

# Metaphor and the World Wide Web

Presented at the University of Twente



Universiteit Twente

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# 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

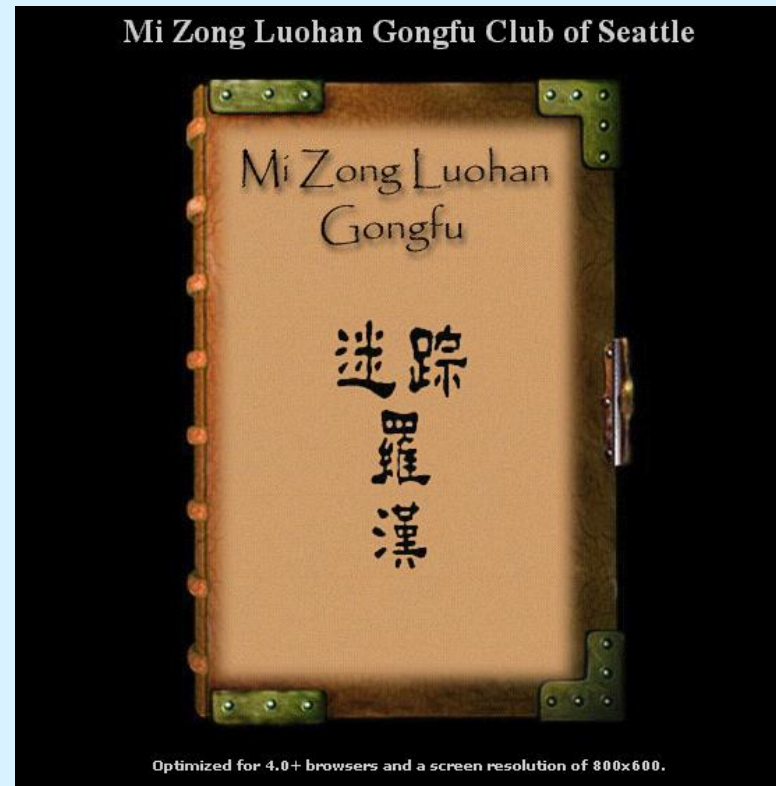
- Remote network (World Wide Web)
- Local devices (CD-ROM, DVD)

“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:

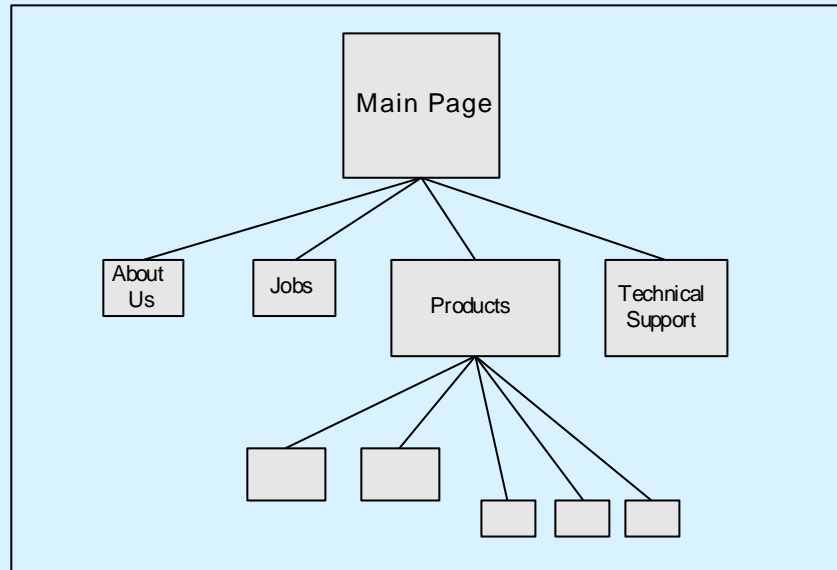
- We envision a succession of screens spatially, navigating from node to node along pathways (links). This is information space or “cyberspace.”
- We use our wayfinding (navigation) skills from the physical world.

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



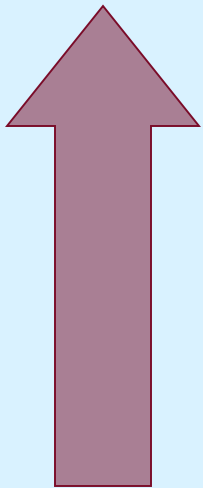
# The navigation metaphor: The designer's perspective

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



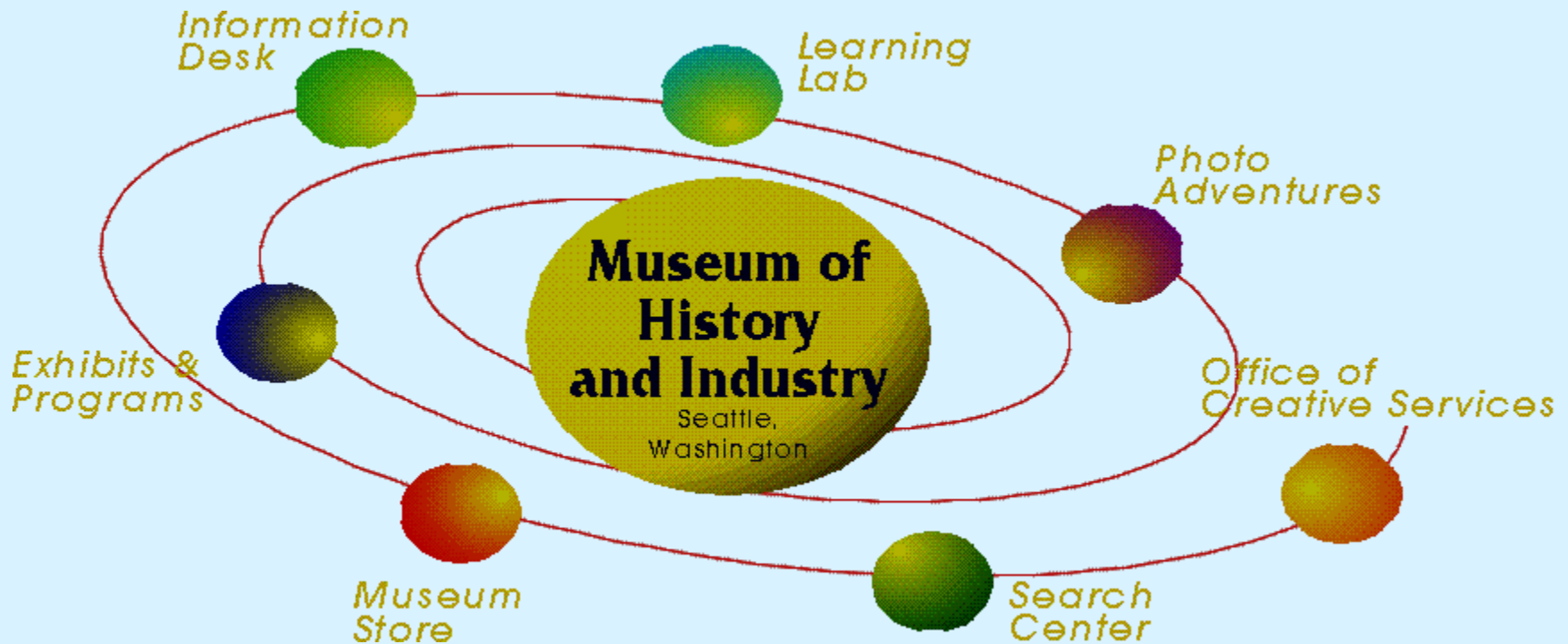
# “Levels” of metaphor: Navigation/Travel

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

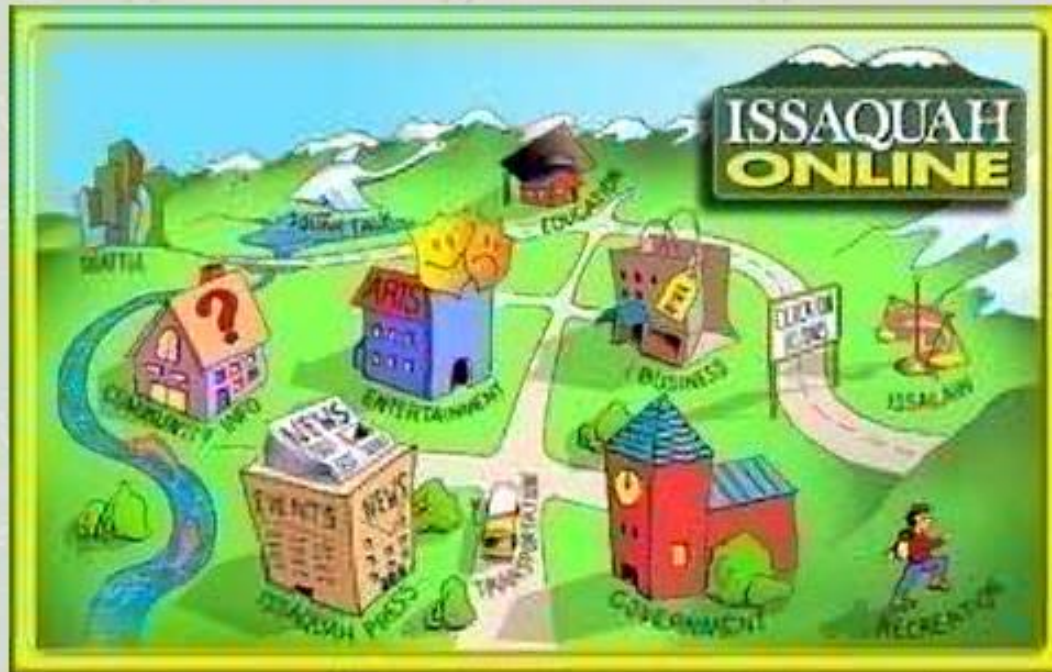


- Specific metaphors: Walking through a room or a forest, driving a car, piloting a space ship
- Foundational metaphor: Replacing one context with another

# Navigation/Travel: A galactic metaphor



# Navigation/Travel: An automobile travel metaphor



INDEX



SEARCH



FEEDBACK

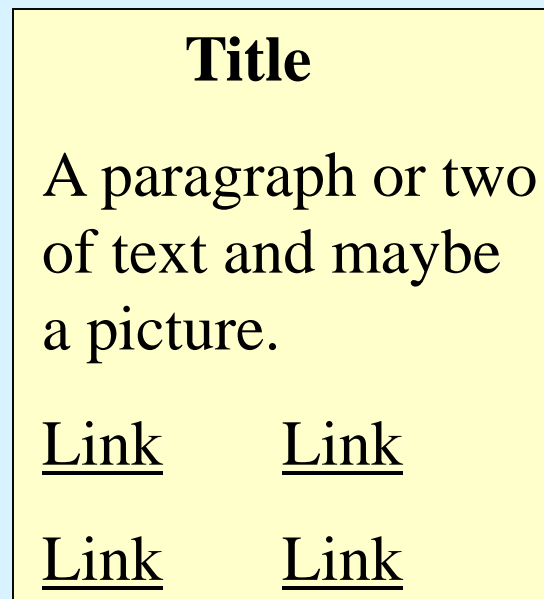
Issaquah Online is a community information resource, virtual storefront and gathering place for citizens and businesses in Issaquah, Washington. Join in on the discussion in [Squak-Talk](#). Read news updates from [The Issaquah Press](#). Announce your local community events in the [events area](#) and add your [favorite links](#) immediately to virtually any area



Sign welcoming visitors

# “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.

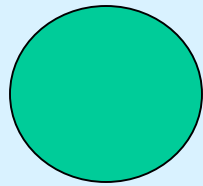
Summoning has a strong basis in the actual operation of the Web and computing itself.

# Most important: Summoning

Link

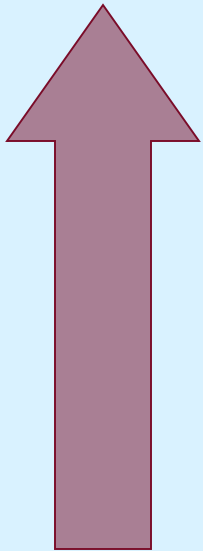


**Most important: Summoning**



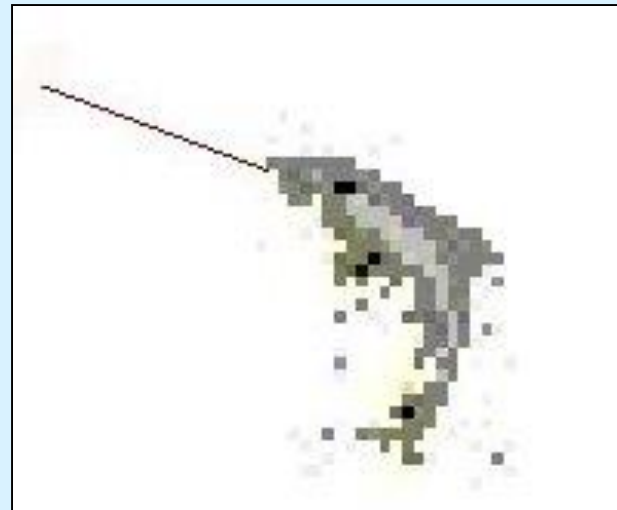
# “Levels” of metaphors: Summoning

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.



The screenshot shows the homepage of the Fred Hutchinson Cancer Research Center. At the top, there is a purple header bar with the text "FRED HUTCHINSON CANCER RESEARCH CENTER" on the left, "Welcome SITE MAP" in the center, and "Find It Fast" and "Contact Us" on the right. Below the header, on the left side, is a vertical navigation menu with buttons for "About the Hutch", "Patient Resources & Cancer Information", "Science & Research", "Education", "Shared Resources", "Arnold Library", "Staff Services & Administration", and "Internet Services". The main content area on the right has the heading "Welcome to the Fred Hutchinson Cancer Research Center" and contains several paragraphs of text, including a description of the center's mission and a link to the "National Comprehensive Cancer Network".

FRED HUTCHINSON CANCER RESEARCH CENTER

Welcome SITE MAP

Find It Fast  
Contact Us

About the Hutch

Patient Resources & Cancer Information

Science & Research

Education

Shared Resources

Arnold Library

Staff Services & Administration

Internet Services

## Welcome to the Fred Hutchinson Cancer Research Center

Located in Seattle, Washington the Fred Hutchinson Cancer Research Center (FHCRC) is a world-renowned research institution which for more than 20 years has pursued its mission to eliminate cancer as a cause of human suffering and death.

The purpose of this web site is to expand the capabilities of the scientific and medical community through the open exchange of ideas in the advancement of knowledge and to communicate FHCRC's endeavors with the public.

Explore this site using the buttons on the left, or if there is specific information you want, use the [Search](#) function in [Find it Fast](#).

Fred Hutchinson Cancer Research Center is a member of the [National Comprehensive Cancer Network](#).

See the Internet Services [Navigating the FHCRC Site](#) for details on how to navigate the Center's Web Site.

# 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.



The screenshot shows the homepage of the Fred Hutchinson Cancer Research Center. The header includes the center's name, a logo, and navigation links for 'Find It Fast' and 'Contact Us'. A vertical sidebar on the left contains menu items such as 'About the Hutch', 'Patient Resources & Cancer Information', 'Science & Research', 'Education', 'Shared Resources', 'Arnold Library', 'Staff Services & Administration', and 'Internet Services'. The main content area features a 'Welcome' message, a paragraph describing the center's mission, and a yellow pop-up window that highlights the sentence 'The purpose of this web site is to explore the scientific and medical community through the advancement of knowledge and to communicate FHCRC's endeavors with the public.' The pop-up window contains the text 'This is a pop-up window.'

FRED HUTCHINSON CANCER RESEARCH CENTER

Welcome SITE MAP

Find It Fast  
Contact Us

About the Hutch

Patient Resources & Cancer Information

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This is a pop-up window.

# How metaphor affects design: The instance of frames

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



FRED HUTCHINSON CANCER RESEARCH CENTER

Welcome SITE MAP

Find It Fast  
Contact Us

About the Hutch

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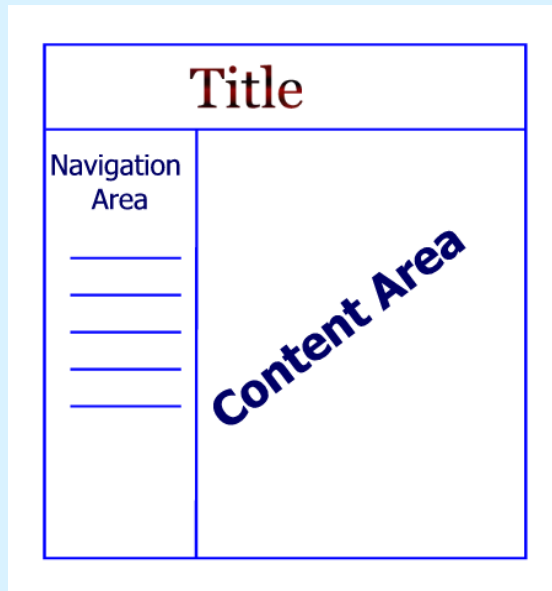
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Fred Hutchinson Cancer Research Center is a member of the [National Comprehensive Cancer Network](#).

See the Internet Services [Navigating the FHCRC Site](#) for details on how to navigate the Center's Web Site.

# 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).

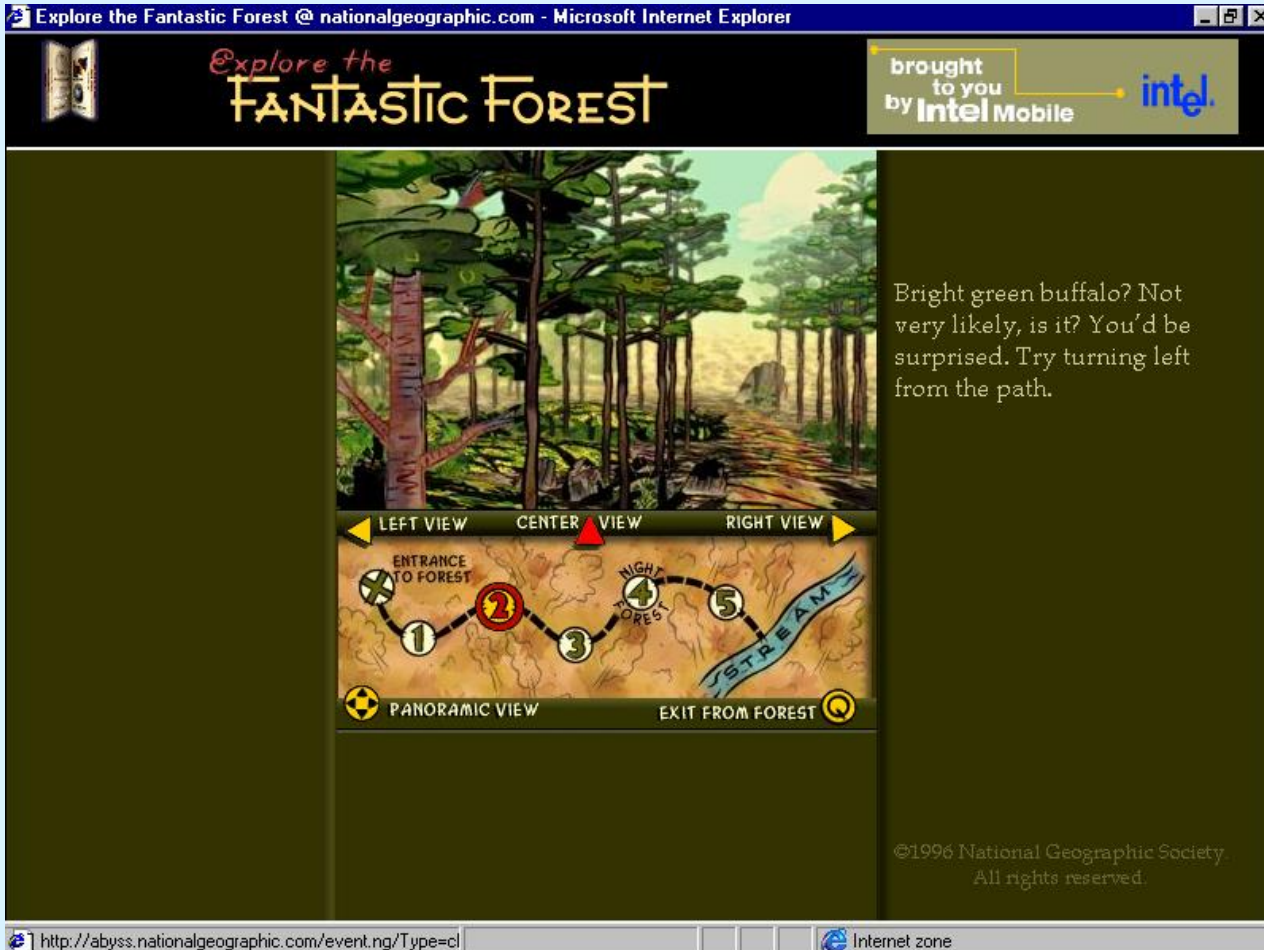
In panning, there is neither travel nor summoning. The user sees a new part of the present context.

# Other metaphors: Panning

Explore the Fantastic Forest @ nationalgeographic.com - Microsoft Internet Explorer

Explore the **FANTASTIC FOREST**

brought to you by Intel Mobile intel.



Bright green buffalo? Not very likely, is it? You'd be surprised. Try turning left from the path.

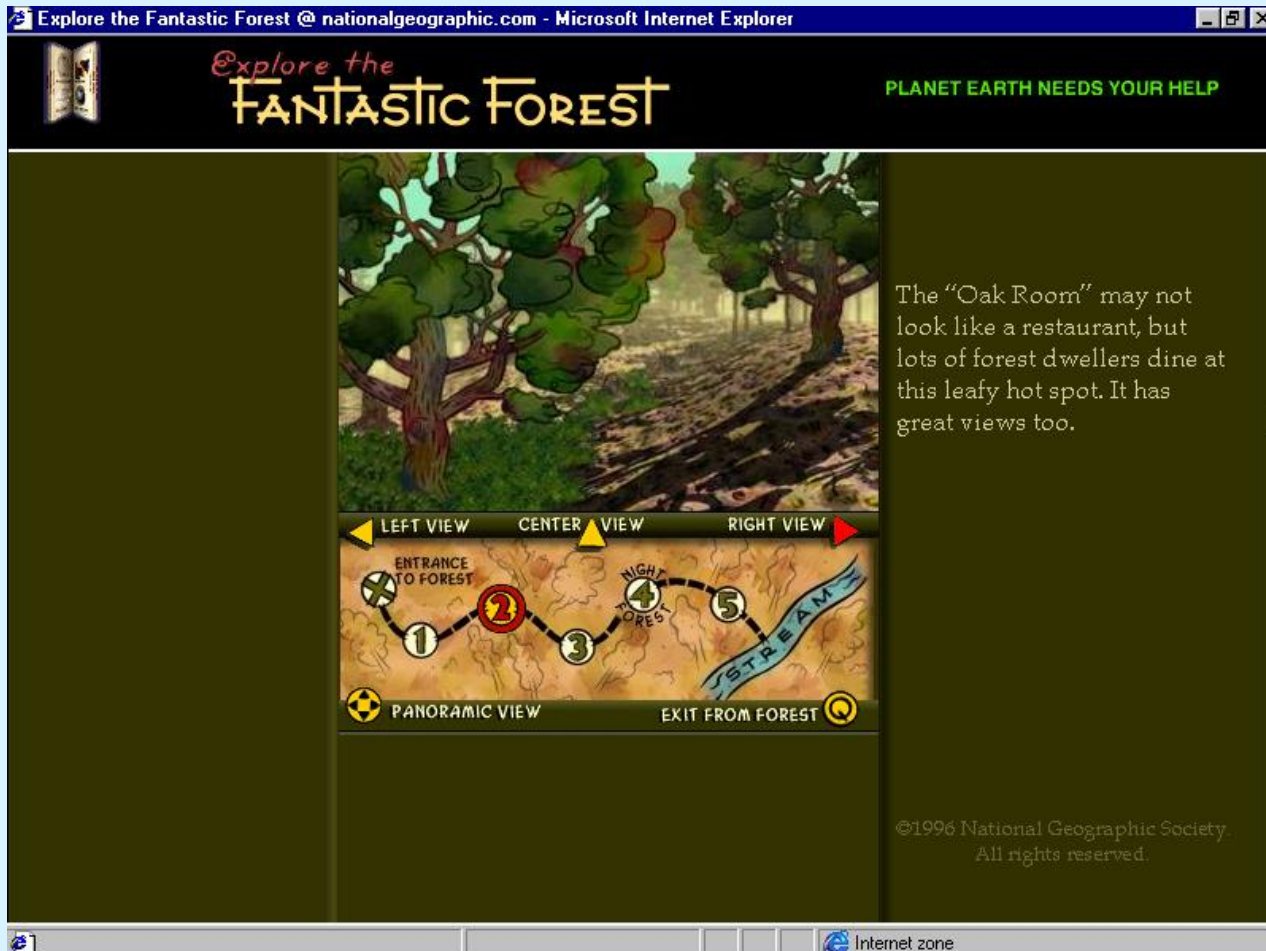
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<http://abyss.nationalgeographic.com/event.ng/Type=cl> Internet zone

# Other metaphors: Panning

Explore the Fantastic Forest @ nationalgeographic.com - Microsoft Internet Explorer

Explore the **FANTASTIC FOREST** PLANET EARTH NEEDS YOUR HELP



The "Oak Room" may not look like a restaurant, but lots of forest dwellers dine at this leafy hot spot. It has great views too.

LEFT VIEW CENTER VIEW RIGHT VIEW

ENTRANCE TO FOREST NIGHT FOREST

1 2 3 4 5

STREAM

PANORAMIC VIEW EXIT FROM FOREST

©1996 National Geographic Society. All rights reserved.

Internet zone

# Other metaphors: Panning

[NOVA Everest](#) | [Climb South](#) | [Western Cwm](#)

(click and drag in image, left or right, up or down)



# **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

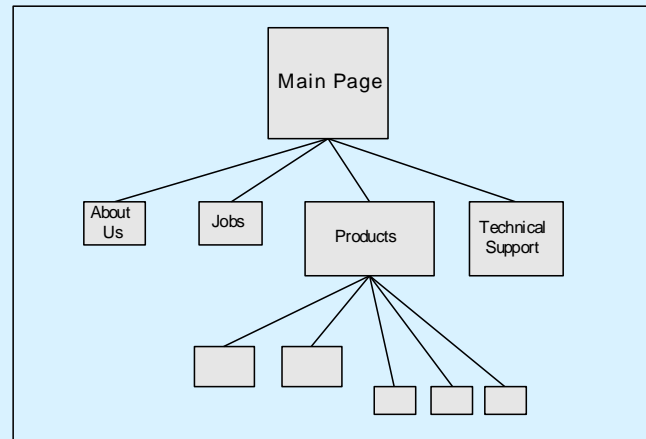
It is important not to overstate the user's awareness of the foundational metaphors.

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.

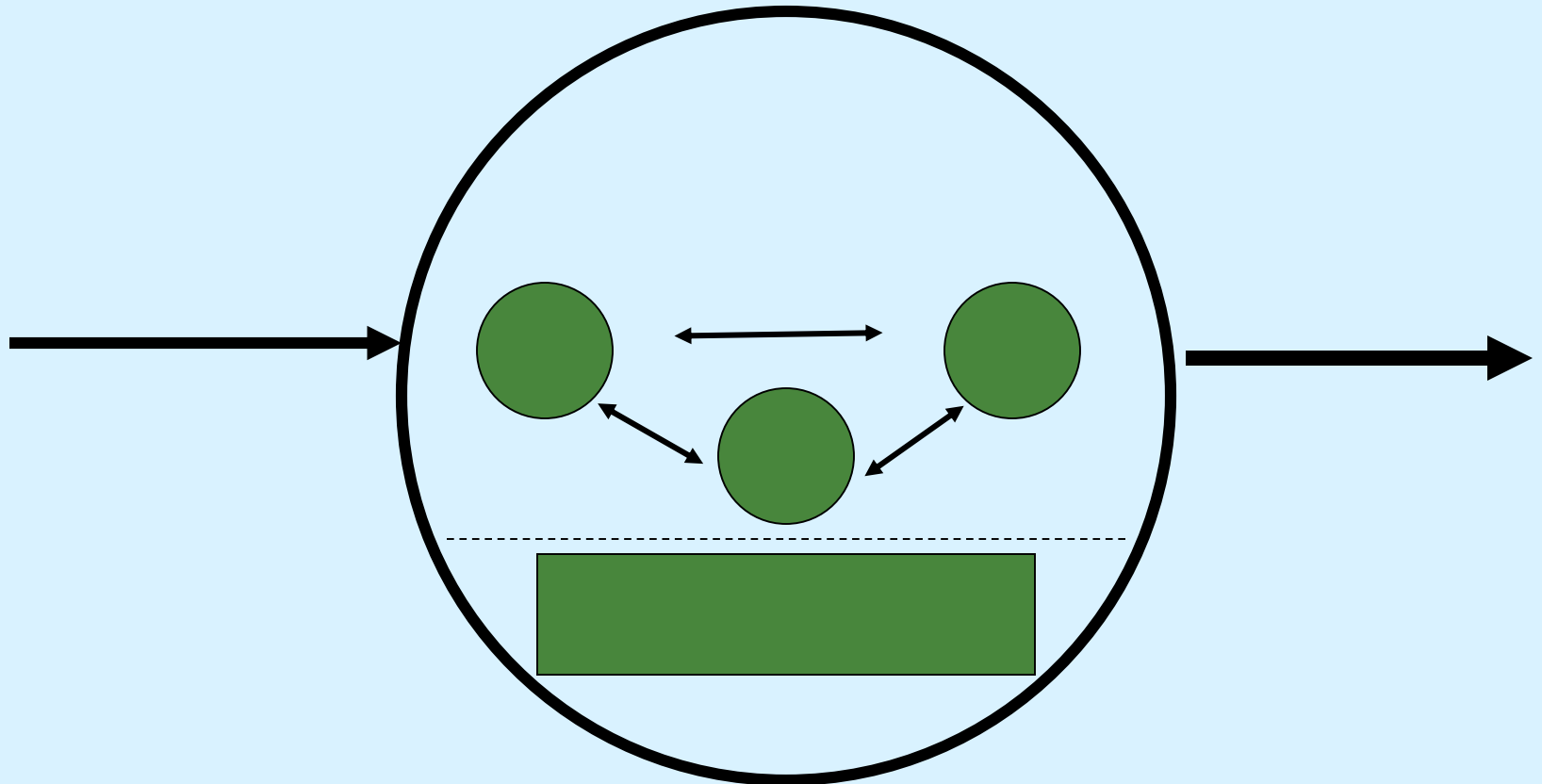
# Designers must extend the visual design vocabulary

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.

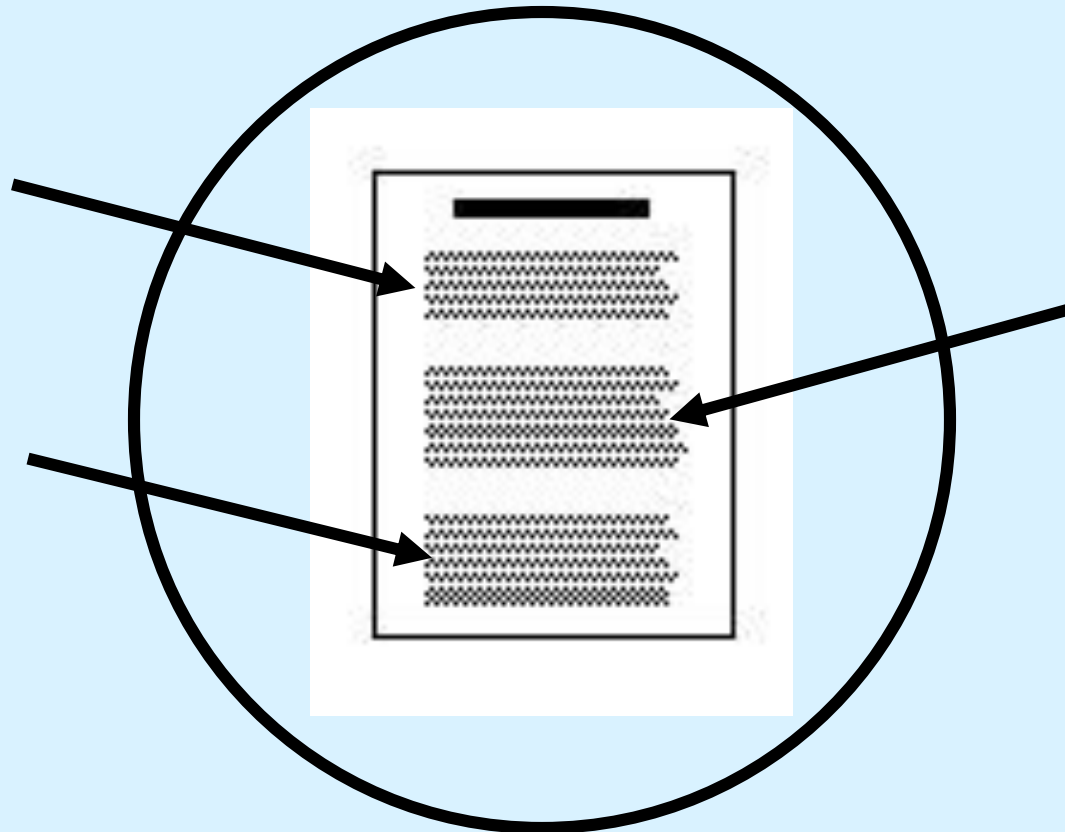


What do we need? One direction may be to represent regions and activity within a node.

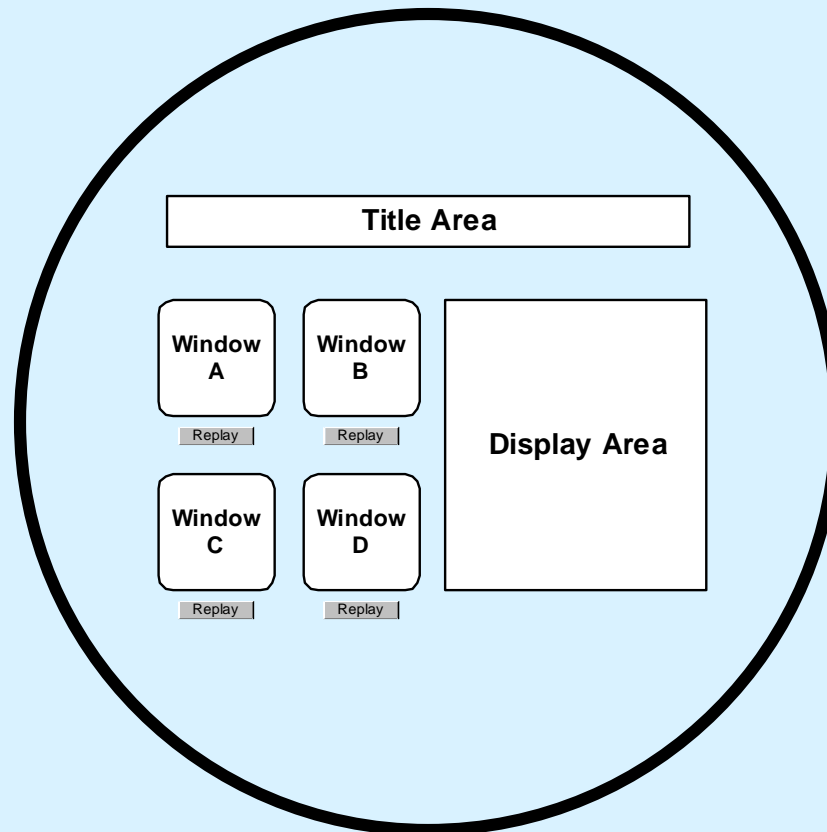
# New conventions for structure diagrams—1



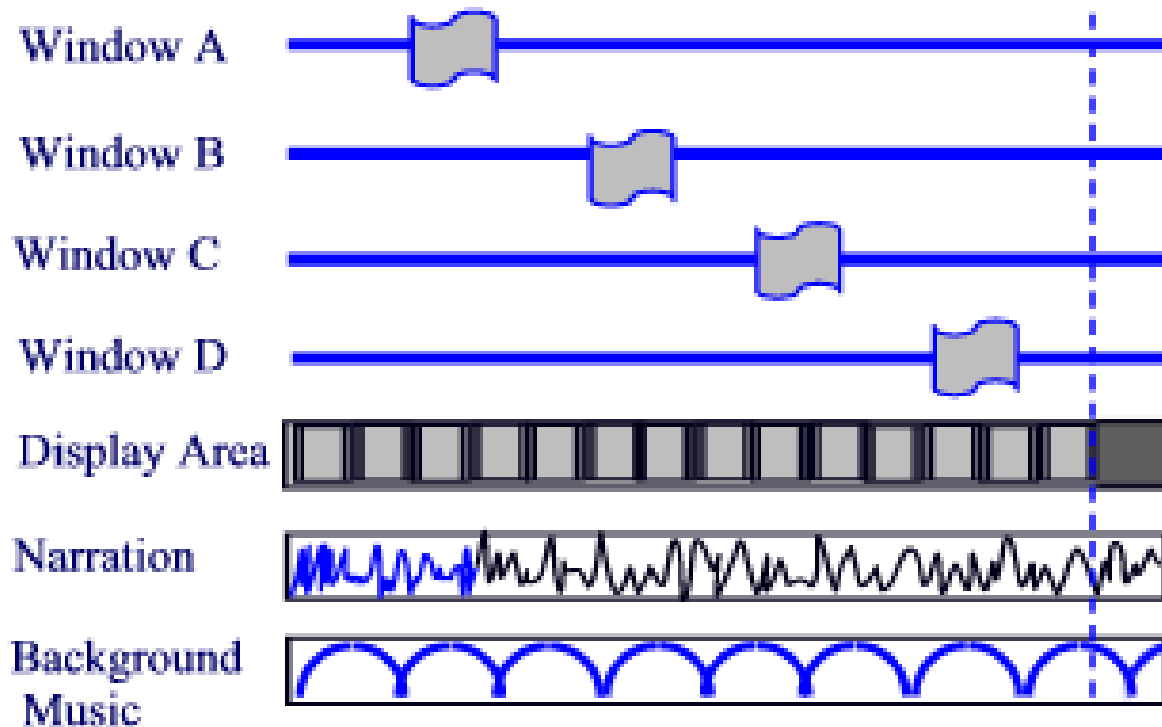
# New conventions for structure diagrams—2



# New conventions for structure diagrams—3



# New conventions for structure diagrams—4



# Design example—1

Mi Zong Luohan Gongfu Club of Seattle




Optimized for 4.0+ browsers and a screen resolution of 800x600.

## 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](#)



[Table of Contents](#)

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[Black Film Pioneers](#)  
[Parks' Photography](#)  
[More on Parks](#)

**Text transcripts** of our RealVideo expert interviews are also available.

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[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

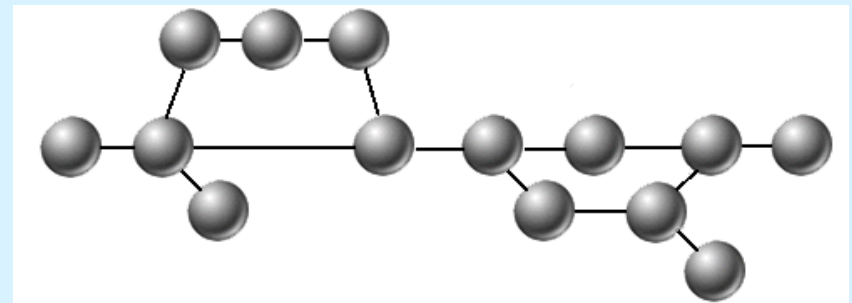
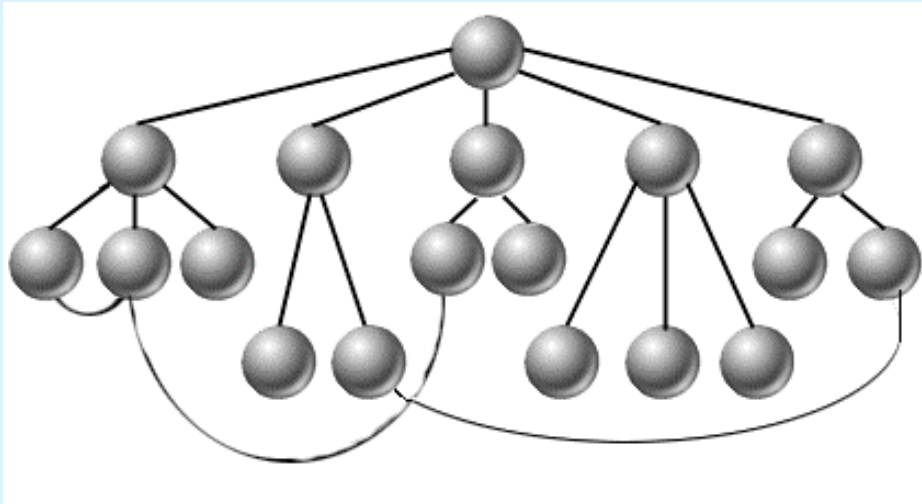
What metaphor would you draw upon for a button that initiates a slow download?

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



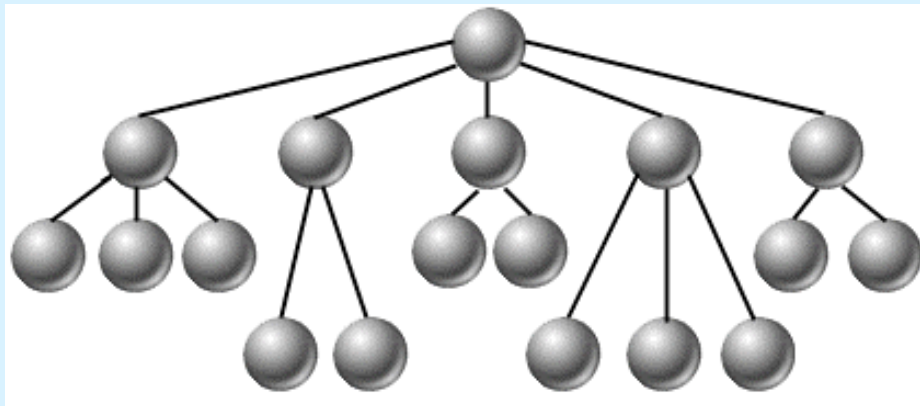
# The importance of structure diagrams in multimedia design

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



# Structure diagrams and the user interface—1

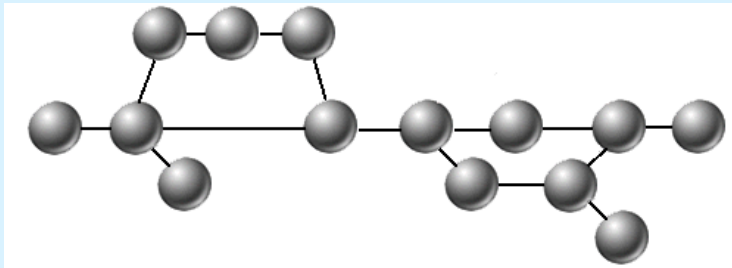
Designers use structure diagrams to represent structure and to plan the interface.



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.



## **TORSO**

The next step is to choose a torso. Many of your robot's most important controls and indicators are located on the torso.

Standard Torso  ▶

Custom Torso  ▶

◀ Paint Your Robot's Head