Liabilities for autonomous systems in the civil domain

Giovanni Sartor – Francesca Lagioia
A new task allocation

• As human delegate tasks to autonomous systems humans, humans still
  – Design, select and program ASs
  – Provide instructions to ASs
  – Cooperate ASs tasks through co-agency and interaction
  – Monitor ASs, possibly overriding them when needed
  – Do nothing. ASs accomplish tasks without human interference

  E.g.: autonomous cars, autonomous flight systems, service robots for health care, etc.

• Who is liable if the AS causes harm? What happens in the civil domain?
The usual legal framework: criminal liability

• Intentional offences
  – Actus Reus: Conduct + Results
  – Mens Rea: Intent, knowledge, or recklessness (awareness of possibility) of actus reus (harm)

• Negligent offences
  – Actus Reus
  – Mens Rea: unjustified lack of awareness of actus reus

• E.g.: causing death by shooting, blasting a bomb, driving while drunk, driving too quickly
Criminal liabilities and ASs
Changes for ASs: criminal responsibility (1)

- Users’ individual criminal responsibility:
  - Intentional user’s crime when an AS is deployed with the intention or knowledge that it will engage in criminal conduct
    
    E.g., *AS is directed to commit a criminal action, e.g., kill a person (a civilian)*

  - Intentional user’s crime when the AS is deployed knowing that it will engage in criminal conduct, though this is not the purpose of its use.
    
    E.g., *an AS is directed to destroy a facility where humans are known to be present*
Changes for ASs: criminal responsibility (2)

– Reckless user’s crime when an AS is deployed with the awareness that it might accomplish a criminal conduct. E.g. *E.g., an AS is directed to destroy a facility where humans are known to be present*.

– Negligent user’s crime (user’s lacking awareness of unreasonable risk) E.g. *E.g., an AS is directed to destroy a facility where humans are wrongly believed not to be present*.
Changes for ASs: criminal responsibility (3)

- What about cases where the AS commits an action that would count as a crime, if it were committed by a human, but there is no intention nor recklessness, nor relevant negligence in the user?
  - E.g. May an AS kills or destroy to achieve the goal assigned to it, without intent or awareness or recklessness or negligence in its user?
  - How to prove the mental state of the user?

- A responsibility gap? Yes, but is it a problem?
The usual legal framework: civil liability

- Personal liability for intentional harm
- Personal liability for negligence
- Exceptional cases of personal strict liability (dangerous things and activities, animals)

E.g.: Causing a person to be harmed by punching him, inadvertently pushing him down a stair, your dog bites him
The usual legal framework: civil liability (2)

• Other sources of liability without fault of the responsible actor (mainly an enterprise)
  – Organizational malfunctioning
  – Vicarious liability (for employees)
  – Strict liability for technological risk (dangerous activity),
  – Product liability (technical standards),
  – Statutory negligence

• E.g.: Harming though industrial pollution, the acts an employee, an explosion in power plan, a defective product, etc.
Civil liabilities and ASs
Changes for AS: Civil liability (1)

- Personal liability for intentional tort (quite rare intentional unlawful harm usually count as crimes):
  - As for intentional crimes

- Personal liability for negligence:
  - Negligent deployment of the AS
  - Negligent choice to deploy it for a task for which it is unsuitable (problem: how to determine unsuitableness)
Changes for AS: Civil liability (2)

• Strict liability
  – Like liability for animals or for employees when the AS causes damage?
  – Liability for dangerous activity, product liability, organisational liability?
  – By analogy liability as for animals or employees

• Liability gap? Maybe
  – Problem: What if the AS causes damage without human fault and no other source of liability is applicable
  – How to prove fault?

• Compulsory insurance? Strict liability with a cap?
Into science-fiction. Sanctioning ASs?

• Can ASs engage in crimes and torts? Can they perform and Actus Reus and have a Mens Rea?
• If so, they can commit crimes?
• But what sanctions can be applied to them?
• Do they have their own assets, and/or can they experience blame?
Conclusions

• ASs make a change in criminal liability.
  – There is a criminal liability gap since ASs may commit
criminal act without human mens rea.
  – However, this has limited significance in the non-military
domain (focus on efficiency and limiting harm)

• ASs shift civil liability from the individual
performers to individuals controlling ASs,
producers, and organisations using ASs
  – There does not seem to be a significant civil liability gap,
since usually liability to compensate damage caused by
AS will be allocated to somebody.
  – Evidence issues: The record of the activities of the AS
can provide evidence, but …
• In what are legally LAWs different from civil applications (e.g. autonomous cars)?
  – Proportionality (between harm and military goal) provides justification unavailable in the civil domain
  – Danger to others is intrinsic
  – No justification in balancing social advantages and disadvantages
  – No strong incentive for minimising damage
  – Command responsibility for harm caused by autonomous systems is distinct from vicarious liability
• Thanks for your attention

giovanni.sartor@eui.eu