**Ethical issues in Human-Robot Interaction**

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**Introduction**

- A reflection on the socio-cultural context of the debate on robots and agents is needed.
- HRI is a new field maybe we can take advantages of the discussions on bioethics?

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**Introduction**

- Ethical concerns:
  - "Vulnerable users": elderly, children, disabled people…
  - Emotions
  - Human-like (and animal-like) robot
  - Private life
  - …

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**Introduction**

- "Ethics (also known as moral philosophy) is a branch of philosophy which seeks to address questions about morality"  
  
  Applied ethics: attempts to apply ethical theory to real-life situations such bioethics and also robotics

- Help to answer some questions such as:
  - Why do we want to live with robots?
  - What do we live with robots for?
  - …
Ethics in robotics

Ethics deal with the following points:
- the ethical systems built into robots,
- the ethics of people who design and use robots,
- the ethics of how people treat robots.

Usefulness:
- A robot is given two conflicting orders by two different humans.
- How should it react? Whom should it obey?…
- Human face such dilemmas all the time
- => Practical ethics provide means to resolve these issues

Questions in Roboethics roadmap?
- Will carebots enhance the quality of life of patients, given that human-robot interaction often replaces human-human interaction?
- What is genuine social interaction?
- What should be an appropriate relation between humans, and between humans and technology?
- What is the good life?

Methodologies in therapeutic applications:
- Development of realistic scenarios
- Interviews with robotics researchers and designers
- Interviews with health care managers
- Interviews with nurses
- Interviews with patients
- Literature on health care ethics
- …

Therapeutic applications:
Example:
Robert and Linda Sparrow have argued that employing carebots to assist older persons would most likely lower the amount of human contact experienced by them, that this would be detrimental to their well-being, and that it would be unethical to substitute robot simulacra for genuine social interaction (Sparrow and Sparrow 2006).
Ethics in robotics

Therapeutic applications:
Example:
- But what is well-being?
- What is genuine social interaction?
- Do designers force their view of what constitutes an appropriate interaction on to users (Whitbey 2006)?
- What should be an appropriate relation between humans, and between humans and technology?
- Do carebots really contribute to the quality of our lives?
- To what extent is human flourishing dependent on human-human interaction, and are carebots a threat to this?
- …

Laws:
The Three Laws of Robotics are a set of three rules written by Isaac Asimov:
- A robot may not injure a human being or, through inaction, allow a human being to come to harm.
- A robot must obey any orders given to it by human beings, except where such orders would conflict with the First Law.
- A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

Robot design
The Uncanny valley

We are more comfortable with a humanoid robot than an industrial robot, but when the artefact becomes close to being like a healthy human but is still clearly not human, our feelings of comfort and familiarity decline: we are in the uncanny valley.
Ethics in robotics

The Humanity Principle:

- Technology should be built, designed and made available ONLY in so far it benefits Humanity
- There is no ethically consistent way resisting technological advances (unless the technology is all bad).
- Therefore constant and complete ethical scrutiny is required.

Ethics in robotics

- Therefore ethical input is essential at the design, and implementation phases of many contemporary technologies.
- Human-like interfaces; exploitation of human affective responses; robots and other systems with intimate roles all fall into this category.

Summary

- The uncanny valley will save us all from real harm
- Interdisciplinary projects and research works are required for investigating these “hot topics”
- We should take care about “vulnerable users”