Robots & Liability
Justifying a Change in Perspective

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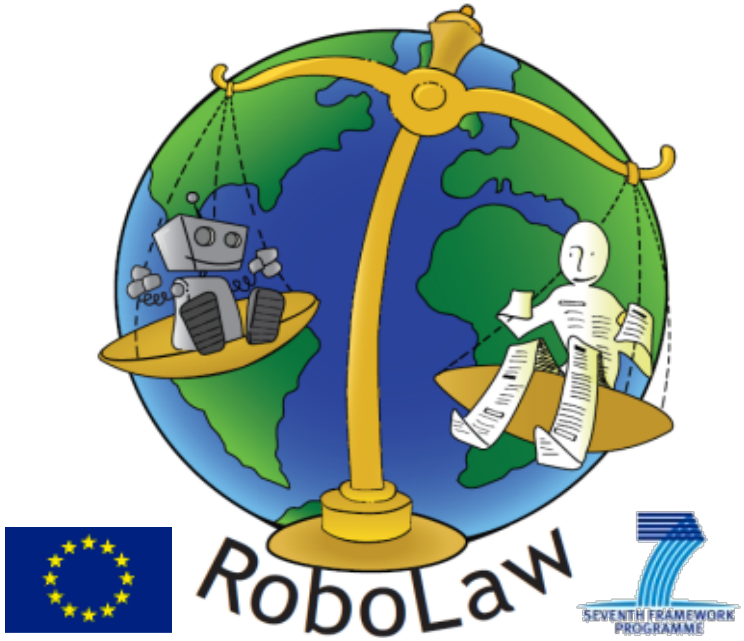
Regulating Emerging Robotic Technologies in Europe: Robotics facing Law and Ethics



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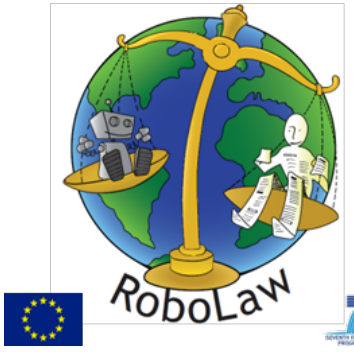


Project Main Outcome

ELABORATE GUIDELINES FOR THE REGULATION OF ROBOTIC APPLICATIONS FOR THE EU COMMISSION

(Spring 2014)

LIABILITY RULES

EX POST: identify who has to pay damages

EX ANTE: provide incentives on how to behave

Liability for damages involving things:

1. Producer: if product defective (inadequate design)
2. Owner/User (misuse/failed to supervise)

LIABILITY & ROBOTS

CLAIMS:

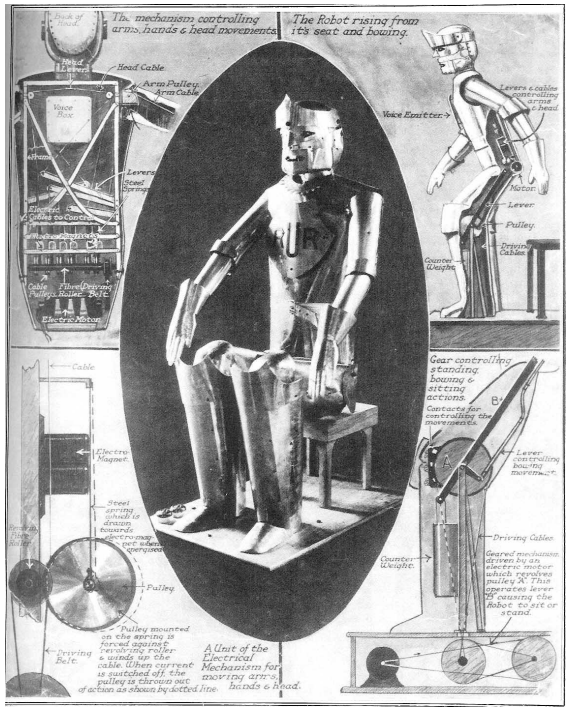
- Robots are different from any other “thing” because they are Autonomous and/or have the ability to Learn
- New (liability) rules need to be conceived to address robots.
- Robots themselves should be held liable for the damage they cause.

Issues:

- Can robots be addressed unitarily?

- Do specific technical aspects suffice in justifying a change in perspective (for the ascription of liability)?

The quest for an overarching definition of robotic technologies and the science fiction lure



The term Robot is derived from science fiction and does not carry a specific technological meaning and even less a legal one.

Definitions offered are unsatisfactory

Merriam Webster dictionary:

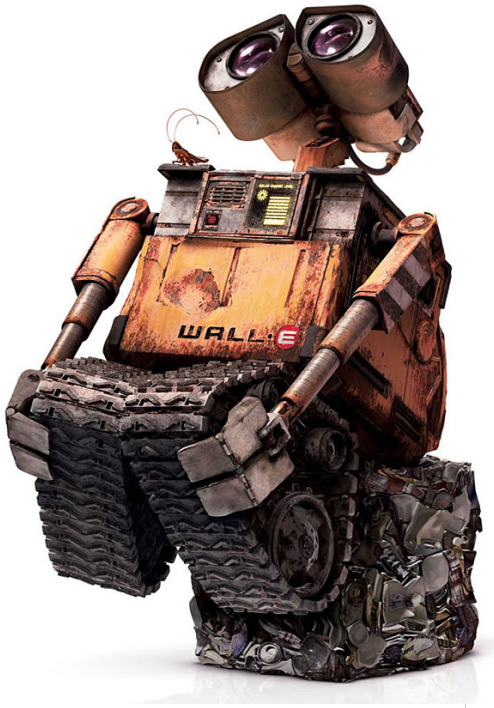
(i) A machine that looks like a human being

(ii) And performs various complex acts (as walking or talking) of a human being

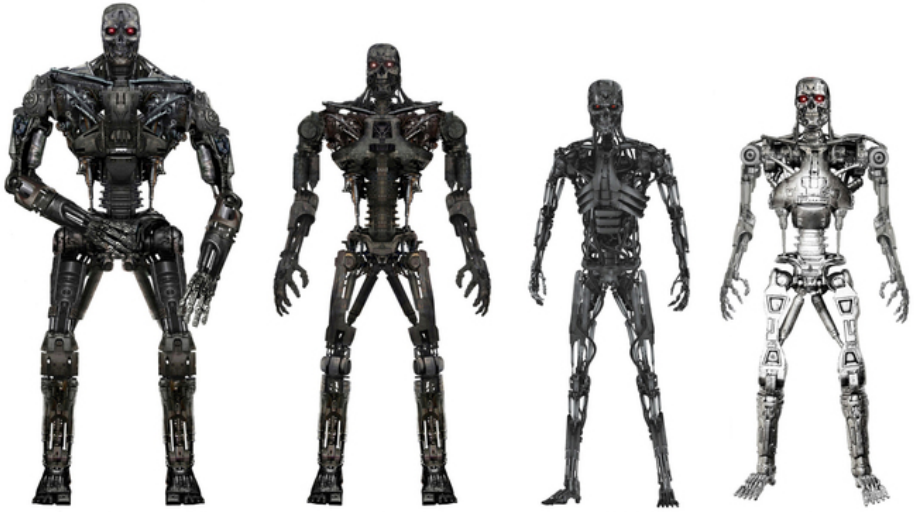
…cont…

(iii) Whose lack of capacity for human emotions is often emphasized

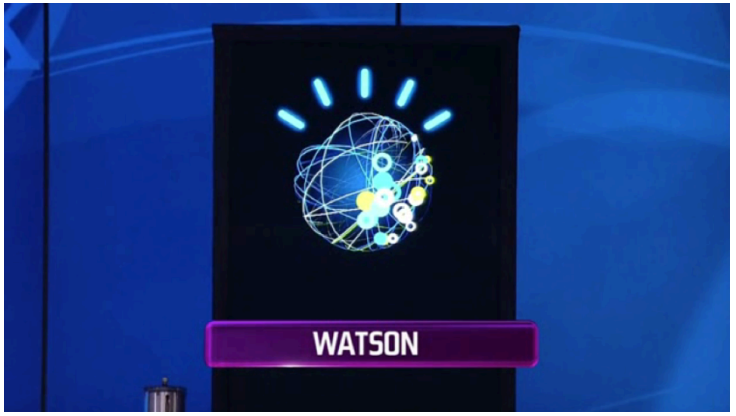
and thus carry no descriptive value.



How dictionaries -seem to-see robots



What -some already existing- robots are



1° conclusion

There is not a Single Notion of Robot.

Robotic applications cannot be addressed unitarily without losing insight.

1 corollary

we cannot conceive a (single) set of rules applicable to (all) robots

1 consequence

we need to **identify** the **distinctive traits,** which trigger the need for a change in liability rules.

2 Notions of Autonomy

STRONG AUTONOMY

(Gutman et al., 2011)

From a philosophical perspective autonomy entails the ability to set one goals and decide freely.

It is disputable if such a kind of (GOF)AI can be created from a technological point of view. (Floridi)

Philosophical arguments against its admissibility

Shall (and can) the Golem be set free?

If such a machine was created it NEEDED to be CONSIDERED a SUBJECT, *Träger von Rechten* (Matthias, 2010)

A paradox: if robots were to be deemed subjects, then the law would perfectly know how to handle them

The ability to intelligently interact

WEAK AUTONOMY

(Gutman)

1. Everything up to “Free will”
2. EVEN IF the robot is DECIDING HOW to PERFORM its task, it does not mean that it is not responding to a situation it was programmed for.

(Loss of) Control

The loss of control on the machine by the human (programmer/creator) is only apparent.

BUT FOR THE PROGRAMMER/PRODUCER/CREATOR the robot would not have those capacities/features.

Weak Autonomy does not allow to consider the robot an Autonomous Being.

Ability to learn

1. Downloading Programs/Updates
2. Interaction with the environment (Learning elevator)
3. Reinforced Learning (training)
4. Evolutionary Robotics

…cont…

- Such abilities are features attributed by the producer to the machine.
- It was the producer's/designer's choice to allow the robot such kind of freedoms
- Therefore the ability to learn per se does not justify a change in perspective for the attribution of liability.

2° Conclusion

- Only strong autonomy causes the robot to become a Subject with rights and duties
- Weak autonomy (ability to intelligently interact) and learning abilities, do not suffice in identifying the robot as an individual subject.
- The producer or programmer is the one who is responsible since it provided the robot with the given skills.

BUT

Product liability rules may in some cases provide inefficient incentives for the production of SPECIFIC ROBOTIC APPLICATIONS

THEREFORE

Othe Criteria need to be taken into account in order to Justify the change in perspective

A "Technology by Technology" Approach

1. Grounded on policy considerations of what is desireable and what is not.

2. Taking into account the existing or potential market for a given application

Viable alternative solutions

- Liability capping (allowed by the same EU defective product directive art. 16)
  - If set too high: would not reduce exposure
  - If set too low: would not provide sufficient incentives in designing safe product
- Compulsory Insurance
  - Most likely not large enough market
- No fault plan

Conclusions

Since robotics encompasses extremely diverse kind of technologies we cannot address it unitarily even from a legal perspective.

The fact that a robot may be autonomous (to some extent) or capable of learning does not force a change in the legal analysis.

The real question to be asked is where do we want to put the incentives, and ultimately what kind of robotic technologies we want.

Thank You!

Andrea Bertolini, Robots as Products. The Case for a Realistic Analysis of Robotic Applications and Liability Rules, Law Innovation and Technology, forthcoming in issue 5(2), 2013

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