* Creativity
Interaction Design & Creativity?

- We have not talked so much about Interaction Design yet

- First Observing Design and now…
  - Creativity…

- And then we are off to the INTERACTION!
What is Creativity?

- The making of something unknown (for you?)
- A novel way of doing something
- Reuse artifact/method in new context
- Take on a new perspective

- Creativity can be deliberate or by chance
- Everyone CAN be creative (not everyone is)
Creativity

Something outside of the box
Creativity

Something outside of the
How to furnish Creativity?

- Creativity does most of the time not just come into existence
- It has to be promoted
- Theory?
Theoretical approach

A couple of stages:

1. **Preparation** – defining the problem
2. **Incubation** – putting the problem aside
   - Three B:s – Bed, Bath, Sauna…
3. **Insight** – gather inspiration – observe design
4. **Verification** – does it really work?
5. **Implementation** – make it happen

*How to achieve this?*
Are you sleeping?
Are you sleeping?

No, I am being creative!!!
Prerequisites

- Understanding of problem area
- Technology skill – abstract from procedure
  - Compare to a good cook (!)
- Motivation, stubbornness and endurance
- Focus
- Discipline
- Hard work is not always a success
  - Physical activities inspires new thoughts
  - Completely different activities may help
Inspiration
Inspiration

Can be everywhere...
Inspiration
Some Approaches

- Not theoretically grounded, but they seem to work!

- Find YOUR own approach!
  - You might do it differently!

- Free YOUR mind!
Inversion (Tõnis Tõnisson)

- Use negations – the opposite
- Negate or inverse your problem
  - How can I make people walk on the roads?
  - How can I make roads where people walk?
- Thinking outside the box
  - Get rid of limitations that YOU put
  - Unpredictable
- Not solving the problem, but changing the problem (and the solution)
Analogies - Metaphors

- Find Analogies or Metaphors
  - A thing that reminds us of something else
  - We can see similarities
    - Camera – eye

- Select a random object, and compare attributes:
  - A book has a protecting cover, like a car has a bodywork for protection ➔ paint art on the cars!
Collect examples

- Can I use this for something?
- What does it look like?
- What thoughts do I get?
Collect examples

- Can I use this for something?
  Shape? Style?
- What does it look like?
  Tower? Speaker?
- What thoughts do I get?
What if...

- What happens when it falls?
- How did the tree get up there?
- Could I change the balance?
- What would the chair look like?

Teufelstisch, Pfalz, Germany
A cockpit!
A cockpit!
A cockpit!

Similarities? Differences? Analogies? Transfers?
Desktop Metaphor, Xerox 1981
Desktop Metaphor, Mac 1983
# Visicalc, 1979 (Excel)

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**Subtotal:** 13155.50

**9.75% Tax:** 1282.66

**Total:** 14438.16
How it happened

As a professor was giving a lecture, he found an error in a single cell and was forced to change the value in every other cell. Bricklin imagined his pocket calculator (a TI Business Analyst) outfitted with a small trackball, like the mouse demonstrated by Douglas Engelbert several days before at Harvard, and a simple interface that would allow him to create spreadsheets that could be corrected and redone on the fly.
Non-creative solutions?
Help or Helpful?
Change Conditions

- What if… - solutions
  - Display the assumptions/limitations
  - Examine what will happen if you change or remove the assumptions
    - What if software/travel/news were free?
    - What if gravity were negative for one minute each day?

- Extrapolate problem
  - Will it scale? Will it reduce?
  - Can it melt? Will it freeze? What if?
    - Eric Drexler - nano
Change old patterns

- View the normal as the strange, and the opposite – difficult, but practise…
Change old patterns

- View the normal as the strange, and the opposite – difficult, but practise…
- Try out something new
  - take a different route
  - talk to strangers
- Combine two completely different ideas
- Do the unexpected
Change view…
Use randomization

- Pick-a-Card
  - Write down words on small cards
  - Put pictures on small cards
- On-line word generators
- Text scramblers
- Important to use FIRST word/association one gets
  - Once caught - refine and associate further
Right side of brain

- Left part – language
- Right part – creativity

Working with right side may bring new answers

- Wordless creation, images, pictures
- Collages

Free Mindmappening
Collaging/ScrapBooking

- Paper + magazines + glue
- Computerbased tools
  - Picasa, PowerPoint, etc.
- Imagination
- Perspective
Ask Questions!

- A formal scientific deduction
  - But also a creative game!
- Find causes and contexts
  - Why?
  - What?
  - Where?
  - When?
  - How?
  - Who?
Listen to "undamaged" children!

- "There was one thing that was strange with the robot!"
Listen to ”undamaged” children!

- ”There was one thing that was strange with the robot!”
- ”Yes?”
Listen to "undamaged" children!

- "There was one thing that was strange with the robot!"
- "Yes?"
- "Well, it talked to me in English, but it understood when I spoke to it in Swedish! Isn’t that straaange?"
- *That it had done several tasks at her instructions and followed her around the house was NOT strange!*
Followup the questions!

- Why do so many die in traffic accidents?
  - Because people do not watch out.

- Why do people not watch out?
  - Because they get easily distracted and don’t look around themselves.

- Why don’t they look around themselves?
  - Because this is not taught in schools anymore, maybe cause it is difficult to teach.

- Why is it difficult to teach?
  - Because…
  - And so on…

- Somewhere along this question-answer chain we might find the ”real” answer we want.
Lower your standards

- William Stafford
  - Writer’s block
  - Training
  - A Poem a day!

- Critique is less harmful
What do you do…

- If you don’t have a white board at home (but have white board pens)?

- If you have two bags to many to bring home from the car?

- If you need to hang something on the wall, but don’t have any nails?
What would you do…

- If, during a maneuver in the army, you came with your truck to a bridge, that had a sign saying:

  “This bridge does not exist, it has been blown up”

  …and the guard won’t let you pass even when you point out that it is there in front of you?

(creative interaction suggestions, please)
Brain storming

- Stimulates creative thinking in groups
- Own ideas based on other’s
- Moderator – presents a problem and make sure the rules are followed:
  - Positive thinking – no stupid ideas (maybe rejected but not stupid)
  - Interruptions not allowed
  - Never criticize other’s ideas
  - Select the best ideas afterwards
  - Document!
Some notes…

- All ideas should be documented
- Critique delimits – no premature critique
- Use efficient tools, simple tools are preferred!
- Practise makes expert

Learn (force yourself) to:
- Use existing things, the room etc.
- Change perspective
- Use your tools
Brain food

- Think about how to design a "Hi-Fi switch"!
- How can you make a system easy to connect and configure, so that you can send sound and picture from one unit to another!

- Ease of use!
- Novel ideas!
- Analogy
- Principles, not details, first!!