

Lecture 11 Interaction Styles (cont.)

10 Different Interaction Styles

Heim, Chapter 2.3



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Interaction Styles - Web Navigation



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Interaction Styles - Web Navigation

- Two basic interaction styles
 - Link-based navigation
 - Sensitive to articulatory distance
 - Ambiguous link labels increase the gulf of evaluation
 - Search
 - Sensitive to semantic distance
 - Inadequate search engine algorithms increase the gulf of execution
 - Slight advantage in development of mental models

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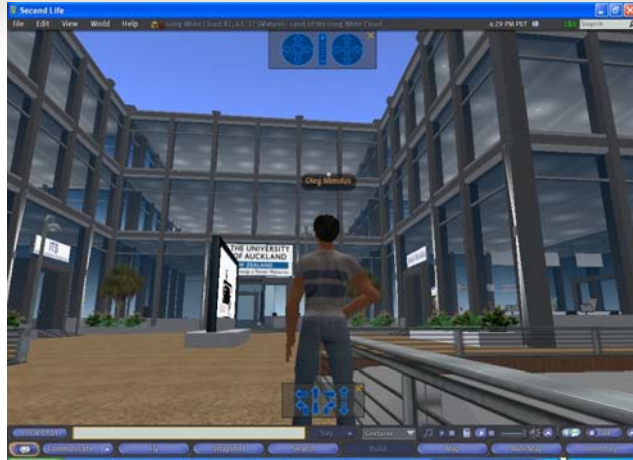
1-3

<http://gigaom.com/2010/09/13/usability-study-shows-kids-dont-search/>

- Adult Internet users increasingly “search dominant”
- Kids navigate the web using bookmarks, remembering their favorite sites, and accessing paid subscription content and games

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Interaction Styles – 3D Environments



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ARI VR1

Interaction Styles – 3D Environments

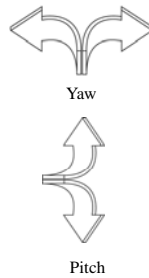
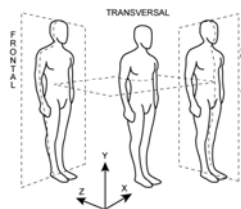
- 3D interaction is natural in the real-world
- 3D environments are common in digital games
- Rich graphical 3D environment are processor intensive

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Interaction Styles – 3D Environments

- 3D Navigation
 - Involves two types of movement
 - Translation – movement on a plane
 - Rotation – movement around an axis



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Interaction Styles – 3D Environments

- Web-based 3D
 - Use vector-based graphics to decrease file size
 - Virtual Reality Modeling Language (VRML)
 - Uses polygons with parameters
 - Transparency
 - Texture maps
 - shininess
 - X3-D is XML based - Web3D.org
 - Offers greater flexibility and control

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1-8

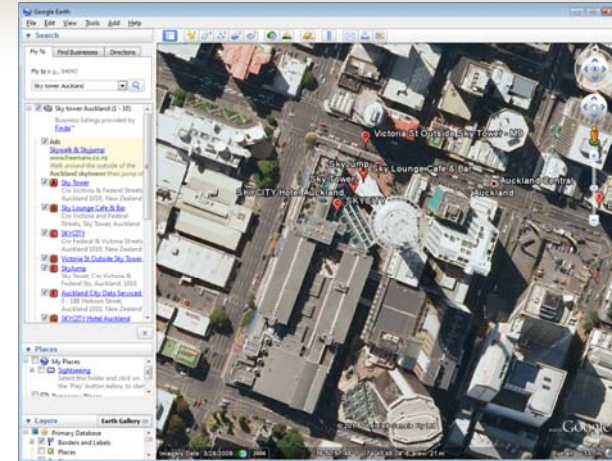
Interaction Styles – 3D Environments

- Desktop 3D
 - Current GUIs are predominantly 2D
 - 3D environments presented on 2D screens are difficult to navigate

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Three-dimensional navigation can quickly become difficult and confusing

Interaction Styles - Zoomable Interface

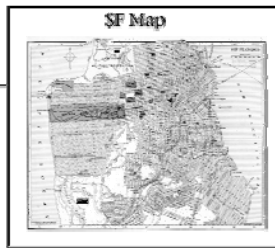


Interaction Styles - Zoomable Interface

- ZoomWorld (Jeff Raskin) is based on the zooming interface paradigm (ZIP)
- ZoomWorld Demo

Zoomed Out

These are the original documents. They are arranged in a grid. The documents are not at all organized. The only way to find a document is to look at the list of documents. This is a very inefficient way to find a document.



Zoomed Out

Zoomed In

Interaction Styles - Zoomable Interface

MAXIM

Zoomable interfaces allow us to use our sense of relative positioning

- ZIP is based on landmarks and relative positioning (organizational cues)
 - Proportion
 - Color
 - Patterns
 - Proximity
- Pad++: Zoomable User Interface (ZUI)

Interaction Styles - Natural Language



Interaction Styles - Natural Language

- Natural Language Interaction (NLI) - Interacting with computers using everyday language
- Obstacles
 - Language is ambiguous
 - Meaning depends on context
 - “Search results”
 - “She said she did not know”
 - Dependant on visual cues

Interaction Styles - Natural Language

- Applications for NLI
 - Speech Input
 - Hands-free operation
 - Poor Lighting Situations
 - Mobile Applications
 - In the home
 - Speech Output
 - On-board navigational systems

Interaction Styles - Natural Language

- Two areas of development
 - Speech recognition
 - Semantics
 - Grammar issues
 - Vague meanings
 - Contradictory statements

MAXIM

NLIs may require constant clarification of linguistic ambiguities

Interaction Styles - *Natural Language*

- Advantages of NLI:
 - Ease of learning
 - Low memory requirements
 - Flexible interaction
 - Low screen requirements
 - Appropriate for beginners
- Disadvantages of NLI:
 - Requires knowledge of the task domain
 - May require tedious clarification dialogues
 - Complex system development

Consider the abilities of Natural Language Interfaces versus Menu-based Interfaces. Specify environments and tasks which would be better suited for each of these interface styles.

Summary

- Large number of possible interaction styles available, each with advantages and disadvantages for particular projects
- Choice of appropriate style should be based on the needs of the project and the deployment technology
- Interaction styles will evolve with new technologies coming onto the market