INTERNATIONAL SYMPOSIUM ON
ROBOTICS AND LAW: TOWARD THE SOCIETY LIVING TOGETHER WITH ROBOTS
Organised by *Chuo University*
Supported by *Embassy of Italy in Japan*

The RoboLaw Project: A European perspective on the ethical and legal implications of social robots

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THE BIOROBOTICS INSTITUTE

Scuola Superiore Sant'Anna

The Campus of Scuola Superiore Sant'Anna in Pisa

THE BIOROBOTICS INSTITUTE

INSTITUTE OF LAW, POLITICS AND DEVELOPMENT

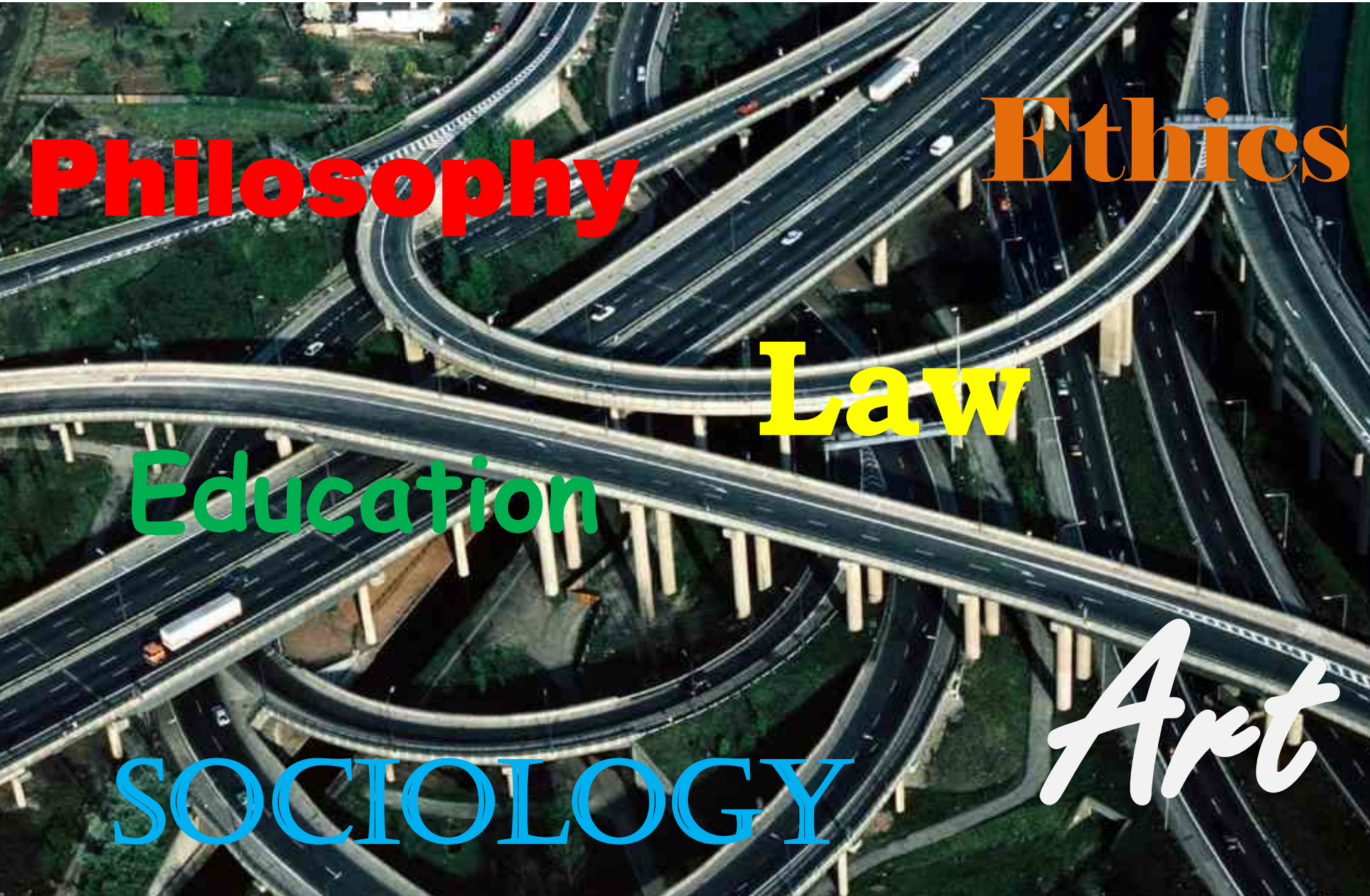
INSTITUTE OF ECONOMICS

INSTITUTE OF MANAGEMENT

INSTITUTE OF LIFE SCIENCES

INSTITUTE OF COMMUNICATION, INFORMATION AND PERCEPTION TECHNOLOGIES

My research activities



Main research questions

- **Ethics:** identification and analyses of ethical issues in robotics research and applications
  - TO DESIGN GOOD ROBOTS!
- **Law:** regulation of robotics technologies (classification of robots and regulation of autonomy…)
  - TO PROTECT USERS AND FAVOUR THE MARKET OF ROBOTS
- **Society**: investigation of (short and long term) effects of physical and psychological interactions with robotics technologies on human beings and the environment
  - TO REDUCE RESISTANCE AND IMPROVE ACCEPTANCE

Contents of the presentation

- Overview of the RoboLaw project
- The ethical and legal issues of care robots

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

SEVENTH FRAMEWORK PROGRAMME

http://www.robolaw.eu/

P. Salvini

International Symposium on Robotics and Law: Toward the Society Living Together with Robots

Chuo University, Korakuen Campus, February 19th, Tokyo, Japan ,2014

The project origin

- Italy, Peccioli (PI), Summer 2010, a working day of DustCart, an autonomous robot for door-to-door, on demand, garbage collection service (FP6 DustBot project, http://www.dustbot.org)

NEW ROAD SIGNS: *'Attention. Area subject to robotic testing. Yellow lane used by robots'.*

THE ROBOT LANE *a special way on the left side of the roads for the robot (the robot travel always in the same direction of cars).*

Project details & consortium

Project details

- **Duration:** 24 Months (extended to. May 2014)
- **Start date:** March 1 st, 2012
- **Strategic objective:** Programme "Capacities" - Call ID "FP7-SCIENCE-IN-SOCIETY-2011-1" Topic: SiS.2011.1.1.1-3 Regulating emerging scientific and technological developments.
- **Project no.:** 289092 – RoboLaw Collaborative Projects (Small or medium-scale focused research project).
- **EU Financial Contribution:** 1.497.966 EUR.

Consortium

- **The BioRobotics Institute and Dirpolis Institute**
  - **Prof. Paolo DARIO and Prof. Erica PALMERINI**

Scuola Superiore Sant'Anna
di Studi Universitari e di Perfezionamento

- **Tilburg Institute for Law, Technology and Society (TILT)**
  - **Prof. Ronald LEENES**

Tilburg University
Understanding Society

- **School of Systems Engineering**
  - **Prof. Kevin WARWICK**

University of Reading

- **Department of Philosophy**
  - **Prof. Fiorella BATTAGLIA**

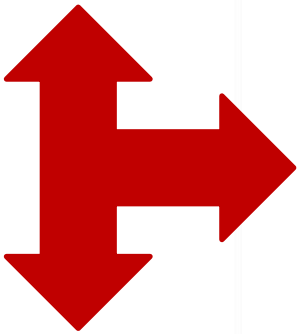
LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

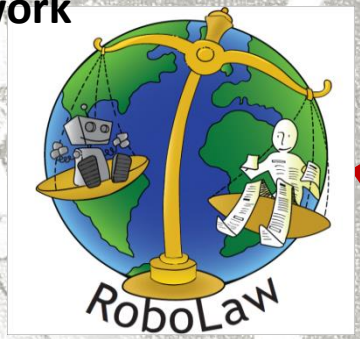
External Networks and Advisory Board

RoboLaw Stakeholders
Robotics companies, professional users, employers, insurance companies, trade-unions, users'associations, standard associations, researchers, etc.

Extra –EU Researchers for comparative perspective
1) **Ryan Calo**, Stanford Law School, The Center for Internet and Society, part of the Law, Science and Technology Program, US;
2) **Masahiro Kobayashi**, Japanese Lawyer, Osaka Bar Association, Japan
3) **Yueh-Hsuan Weng**, PKU-Yahoo! Internet Law Center, Peking University Law School, China
4) **Eung Jin Lee**, Korean Lawyer, South Korea

Supporting External Network





1) Scuola Superiore Sant'Anna, Pisa, Italy
BioRobotics and DIRPOLIS Institutes

2) Tilburg University, the Netherlands
Tilburg Institute for Law, Technology, and Society

3) University of Reading, England (UK)
School of Systems Engineering

4) Ludwig-Maximilian-University, Germany
Department of Philosophy

External Advisory Board
1) **Prof. Francesco Donato Busnelli**: Professor Emeritus of Civil Law at the Scuola Superiore Sant'Anna of Pisa
2) **José M. Galván Casas**, Professor of Moral Teology Pontificia Università della Santa Croce, Roma, Italy
3) **Martha J. Farah**, director of Center for Cognitive Neuroscience, Uni Pennsyvania (US)
4 **) Stefano Rodotà**: Professor Emeritus of Civil Law at University "La Sapienza" of Rome
5) **Maxim Stamenov**, Head of the Department of General and Applied Linguistics at IBL, Sofia University, Bulgaria.

Objectives of RoboLaw

The RoboLaw project intends to investigate the ways in which emerging technologies in the field of biorobotics have a bearing on the national and European legal systems, challenging traditional legal categories and qualifications, posing risks to fundamental rights and freedoms that have to be considered, and more generally demanding a regulatory ground on which they can be developed and eventually launched.

The RoboLaw Approach

1. Analysis of the current state-of-the-art of **legislation and regulation** pertaining to robotics, and identification of the areas of regulation that are in need of adjustment or revision due to the advent of emerging robotics technologies.
2. **Clarification of terminology**, **classification of robotic applications** and **identification of case studies** relevant for constitutional interests and rights
3. Exploration of the **interrelations between technical, legal and moral norms** (soft law + hard law), in order to define what could be the best balance between them, and to promote a technically feasible, yet also ethically and legally sound basis for future robotics developments

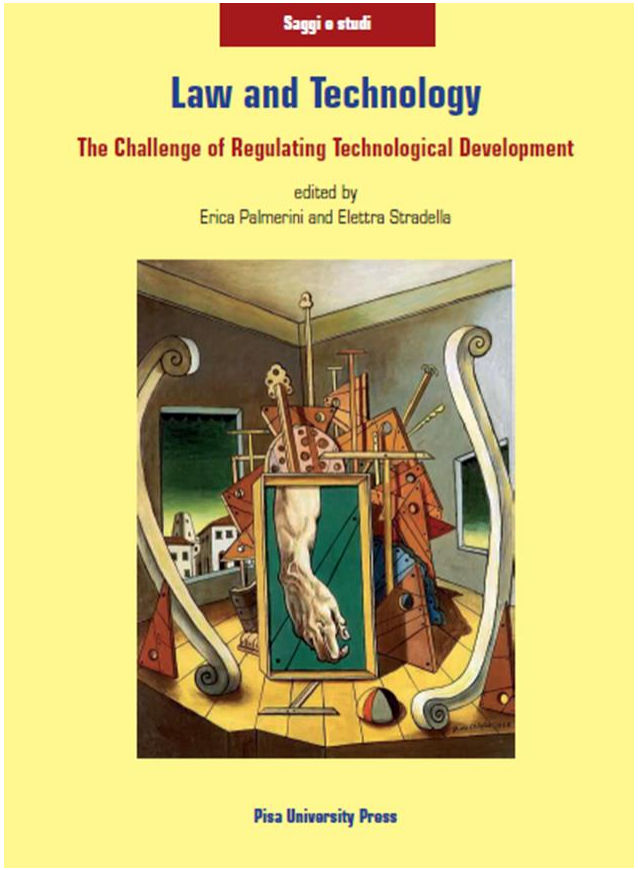
Project main outcome

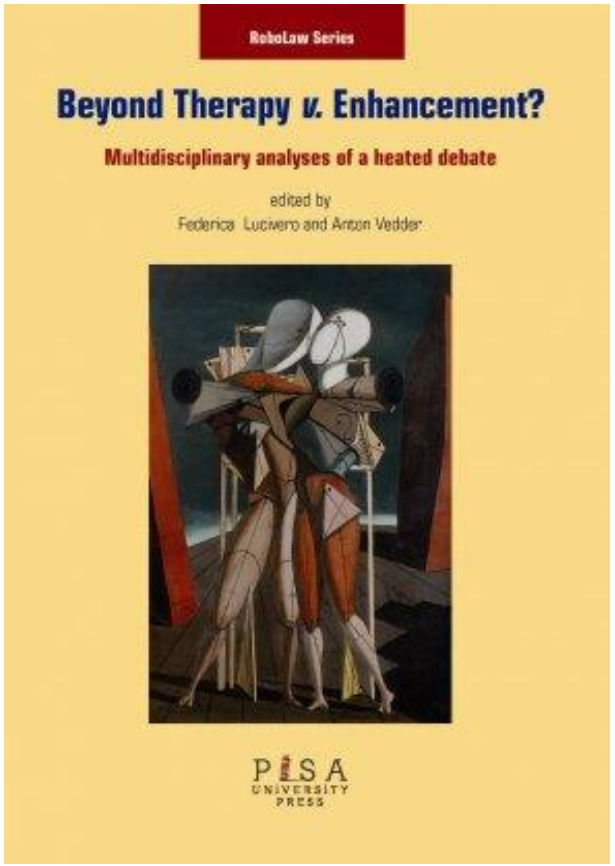
- To elaborate **"Guidelines for Regulating Robotics"**, containing recommendations for the European Commission, in order to establish a solid framework of 'robolaw' in Europe
- To focus on a diverse range of regulatory tools beyond hard law (soft law) that can guide decision-making and behavior (in institutional, corporate or other settings)
- **http://www.robolaw.eu/**

Preliminary results and current activities

- **New or existing laws?**
  - E.g. New laws are needed for autonomous robots standing as subjects, capable of entering into basic transactions, perform legal acts, and being accountable for the damages caused to their users and to third parties
- **Hard or soft laws?**
  - Soft laws (non legal norms: declarations of principles, codes of practice, conduct and ethics, recommendations, guidelines, standards, charters, resolutions, etc…) present some interesting aspects for the governance of robotic technologies (they are flexible and experimental)

The new *RoboLaw Series,* by Pisa University Press





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- **What is a robot? What are we talking about?**
  - 'I can't define a robot, but I know one when I see one'. Joseph Engelberger
- **The selection of cases studies**
  - Autonomous vehicles, hybrid-bionic systems, medical robots and social/assistive robots
- **Robotics technologies and human capabilities**
  - What are the human capabilities that are affected by robots that are potentially relevant in the short and medium term for the EU regulatory framework?
- **Foundamental rights and freedoms**
  - Changing one's body through technology begins to be conceptualized as a right, an open possibility that becomes part of the right "to freely construct one's identity using all the socially available opportunities" and thus dilates the scope of fundamental human rights

Motivations for the design of care robots

- To face the demographic shift and the change in social norms
- To improve the quality of care
- To reduce the cost of healthcare

Positive aspects

- Benefits for care-receivers:
  - To improve dignity, independence, privacy, and identity
  - To age in place
- Benefits for care-givers:
  - To improve their jobs conditions
- Benefits for relatives
  - To improve their peace of mind

Negative aspects

- To deteriorate care:
  - only 4% of EU citizens believe that robots should be used in activities concerning the care of children, elderly or disabled and that 60% of interviewed consider care robots should be banned
- To increase social isolation and loss of human contact
- To deceive care-receivers
- To reduce freedom
- To produce dependence and lack of competences
- To reduce workplaces

Legal isses

- Privacy
- Liability
- Legal capacity
- Classification

Open issues

- Which ethical framework?
- Which method for the identification and analysis of ethical issues?
- How to evaluate safety?
- How to turn ethics into a design requirements? Which legal instrument?

Conclusions

- To care for and care about should never be separated
- The de-humanisation of care and the objectification of care-receivers are not just problems brought about by robots
- To avoid the hype of technologies and technological fixes
- A combined solution is needed
- Robots as tools not as replacement of care-givers
- To design robots for specific tasks rather than general purpose robots

A near futuristic story about the relationship between a dog and a robot. Created by Greg Omelchuck and MoontowerVFX. Presented at the Robot Film Festival 2012

Chorebot