



# *'I tech care'. Responsibility in providing healthcare through robots*

Antonio Carnevale — Alberto Pirni  
[a.carnevale@sssup.it](mailto:a.carnevale@sssup.it) — [a.pirni@sssup.it](mailto:a.pirni@sssup.it)



Corresponding author: Alberto Pirni



# Personal Care Robots (PCRs), Ethics and Sustainability

## TODAY ...

- Robots come in many forms
- Companies and laboratories continue to implement prototypes
- Much research being done, resulting in prototypes
- Few assistive robots in use today
- High cost and uncertain benefits are major barriers to their widespread adoption

## ... FOR THE FUTURE

- An ageing society of European countries (“European Disability Strategy” 2010-2020)
- Need for healthcare systems to shorten hospital stay
- Home-based health care
- Deep transformation of social agencies that guaranteed healthcare in the past and at nowadays

## ... SOME OF THE MAIN RISKS

- Affecting the dignity of elderly and disabled people
- Isolation / dependence
- “Techno-fix” (extra “technology” nulla salus - Rosner 2014)
- “Hype of technology” (considering only the positive side Seidensticker 2006)

## What does it mean the “ethical sustainability” of a PCR?

### ➤ *The Governance of technology*

- The difficulty of “drawing the line” (medical / service [or care] robots; substitutive / assisting robots)
- The new framework offered by the ISO 13482
- From “ROBOT-LAW” and “ROBOT-ERA” Projects: the variability of scenarios (indoor/outdoor/urban) and the respective critical issues

### ➤ *The Governance of society*

- Beyond the regulatory level (safety and liability): challenging the structure of our societies (“they are among us” effect)
- Social contexts of interaction at stake:
- care,
- work,
- welfare
- human rights

### ➤ *The “Second Level” Challenge: Combining both levels of governance*



# How to Approach an Ethical Analysis of Personal Care Robots

## 1) The stakeholders

a) Opportunity: the point of view of industries, operators, end users, etc.

b) Risk:

Selection

Attitude/ positive bias towards technology,  
The point of view of the end users

c) The diacronic / epistemic gap



## 2) The scientific debate

a) The difficulty of a distinction between medical and assistive robotics

“healthcare robots” (Van der Loos & Reinkensmeyer, 2008; Datteri & Tamburrini, 2009).

Consequences:

- Overlapping the ethics of robot-producers with the ethical concerns of the society within which the robots are introduced
- Using a too large and generic ethical and legal vocabulary for evaluation of new prototypes and devices

b) “Vulnerability” as anthropological condition

(Lisetti *et al.*, 2004; Sparrow & Sparrow, 2006; Turkle *et al.*, 2006; Coeckelbergh, 2010).

c) New Scientific Challenges

- The challenge against standards
- The cultural variable
- Reshaping the concept of “social acceptability”

# The “ethical sustainability test”: Values at stake

## *Safety*

- a) Hard (physical) Risks*
- b) Soft (economic, psychological) Risks*
- c) Specific Challenges for PRCs*

General Overview

Systemic Overview

1. The kind of contact between robot and people is not always clear
  - > “Assistive Robotics”
  - > Socially Interactive Robotics”
2. Safety requirements and protective measures in the domestic environment
3. Safety related to maintenance and control requirements

## *Liability*

*Autonomy & Independence*

*Privacy*

*Social connectedness*

*New technologies and equality of access*

*New technologies, ethics and scientific research*

*Thank you for your attention!*

<http://www.cdg-lab.dirpolis.sssup.it/en/staff/academic/antonio-carnevale/>

<http://www.cdg-lab.dirpolis.sssup.it/en/staff/academic/alberto-pirni/>