Promise of AmI for Design

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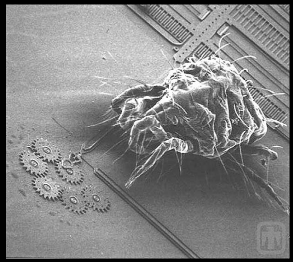
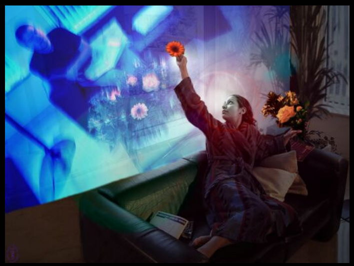
“Design explorations take the next step of considering how computation is to be manifest when it moves into the physical environment, and recognizing that this move makes the physicality of computing central.”
(Dourish, 2002)

promises [1999 – the future]



- embedded systems: electronics & ICT
- faster, more powerfull, smaller, more efficient, ...
- MEMS, ‘smart’ materials, …
- transparant
- application scenarios for different domains:
  health, work, home, play, public space, car, ...



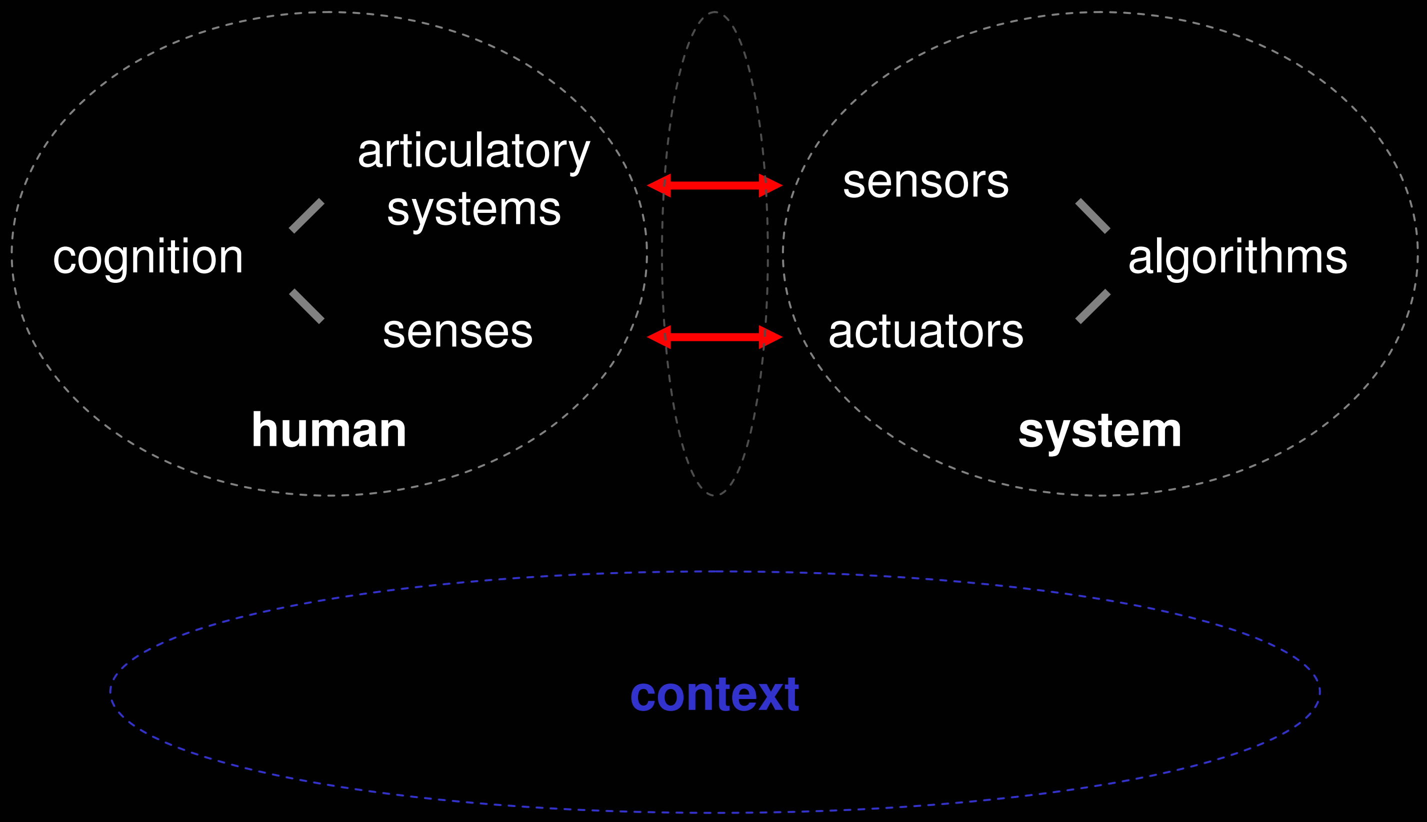
design explorations [1999 – now]

- enriched experiences – beyond utility & usability
- design for personal experiences (not: of)
- fit rhythms, patterns, and cycles of everyday life
- smooth transitions from subliminal awareness (background) to direct interaction (foreground)
- people should always be in control
- applications should be trustworthy e.g. take privacy issues into account
- experience prototyping is crucial
- ...

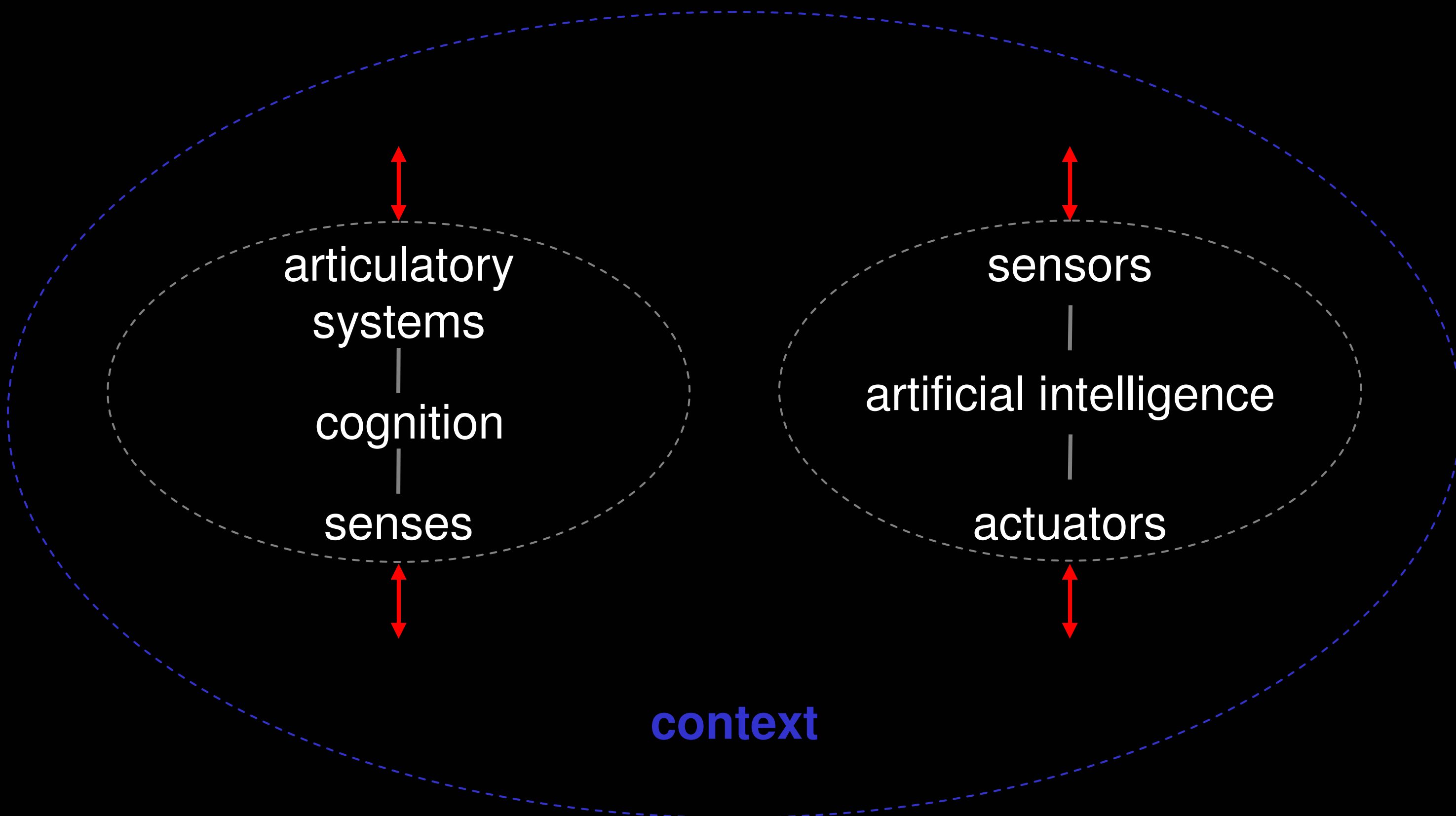
- lessons learned reported in many publications throughout the years!

challenges – new directions

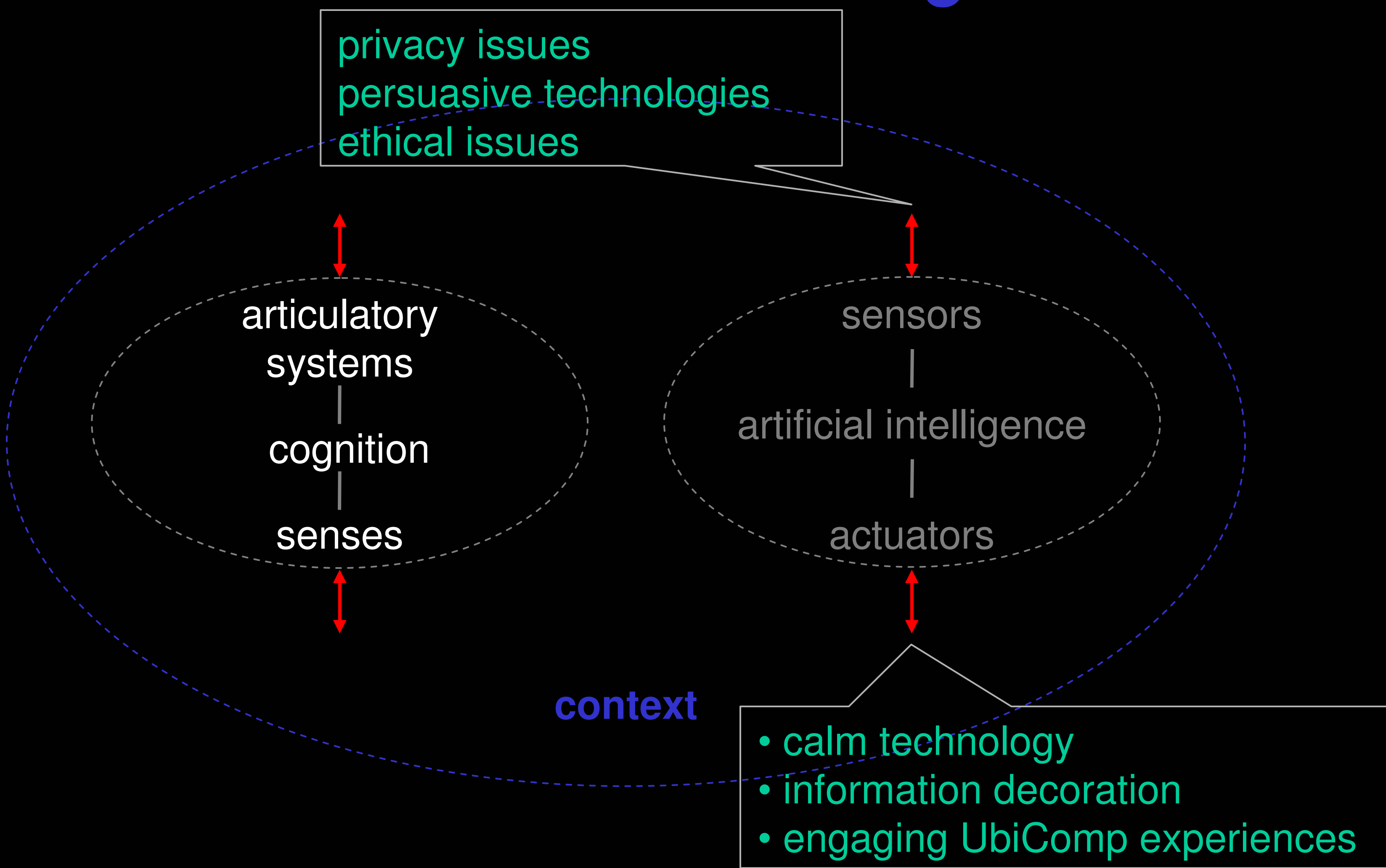
interaction design



AmI - interaction design



AmI - interaction design



multimodal interaction

people perspective

- broaden bandwidth of user-system interaction
- bring naturalness to user-system interaction by capitalizing on everyday human communication skills

system perspective

- rich input from environment necessary for truly intelligent (i.e. meaningfull and appropriate) behaviour
- multimodal output to communicate embedded potential for possible actions

tangible computing
embodied interaction

embody mechanisms for interactive control in physical representations

intimacy, i.e., subjective match between behaviour and operation of device, is needed to effectively communicate emotions

pleasure is in the doing not the achieving

‘smart’ and active tangibles that deliver system functionality that goes beyond utility and usability by inspiring, challenging, exciting and affecting people

ambient culture

decentralized systems

- several 'smart' objects linked into a network giving rise to emergent functionality
- everyday objects teaming up with people to create a desired experience

ambient culture defines quality of people-system relationship

- communication between 'smart' objects and between 'smart' objects and people facilitates and shapes an emergent set of sharred attitudes, values and goals

user centered design

- user-centered-design: match technological possibilities to people's needs, abilities and desires
- social and cultural aspects of intelligent product environments should be explicitely taken into account
- ethnomethodology: study of common-sense routines used by people to manage and organise everyday behaviour
- Wizard-of-Oz-like approach to the design of decentralized systems