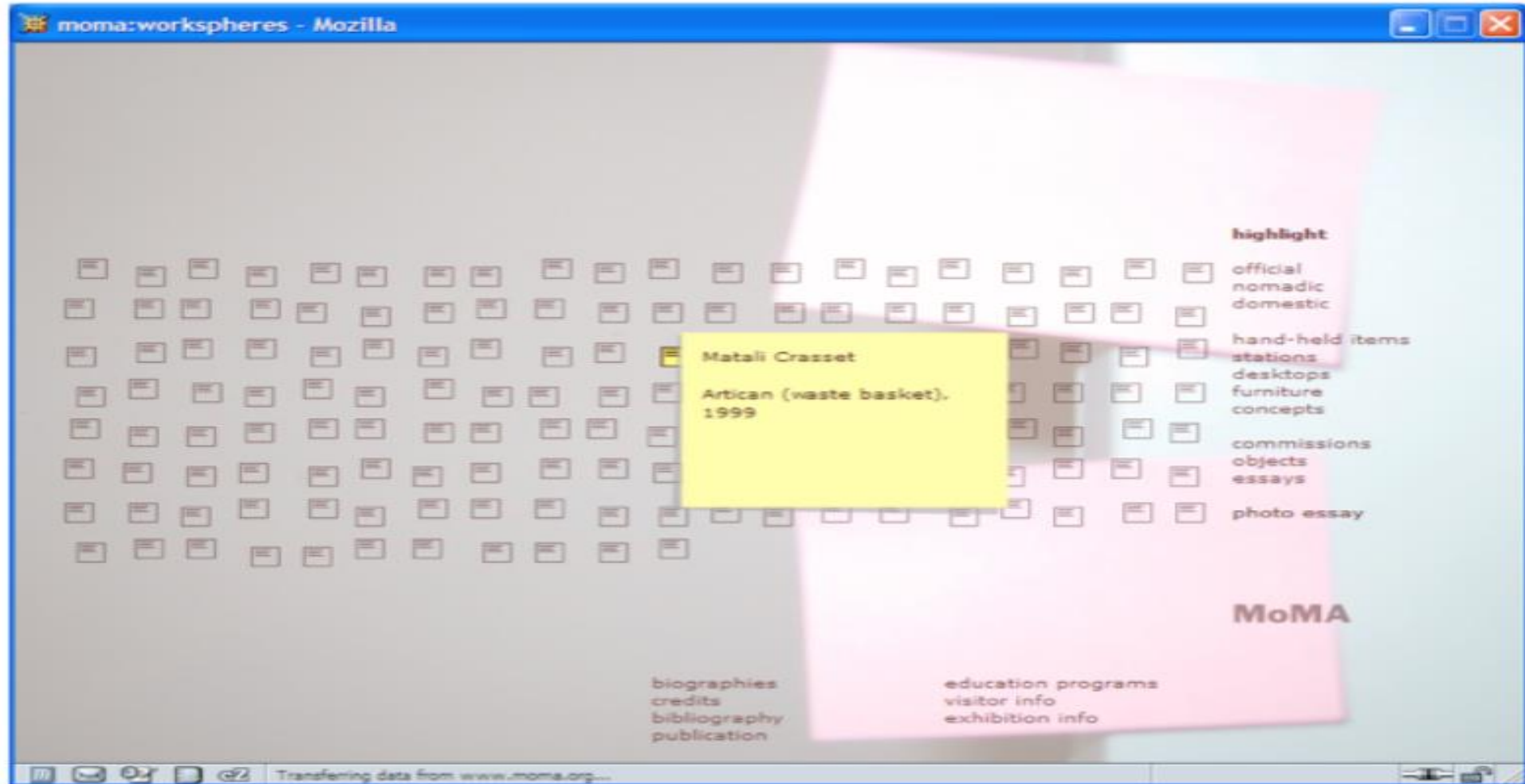


A thick black L-shaped frame surrounds the central text. It consists of a vertical bar on the left and a horizontal bar at the top, meeting at a corner in the top-left. Another L-shaped bar is on the right, consisting of a vertical bar and a horizontal bar at the bottom, meeting at a corner in the bottom-right.

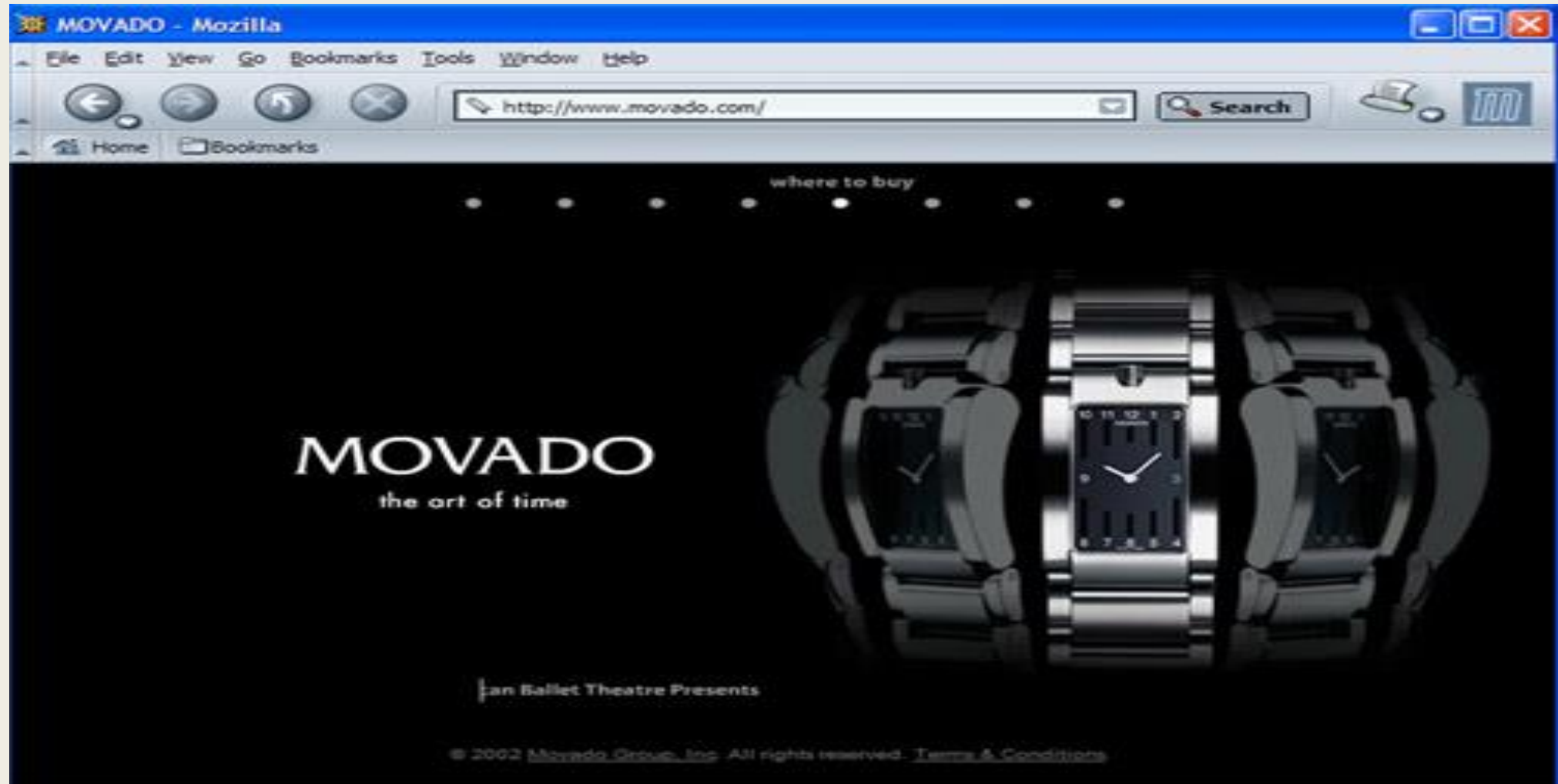
HUMAN COMPUTER INTERACTION

Lecture 3: Visibility

UI hall of Fame or Shame



Mystery Navigation



Topics to Discuss

- Visible actions
 - *Information Scent*
- Visible state
 - *Locus of attention*
- Visible feedback
 - *Perceptual fusion*
 - *Response time*

Visibility

- Relevant parts of the system should be visible
 - *Not usually a problem in the real world*
 - *But takes extra effort in the computer interface*

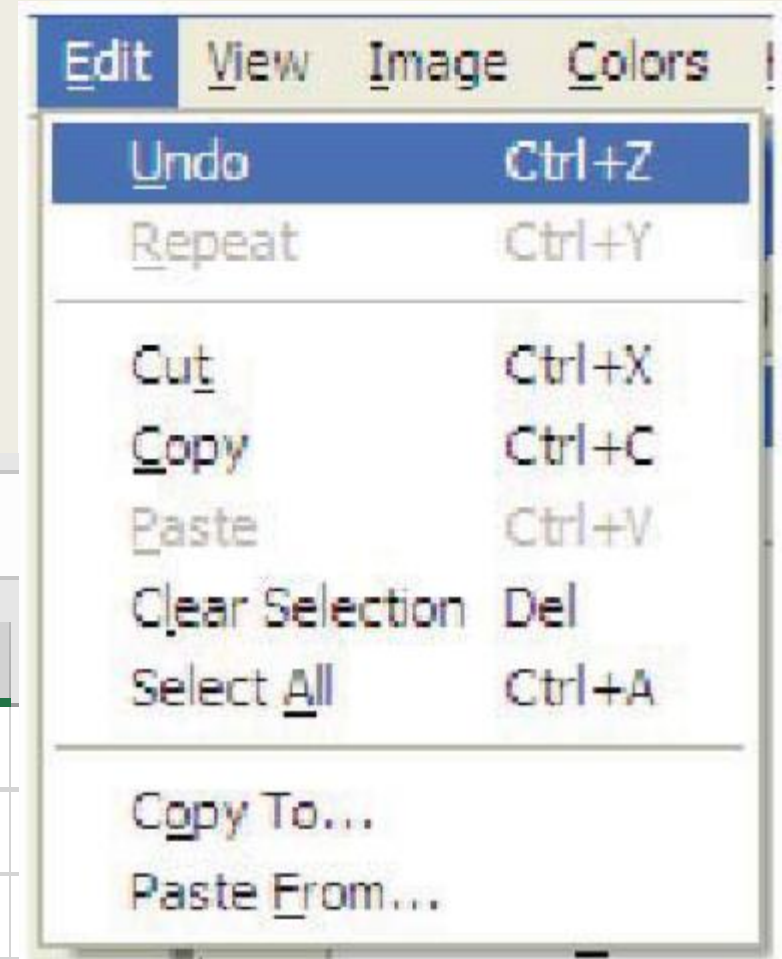
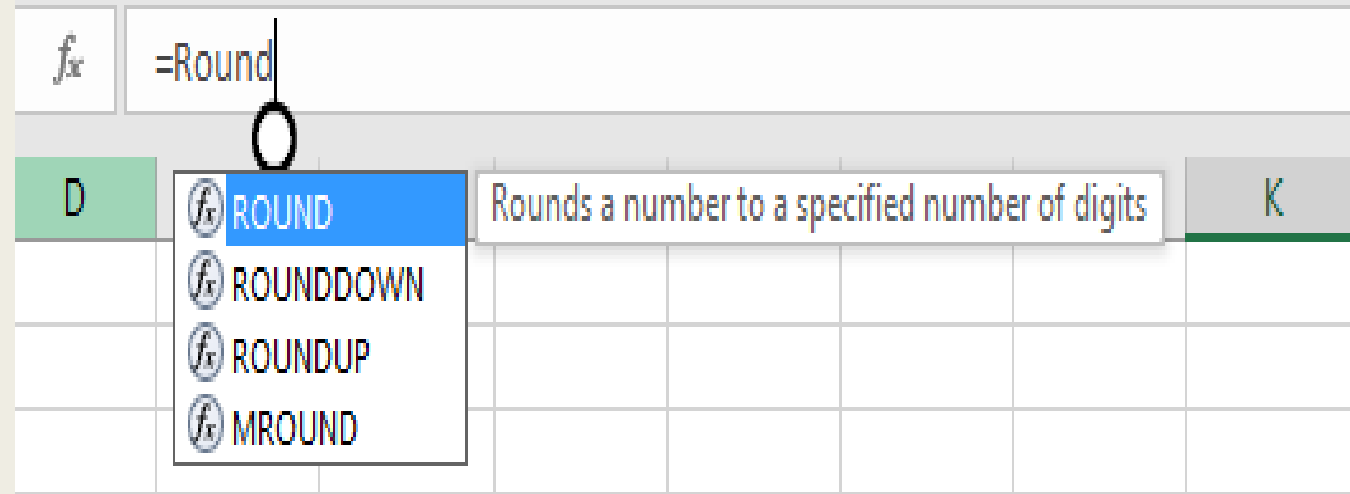
Visibility of Actions: Use Appropriate Affordances

- Buttons and Links
- Drop-down arrows
- Texture
- Mouse cursor
- Highlight on mouseover



Make commands Visible

- Menus
- Tooltips
- Self-disclosure

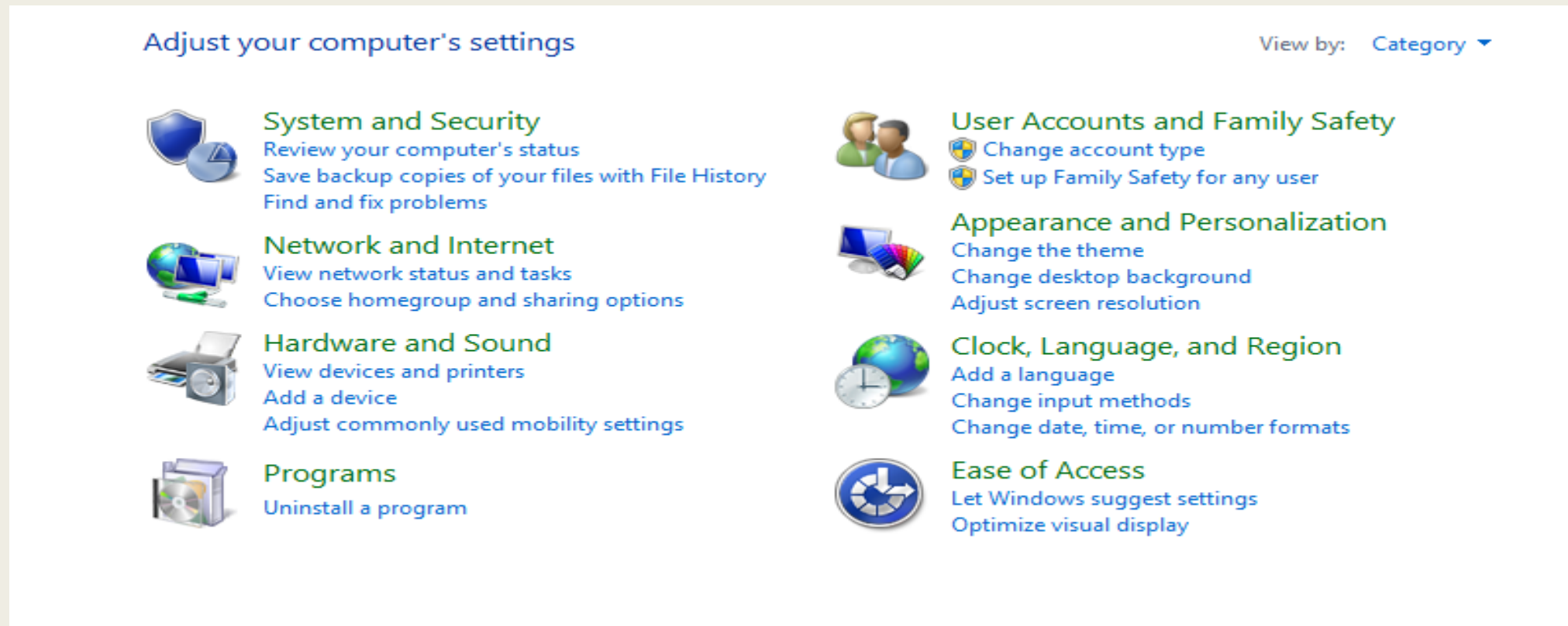


Information Scent

- Information foraging theory
 - *Humans gathering information can be modeled like animals gathering food*
 - *Constantly evaluation and making decisions to maximize information collected against cost of obtaining it.*
- Information Scent
 - *Cues on the link that indicate how profitable it will be to follow the link to the destination*

Give Good Information Scent

- A link should smell like the content it leads to.



Make Mode Clearly Visible

- Modes: State in which actions have different meaning.
 - *Vi's Insert mode vs command mode*
 - *Caps Lock*
 - *Drawing palette*

Visibility Depends on Locus of Attention

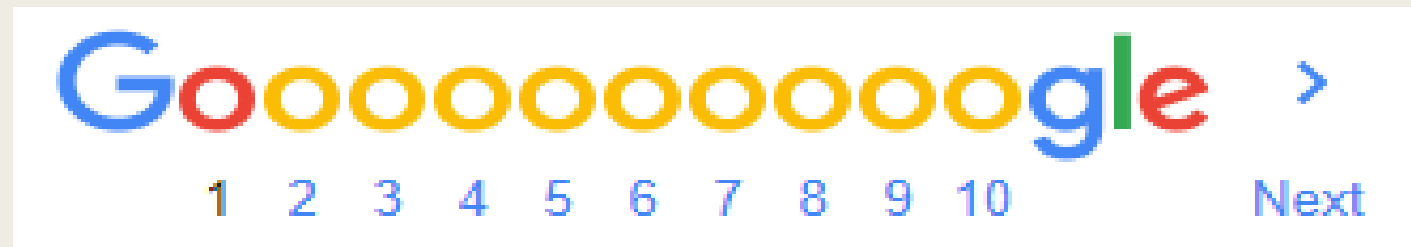
- Spotlight metaphor: attention Focuses on one input channel(e.g. area of visual field) at a time.
- Does the users locus of attention include:
 - *Caps Lock light on the keyboard?*
 - *Status bar?*
 - *Menu bar?*
 - *Mouse cursor?*

Visible Navigation State

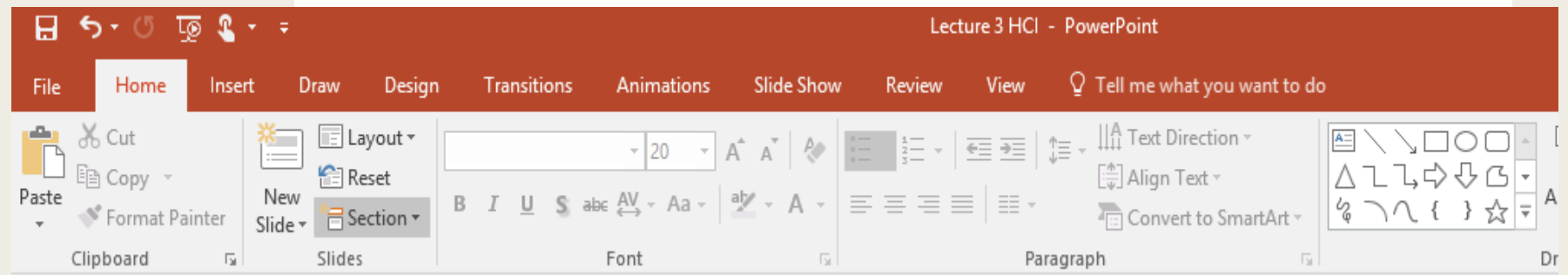
- Breadcrumbs



- Pagination

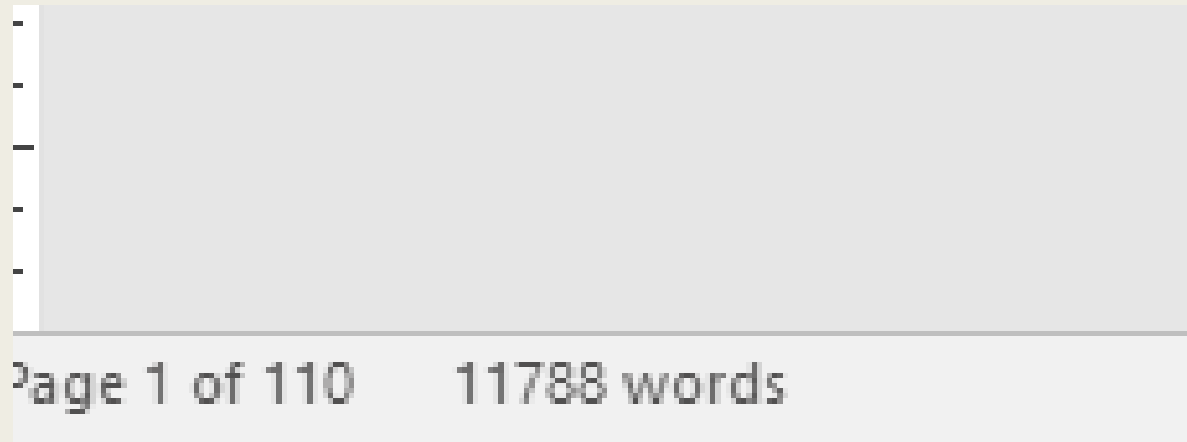


- Tabs



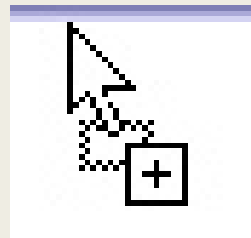
Visible Model State

- Continuous visual representation of model
 - *What to visualize should be guided by the user's tasks*



Visible View State

- Selection highlight
- Selection handles
- Drag and drop



Visibility of a complex state



Feedback:

Actions Should Have Immediately Visible Effects

- Low-level feedback
 - *Push button*
- High-level feedback
 - *Model state changes*
 - *New web page starts loading*

Visibility vs. Security



The image shows a web-based login interface for 'Athena'. At the top left is a circular logo featuring an owl. In the center, the text 'Welcome to Athena' is displayed above 'athena .mail.uk'. At the top right is a logo for 'MIT Information Systems'. Below the welcome text, there are labels for 'Username:' and 'Password:' followed by input fields. At the bottom, there are three buttons: 'Login Options', 'Other Options', and 'Register for an Account'.

 **Welcome to Athena**
athena .mail.uk 

Username:

Password:

Perceptual Fusion

- Two stimuli within the same perceptual cycle ($T_p \sim 100\text{ms}$ [50-200ms]) appeared fused.
- Consequences
 - *$1/T_p$ Frames/sec is enough to perceive a moving picture(10 fps OK, 20 fps smooth)*
 - *Computer response $< T_p$ feels instantaneous*
 - *Causality is strongly influenced by the fusion*

Response Time

- 0.1 s: Seems instantaneous
- 0.1 – 1 s: user notices the delay
- 1 – 5 s: display busy indicator
- >1 – 5 s: display progress bar

Unnecessary Feedback

- Weird Message boxes

Visibility is not Just Seeing

- Audio
- Haptic

Visibility vs. Other Usability Principles

- Visibility primarily conveys information
- Supports learnability'
- May conflict with simplicity