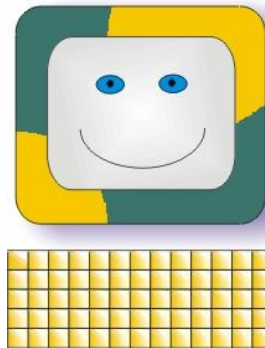# What is human computer interaction?

Human Computer Interaction

dr Kristina Lapin

Objectives

- Difference between good and poor design
- Interaction design (IxD) and human computer interaction (HCI)
- Usability and user experience

Bad designs

– Elevator controls and labels on the bottom row all look the same, so it is easy to push a label by mistake instead of a control button

– People do not make same mistake for the labels and buttons on the top row. Why not?
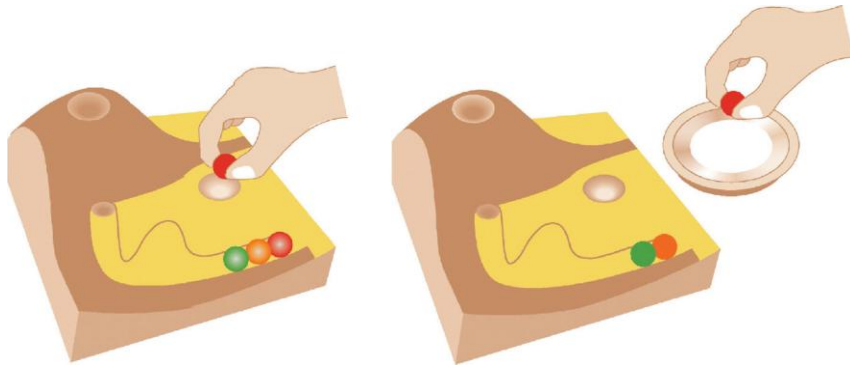

From: www.baddesigns.com

Why is this vending machine so bad?

- Need to push button first to activate reader
- Normally insert bill first before making selection
- Contravenes well known convention

From: www.baddesigns.com

Good design

- Marble answering machine (Bishop, 1995)
- Based on how everyday objects behave
- Easy, intuitive and a pleasure to use
- Only requires one-step actions to perform core tasks

Good and bad design

- What is wrong with the remote on the right?
- Why is the TiVo remote so much better designed?
  - Peanut shaped to fit in hand
  - Logical layout and color-coded, distinctive buttons
  - Easy to locate buttons

Activity

- How does making a call differ when using a:
  - Cell phone
  - Public phone box?
- Consider the kinds of user, type of activity and context of use

Use and Context

U1 Social Organization and Work

U3 Human-Machine Fit and Adaptation

U2 Application Areas

Human

H1 Human Information Processing

H2 Language, Communication and Interaction

H3 Ergonomics

Computer

C2 Dialogue Techniques

C4 Computer Graphics

C3 Dialogue Genre

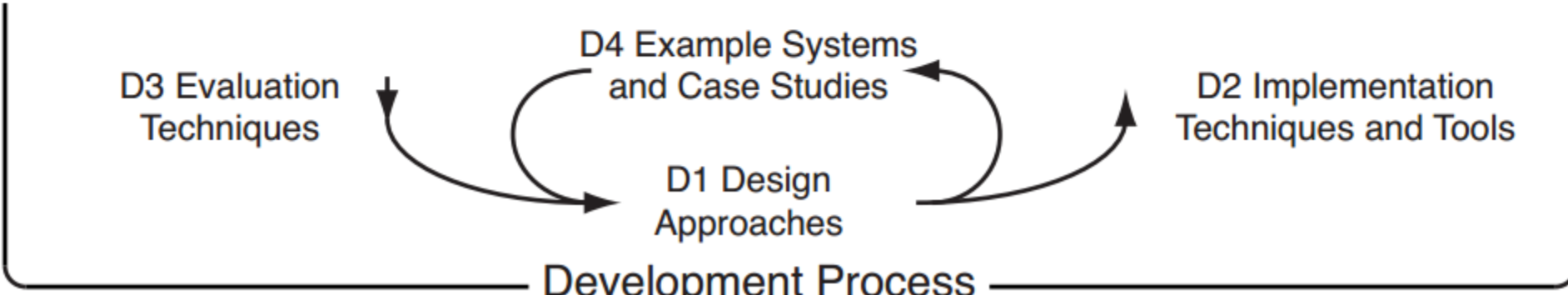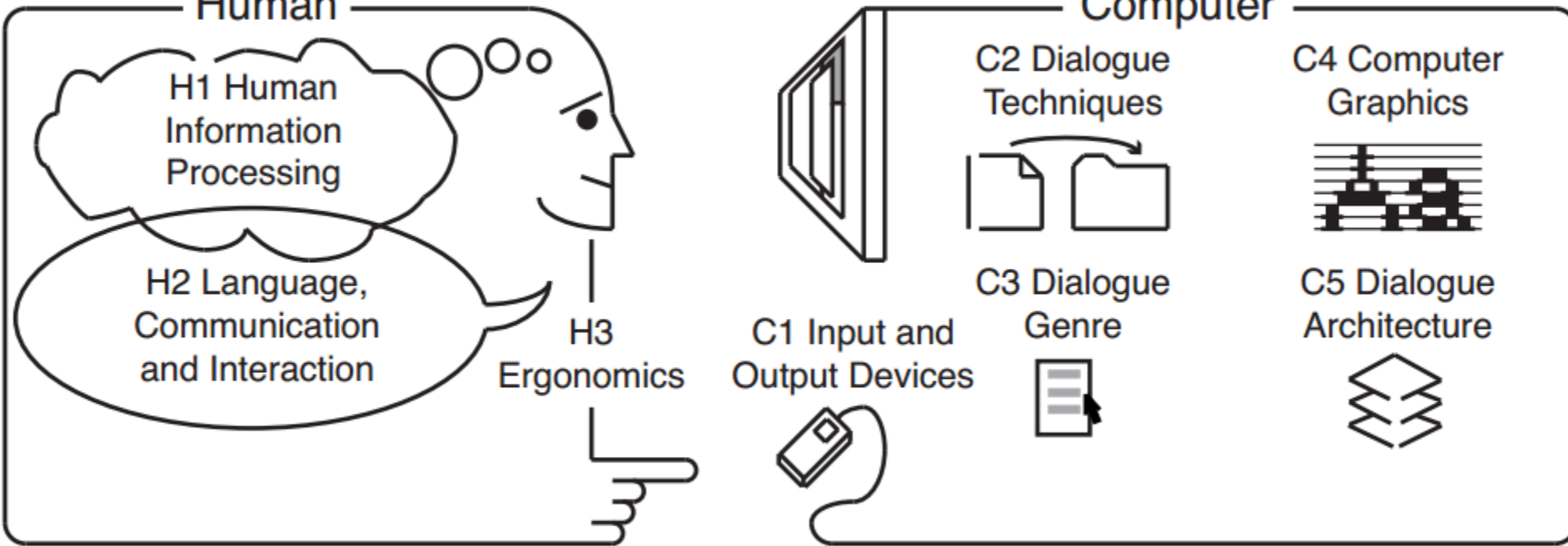C5 Dialogue Architecture

C1 Input and Output Devices

Development Process
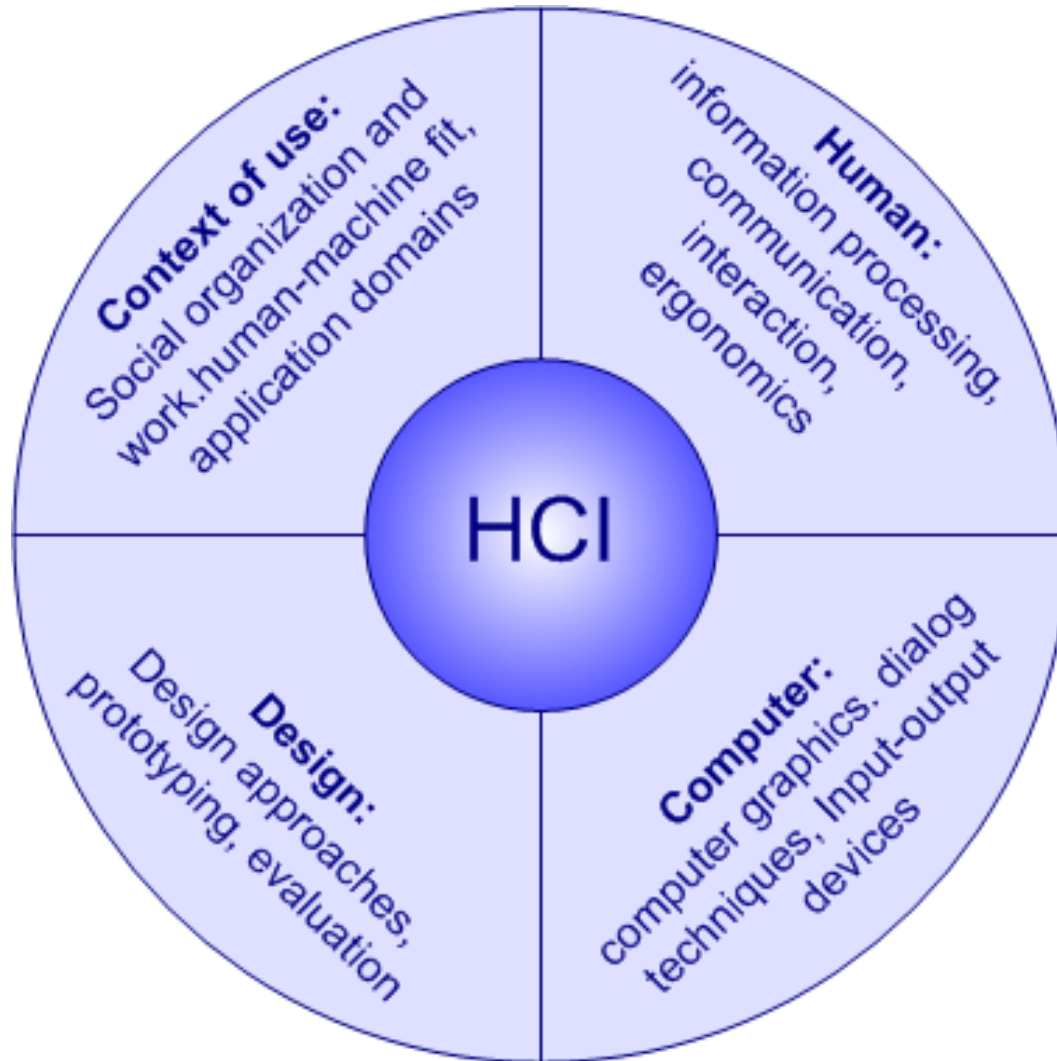
D3 Evaluation Techniques

D4 Example Systems and Case Studies

D2 Implementation Techniques and Tools

D1 Design Approaches

Human computer interaction

Which kind of design?

- Interaction design is the umbrella term covering all of these aspects
  - fundamental to all disciplines, fields, and approaches concerned with researching and designing computer-based systems for people
- Terms emphasize what is being designed, e.g.
  - user interface design, software design, user-centered design, product design, web design, experience design (UX)

Interaction design:
academic disciples and design practices
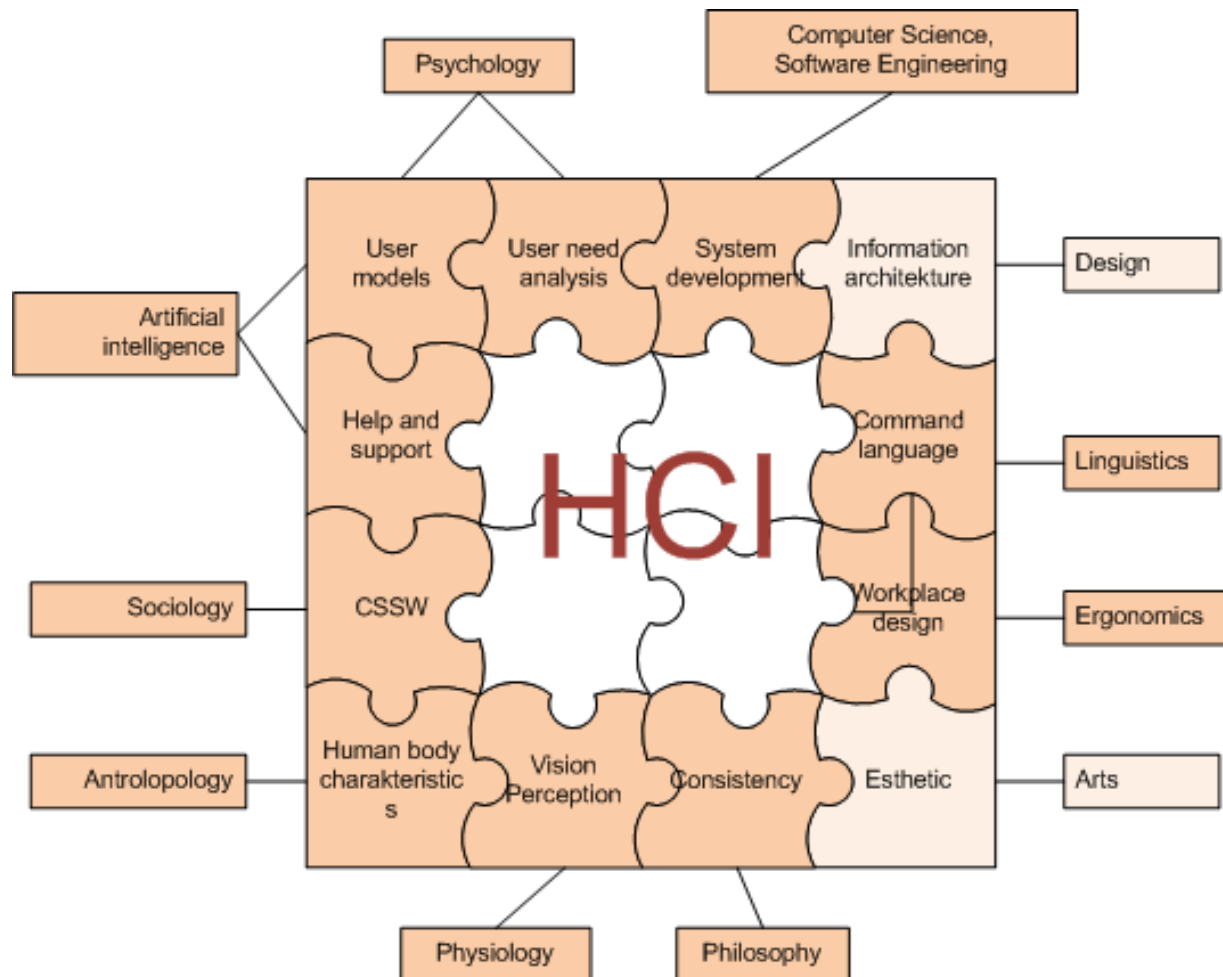
Working in multidisciplinary teams

- Many people from different backgrounds involved

- Different perspectives and ways of seeing and talking about things

- Benefits
  - more ideas and designs generated

- Disadvantages
  - difficult to communicate and progress forward the designs being create

Interaction design in business

- Increasing number of ID consultancies, examples of well known ones include:
  - **Nielsen Norman Group**: "help companies enter the age of the consumer, designing human-centered products and services"
  - **Cooper:** "From research and product to goal-related design"
  - **Swim:** "provides a wide range of design services, in each case targeted to address the product development needs at hand"
  - **IDEO: "**creates products, services and environments for companies pioneering new ways to provide value to their customers"
  - **Adaptive path: We halp companies crreate products and services that deliver great experiences and improve people's lives.**

What do professionals do in the ID business?

- **interaction designers** - people involved in the design of all the interactive aspects of a product

- **usability engineers** - people who focus on evaluating products, using usability methods and principles

- **web designers** - people who develop and create the visual design of websites, such as layouts

- **information architects** - people who come up with ideas of how to plan and structure interactive products

- **user experience designers (UX)** - people who do all the above but who may also carry out field studies to inform the design of products

ID business in Lithuania

Usability
- Quick review
- Expert evaluation
- Competitive testing
- User testing
- Consulting

UI Design
- User research
- Information architecture
- Wireframing
- Graphic design
- Prototyping

About us
- Company
- Career
- Contacts
- Portfolio

http://www.ideacode.eu/
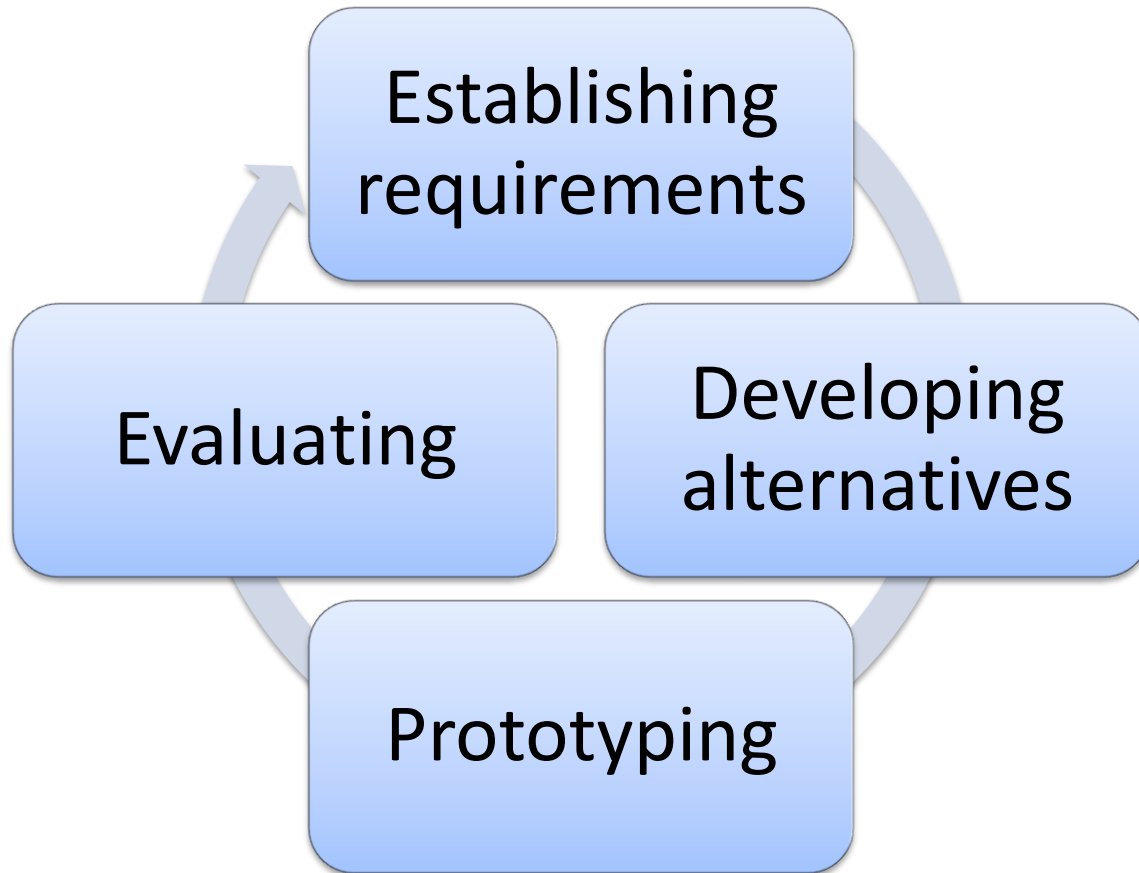

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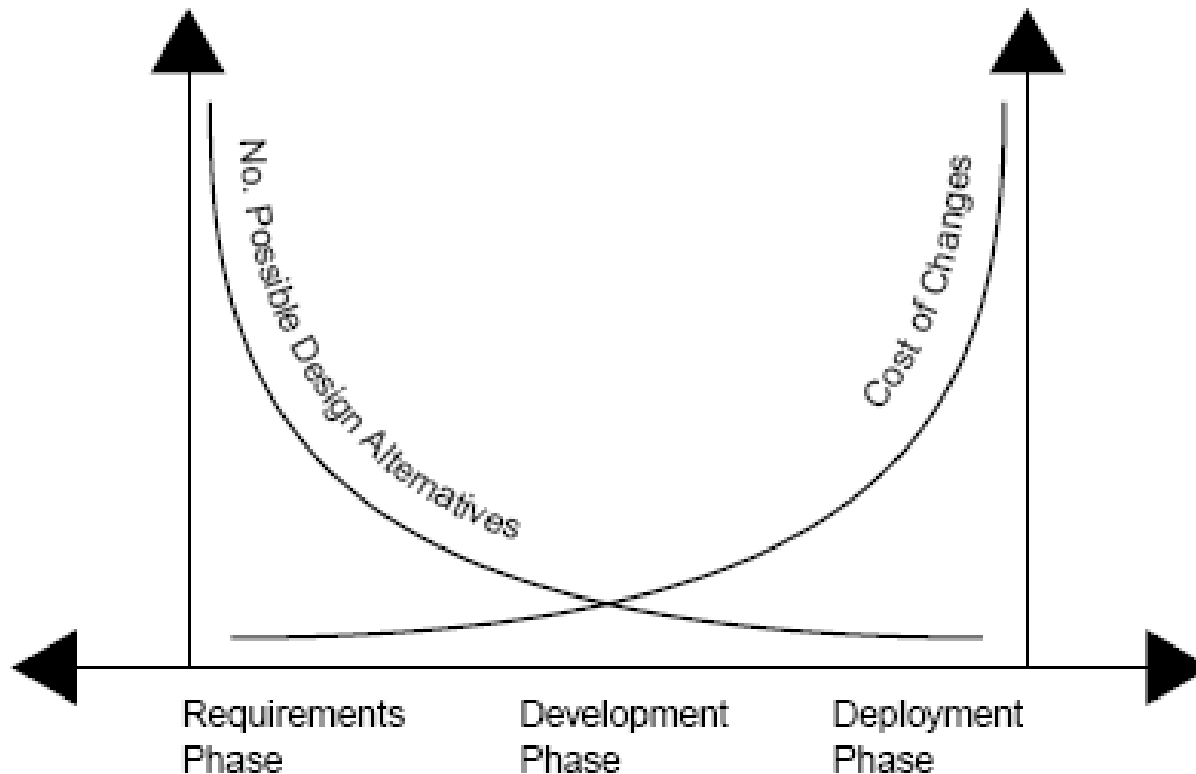Home   Services   Software   Clients   Contacts   Wall   Career

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What is involved in the process of interaction design

Establishing requirements → Developing alternatives → Prototyping → Evaluating (shown as a cyclic process)

Save development costs

The number of possible designs decreases as the cost to make changes increases (Erhlich and Rohn, 1994, p. 80).

Bias, Randolph G., Mayhew, Deborah J. Cost-justifying usability: an update for the internet age. Morgan Kaufman Publishers, 2005.

Why go to this length?

- Help designers:
  - understand how to design interactive products that fit with what people want, need and may desire
  - appreciate that one size does not fit all
    > e.g., teenagers are very different to grown-ups
  - identify any incorrect assumptions they may have about particular user groups
    > e.g., not all old people want or need big fonts
  - be aware of both people's sensitivities and their capabilities

Bibliography

- Jennifer Preece, Yvonne Rogers, Helen Sharp (2011). Interaction design: beyond human – computer interaction. John Wiley & Sons www.id-book.com