

Legal challenges for ubiquitous robotics

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Outline

- Robots' technological features as relevant for the law
- Different types of human robot interaction
- The issue of replacement ...
- And how it impacts on current models of liability

What is a robot?

In the singular or in the plural?

Technological notion

... the sequence sense – think - act



Robots in the legal discourse

- Embodiment: a robot is both a physical object
- ... and a digital agent
- Software intelligence and data processing
- Unstructured and dynamic environments of operation

Safety

Privacy
and security

Other distinguishing features

Connectivity

(V2V e V2I communication technologies, cloud robotics, infotainment services)

New vulnerabilities and cybersecurity

Autonomy and learning capabilities

Emergent behaviour and liability

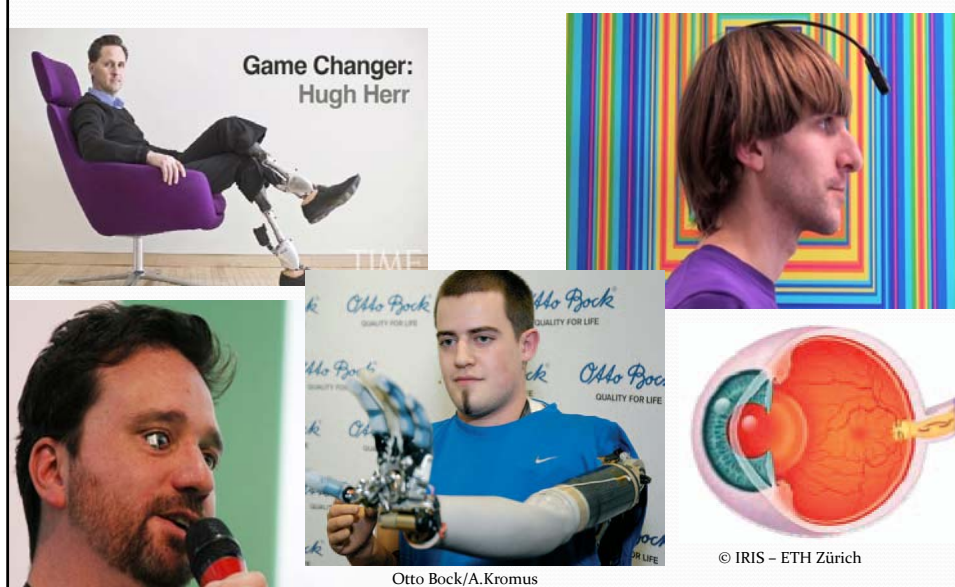
Three types of human robot interaction

- Robots help/assist/serve
- Robots integrate/augment humans
- Robots replace humans

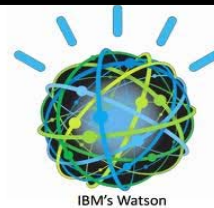
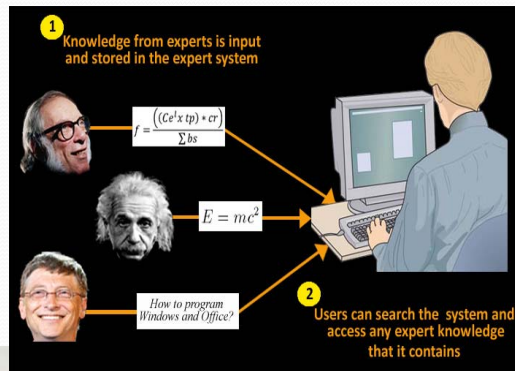
I. Robots help/assist/serve humans



II. Robots integrate/augment humans



III. Robots replace humans



WHY should robots replace humans?

- Robots perform critical tasks better than humans

Examples:

- Expert systems and quality of healthcare
- Autonomous vehicles and road safety
- Robo-advice in finance
- Difficulties in human-robot coexistence

Impact on liability rules

- Product liability regime:
 - It may be hard to prove defectiveness on the side of the victim
 - It may be hard to estimate and ensure the risks on the side of the producer
 - A “technology chilling effect”?

A “technology chilling effect”?

- ✓ Uncertainty regarding technical performance of novel products
 - ✓ Uncertainty about how current rules and standards could apply
 - ✓ Reputational concerns
- Risks are difficult to estimate, therefore to price and insure

Proposed alternative strategies

I. Selective immunity for robotic products

- Precedents in:
 - Immunity of gun manufacturers
 - Immunity of web providers
- Need for compensatory remedies to accompany immunity
- Immunity would be justified only for devices that serve important social needs

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Proposed alternative strategies

II. Robotic products and services as ultra-hazardous activities / Strict liability in the framework of enterprise liability

- Robots are not routinely dangerous
- Problems with insurability and internalization of costs
- Demand for robotic products may drop

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Proposed alternative strategies

III. Legal personhood for robots

- Functional approach, not ontological perspective
- Robots would be registered and endowed with a asset
- Is electronic personhood the answer?

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Thank you!

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