

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

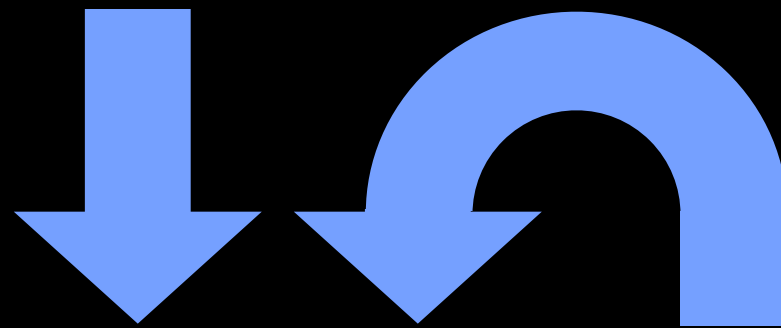


Motivation

- 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

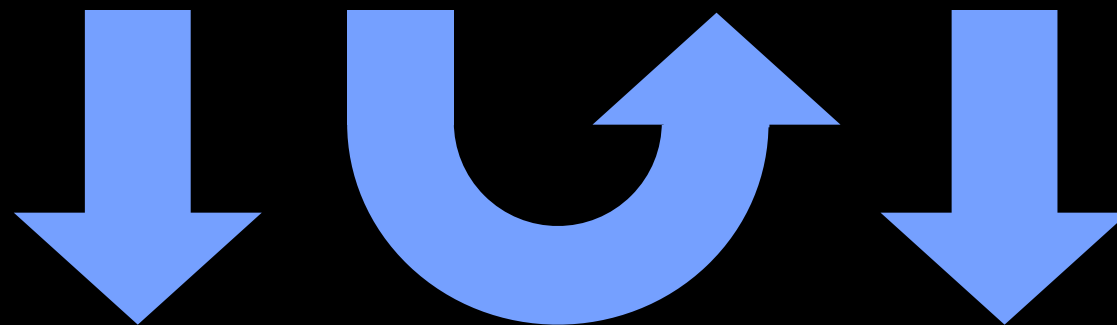
Researchers and filmmakers

films cite existing technology



technology
inspires films

films inspire
new technology



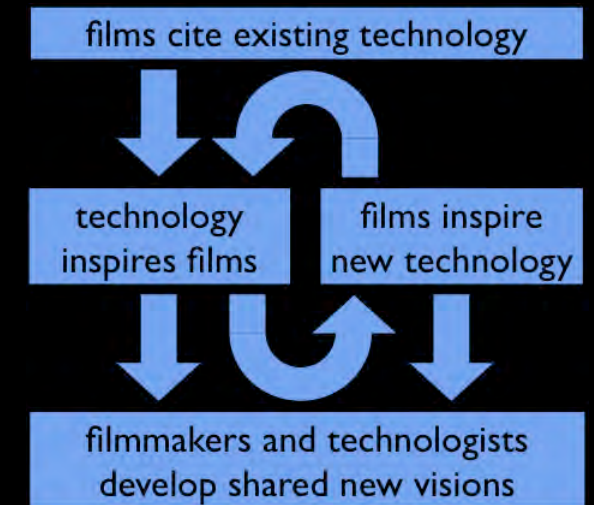
filmmakers and technologists
develop shared new visions

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

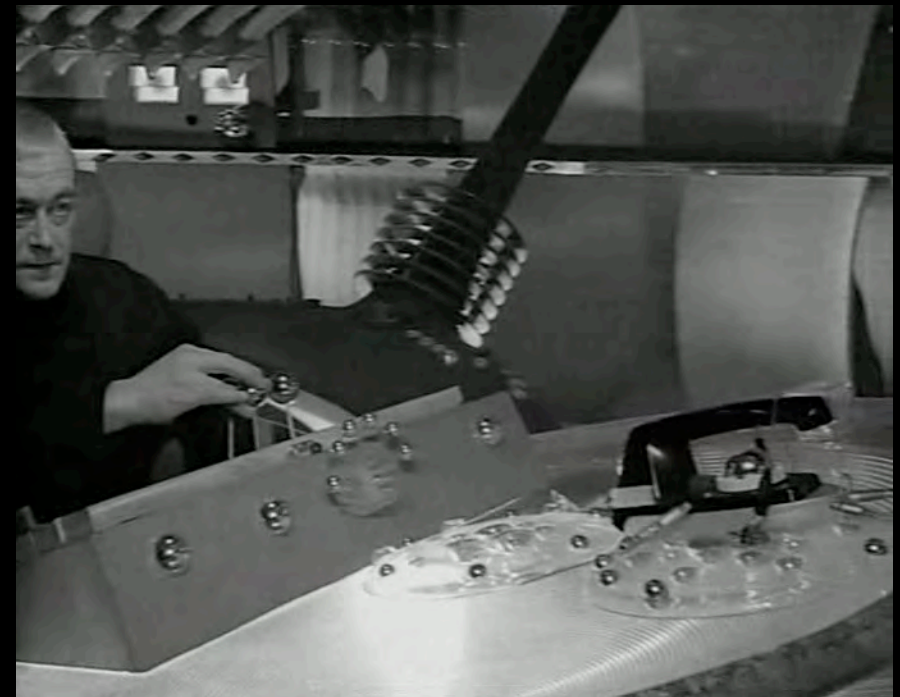
- Pre-computer ideas about interaction
- Simple adaptation of existing technology
- Advanced technology with well-known interaction

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

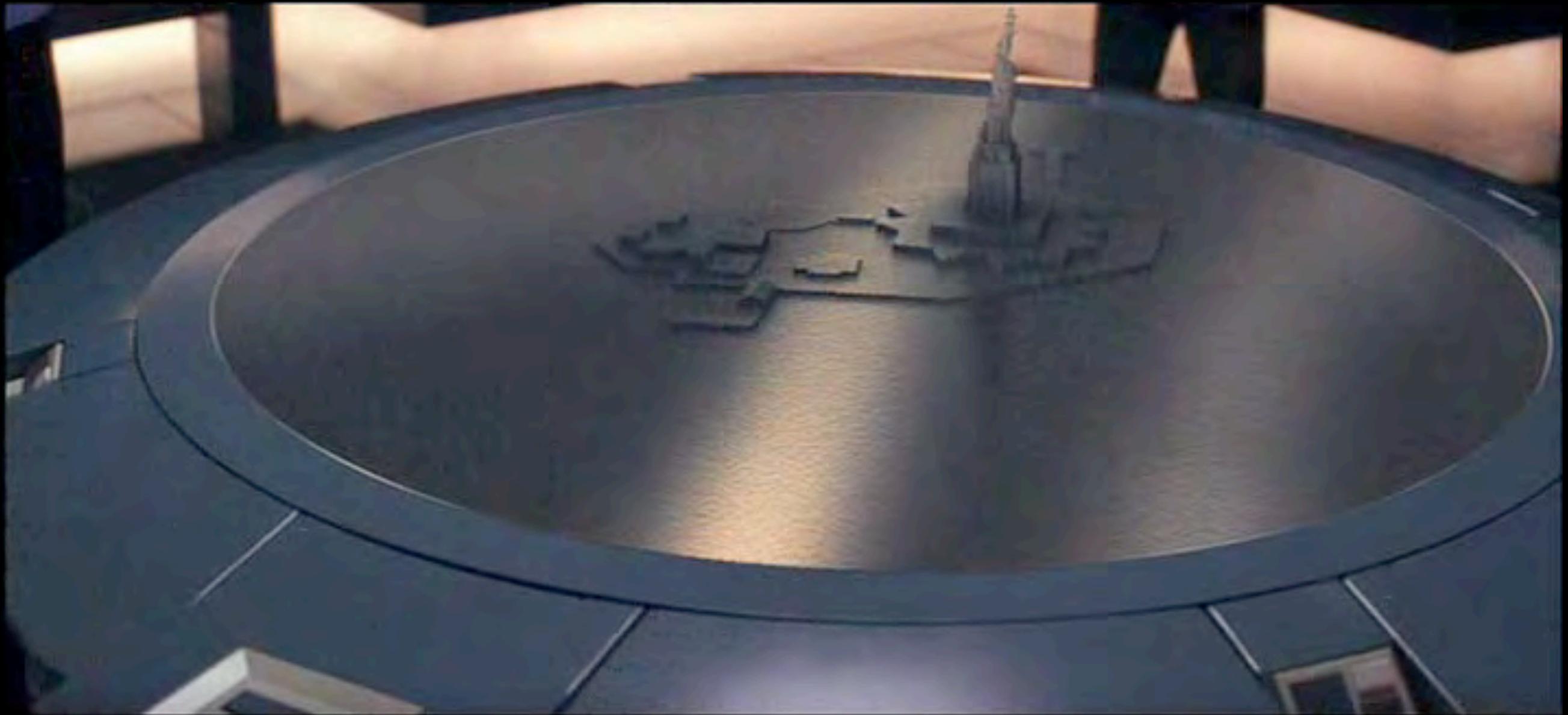


Alien 4 (1997, USA), Jean-Pierre Jeunet

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
- STTNG: navigation via public displays
- Hitchhiker: Babel fish
- Time Machine: anthropomorphic interface

STTNG: navigation via public displays



Star Trek: The Next Generation (1987, USA), G. Roddenberry

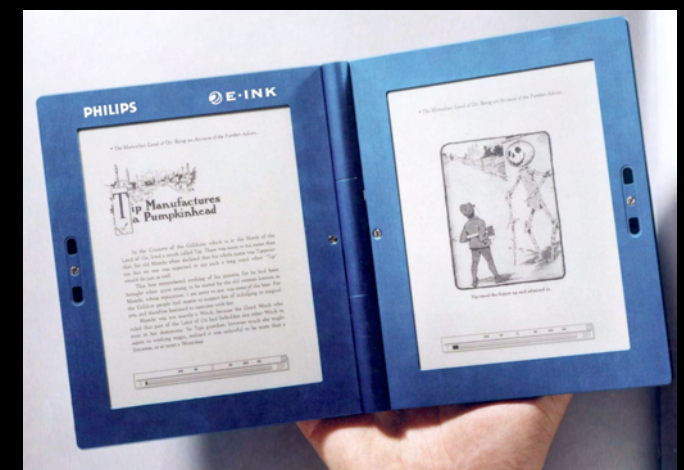
Time Machine: anthropomorphic interface



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

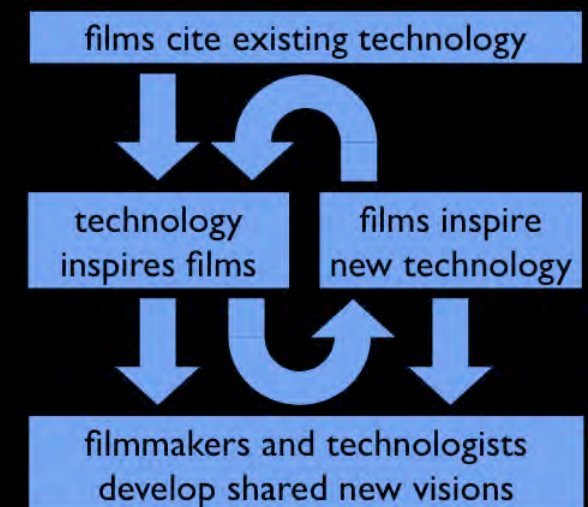
Dark Star: Ultimate AI



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