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(2019)

Week 1: What is HCI?

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.

www.baddesigns.com

People do not make same mistake for the labels and buttons on the top row. Why not?
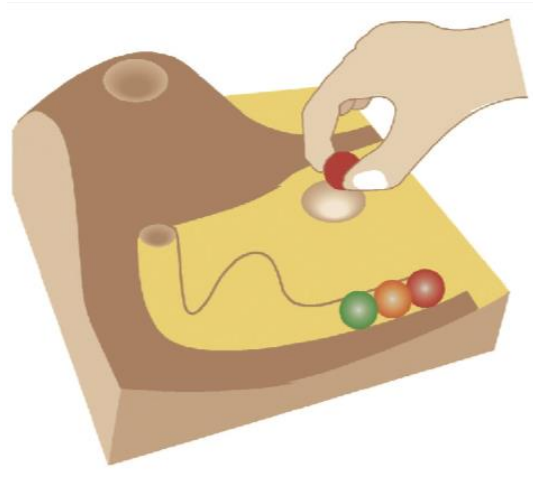
Why is this vending machine so bad?

www.baddesigns.com

- Need to push button first to activate reader

- Normally insert bill first before making selection

- Contravenes well known convention

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

Why is the TiVo remote much better designed than standard remote controls?

- Peanut shaped to fit in hand
- Logical layout and color-coded, distinctive buttons
- Easy-to-locate buttons

Dilemma

Which is the best way to interact with a smart TV? Why?

- Pecking using a grid keyboard via a remote control
- Swiping across two alphanumeric rows using a touchpad on a remote control
- Voice control using remote or smart speaker
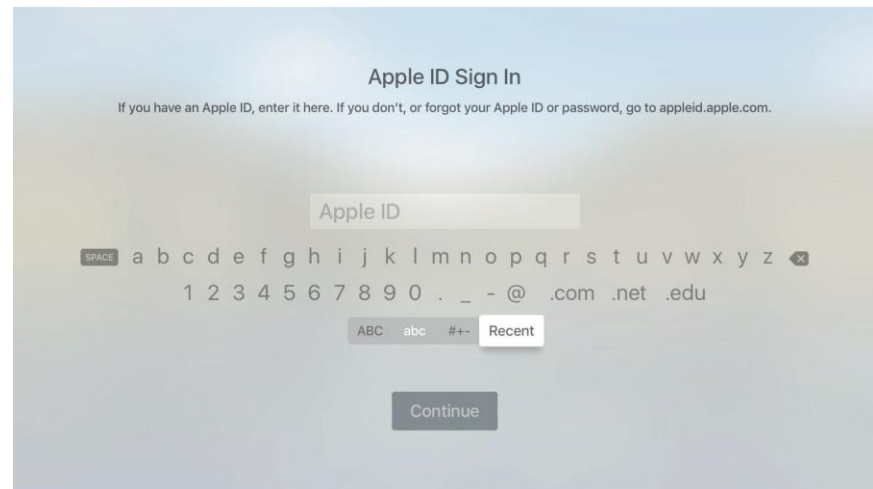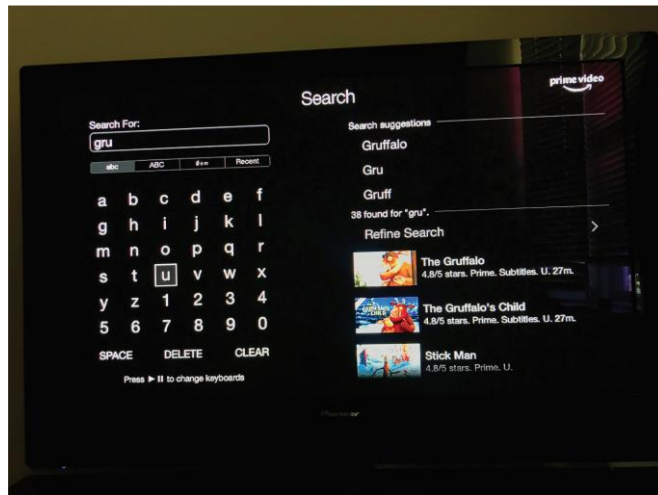
What to design

Need to take into account:

- Who the users are

- What activities are being carried out

- Where interaction is taking place

Need to optimize the interactions users have with a product:

- So that they match the users' activities and needs

What is interaction design?

"Designing interactive products to support the way people communicate and interact in their everyday and working lives."

Sharp, Rogers, and Preece (2019)

"The design of spaces for human communication and interaction."

Winograd (1997)

Goals of interaction design

Develop usable products

- Usability means easy to learn, effective to use, and provides an enjoyable experience

Involve users in the design process

Which kind of design?
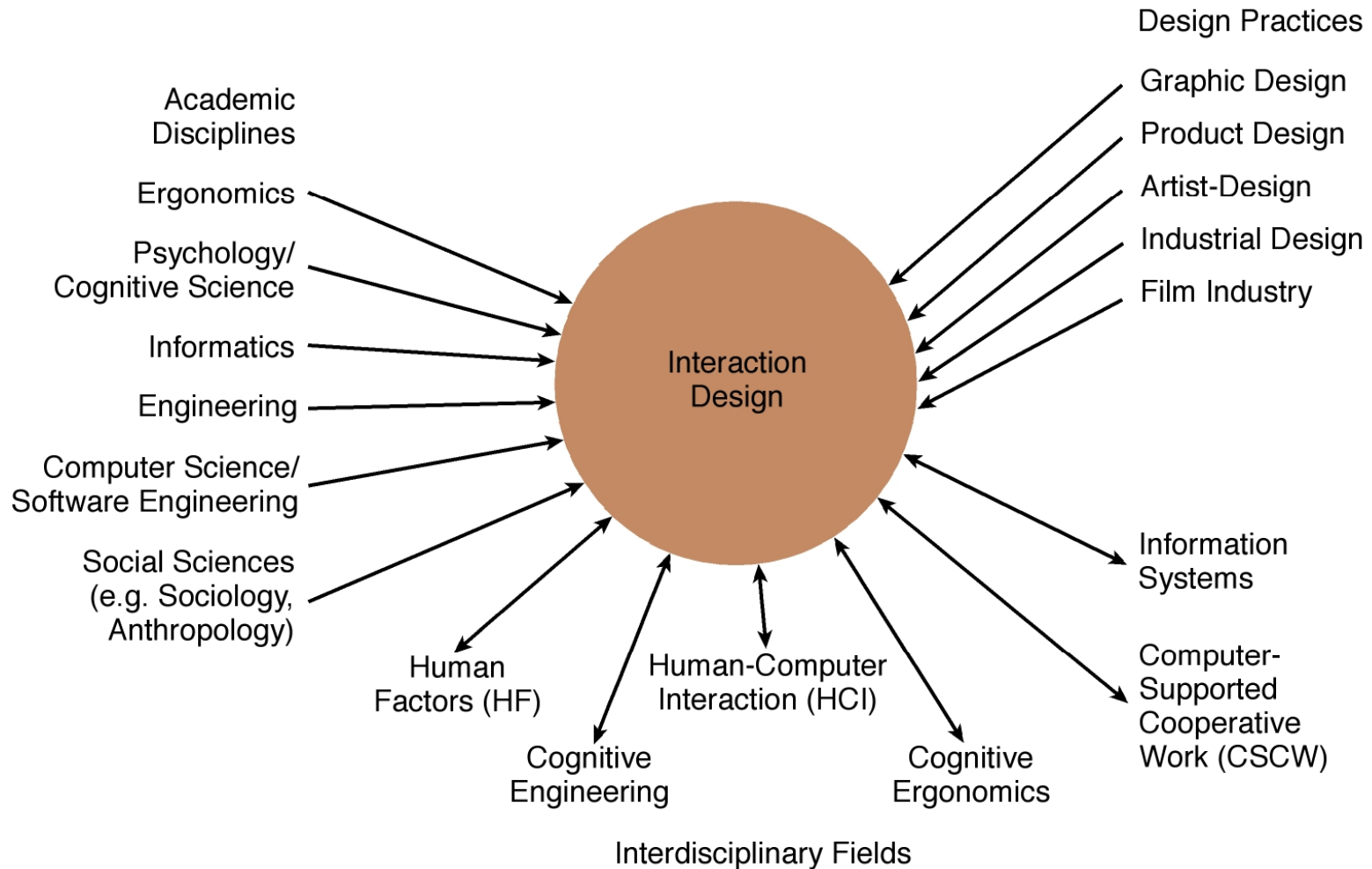
Number of other terms used emphasizing what is being designed, for example:

- User interface design, software design, user-centered design, product design, web design, experience design (UX)

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

Interaction design

Design Practices

Graphic Design

Product Design

Artist-Design

Industrial Design

Film Industry

Academic
Disciplines

Ergonomics

Psychology/
Cognitive Science

Informatics

Engineering

Computer Science/
Software Engineering

Social Sciences
(e.g. Sociology,
Anthropology)

Interaction
Design

Information
Systems

Computer-
Supported
Cooperative
Work (CSCW)

Human
Factors (HF)

Cognitive
Engineering

Human-Computer
Interaction (HCI)

Cognitive
Ergonomics

Interdisciplinary Fields

Relationship between ID, HCI, and other fields−academic disciplines

Academic disciplines contributing to ID:

- Psychology

- Social Sciences

- Computing Sciences

- Engineering

- Ergonomics

- Informatics

Relationship between ID, HCI and other fields−design practices

Design practices contributing to ID:

- Graphic design

- Product design

- Artist-design

- Industrial design

- Film industry

Relationship between ID, HCI and other fields−interdisciplinary fields

Interdisciplinary fields that 'do' interaction design:

- HCI

- Ubiquitous Computing

- Human Factors

- Cognitive Engineering

- Cognitive Ergonomics

- Computer Supported Co-operative Work

- Information Systems

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

Large 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"

- **IDEO: "**creates products, services and environments for companies pioneering new ways to provide value to their customers"

The user experience

How a product behaves and is used by people in the real world

- The way people feel about it and their pleasure and satisfaction when using it, looking at it, holding it, and opening or closing it
- "Every product that is used by someone has a user experience: newspapers, ketchup bottles, reclining armchairs, cardigan sweaters." (Garrett, 2010)
- "All aspects of the end-user's interaction with the company, its services, and its products. (Nielsen and Norman, 2014)

Cannot design a user experience−only can design *for* a user experience

Defining user experience

How users perceive a product, such as whether a smartwatch is seen as sleek or chunky, and their emotional reaction to it, such as whether people have a positive experience when using it.

(Hornbæk and Hertzum, 2017)

Hassenzahl's (2010) model of the user experience
- Pragmatic: how simple, practical, and obvious it is for the user to achieve their goals
- Hedonic: how evocative and stimulating the interaction is to users