Change Awareness

Rob Diaz-Marino
University of Calgary
CPSC 781

Outline

- Collaborative Editing
- Change Awareness
  - Importance
  - Comprehension
  - On Paper
  - On the Computer
Collaborative Editing

- Common artifacts
  - Viewed / Manipulated by 2+ people
- Modes
  - Coordinated with others
  - Not coordinated with others
  - Drift between the two

Change Awareness

- Importance
  - Duplication of effort
  - Conflicts
  - Introduction of new mistakes
  - Group consensus
Change Awareness

- What information is necessary to comprehend change?
  - Who – Presence, Identity, Authorship
  - What – Action, Intention, Artifact
  - Where – Location, Gaze, View, Reach, Context
  - When – Event History, Order
  - Why – Cognitive/Motivational History
  - How – Process, Outcome


On Paper

- Wear
  - Happens automatically
  - Ex. wrinkled edges, folds, creases, dog-ears, smudges, tears, spills, bindings…

[1] Hill, Hollan, Wroblewski, McCandless
On Paper (2)

- Editing Markup
  - Insertions
  - Annotations
  - Strikeouts
  - Overwrites
  - Block moves
  - Block scribbles

On the Computer

- Views
  - Artifact
  - People
  - Workspace
On the Computer (2)

- Wear does not automatically accumulate
  - Simulated
  - Ex. Attribute-mapped scroll bars [1]
    - (a) Normal scrollbar
    - (b) Total edit wear
    - (c) Two categories of edit wear
    - (d) Total read wear
    - (e) Three categories of read wear

[1] Hill, Hollan, Wroblewski, McCandless

On the Computer (3)

- Differencing (two versions)
  - Sequential Deltas – ex. Unix Diff
  - Annotations and Markups – ex. Word
  - Highlighting – ex. Word
  - Overviews – entire doc miniature
  - Graphical Playback – storyboard/animation

On the Computer (4)

- Differencing (multiple versions)
  - File Differencing
  - Real-time Differencing – while typing
  - Version Control Systems – ex. CVS
  - History Systems – Playback, Undo

Questions?

References
