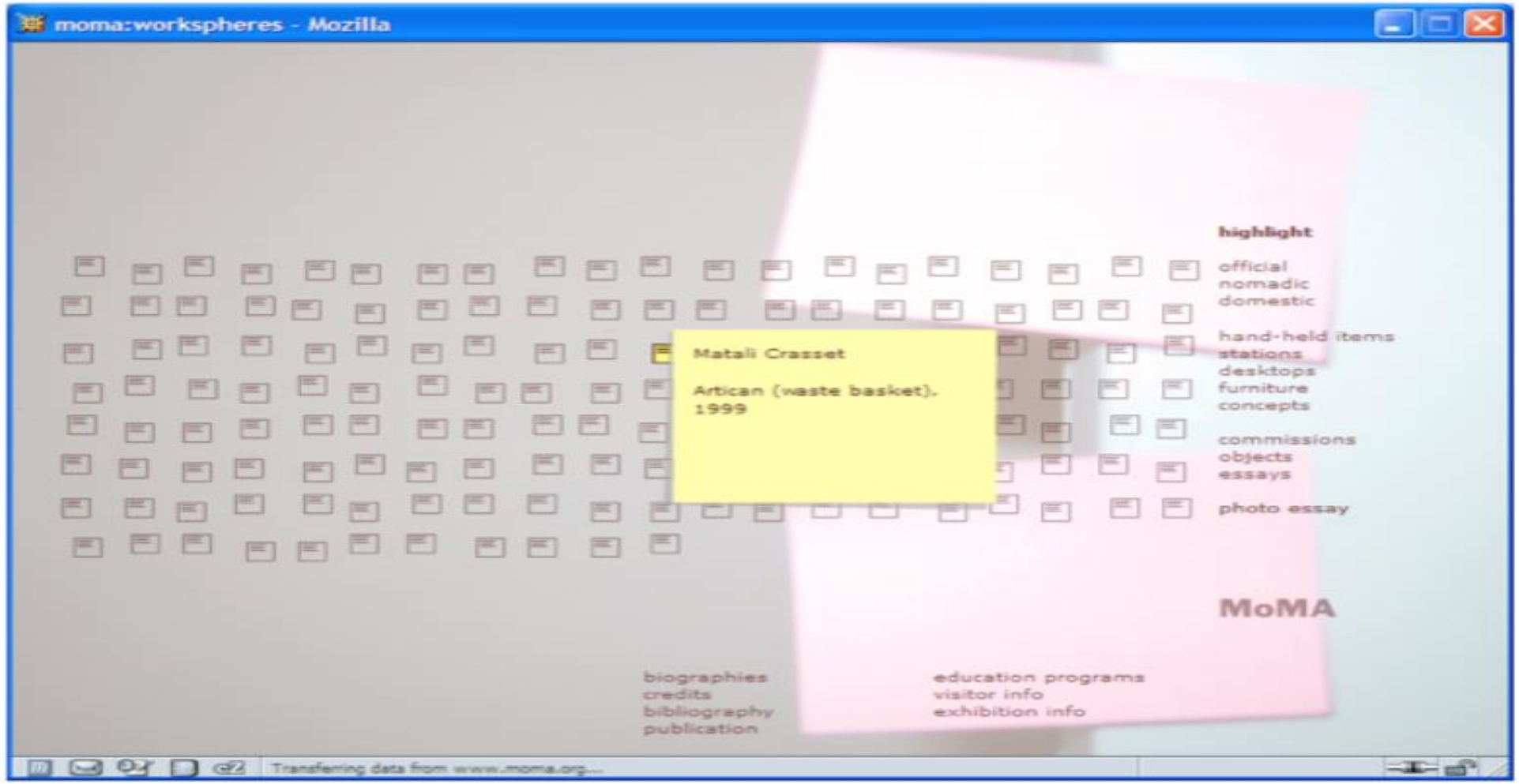
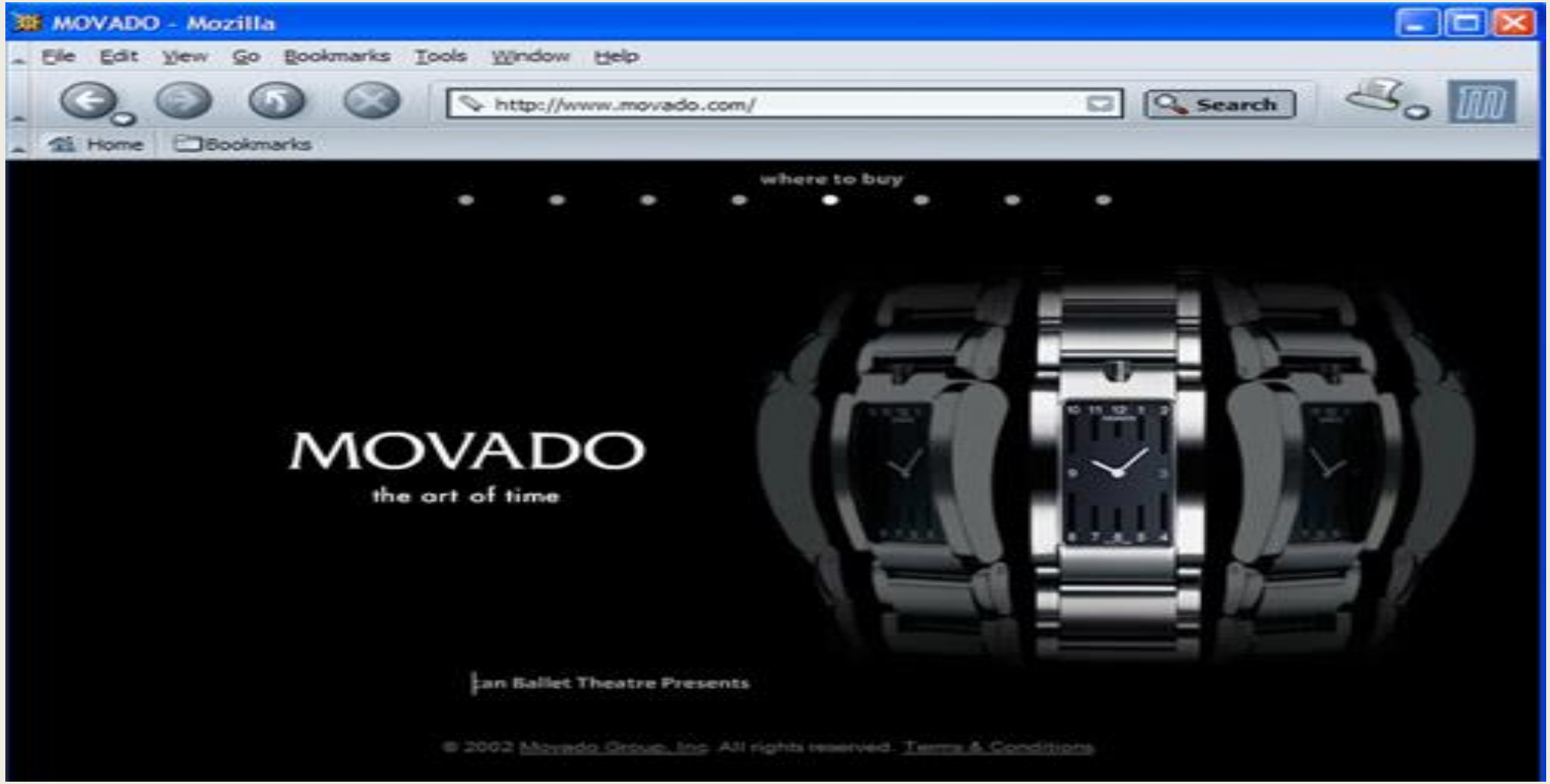
HUMAN COMPUTER INTERACTION

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

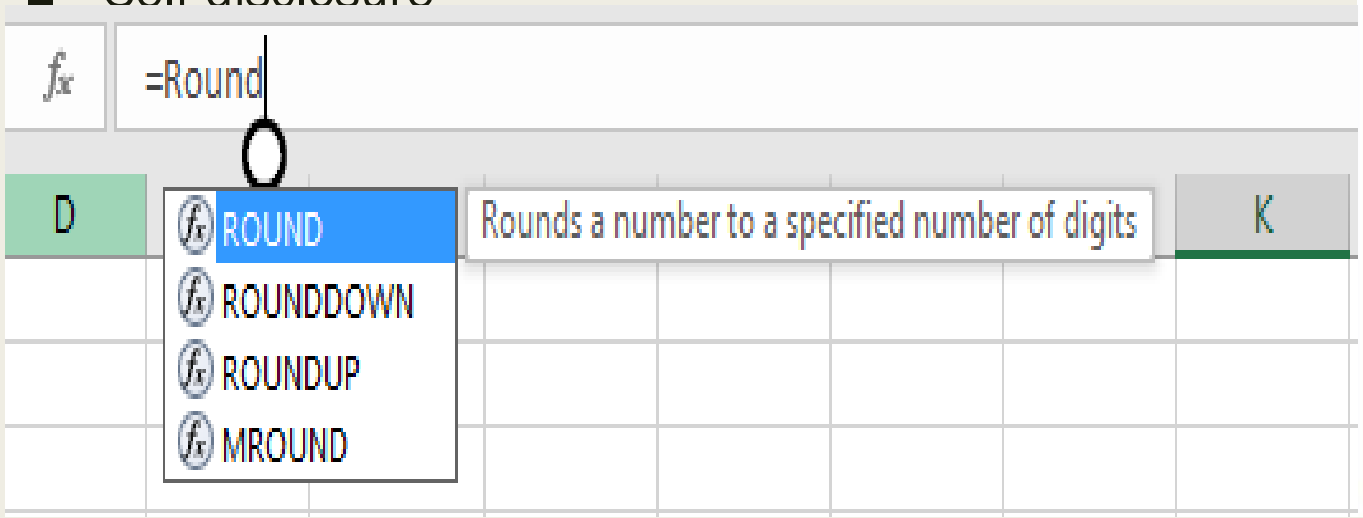
- Relevant parts of the system should be visible
  - *Not usually a problem in the real world*
  - *But takes extra effort in the computer interface*

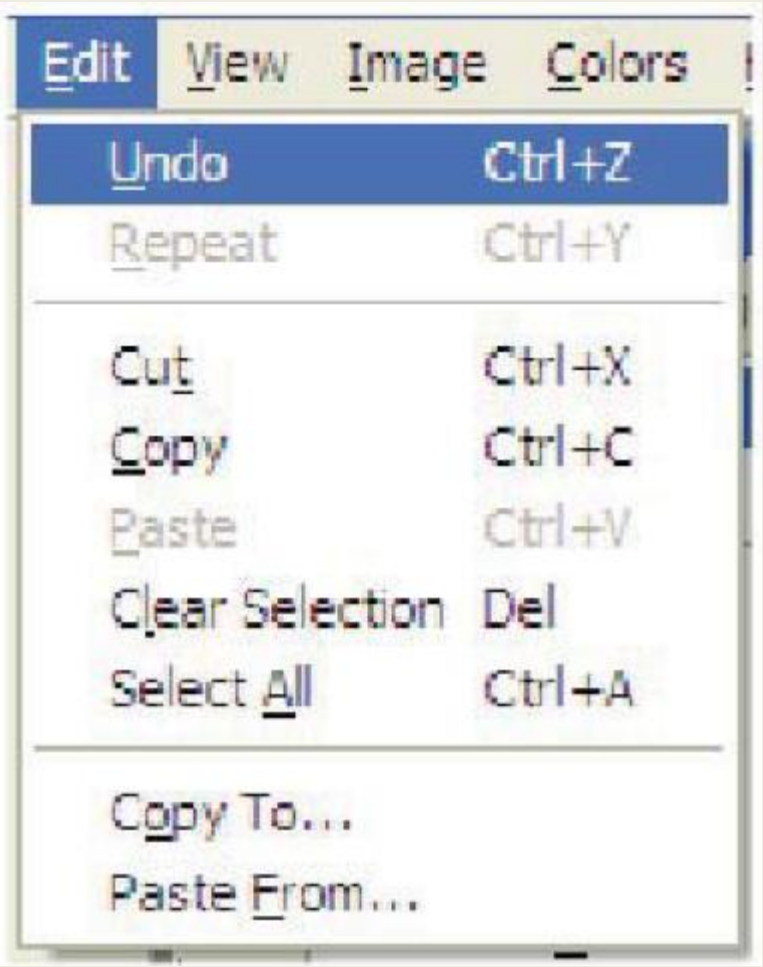
Visibility of Actions: Use Appropriate Affordances

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

Make commands Visible

- Menus
- Tooltips
- Self-disclosure



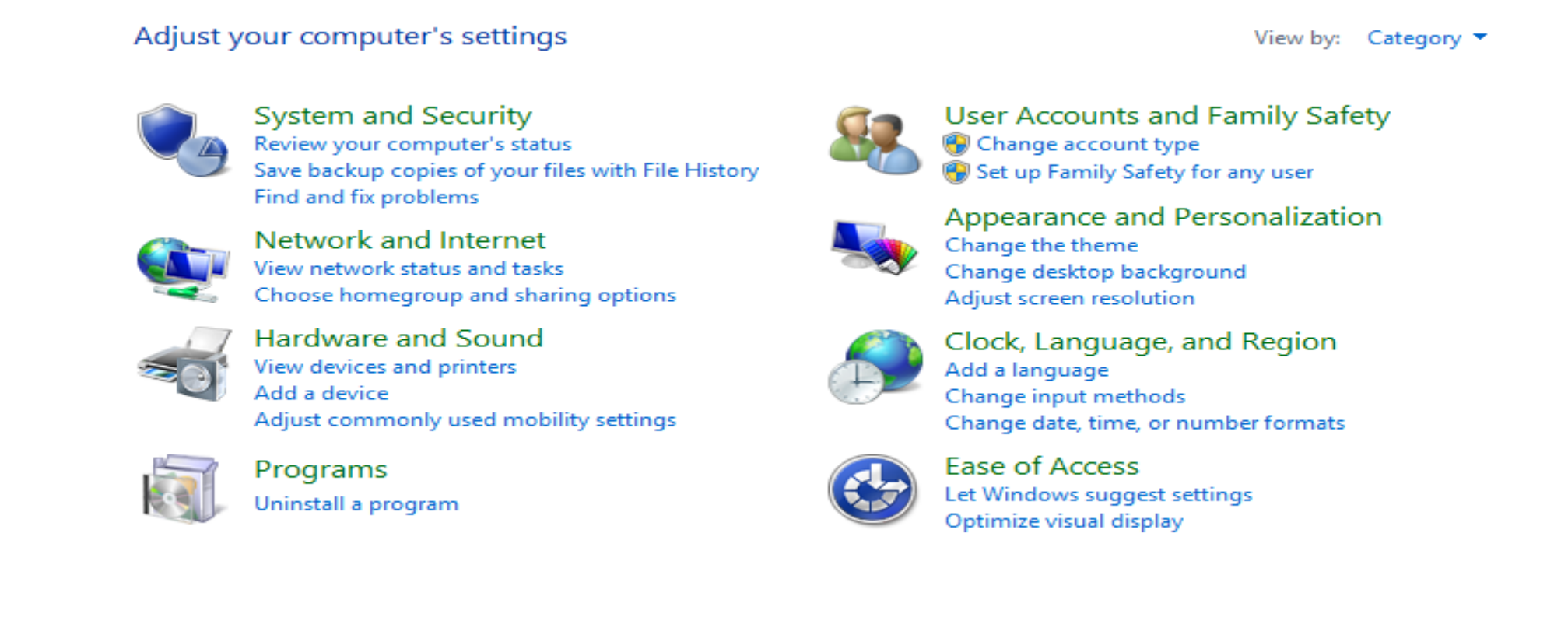


Information Scent

- 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*

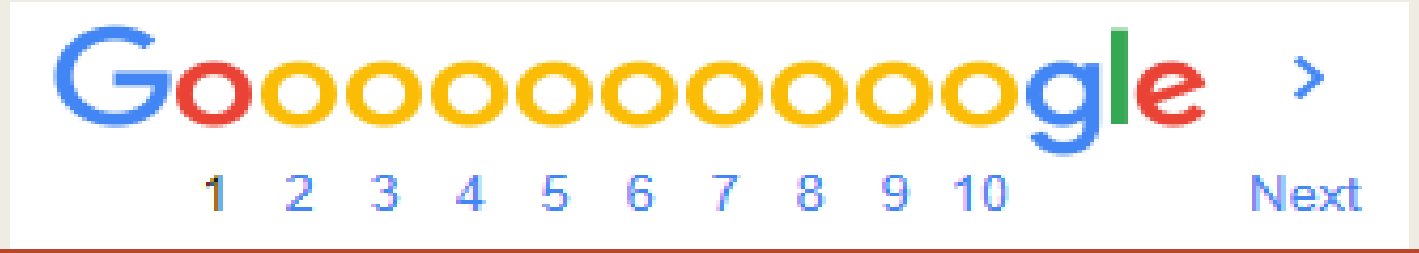
Visibility Depends on Locus of Attention

- 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?*

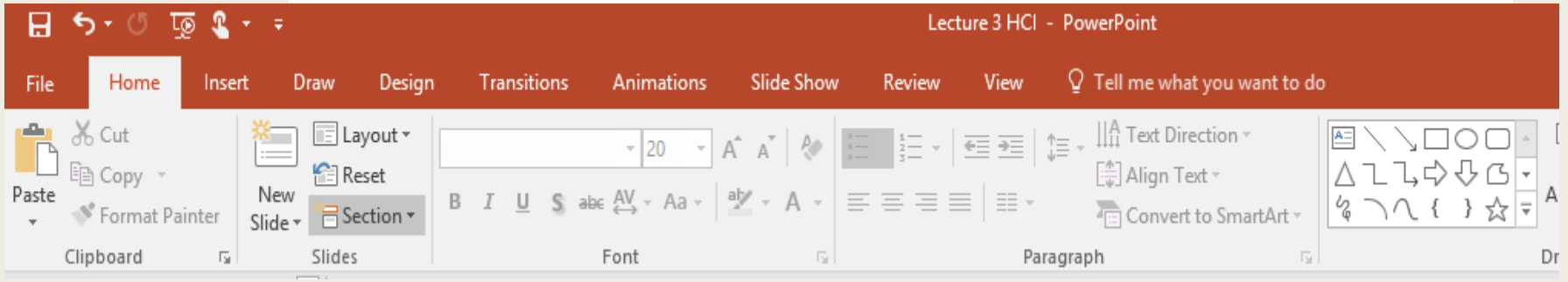
Visible Navigation State

- Breadcrumbs

- Pagination

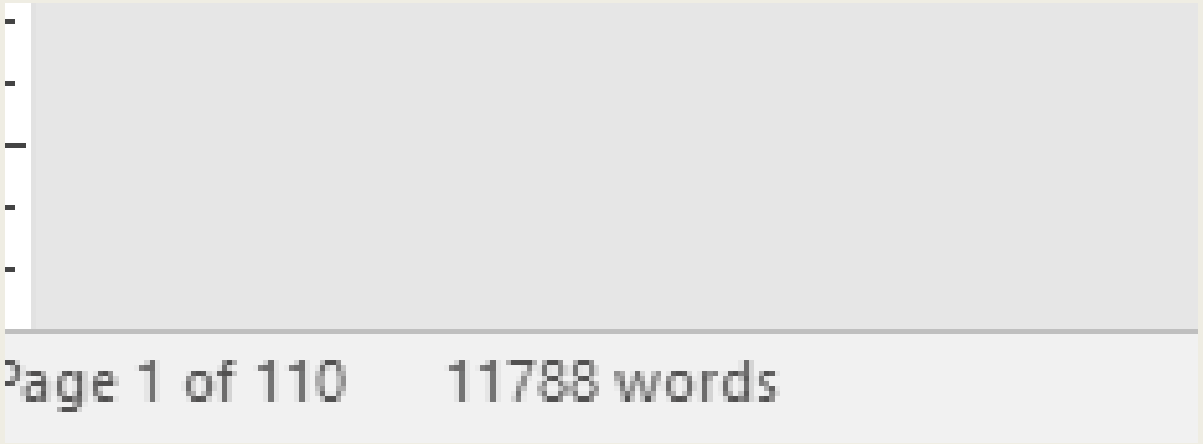


- Tabs



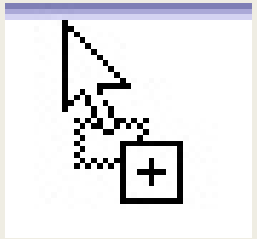
Visible Model State

- 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

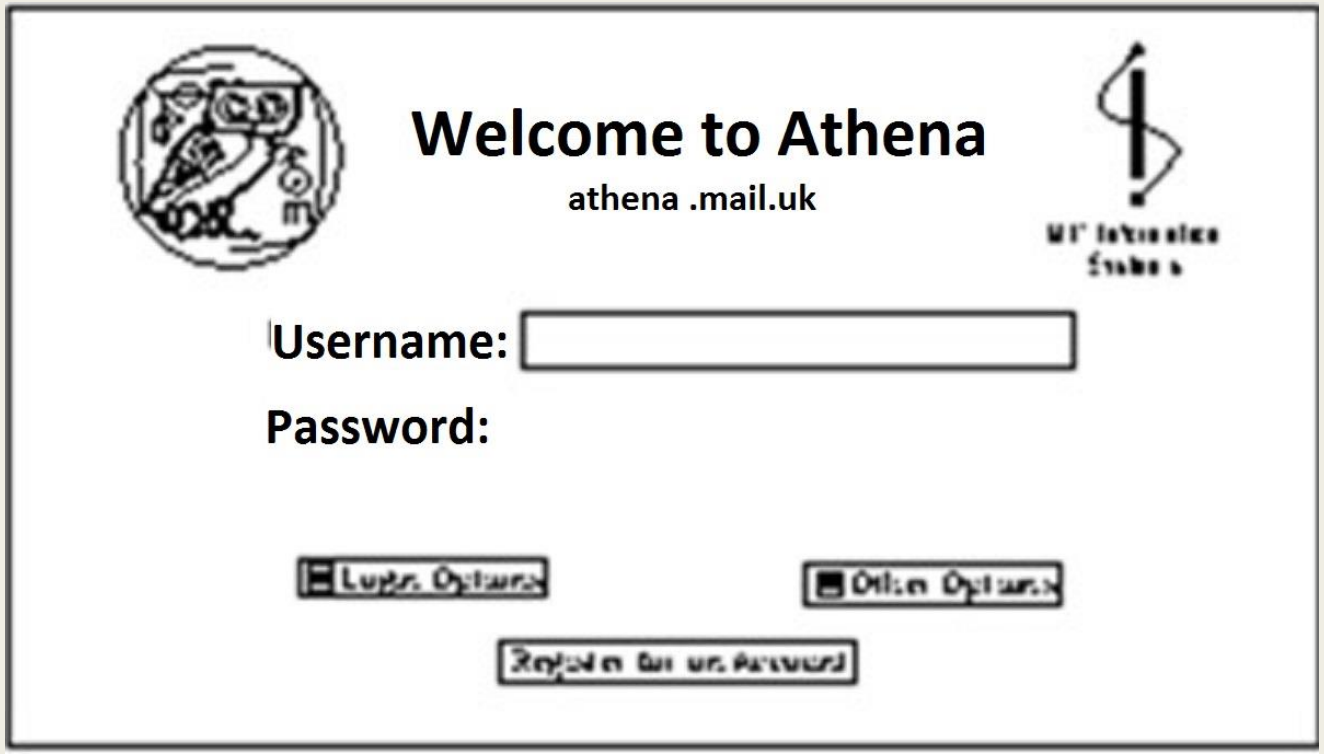


Visibility of a complex state

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



Perceptual Fusion

- Two stimuli within the same perceptual cycle (T_p ~ 100ms [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