

# ECAI 20<sup>th</sup> European Conference on Artificial Intelligence

Montpellier, August 27-31, 2012

## 1st Workshop on Rights and Duties of Autonomous Agents (RDA2)

### “Subjectivity” of Autonomous Agents. Some Philosophical and Legal Remarks

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# The Research Question

- Would it be possible to attribute to certain typologies of robots the status of “subjects”, namely, of “autonomous agents”?
- And, if yes, under which conditions?



# **1. Preliminary remarks:**

## **The technological point of view**



# Which Autonomy? A Technological Point of View

(I)

- **Autonomous agents**

1. Physically instantiated (e.g., robots having both brainware and bodyware)
2. Virtual agents (e.g., non-human operators in financial transactions such as in stock exchange markets or in business-to-business platforms managing industrial supply chains)

- **Here we focus on embodied agents**  
(1)



# Which Autonomy? A Technological Point of View (II)

- **Examples of layers that may be awarded with a degree of autonomy**
  - low-level control (e.g., in tracking a reference trajectory in the joint space of a robot)
  - task planning and execution given a specific objective (e.g., in identifying optimal trajectories while navigating between two locations)
  - definition of specific objectives given a general objective (e.g., the sequence of intermediate stops in product distribution chains)
  - management of energetic resources (e.g., energy saving and battery charge policies)
  - cloud robotics (e.g., agents sharing decisions and experiences over ICT infrastructures)
  - interaction and communication (e.g., the case of the “Chinese room thought experiment”)
  - decision of strategic objectives in abstract form
  - ...



## Which Autonomy? A Technological Point of View (III)

The Justin robot (DLR,  
Germany)

• Example of  
autonomy in task  
planning and  
execution given  
specific objectives

- Launch the ball
- Catch the ball



<http://www.robotic.dlr.de/bcatch>



# Which Autonomy? A Technological Point of View (IV)

Improvisation with a  
robotic marimba  
player (GeorgiaTech,  
USA)

•Example of  
autonomy in  
interaction and  
communication



<http://www.gtcmt.gatech.edu/research-projects/shimon>



## **2. The foundation:**

# **The philosophical point of view**





# Which Autonomy? A Philosophical Point of View (I)

**Autonomy** as key-concept (also) for Robo-ethics

- A preliminary universe of re
  - health-care robots
  - child-care robots
  - robotic warfare

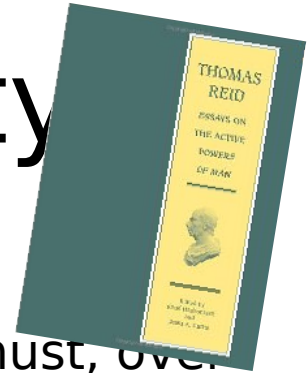


# Which Autonomy? A Philosophical Point of View (II)

- The concept of autonomy: theoretical conditions of its attribution to a subject
- Robots as autonomous agents?
- **The attempt for an alternative path: the nexus between *autonomy* and *duty***



# A short definition of duty



- Duty is neither something that belongs exclusively to an agent («It's up to you!»; «You must, over and beyond any considerations!»), nor something that is intrinsically related to action («This action should be done!» «It's impossible not to do that»).
- Rather, **duty is** structurally and inseparably **connected** to both, or **to agent** and **to action at the same time** (cfr. Th. Reid [1788], *Essays on the Active Powers of Man*).



# A case-scenario ...

- I see a person falling while she is walking in front of me and immediately I feel / perceive the duty (as subject) to help her to get up.
- **... and three areas of questioning:**
  - time of reaction;
  - type of action;
  - type of agent.
- Let us concentrate just on the third one (on a little portion of such problematic area)



# Open problems related to duty

- Any duty implies a power: “to be able to do something” (Hare)
- Two conditions:
  - b.1. external condition
  - b.2. internal condition
    - b.2.1. The “first level capacity side”
    - b.2.2. The “second level capacity side”



# Preliminary conclusion from a philosophical point of view

- a. From a synthetic examination of the sphere of duties (and just by considering physical tasks) it seems problematic to attribute the status of autonomous agent to robots.
- b. The attribution of autonomous agent to such types of robots, suffers of a weak legitimation.



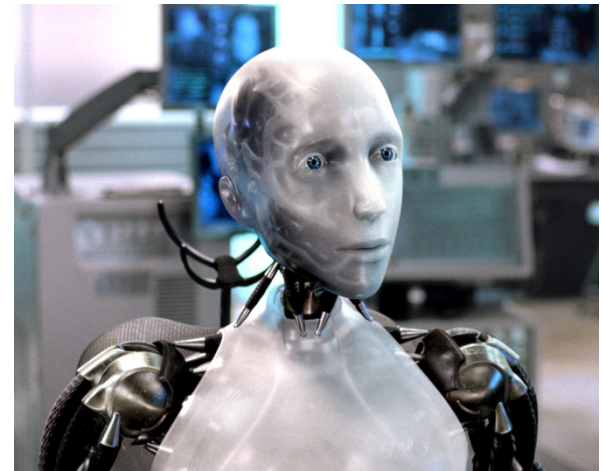
## **2. The application:**

**The legal point of view**



# Legal Issues

- **A.** Is it possible to include Robot Companions among the entities “other than persons” that have legal subjectivity?
- **B.** Can we predicate the recognition of autonomous subjectivity deriving it from the “legal environment” in which robot companions are going to act?





# Legal Issues – A

- In the European Member State Law do exist relevant cases of the attribution of juridical recognition to entities “other than (physical or legal) person”:
  - unrecognized organizations and some kind of corporations without legal personality (i.e. parties, unions; cultural associations, and so on);
  - conceived baby before birth;
  - animals.
- Assessing the possibility to extend some of their *rationales* to the recognition of robots’ subjectivity?



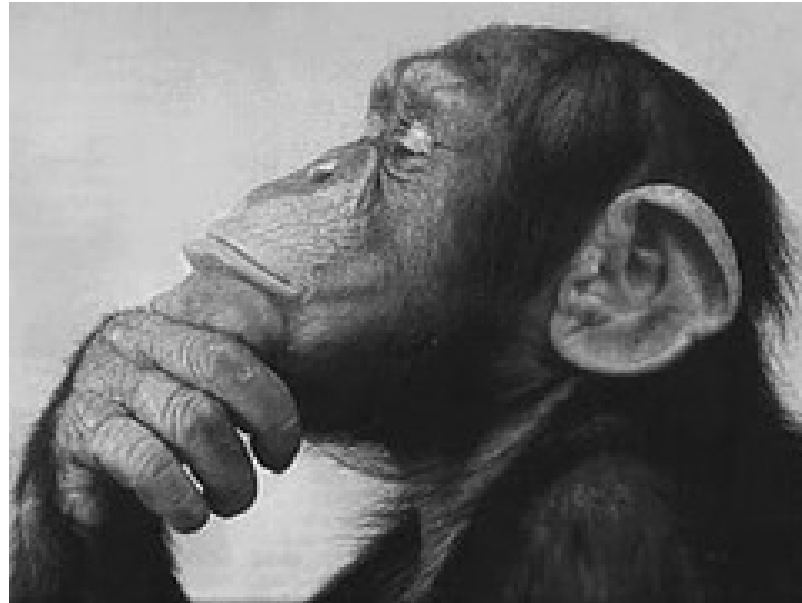
# Legal Issues – A

- Recognition of subjectivity to **animals**: directed to the protection against behaviours aimed at (gratuitously) inflicting pain, and to clear - though partially - the relationship between the animal and its owner from a strict dimension of property rights.
- **The Marguénaud's approach**: refusing to recognize human rights to animals does not mean denying at all the protection of certain animal interests.
- **The Feinberg's approach**: considering animals equivalent to elderly, disabled people and minors from a legal point of view.



# Legal Issues – A

A reference concept:  
The case of *animals* “Sentience”



# Legal Issues – A

- **What about robots?** Should they be protected just like animals? “Sentience”, well known by ethologists, is the key concept in this field. There are various methods to define a pain assessment in animals, and the results provide evidence that the animal would be able to experience negative sensations similar than the human ones, suitable to raise the demand of justice mentioned above.
- **The different content of “sentience” in the animal in comparison to RCs prevents the recognition of a legal subjectivity for animal and the (just prospective) recognition of a legal subjectivity for robots to be ascribed to the same rationale.**



# Legal Issues – B

- Should the recognition of autonomous subjectivity derive from the “legal environment” in which RCs are going to act?



# Legal Issues – B

Technology would be more helpful and worthy whereas robots, specifically for elderly or disabled people, were provided with the **ability of performing legal transactions**, namely acts which go beyond the pure material care.



# Legal Issues – B

- Two Hypothesis:
  - **A.** considering robots **as a sort of extension of their users'** will and physical body, so that any act they execute is directly referable to them;
  - **B.** considering the robots **as autonomous agents**, endowed with the status of subjects, but capable of entering into transactions under certain constraints (the case of minors and the mentally impaired).



# Legal Issues – B

- ... Sed contra ...
- **A.1.** it is counterintuitive, because of the detachment and possibly the physical distance between the primary actor and his supposed offshoot;
- **A.2.** it does not take into account the limited, but not inexistent, autonomous decision-making ability the robots companions are doomed to have in order to perform such actions.





# Legal issues – B

- **B.1.** The reduced capacity of minors or of the mentally impaired, could be taken as a model for regulation. **BUT:** Under this special regime, robots would be entitled to act validly but only with regards to transaction of minor importance and value (see, i.e., *Italian Civil Code*, art. 409, c. 2).
- B.2.: consequently: renunciation of the pursuing of transactions of legal relevance.



# Legal Issues – B

- Another path? The liability for damages
- The basic structure of most legal regimes regarding injuries caused by minors and incompetent persons could again be taken as a model rule.



# Concluding remarks

- Technology opens up always more complex areas of questioning potentially related to autonomy of robots, but ...
- Currently, there are **no duties for robots**, from the philosophical-foundational side: robots should satisfy too ambitious set of conditions in order to become capable of duty and, therefore, to become autonomous agents in the full meaning of the word;
- from the legal-applicative side: there are **no rights** for robots, **even if**:



# Concluding remarks

- the **analogy with animal**'s status of particular legal subjectivity;
- the **analogy with minor or impaired persons**' legal systems

Could potentially open fruitful paths, if and when new and enhanced technological achievements will be available.



# **Thank You for Your attention!**

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# References

- **Robolaw web site:** [www.robolaw.eu](http://www.robolaw.eu)
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