A Survey of Human-Computer Interaction Design in Science Fiction Movies

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History of this paper

- Seminar talk by Michael Schmitz in 2003
- English paper online
- Slashdotted in 2006
- Comments and discussions
- Intetain paper in 2008
- New aspects, new structure
Motivation

• Movie Industry has a major influence on public mindset and opinions

• Movies also pick up current trends and fashions

• SciFi Movies show visions of the future
  • can be inspired by actual technology or research
  • can be a source of inspiration for research

• HCI plays a prominent role when presenting new or fictional technology
Researchers and filmmakers

- Films cite existing technology
- Technology inspires films
- Films inspire new technology
- Filmmakers and technologists develop shared new visions
Influencing factors for HCI in movies

• Cool looks
• Limited budget
• Available special FX
• Importance of technology for the story
Structure of the survey

- Movies adopting contemporary HCI
- Movies with unrealized HCI visions
- Movies anticipating or inspiring HCI research
- Collaboration between Movie and HCI visionaries
Movies adopting contemporary HCI

- Pre-computer ideas about interaction
- Simple adaptation of existing technology
- Advanced technology with well-known interaction
Pre-computer interaction

Metropolis (1927, Germany), directed by Fritz Lang
Simple adaptation of ex. technology

- Space ship interiors 1966 (Space Patrol)
- Typing off a punch card (Space Patrol)
- Contemp. computers & joystick (Battlestar Galactica)
- Multi display setup (Password Swordfish)
Space ship interiors 1966

Raumpatrouille Orion (1966, West Germany), Rolf Honold
Multi display setup

Password Swordfish (2001, USA), directed by D. Sena
Movies with unrealized HCI visions (or still unrealized...)

- Invasive neural interfaces
- Technologies for identification
- Display technologies
- Other I/O technologies
The Matrix: invasive neural interfaces

The Matrix (1999, USA), dir. by the Wachowski Brothers
Technologies for identification

- Logans Run: identification implants
- Gattaca: instant DNA identification
- The Bourne Identity: hand scanning
- Alien Resurrection: breath identification
The Bourne Identity: hand scanning

The Bourne Identity (2002, USA/Germany), dir. Doug Liman
Alien Resurrection: breath identification

Alien 4 (1997, USA), Jean-Perre Jeunet
Display technologies

• Xerox PARC’s Tabs, Pads and Boards aboard the USS Enterprise (both late 1980ies)?
• Physical display in X-men
• Holographic display in Forbidden Planet
• Holo Cube in Star Trek
• The holo deck in STTNG
Physical display in X-men

X-Men (2002, USA), directed by Brian Singer
The holo deck in STTNG

Star Trek: The Next Generation (1987, USA), G. Roddenberry
Other I/O technologies

- Minority Report: Balls as a Tangible UI
- The Matrix: pills as a physical UI
- The Matrix: phones as gateways between worlds
The Matrix: pills as a physical UI

The Matrix (1999, USA), dir. by the Wachowski Brothers
The Matrix: phones as gateways between worlds

The Matrix (1999, USA), dir. by the Wachowski Brothers
Movies anticipating or inspiring ongoing HCI research

- Total Recall: motion tracking
- Total Recall: ambient display
- STTNGL: navigation via public displays
- Hitchhiker: Babel fish
- Time Machine: anthropomorphomorphic interface
STTNG: navigation via public displays

Star Trek: The Next Generation (1987, USA), G. Roddenberry
Time Machine: anthropomorphic interface

Time Machine (2002, USA), directed by Simon Wells
Collaboration between Movie and HCI visionaries

- Minority Report: iris scan
- Minority Report: personalized public displays
- Minority Report: e-ink
- Minority Report: gesture interfaces
Minority Report: e-ink

Minority Report (2002, USA), directed by Steven Spielberg
Anecdotes

• The Fifth Element: humanity
• Star Trek: Hello computer!
• Futurama: speech interfaces
• Galaxy Quest
• Dark Star: Ultimate AI
Star Trek: Hello computer!

Star Trek IV: The Voyage Home (1986, USA), Leon. Nimoy
Dark Star: Ultimate AI

Dark Star (1974, USA), directed by John Carpenter
Summary

- SciFi movies influence and are influenced by public perceptions of technology
- HCI prominent in movies
- Different forms of influence
- Many examples, few shown
- Other ordering principles possible
The End