

# ::: reflection through interaction

raising energy awareness among young people with interaction design and speculative re-design of personal objects



## introduction :::

master program hci:id @ it university of göteborg

interactive institute + re:form research studio

power research studio + static! project

the swedish energy agency



## **the static! project :::**

increasing energy awareness through interaction design

focusing on domestic and public spaces

targeting a general population



## problem area :::

society increasingly dependent on energy

more electrically powered objects, appliances and gadgets

energy awareness through information campaigns, laws and regulations



## master thesis scope :::

proposing interaction design for raising energy awareness

focusing on young people and their personal objects

using conceptual design and a critical approach



## specific research question :::

can re-designed personal objects reinforce young people's awareness about energy consumption and stimulate a change of their energy behaviour in everyday life?



## general research questions :::

can interaction design be used  
to achieve a reflection through interaction  
that results in a change of existing behaviours?

can conceptual design act as a mediator for this purpose?

and can a critical approach be appropriate in order to success?





## conceptual design in an art and design context :::

art objects

illustration of theory





## conceptual design in a commercial context :::

business direction and vision concepts

product development and foresight

marketing and branding



## critical and provocative design :::

design is a powerful agent of change

»critical design can never be truly popular«

ask carefully crafted questions

stimulate discussion and debate

para-functionality



## methodological framework :::

the design process

the role of the designer

a number of design methods



## the design project :::

gathering inspiration and information

expanding the mind

grouping and characterising the ideas

refining ideas to concepts

evaluating and building mock-up models



## gathering inspiration and information :::

cultural probes

personal inventory

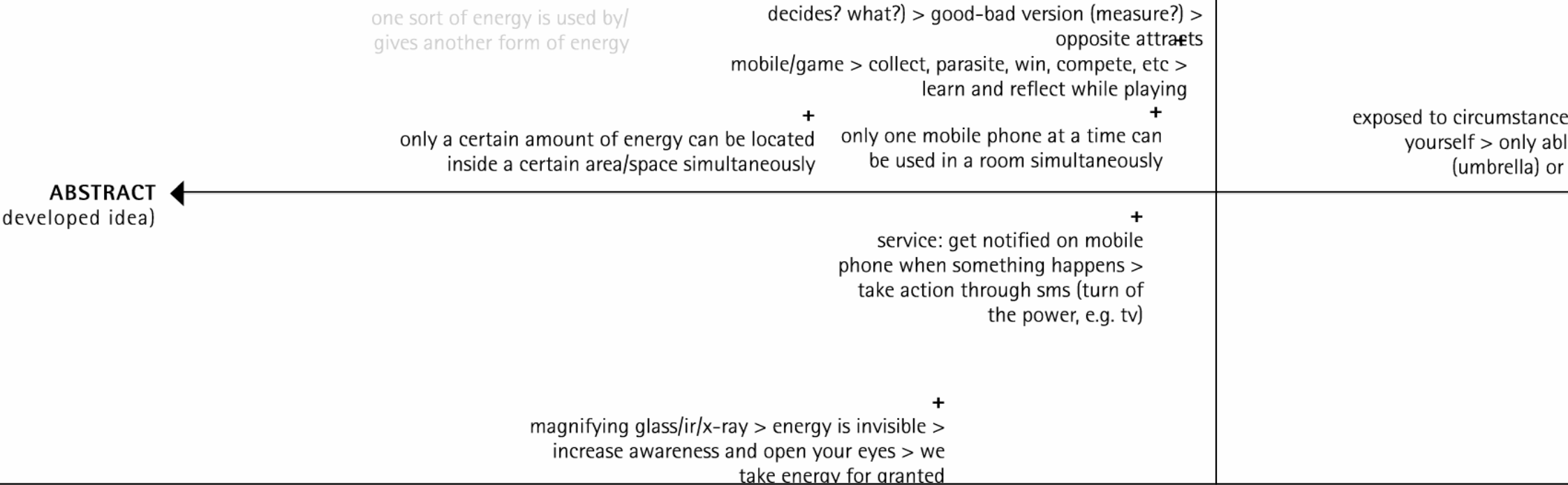
secondary research



expanding the mind :::

brainstorming in slow motion

sketching and drawing



# grouping and characterising the ideas :::

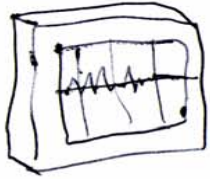
affinity diagram

matrix diagram

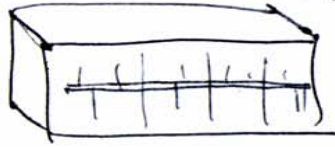


personalisa

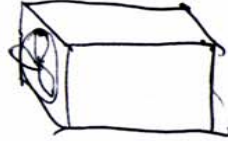
radio/mp3/cd



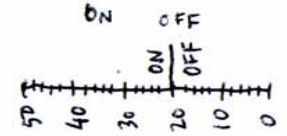
... uses streaming/radio/MP3



... uses wind



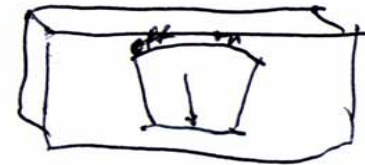
stromverbrauch glie für  
und ein... uses high temperature



... will solar



... uses heat



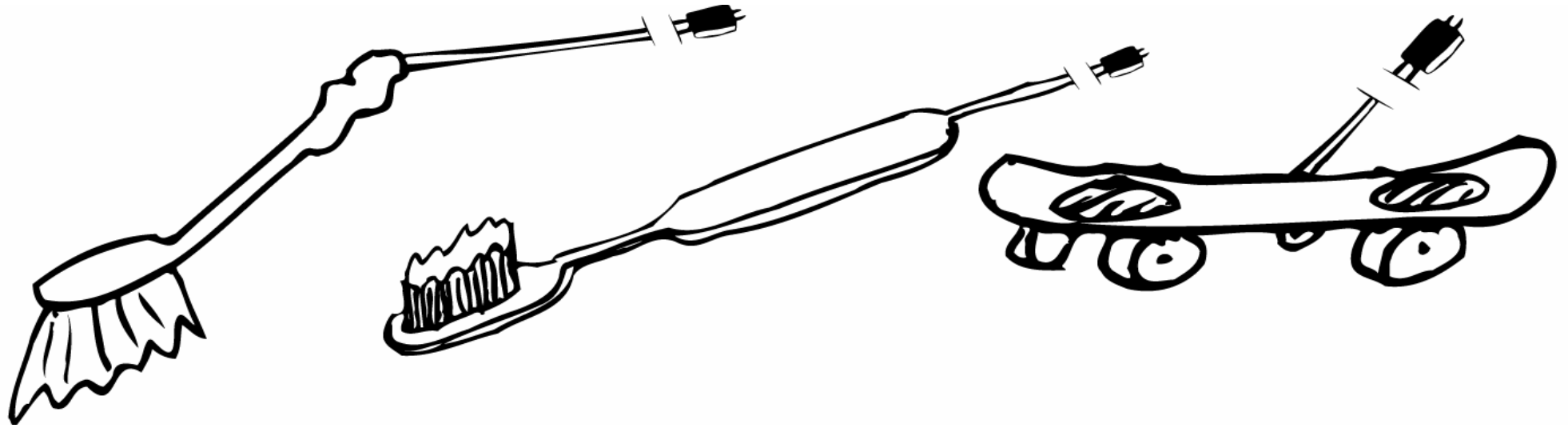
power consumption  
localisation  
dependency

## refining ideas to concepts :::

refinement of ideas in three iterations

resulting in three themes of conceptual design proposals

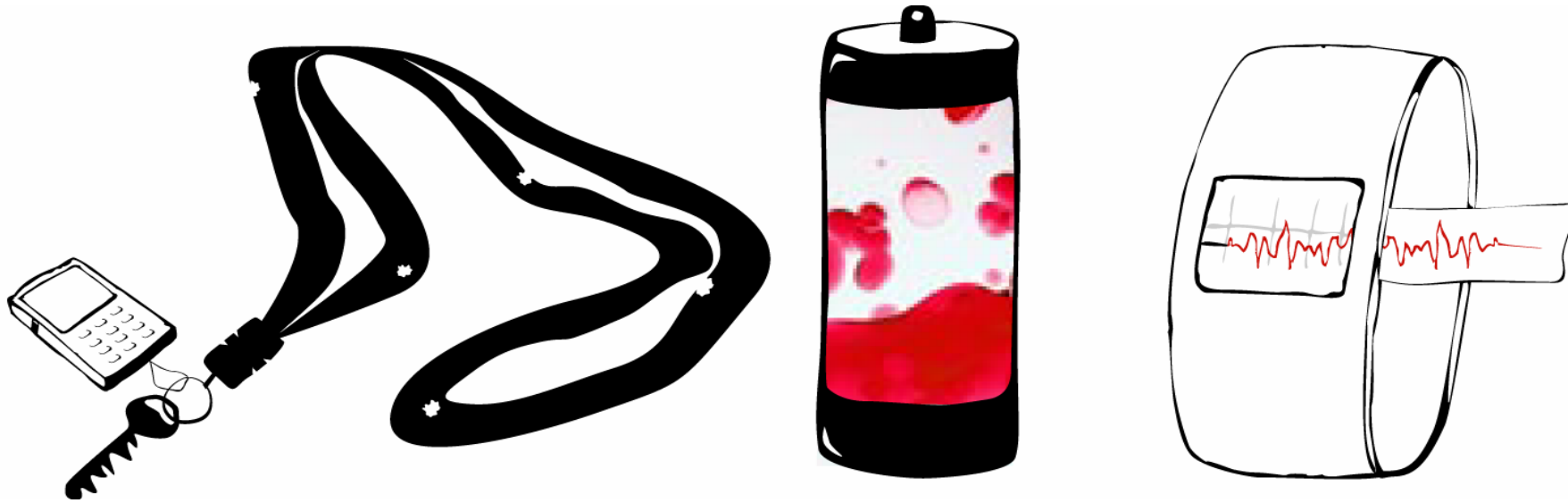
energy generation + energy visualisation + energy localisation



**energy generation theme :::**

battery chargers

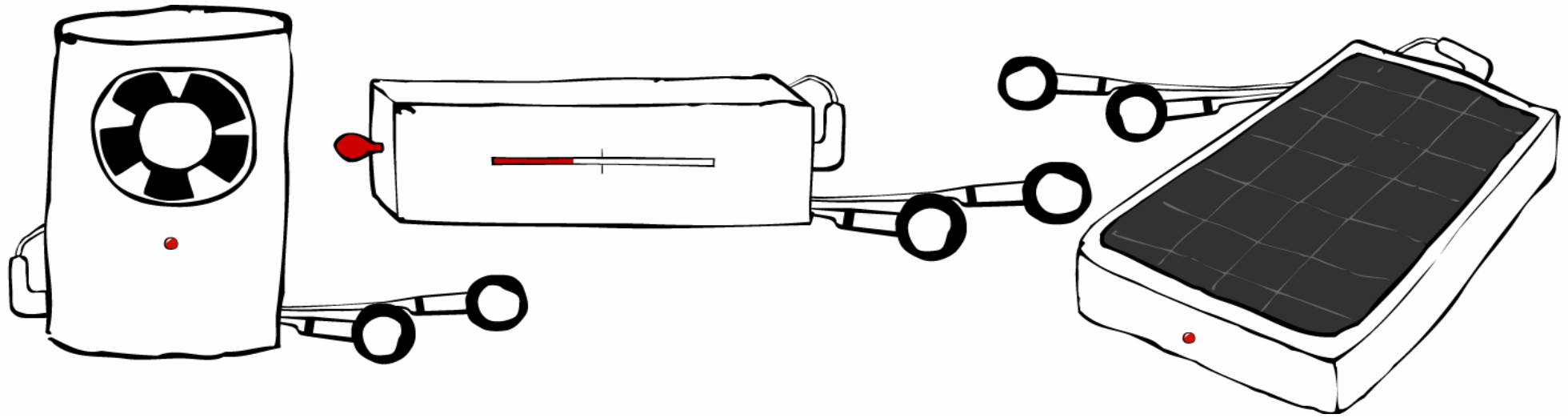
generating sustainable energy in natural interaction with ordinary objects



## energy visualisation theme :::

accessories

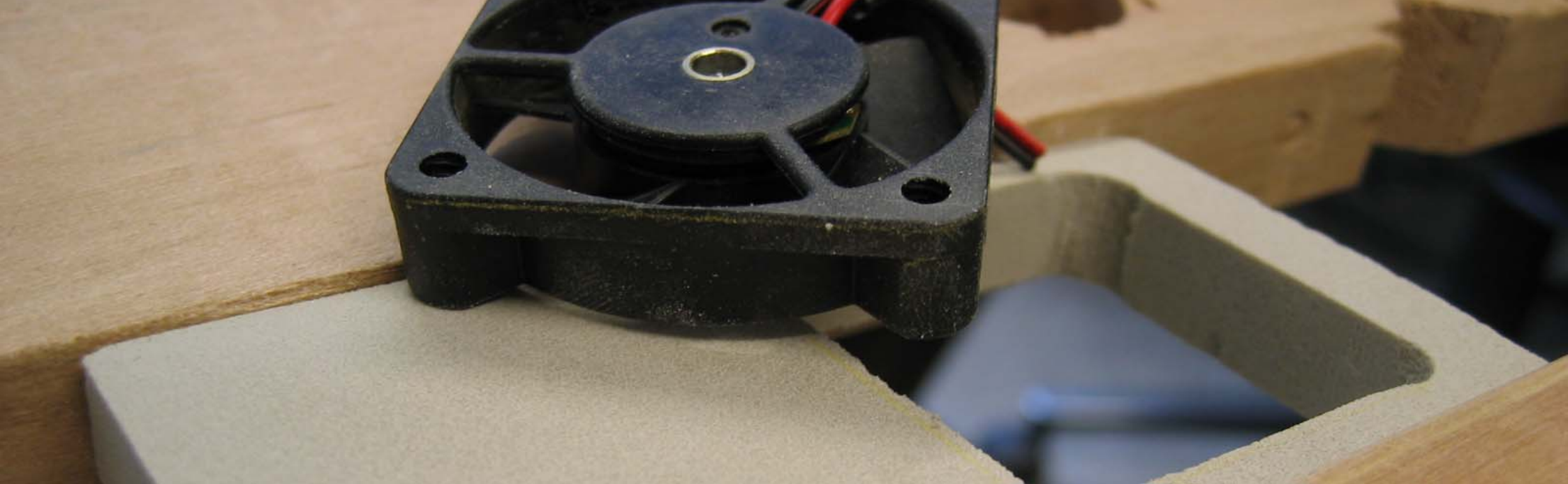
visualising and indicating »dangerous« mobile phone radiation



## energy localisation theme :::

music players

localising sustainable power sources in the surroundings



## **evaluating and building mock-up models :::**

workshop with students discussing sketches of conceptual design proposals

illustrating the concept with three non-working mock-up models

mock-up models :::



## highlighting aspects of energy awareness :::

choices

cost to use energy

dependency on energy

psychological and social consequences





## achieving reflection through interaction :::

interaction design as a means to change behaviours

conceptual design as a provocative mediator

re-design of existing objects



## introducing speculative re-design :::

speculative approach vs. critical approach

choice of representation

future work

the end :::

**more information :::**

master thesis web site | [www.stenbrott.se/thesis](http://www.stenbrott.se/thesis)

accepted paper, nordic design research conference | [www.nordes.org](http://www.nordes.org)





**toothbrush battery charger :::**

toothbrush

mobile battery charger



## medallion accessory :::

glass container

transparent oil

red coloured water

black rubber

fibre optic cable





## wind music player :::

high-density foam

fan

red diode

headphone contact