertext theory.

This topic also has connections to rhetoric, interface design, and graphic design.

This is an applied and empirically testable line of research.

The main ideas of this talk

The metaphor of **navigation**, while central to multimedia, is not adequate for such newer capabilities as frames, pop-up windows, animation, and sound.

We need to recognize additional “foundational” metaphors—**summoning**, **manipulating**, and **panning**.

We need to learn more about how metaphors are related and how they interact in our designs.

We need to augment the visual design vocabulary of multimedia designers.

Defining “multimedia”

Characterized by

- Interactivity (user’s ability to control content)
- Multiple content types (text, static graphics, animation, video, and audio)

Delivered by

- Remote network (World Wide Web)
- Local devices (CD-ROM, DVD)

“Hypertext” refers to multimedia with only static content or to the interactive aspects of multimedia.

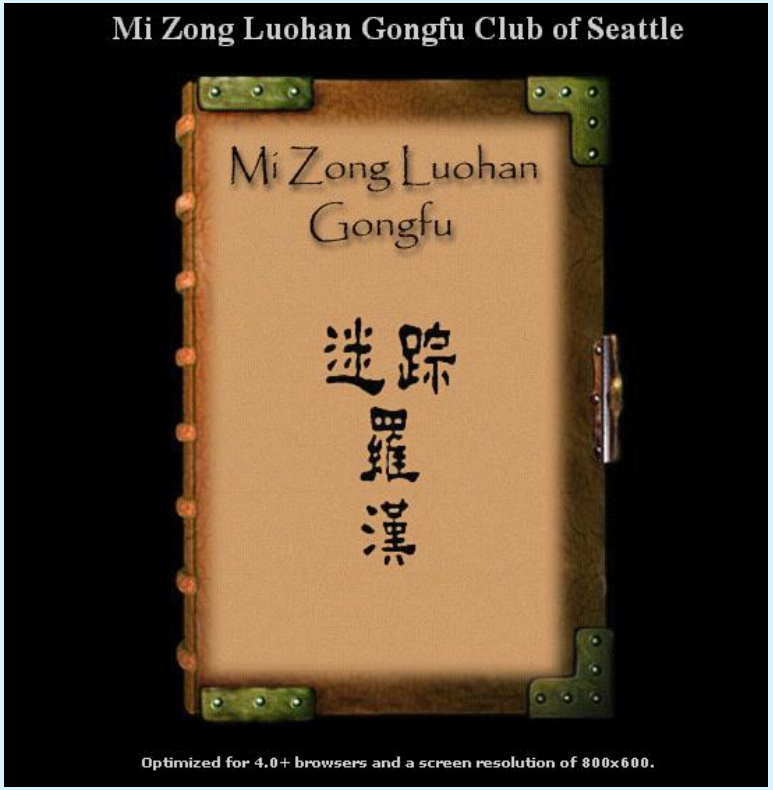
About metaphor

- Definition: A likeness or similarity. Something that makes you think of something else.

- There are innumerable metaphors because there is no limit to the human imagination.

- Foundational metaphors derive directly from movement and actions in the physical world. They connect the physical world and the digital world (follows Lakoff and Johnson).

Task vs. non-task metaphors



The navigation metaphor: The user's perspective

The navigation/travel metaphor is central to our experience as users of hypertext and multimedia:

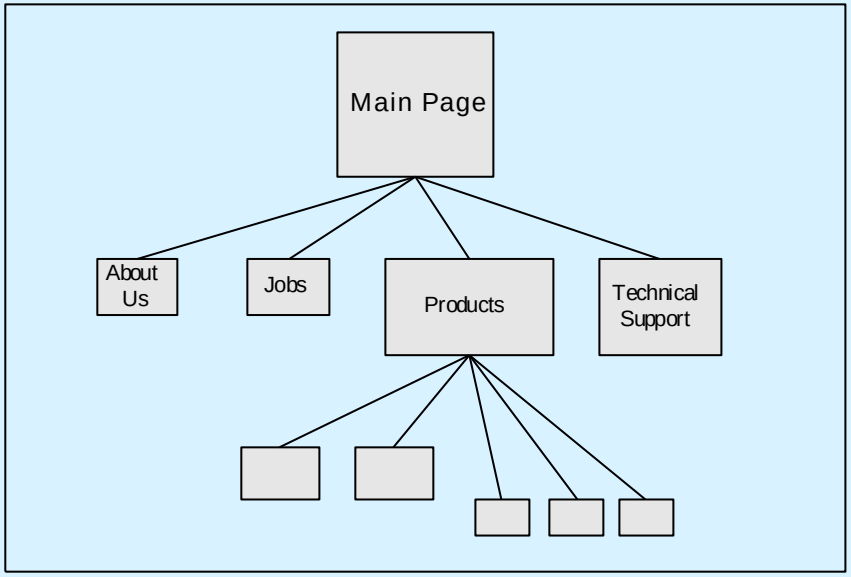
- We envision a succession of screens spatially, navigating from node to node along pathways (links). This is information space or "cyberspace."

- We use our wayfinding (navigation) skills from the physical world.

The strength and nature of the travel metaphor varies and can be hard to determine.

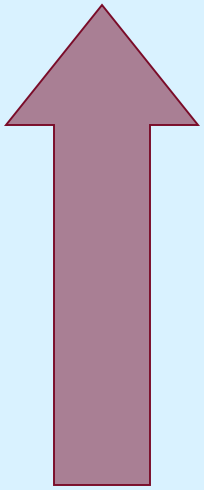
The navigation metaphor: The designer's perspective

The navigation/travel metaphor underlies the use of structure diagrams (node-link diagrams) in the multimedia design process.



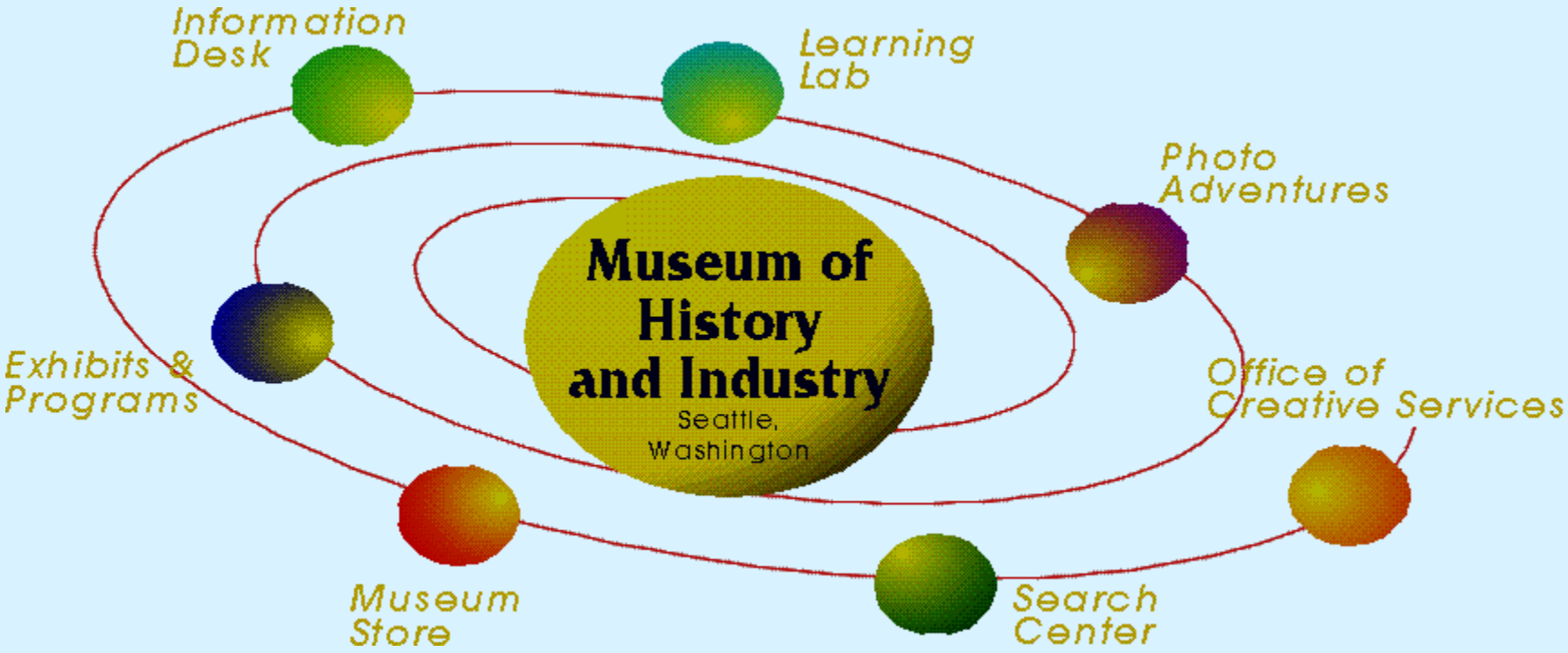
“Levels” of metaphor: Navigation/Travel

The foundational metaphor of travel is the basis for more specific travel-based metaphors.

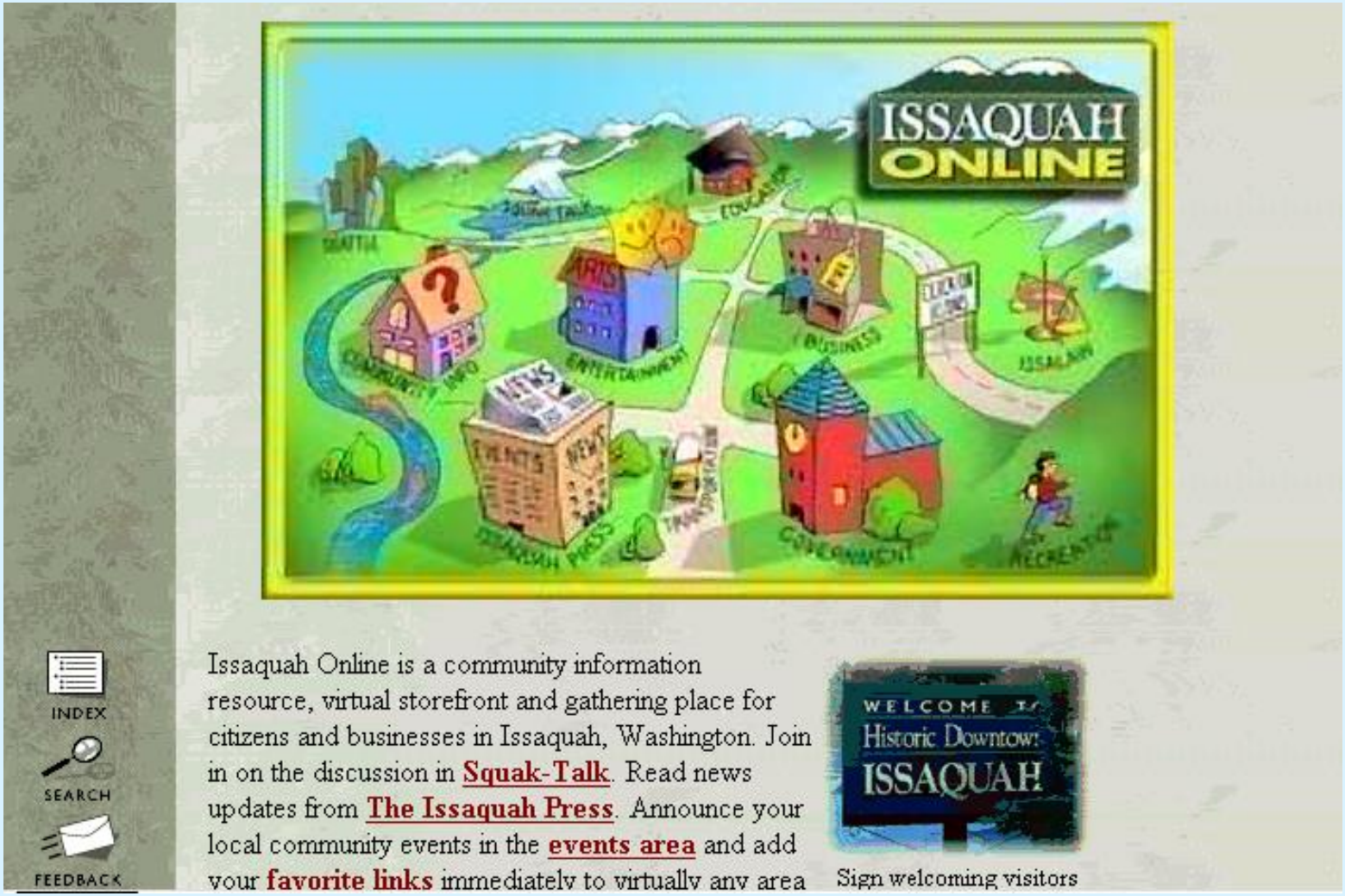


- Specific metaphors: Walking through a room or a forest, driving a car, piloting a space ship
- Foundational metaphor: Replacing one context with another

Navigation/Travel:
A galactic metaphor

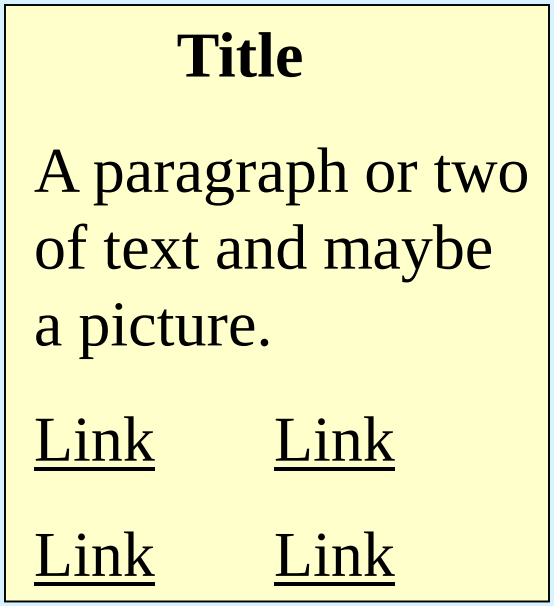


Navigation/Travel:
An automobile travel metaphor



“Classic” hypertext theory

- Evolved during the hypertext era.
- Assumes fairly basic system/interface behaviors.
- Fits easily with the metaphor of travel.



More capabilities make older conceptions inadequate

We don’t always travel from node to node: Consider pop-ups, downloads, frames, sound, etc.

The summoning metaphor

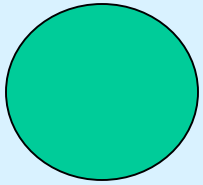
Another foundational metaphor in multimedia is summoning, bringing something new into the present context.

Summoning has a strong basis in the actual operation of the Web and computing itself.

Most important: Summoning

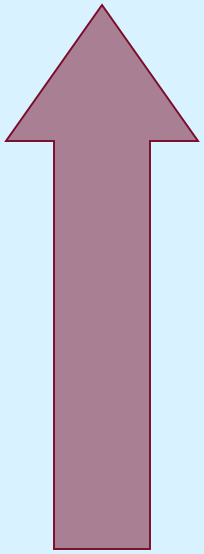
Link

Most important: Summoning



“Levels” of metaphors: Summoning

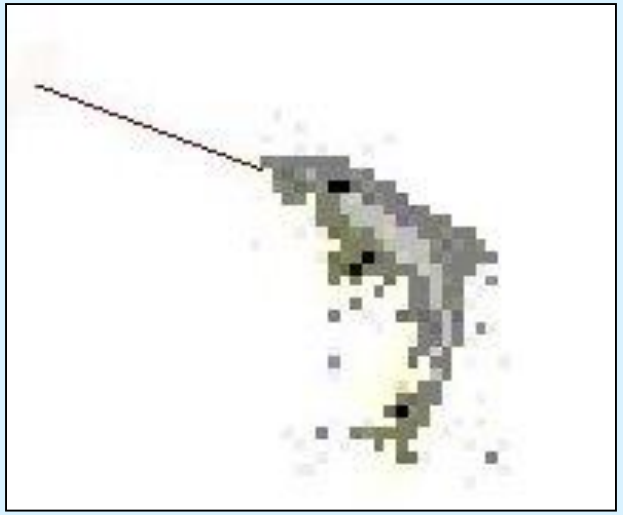
The foundational metaphor of summoning is the basis of more specific summoning-based metaphors.



- Specific metaphors: Fishing, calling for assistance, magical invocation (including troubled forms of summoning)

- Foundational metaphor: Introducing new content to current context

Summoning:
The metaphors of magical invocation and fishing



How metaphor affects design: The instance of pop-up windows

Pop-up windows do not change the overall context and are likely to be perceived as summoning.

How metaphor affects design: The instance of pop-up windows

The user has brought something new into the present context. There is no hint of travel.

How metaphor affects design: The instance of frames

Web pages with frames can be perceived as travelling or summoning depending on various design decisions.

How metaphor affects design: The instance of frames

The size of the area that is replaced helps determine whether the experience is like travel or like summoning.

How metaphor affects design: The instance of frames

Other design ideas, such as this dashboard/console, will very strongly influence the user's experience.

The manipulation metaphor

Another foundational metaphor in multimedia is manipulation. Manipulation entails re-creating the tactile sensation of using one's fingers and hands.

Manipulation is based on but goes beyond our normal "direct manipulation" of a GUI interface (Ben Shneiderman).

Manipulation is often used in conjunction with other metaphors.

Other metaphors: Manipulation

Other metaphors: Manipulation

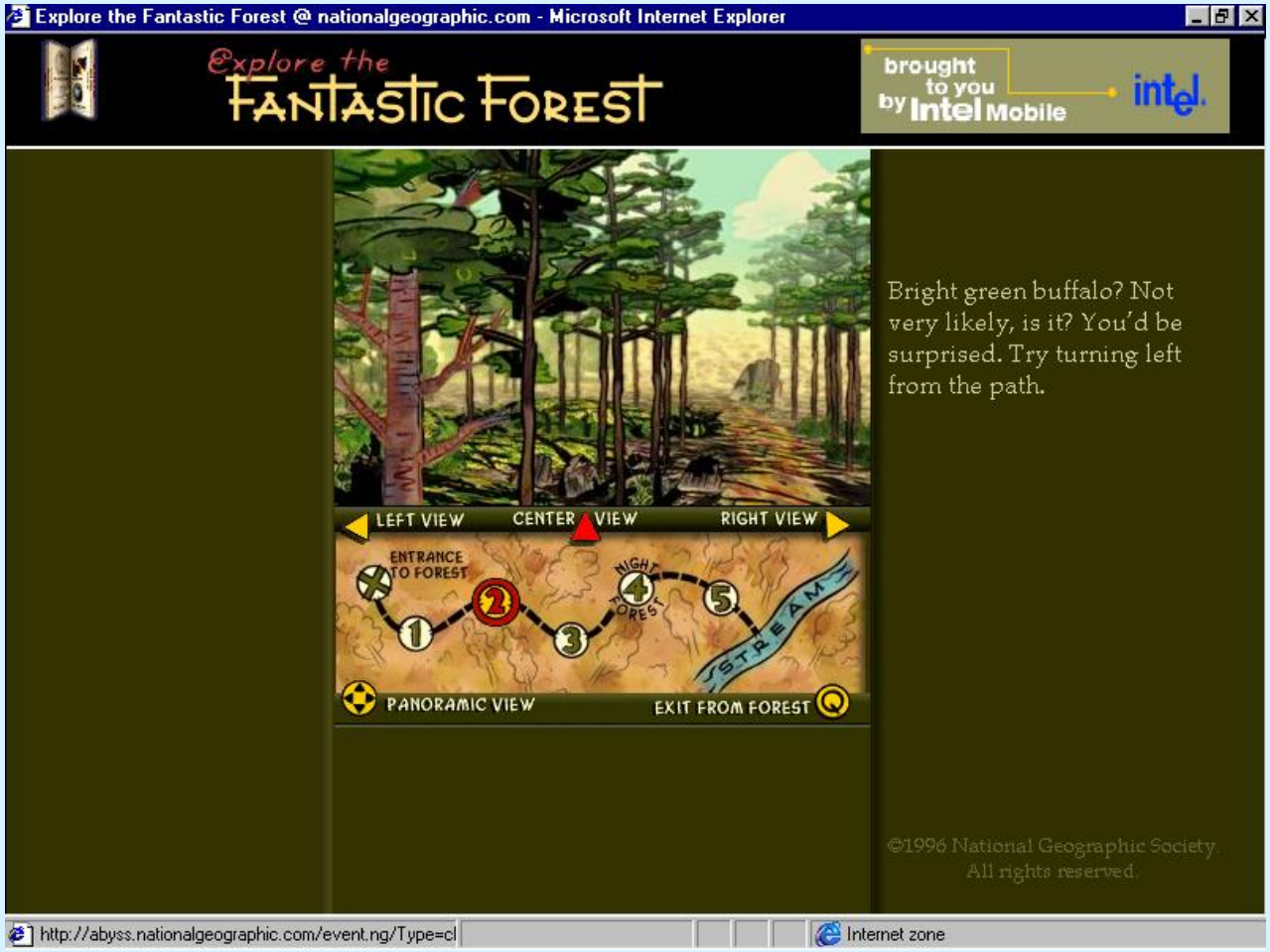
The panning metaphor

One more foundational metaphor in multimedia is panning (turning one's head).

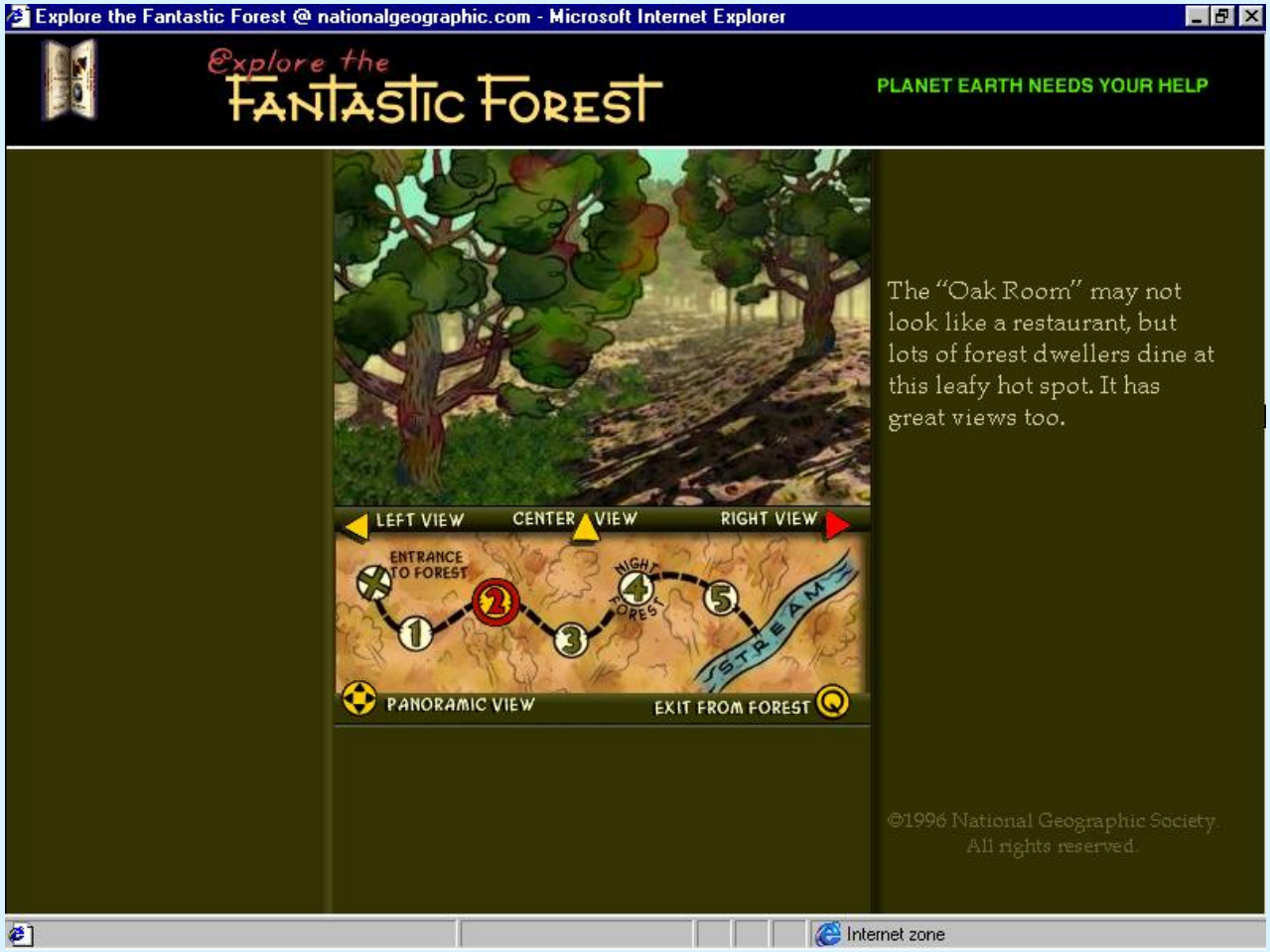
Panning re-creates, whether clumsily or smoothly, the freedom of gaze that we do not truly experience in computing (except for VR).

In panning, there is neither travel nor summoning. The user sees a new part of the present context.

Other metaphors: Panning



Other metaphors: Panning



Other metaphors: Panning

Designers need to understand the complexity of metaphor in multimedia

Designers need to understand that there are foundational metaphors in multimedia that underlie more specific metaphors (travel underlies piloting a space ship; summoning underlies invoking a magician).

Designers need to understand and effectively use the subtle dynamics among these metaphors.

A word of caution

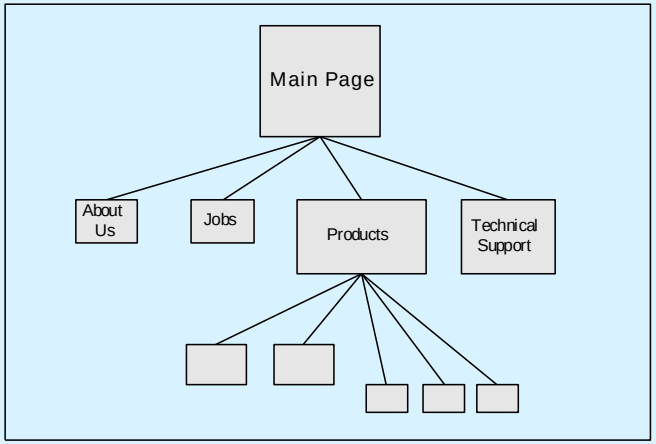
It is important not to overstate the user's awareness of the foundational metaphors.

And, of course, there are large individual differences among users.

But the foundational metaphors and their interplay with more specific metaphors are part of the user's experience with multimedia.

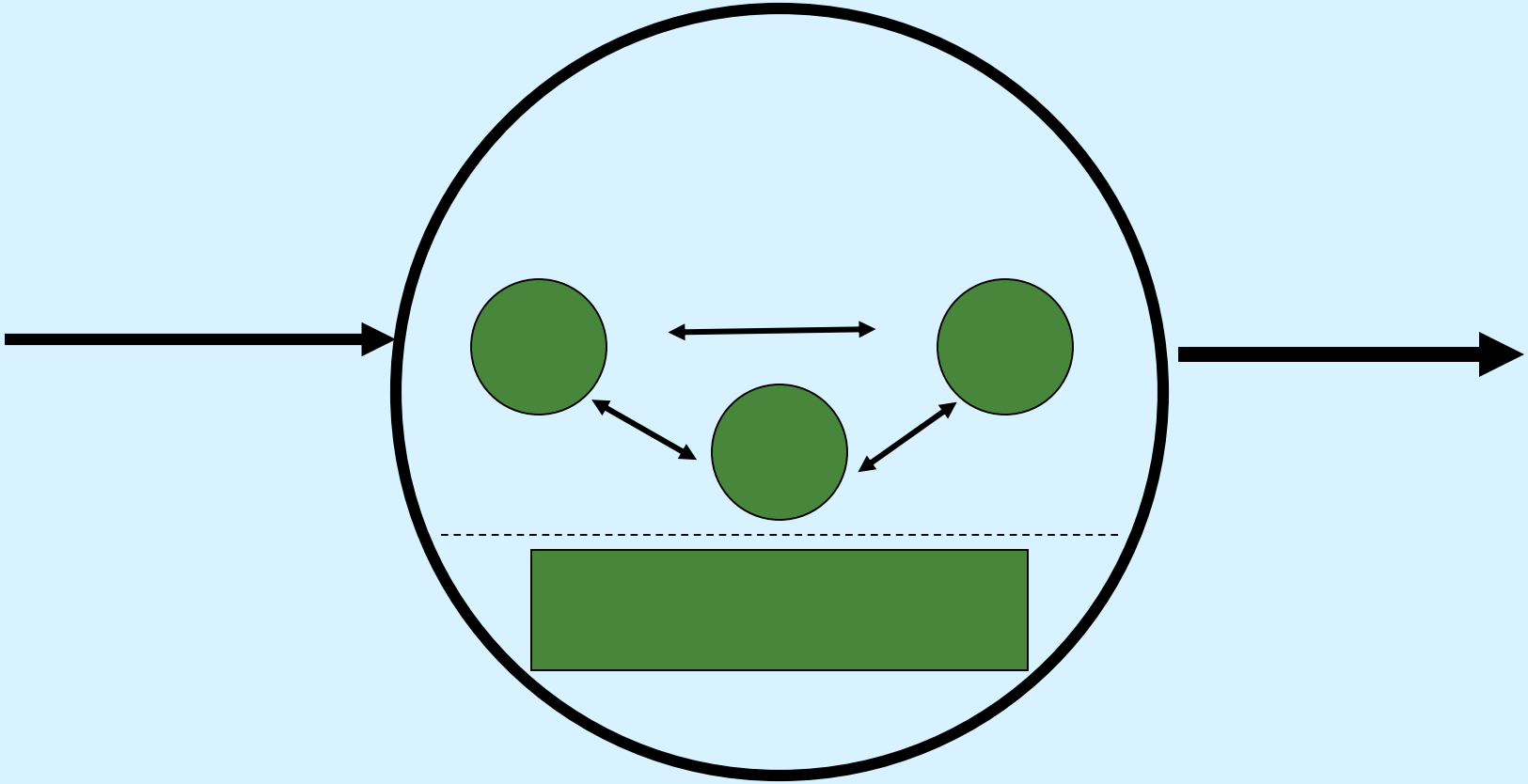
Designers must extend the visual design vocabulary

Because it is tied so closely to the navigation metaphor, the visual vocabulary of nodes and links no longer adequately serves the needs of designers.

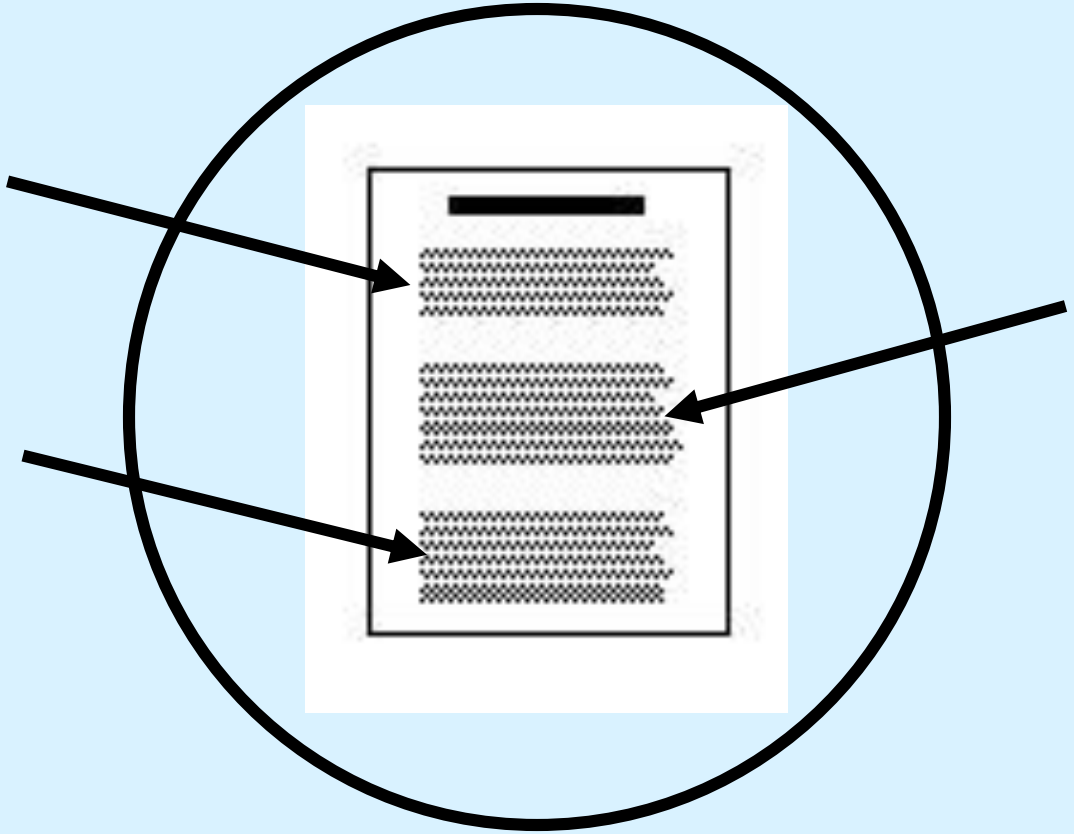


What do we need? One direction may be to represent regions and activity within a node.

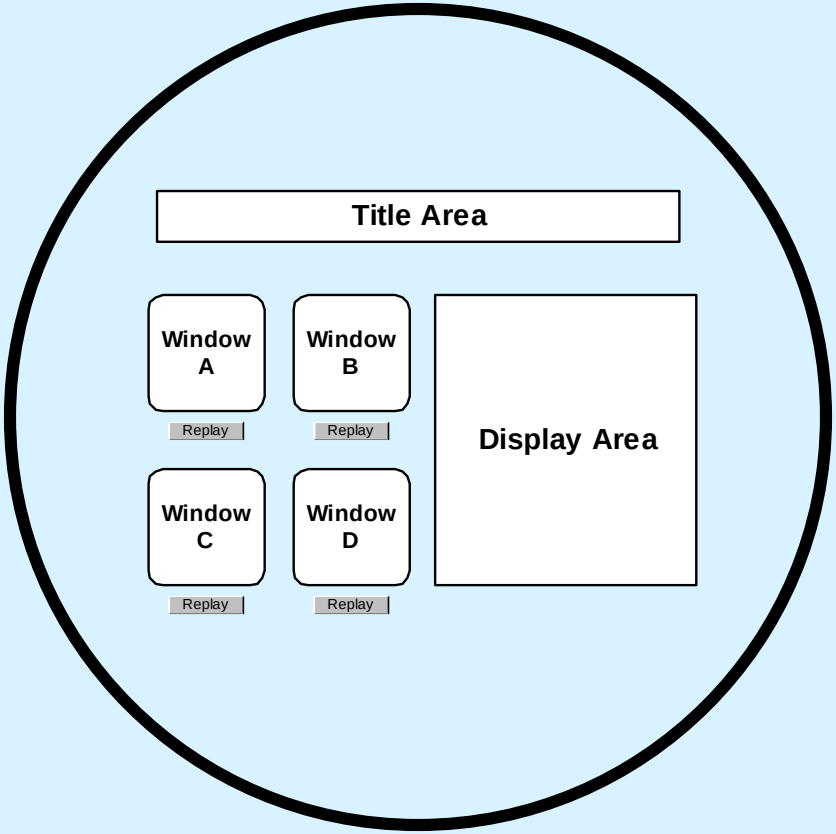
New conventions for structure diagrams—1



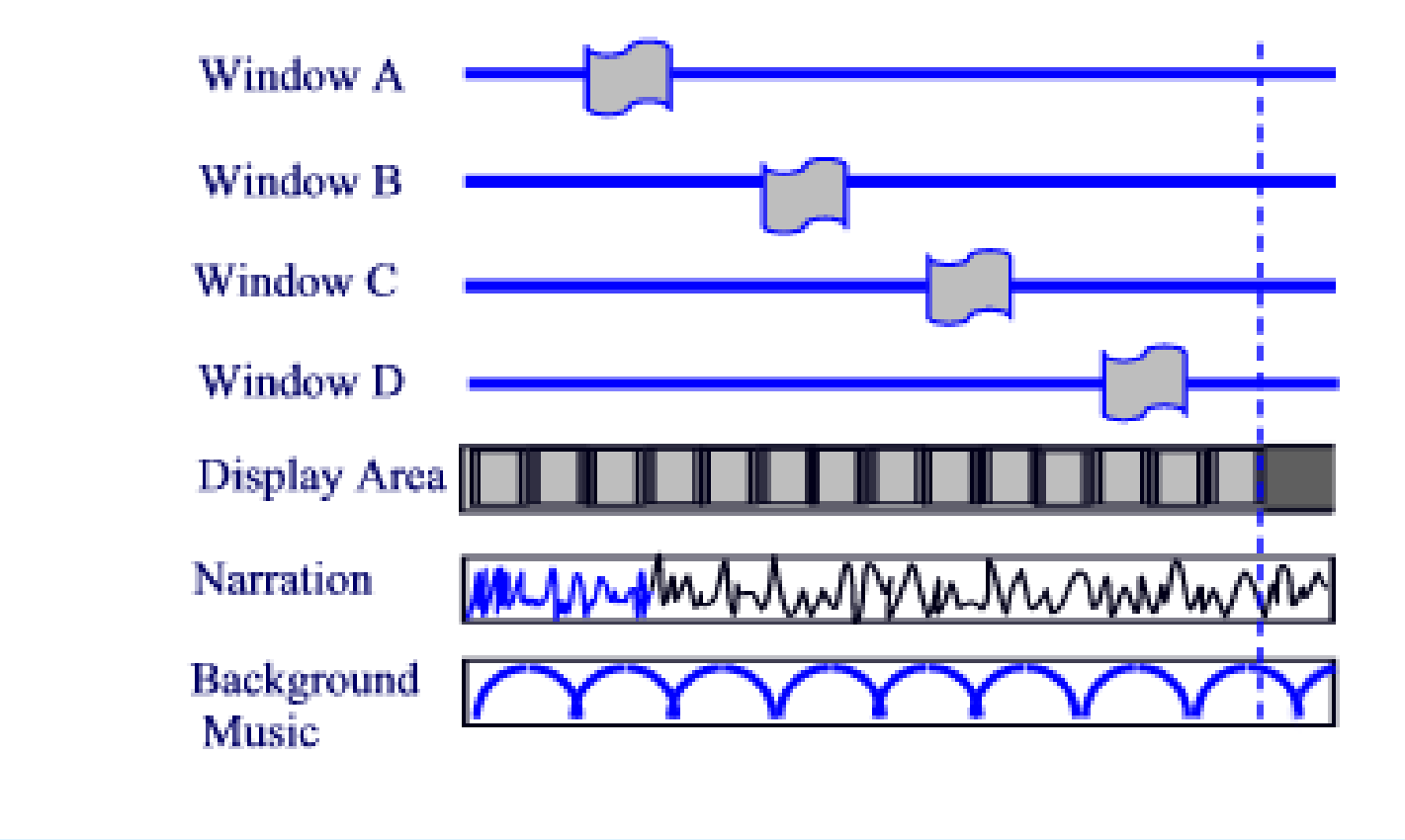
New conventions for structure diagrams—2



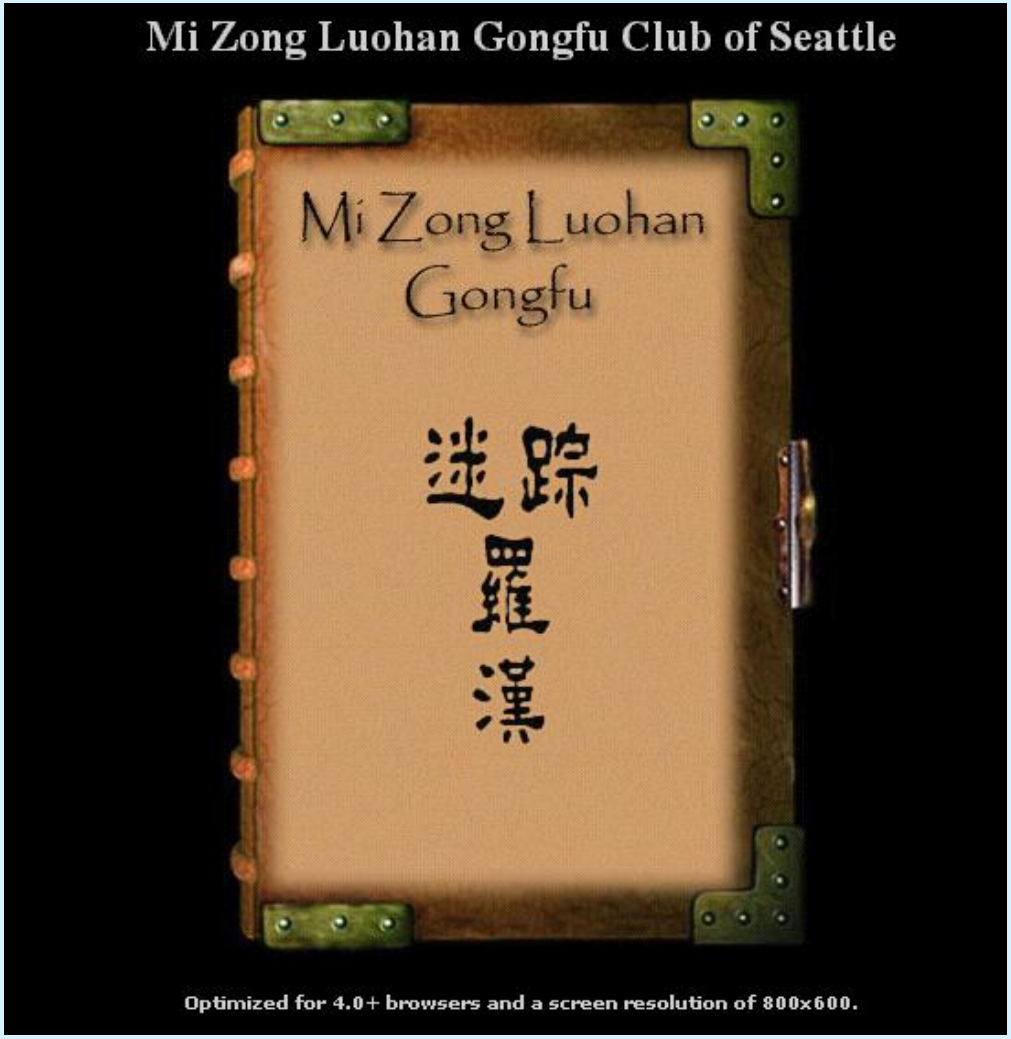
New conventions for structure diagrams—3



New conventions for structure diagrams—4



Design example—1



Design example—2

Design example—3

Address http://www.pbs.org/ktca/litandlife/chapters/chapter5.html

Links Best of the Web Common Internet File Formats IE Info Microsoft Today's Links Web Gallery

PBS online Literature & Life

Table of Contents | Authors, Eras and Impact | Online Study Guide | Resources

RealVideo Clips

Gordon Parks Interview
Black Film Pioneers
Parks' Photography
More on Parks

Text transcripts of our RealVideo expert interviews are also available.

Related Links

Gordon Parks' Farm Security Administration photos

The Givens Collection
at the University of Minnesota

• Chapter Five •

Choice of Weapons

Among all the great writers in pantheon of African-American literature, a lesser-known author stands out for his range of creativity and his commitment to community. Gordon Parks, sr. has had considerable impact on America. He was the first black photographer for Life Magazine. His photojournalism on a vast range of people, places and issues gave the world a better understanding of itself.

He was the first African American to make a Hollywood film when he wrote, produced, and directed "The Learning Tree." He is also a gifted composer writing, songs and musical scores. John Wright states that Parks' path is, "an eclectic career, and a career that moves in so many directions that it's difficult to comprehend." To begin to comprehend his impact, one need only open the pages of Parks' books. They are poignant testaments of his life and his art. It is in this literature - his novels, poems and autobiographies - that one appreciates the impact of Parks' art.

The End

Thank You

Questions?

The functional and dysfunctional modes of foundational metaphors

Travel and summoning (as well as other foundational metaphors) have “modes.”

Travel

Functional

Smooth, controlled

Dysfunctional

Impeded

Uncontrolled

Summoning

Functional

Smooth, controlled

Dysfunctional

Impeded

Uncontrolled

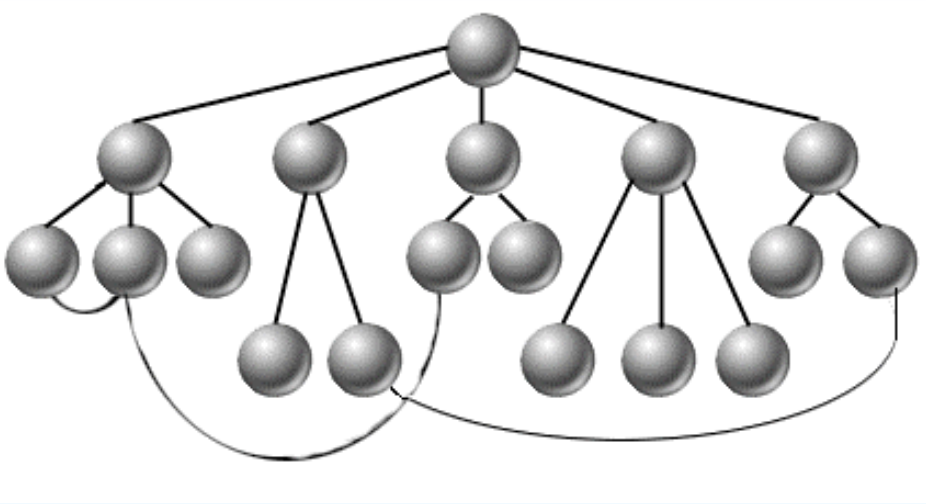
How the modes affect design: The instance of a slow download

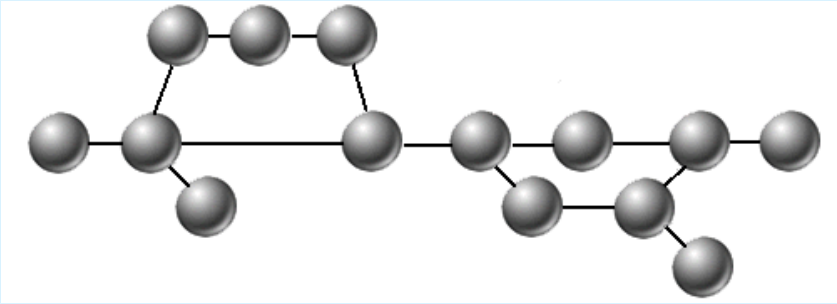
What metaphor would you draw upon for a button that initiates a slow download?

- A genie or magician?
- A fellow fishing by a pond? Or, fighting a fish?
- Just a download button?

The importance of structure diagrams in multimedia design

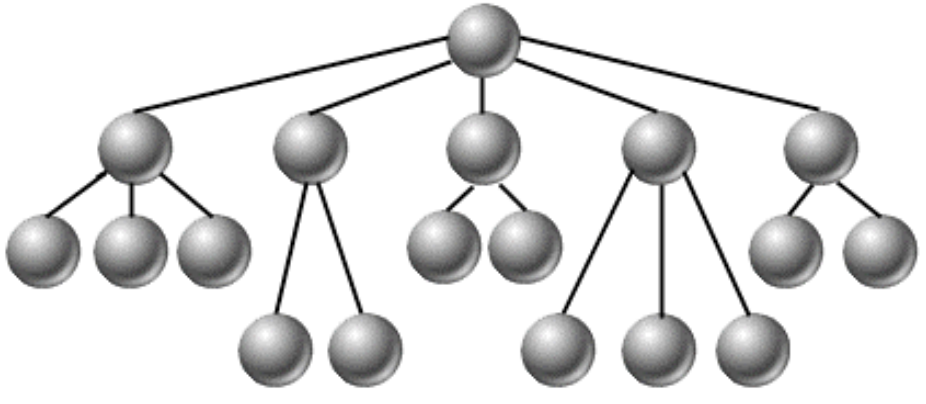
Designers use structure diagrams to represent structure and to plan the interface.



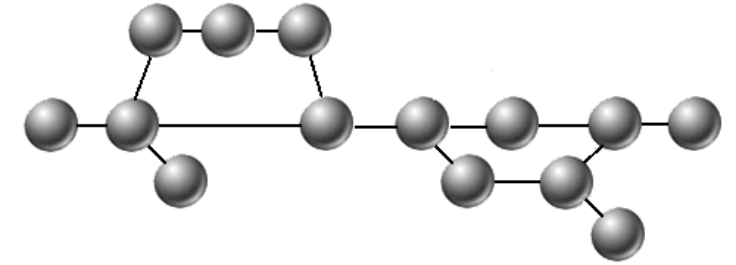
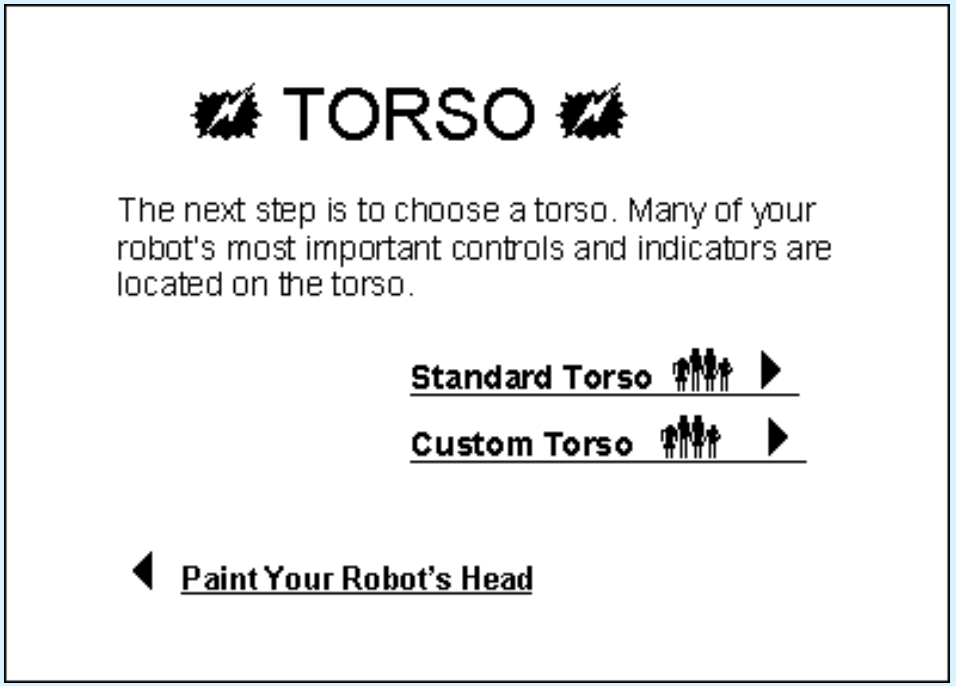


Structure diagrams and the user interface—1

Designers use structure diagrams to represent structure and to plan the interface.



Mayor	City Commission	Finance	Historic Preservation	Police Dept.
Public Works	Parks & Rec	Recreation Center	Planning & Zoning	Trolley

Structure diagrams and the user interface—2

Designers use structure diagrams to represent structure and to plan the interface.