

Action

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Part I: Cooper & Reinmann

## MAKING INTERFACES INVISIBLE

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## 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!



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## 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.



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## Making Interfaces Invisible

- **Four important guidelines:**
  1. Follow mental **models**
  2. Direct, **don't discuss**.
  3. Keep tools **close at hand**.
  4. Provide **modeless** feedback.

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### 1. Follow mental models

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



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## 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.



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## 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 different 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.



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## 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.



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Part II: Brenda Laurel

## COMPUTER AS THEATRE

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## Dramatic Techniques

- **Dramatic Theory**

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



From "Ivanov" in Þjóðleikhúsið, 2008

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## Drama vs. Narrative

- Sometimes emphasis on **narrative**, but...
- Human-Computer Activities are **more like drama** than narrative.

Narrative	Drama
Description [storytelling]	<b>Action</b> <b>(Enactment)</b>
Detail [expansion]	<b>Intensity</b> <b>(Intensification)</b>
Thematic Links [episodic]	<b>Causal Links</b> <b>(Unity of action)</b>

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## 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.

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Part III: Brenda Laurel

## CONSTRAINTS

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## Interaction Constraints

- Two kinds of imposed constraints:
  - "Real world" or hardware related.
  - "**Mimetic world**" or software related.



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Create a new story...



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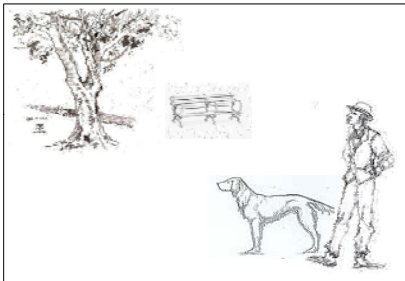
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Create a new story...



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### 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.



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## 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

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## Giving Constraints

- How should mimetic constraints be given?
- **Explicitly**
  - **Undisguised** constraint
    - Directly available (e.g. menus)
  - Can be used **before** action.
- **Implicitly**
  - **Disguised** constraint
    - Simply inferred from behavior of system (e.g. failing)
  - Can be used **during** action.

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## 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.

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## The Power of Context

- **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

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## The Power of Context

- **Character as Mimetic Context**

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



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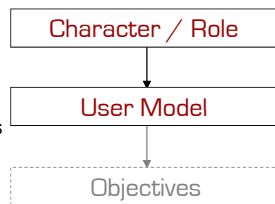
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## User as Character

- Think of the user of your environment as someone taking a specific **role**.
- A **user model** maps roles to specific interaction objectives.
- **Support these objectives** with the available actions.



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## Using 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.

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## 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.

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