Understanding Error

Mistakes

the user did the intended action but the action was not appropriate

Slips

the user performs an action that was not intended

- often occur with experienced users
- usually not as serious as mistakes

Minimizing error

Minimize error by following good user interface design principles

- Avoiding error through appropriate representation
  - every choice of representation provides a set of intrinsic properties, sometimes eliminating whole classes of errors
  - but every design decision is a tradeoff
  - “file doesn’t exist” example
- Avoiding false understandings
  - by giving people more information they may not make false inferences
  - rm and exit vs. quit
- Minimizing errors that result from slips
  - mode errors - better feedback
  - description errors - better consistency
  - capture errors - better feedback

Detecting error

Early detection is extremely important
Slips are easier to detect than mistakes

- How should the system respond
  - find out what was intended so the system can proceed
  - warn when something inappropriate has taken place
- The problem of level
  - where is the problem
- Failure to detect problems
  - the action will accomplish a legal action so it cannot detect an error

Six responses to an error

- Gag
  - prevents the user from continuing
- warning
  - presents warning but will not restrict the user from performing the action
- do nothing
  - the action just doesn't work
- self correct
  - system tries to guess some legal actions that might be what the user wants to do (DWIM)
- teach me
  - queries the user to find out what they meant
- let's talk about it
  - initiate a dialog with the user

Correcting error

If an error is detected, the user needs to recover from it.

- "undo"
- perform a natural inverse
- provide structured help

- Essential information
  - what the current state of the system is
  - where one came from
  - what possible alternatives there are

Readings for Wednesday, June 30th

- Article 16: Methodology Matters: Doing Research in the Behavioral and Social Sciences by Joseph E. McGrath
- Inkpen, Kori M. (1999). Designing Handheld Technologies for Kids To appear in Personal Technologies, 3(1), May 1999.