# Social and ethical aspects of cognitive systems

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# Social and ethical aspects of cognitive systems – EUCog meeting

- EUCog – a network of European cognitive scientists (900).
- Conference in Brighton 2013
- Aims:
  - How to collectively drive science and innovation in the present so that we may take care of the future?
  - How could different cognitive systems affect society, and how should this drive the research goals in the present?
  - How do different sectors of society hope to benefit from cognitive systems? What are their concerns about these technologies?
  - How might those hopes and concerns be used to inform cognitive systems research and the way it presents itself to society at large?

# Social and ethical aspects of cognitive systems – EUCog meeting

- **People present:**
  - cognitive scientists, lawyers, philosophers, health care professionals, but also EU policy makers
- **Topics:**
  - health care
  - military
  - privacy and security
  - cognitive systems in industry

# Health care

- medical robotics
  - surgery
  - (endo)diagnosis
  - rehabilitation
  - BCI
  - personal assistance

(Source: EDOARDO DATTERI and GUGLIELMO TAMBURRINI (2009): Ethical Reflections on Health Care Robotics. Ethics and Robotics, 35-48)

# EU invests a lot into assistive & health care robotics

- ICT strand of FP7 + AAL (Active and Assistive Living, http://www.aal-europe.eu/) – Horizon 2020 estimated **budget €700 million**
- **Examples of projects:**
  - **GrowMeUp project (launched in 2015) - a self-training robot:** "provide an affordable robot that is able to learn from older people's routines and habits and enhance and adapt its functionality. This way it can compensate for the gradual deterioration of the cognitive ability of the older person, while ensuring a consistent service provision and quality of life throughout the ageing process."
  - **A Robot companion for the elderly – the Accompany project (completed):** a social robot. "The ethics of human-machine interaction was a focal point of the project, resulting in the drafting of an ethical framework for care robotics. The framework stresses the autonomy of the user and the freedom to make their own choices. The underlying principle is that ageing users should not be treated differently than other adults just because they are old. ACCOMPANY has demonstrated that a social robot can potentially help to prevent social isolation and loneliness, offering stimulating activities whilst respecting autonomy and independence."

- (Source: https://ec.europa.eu/digital-single-market/en/robotics-ageing-well-current-research)

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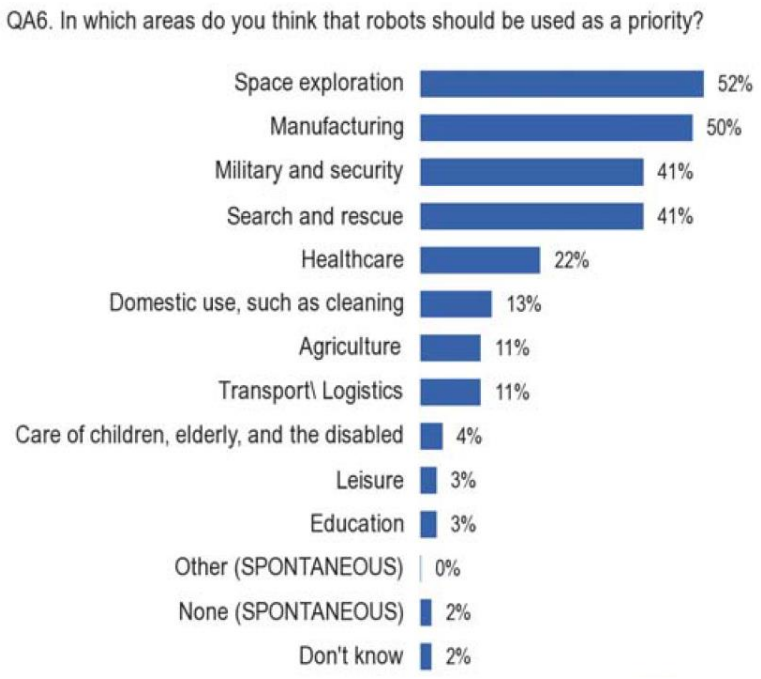
- UK NHS facts: average time a nurse pends with one patient per day is 15 min.
- **Would you prefer a 15 min of human interaction a day to a whole day of having a robotic companion/assistant?**

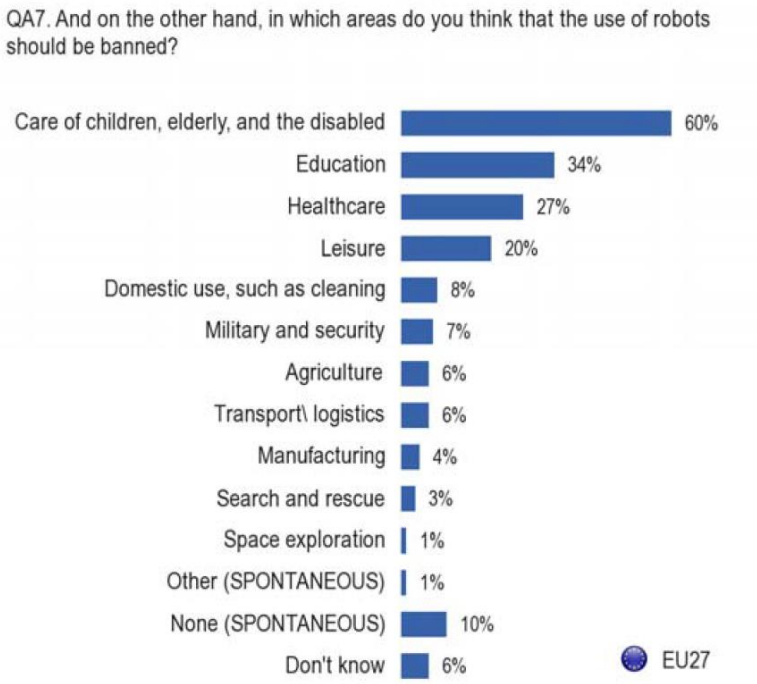
# Public attitudes towards robots

- Large EU study (2012), 26 751 respondents aged 15+ from 27 EU countries
- http://ec.europa.eu/public_opinion/archives/ebs/ebs_382_en.pdf

# Public attitudes towards robots

- Results:



# Public attitudes towards robots

- Results:
  - **Robots should be used as a priority in areas that are too difficult or too dangerous for humans.**
  - **Robots should be banned in the care of children, the elderly or the disabled** (60%) with large minorities also wanting a ban when it comes to other ‘human’ areas such as education (34%), healthcare (27%) and leisure (20%).

# US study

- Older Adults' Acceptance of Assistive Robots for the Home, Technical Report HFA-TR-1105, Atlanta, GA: Georgia Institute of Technology and School of Psychology – Human Factors and Aging Laboratory
- smaller scale (21 participants, aged 65-93)
- similar results

# Robots for disadvantaged kids - success stories

- Autistic children
  - Robots4Autism
- Children with diabetes
  - ALIZ-E – an €8.3million EC-funded project led by Plymouth University
  - NAO robots


Source: Plymouth University

# Methodological problem with surveys

- Abstract vs. concrete

# Back to assistive/health care

- Seniors don’t want to feel dependent or a burden
  - Actually prefer robot care (Japan)
- Smart systems not necessarily a companion, but ambient intelligence in the house, smart gadgets that **enhance/support independent living**

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- But as soon as they are available, they will also be used by healthy (rich) people

# Cognitive systems in military

- EU policy: no EU public research funds for military applications of AI.
- US: probably most of top AI research funded by military bodies

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  - But: we need to have top technologies to keep up against villains!
  - But: who determines who the villains are?

# Military research on moral reasoning

- personal responsibility/liability if something goes wrong
- the army dudes have clear rules

# EU and liability issue in autonomous systems

- EU-funded project Regulating Emerging Robotic Technologies in Europe: Robotics facing Law and Ethics - Robolaw (completed 2014).
- www.robolaw.eu

Outcome: **Guidelines on regulating robotics** (includes ethical and legal analyses for: self-driving cars, surgical systems, robotic prostheses and care robots)

# Impact of intelligent systems on job market

- If it is cheaper to replace people with machines, they will be replaced
- value of work for self-esteem
- routine jobs disappearing
- scissors between rich and poor will open even more

# Conclusions

- The issues are very complex, no black/white answers
- Scientists need to take responsibility for the bigger picture of their research
- Thank God, some of them do.