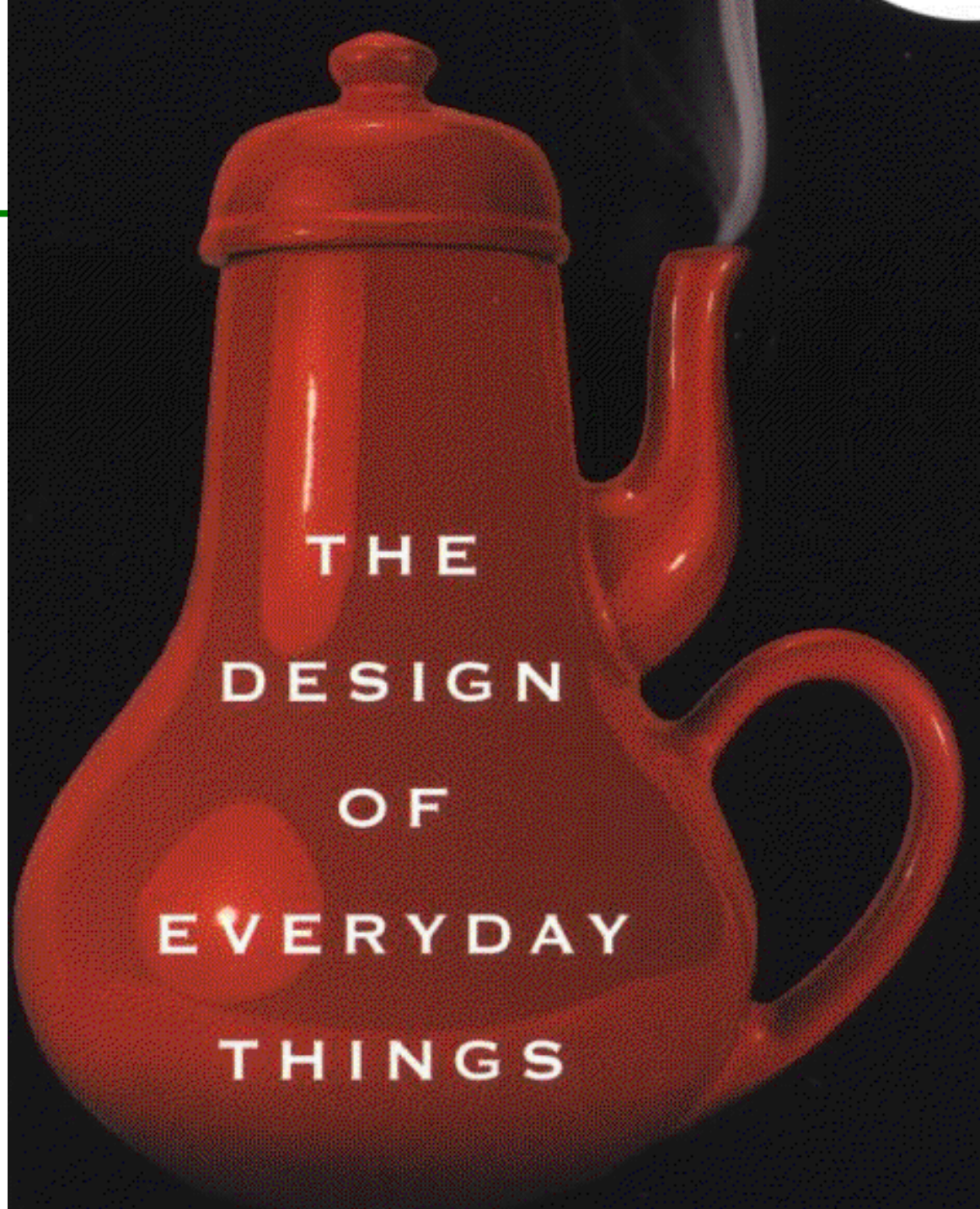

THE
DESIGN
OF
EVERYDAY
THINGS

kap. 1: The psychopathology of everyday things

psy·cho·pa·thol·o·gy
Pronunciation: "sI-kO-p&-'thä-l&-jE, ...

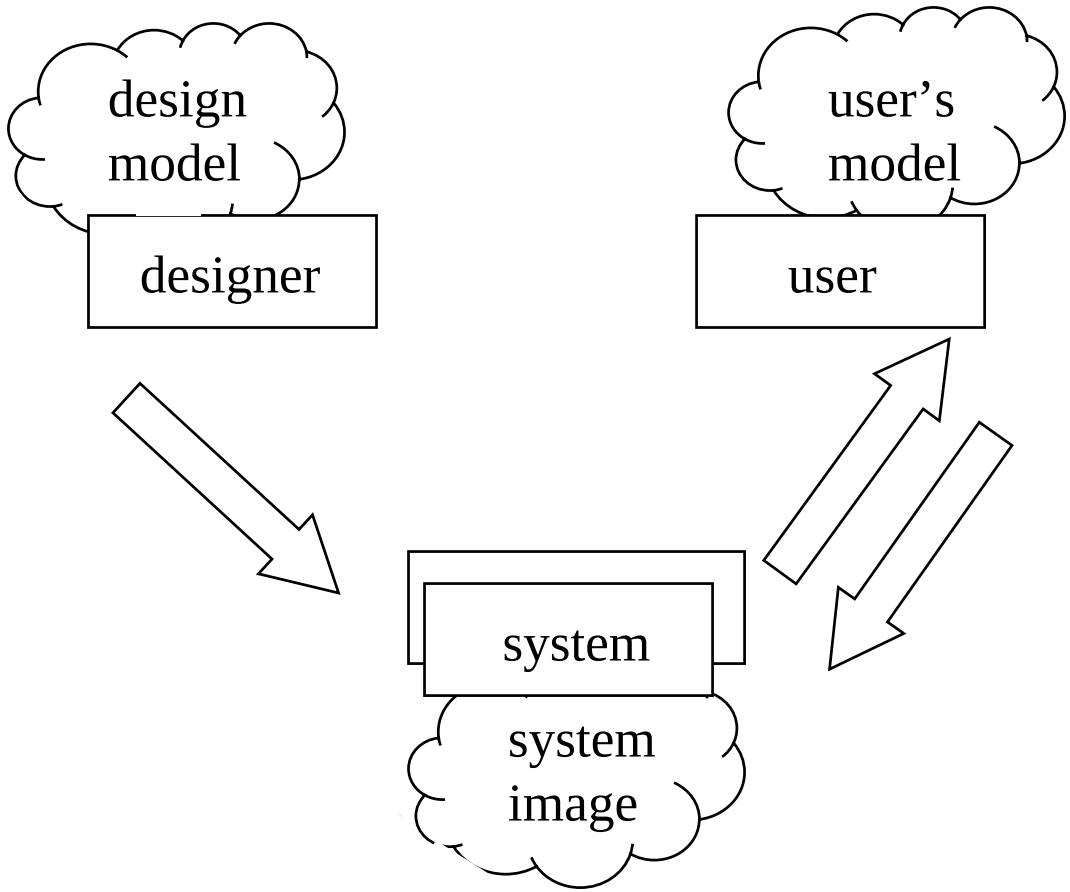
the study of psychological and behavioral dysfunction occurring in mental disorder or in social disorganization; *also* **:** such dysfunction

Affordances:

”the perceived and actual properties of the thing, primarily those functional properties that determine just how the thing could possibly be used ... A chair affords (”is for”) support and, therefore, affords sitting.”

kap. 1 fortsatt

Conceptual models:



- visibility
- mapping
- feedback

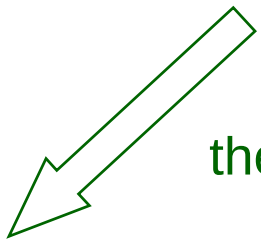
Kap. 2: The psychology of everyday actions

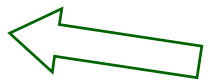
”menneskelig svikt”

- falsely blaming yourself
- lært hjelpeløshet

The seven stages of action:

1. forming the goal
2. forming the intention
3. specifying an action
4. executing the action
5. perceiving the state of the world
6. interpreting the state of the world
7. evaluating the outcome





the gulf of execution:

the difference between the intentions and the allowable actions

the gulf of evaluation:

the amount of effort that the person must exert to interpret the physical state of the system and to determine how well the expectations and intentions have been met

Kap. 2 fortsatt

The seven stages of action:	*Using the seven stages of action to as design questions:* **How easily can one**:
1. forming the goal	1. determine the function of the device?
2. forming the intention	2. tell what actions are possible?
3. specifying an action	3. determine mapping from intention to physical movement?
4. executing the action	4. perform the action?
5. perceiving the state of the world	5. tell if the system is in desired state?
6. interpreting the state of the world	6. determine mapping from system state to interpretation?
7. evaluating the outcome	7. tell what state the system is in?

Kap. 3: Knowledge in the head and in the world

- information is in the world
- great precision is not required
- natural constraints are present
- cultural constraints are present

Memory is knowledge in the head

- of arbitrary things / meaningful relationships / explanation

Memory is also knowledge in the world - reminding

natural mapping

Tradeoffs:

- Retrievability
- Learning
- Efficiency of use
- Ease of use at first encounter
- Aesthetics

Kap. 4: Knowing what to do

Constraints:

- physical
- semantic
- cultural
- logical

Applying affordances and constraints to everyday objects

- visibility
- feedback

Kap. 5: To err is human

Slips:

- capture errors
- description errors
- data-driven errors
- associative activation errors
- loss-of-activation errors
- mode errors

prevent before occur

detect and correct when occur

Models of human thought

Structure of tasks (wide & deep, shallow & narrow)

How to deal with error — and how not to

- forcing functions (interlocks, lockins, lockouts)

Kap. 5 fortsatt

Designing for error:

- understand the causes of error and design to minimize those
- make it possible to reverse actions — to ”undo” them — or make it harder to do what cannot be reversed
- make it easier to discover the errors that do occur, and make them easier to correct
- change the attitude towards errors .. don’t think of the user as making errors; think of the actions as approximations of what is desired

A design philosophy

1) put the required knowledge in the world
2) use the power of constraints
3) narrow the gulfs of execution and evaluation

Kap. 6: The design challenge

Problemer ved design-prosesser og designere...

Designere

- er ikke typiske brukere
- deres klienter (oppdragsgivere) er kanskje ikke brukere heller

Design-prosessen er kompleks

- hvem designer vi for? (”there is no such thing as the average person.”)
- fokus setter noe i forgrunnen og andre ting i bakgrunnen
- deadly temptations:
  - creeping featurism (”Hollywood programmering”)
  - worshipping of false images (symbolverdi)

Kap. 6 fortsatt

How to do things wrong:

- make things invisible: widen the gulf of execution (no hints of expected operations) & establish a gulf of evaluation (no feedback, no visible results)
- be arbitrary: use nonobvious command names or actions & arbitrary mappings between intended action and what must actually be done
- be inconsistent: change the rules. Let something be done one way in one mode and another way in another mode.
- make operations unintelligible. Use ideosyncratic language or abbreviations. Use uninformative error messages.
- be impolite. Treat erroneous actions by the user as breaches of contract. Mumble unintelligible verbiage.
- make operations dangerous. Allow a single erroneous action to destroy invaluable work. Make it easy to do disastrous things. But put warnings in the manual ...

Kap. 7: User-centered design

Seven principles for transforming difficult tasks into simple ones:

1) use both knwoledge in the world and knwoledge in the head
   - conceptual models: the designer, the user & the system
2) simplify the structure of tasks
   - keep task w. mental aids, make visible invisible aspects, automate & keep or change. NB don't take away control
3) make things visible: bridge the gulfs of execution and evaluation
4) get the mappings right ("natural mappings")
   - between intentions & possible actions; actions & their effects; actual system state & what is perceived; perceived state & needs, intentions, expectations of the user
5) exploit the power of constraints, both natural and artificial
6) design for error
7) when all else fails, standardize