

Research Project

(Ro)Bot-Human Interaction – A Digital Shift in the Administration of Criminal Justice? Substantive Law, Procedure, & Verdicts in Ambient Intelligent Environments

Third-party funded project

Project title (Ro)Bot-Human Interaction – A Digital Shift in the Administration of Criminal Justice? Substantive Law, Procedure, & Verdicts in Ambient Intelligent Environments

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Criminal law was designed by humans to create order amongst ourselves. Accordingly, its fundamental concepts, such as the notion of free will or the concept of a free appraisal of evidence or the claim of dignity and autonomy of parties to the criminal proceeding, are uniquely human. However, this humancentric approach is at risk of losing its place as a primary guiding principle as (ro)bot-human interactions increase. Until now, such collaboration has not had special standing in criminal law despite the fact that robots in various forms, software bots as well as standalone machines, already gather and process information, draw conclusions on behalf of humans and cooperate with them, or even act autonomously as their agents. Ongoing digitalization, or the increase in ambient intelligent environments, may gradually require a change in the traditional method of establishing the elements of alleged cri-minal conduct and in the way in which such elements are proven in court when human-robot collaboration turns detrimental. This, in turn, may have repercussions upon the narratives in criminal verdicts.

This project assesses the consequences of (ro)bot-human interactions in ambient intelligent environments. It primarily uses the example of technology surveying human drivers in modern cars in the course of driving automation. This includes software bots as well as physically independent smart devices that are made for enhancing safety in road traffic in the context of Swiss penal law. The goal is to understand legal changes and predict further impacts upon criminal law. The project will cover three working packages; packages one and two will be dissertation projects and the third will be a joint project among a group of scholars in comparative criminal law, engineering and law and legal narratives. The working packages will build upon each other, addressing the following questions:

- Substantive Criminal Law: What are the potential changes in the assessment of subjective (mens rea) elements of crimes in penal traffic law cases, particularly when robots issue war-nings to humans based on their assessment of drivers' behavior?
- Criminal Procedure: What are the challenges for fact-finding and evidence evaluation in cri-minal proceedings after fatal traffic accidents involving evidence from monitoring technology? Specifically, must defense rights be modified as a consequence to the use of certain machine-generated evidence so as to provide sufficient protection to the human driver standing trial?
- Digital shifts and its impact on narratives in criminal verdicts: How do criminal courts assess and prove mens rea in traffic incidents? Does the approach change with driving automation? Where do different criminal justice systems, with diverging legal traditions, technology adoption and traffic regulations, differ in explaining and establishing responsibility? Are there any commonalities?

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Smart safety devices in modern cars provide poignant examples of everyday human-robot collaboration that foreshadows a number of specific effects upon penal law. Within the domain of substantive criminal law, the demarcation of a negligent act from an intentional crime could change entirely when the mens rea could be inferred from a person's response to (ro)bot advice. For instance, if a drowsiness detection system alerts a driver to take a break but the driver continues, eventually causing an accident, courts may be inclined to infer negligence or even intent as a result of the driver disregarding the advice. Yet, criminal procedure might not grant an adequate defense to human drivers. In criminal proceedings the importance of human testimony, most notably a defendant's admission, will lose standing, while machine-based evidence will gain traction. For example, if a drowsiness detection system assesses a driver as sleepy, how can the driver challenge this machine-evidence if it is presented against him in court? Finally, verdicts will have to explain responsibility sharing in (ro)bot-human interactions and how machine-generated data was evaluated against human statements to justify an acquittal or conviction. With the ongoing automation of driving, robots monitoring humans will take over a crucial safety functions, like in Take Over Requests (TOR) when a car wants to hand over after having performed the dynamic driving tasks itself and must ensure the human driver is in fact capable of taking the steering wheel. As robots will likely become more embedded in our lives, similar issues will arise in other aspects of human life.

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