Action

(Cooper & Reinmann, 2003)

Flow and the Interface

- Flow (Csikszentmihalyi)
  - When people are able to concentrate wholeheartedly on an activity, they lose awareness of peripheral problems and distractions.
  - Software interaction should promote and enhance flow, rather than potentially breaking it and including flow-disturbing behavior.
  - The interface is the greatest threat!

Trouble with Interface

- An interface is
  - ...an artifact, not directly related to the goals of the user.
- The best interface is
  - ...no interface at all!
- Interfaces must be
  - ...at the service of the user, providing what is needed at every turn.

Making Interfaces Invisible

- Four guidelines:

1. Follow mental models
2. Direct, don't discuss.
3. Keep tools close at hand.
4. Provide modeless feedback.

1. Follow mental models

- The mind looks for pattern of cause and effect to understand the machine's behavior.
- Provide what is most likely the users will look for first, based their background.
- Yet, don't forget to improve on "mechanical-age" representations to move things forward.

2. Direct, don't discuss

- The ideal interaction is not a dialog – it's more like using a tool such as a hammer.
- Direct feedback is expected from the tool and the environment – not a dialog box.
- Direct manipulation idioms provide better and more flow-inducing interfaces.

3. Keep tools close at hand

- Most programs are too complex for one mode of direct manipulation to cover all features.
- Tools (effectors, manipulators) offer differet modes.
- Make tool manipulation and switching easy to prevent flow disturbance (provide shortcuts).
- Users should not have to divert attention from application to find a tool.

4. Modeless feedback

- Presented information and feedback should be built into the main interface and shouldn't stop the normal flow of activities.
- The heads-up display (HUD) is typically used for this purpose.

Tactical Pashto by Alelo Inc.

[Laurel, 1991]

Dramatic Techniques

- Dramatic Theory
  - Used to design interesting, engaging and satisfying human-computer activities.

From "Ívanov" in Þjóðleikhúsið

Drama vs. Narrative

- Sometimes emphasis on narrative, but...
- Human-Compupter Activities are more like **plays** than stories.

Stories	Plays
Description	Action (Enactment)
Detail	Intensity (Intensification)
Thematic Links	Causal Links (Unity of action)

Drama and Time

"...I'd design games that were meant to be played in 4-5 hours. The games would be of the same scope that I currently design, I'd just remove the silly time-wasting puzzles and take the player for an intense ride. The experience they would leave with would be much more entertaining and a lot less frustrating." (Gilbert, "Monkey Island", 1989)

- Drama imposes time limits
  - So does an interactive system.

Constraints

- Imposed constraints:
  - "Real world" or hard-ware related.
  - "Mimetic world" or software related.

Creativity and Constraints

- No limits
  - Can produce a sense of powerlessness or even complete paralysis of imagination.
- Limitations
  - Paradoxically increase imaginative power by reducing open possibilities.

Creativity and Constraints

- Closed Mimetic Worlds
  - Provide a creative security net.
  - People respect this.
  - Increased potential for effective agency where causal relations are clear and not left open.

Eve-Online by CCP Games

Good Constraints

- How should constraints be expressed?
- Explicit
  - Undisguised and directly available (e.g. menus)
  - Can be used before action.
- Implicit
  - Inferred from behavior of system (e.g. failing)
  - Preferred during the course of action.

Good Constraints

- The Mimetic Context
  - Can provide a way to make constraints appear to be within the scope of the activity.

In-Story Tutorial in Star-Trek Elite Forces by Raven Software

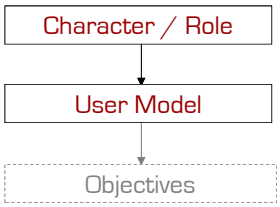
The Power of Context

- Constraints should limit...
  - ...not what we can do,
  - ...but what we are likely to think of doing.
- Context
  - Is the most effective way to do this.

Character as Context

- Character
  - A role template giving rise to action.
  - Implicitly constrains choices.
  - Inspires creativity in fulfilling that role.

User as Character



Plan Recognition

- Discover
  - What action is being performed (observation).
  - What process has started (inference).
  - What objectives are being pursued (user model).
- Intervene
  - To help user fulfil their role.
  - To guide user to a different role.

References

- Cooper, A., Reimann, R., Reimann, R. M., and Dubberly, H. 2003 About Face 2.0: the Essentials of Interaction Design. John Wiley & Sons, Inc.
- Laurel, B. 1993 Computers As Theatre. 2nd. Addison-Wesley Longman Publishing Co., Inc.