Chapter 1 - Mental Models

• Various types of models

• Interaction of the models
  – Transparency
  – Flexibility

• Execution of goal-directed actions
The Model of the Way How Something Works

https://www.youtube.com/watch?v=v9kTVZiJ3Uc
Mental Models

What was the “mental model” which Commander Montgomery Scott (“Scotty”, here “The Professor”) had of the computer in front of him?

Commander Scott will be born in the year 2222, if the movie is right.

For how long will we be using a mouse to operate a computer?

What was the mental model of computer users in the 1930s to 1940s?
Various Types of Models

- Conceptual model
- Mental model
- Implemented model
- Presented model

Designer → System
User → System

Developer

System

Based on Material by A. Butz & A. Krüger
Example Seesaw

Are all those models relevant here?
Example Car
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Transparency

- Conceptual model
- Designer
- System
- Implemented model
- Presented model
- Implem. model
- User
- Mental model

identical
Example: Transparency Violation
Dropbox Example 1

An item named “hci_0_Introduction” with extension “.key” already exists in this location. Do you want to replace it with the one you’re moving?

- Keep Both
- Stop
- Replace

Local Folder

Dropbox Folder

2014 HCI-1 schedule

hci_0_Introduction

hci_1_BasicModel

hci_2_Perception
Dropbox Example 2

"Why has my file disappeared from the local drive?"
Flexibility = Various Ways to the Same Goal
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Execution of Goal-Directed Actions

Donald Norman: The Seven Stages of Action
(in: The Design of Everyday Things)
Goal-Directed Actions & Models

• How are goal-directed actions related to mental/conceptual models?
• How are human mistakes in operating a system related to mental/conceptual models?
• Can we find real-life examples in an attempt to answer these questions?
  – Real “gulf” experiences (of execution, evaluation)