Criminal behavior and accountability of artificial intelligence systems

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Impact Statement

Societal and Scientific Relevance of the Research Findings

Questions of accountability and liability for the actions of AI systems will surface, as they become more sophisticated and common. As such, this study could lead to the development of legal frameworks that bridge accountability gaps, bearing significant implications for industries such as healthcare, finance, and transportation. Moreover, this study could lead to a change in public perception of crimes committed by AI.

Indeed, one of the main results obtained with this research is that it is able to explain the impact of AI on matters of criminal law to non-lawyers. The language adopted is purposedly straight-forward and simple, hence the research can be read also by those who do not have a legal education. In this sense, it could work to build bridges in the future between criminal legal scholars and AI scientists. Part of this result were already obtained, via presenting the research findings to a network comprising of both AI scholars and of philosophers. Furthermore, some of the reflections were already anticipated in publications on legal journals (especially on the matter of liability of humans).

In the short-term, the results of this research definitely brought the discussion on the matter forward: as a *unicum* in its field, it is hoped that it will stimulate further research on the matter.

Specifically, this research will be useful for legislators and policymakers when drafting new legal tools on matters of AI and criminal law. It could also impact international policy makers, who may look at the research to inform their own policies on AI systems. In this sense, its wide scope and lack of boundaries to national legal systems proves extremely useful.

Innovative Aspects of the Research

The study provides an original point of view in a doctrinal debate which has become topical in the past 5 years. The originality stems from different aspects. First and foremost, it represents a wholesome synthesis of a complex and layered topic. Indeed, an analysis of the impact of AI on substantial criminal law has potentially endless ramifications: in order to be able to truly deal in depth with the issue of criminal liability of AI system, a researcher has to acquire notions of computer science (so as deal with the functioning of AI systems in laymen terms); notions related to theories of moral philosophy (so as to deal with purposes of punishment in connection to AI); and notions related to ethics (due to the impor-

tance and prominence of ethical guidelines and principles as forebearers of AI regulation). The book is the result of the combination of these notions in a way that is not redundant and understandable for legal scholars. Second, it delivers – for the first time – an extensive analysis of the scholarly debate on AI and criminal law based on over 100 sources written in 3 languages (Italian, English and German). Third, it presents reflections on avant-garde topics, which have not been scrutinized by scholars before (see for example the discussion on Artificial Insane Offenders and Artificial Infant Offenders and the analysis of duties to act and responsibility of AI systems in commission-by-omission scenarios). Fourth, it introduces a unique comparison of 5 novel legal frameworks (laws, law proposals, and other policing initiatives) related to criminal liability and AI systems. Finally, the conclusion chapter presents numerous open questions, which will potentially be used by researchers as inputs for future research.

TARGET AUDIENCE & OUTREACH

The main target group for this research are criminal legal scholars interested in the interaction between criminal law and technology. Thus this study, due to its polyhedric nature, is of interest also for AI scientists, ethicists, and philosophers. It provides a basis for further discussion with academics from various fields. Thus, the research is not only relevant for members of academia, but also for member of parliaments, governmental officials, and of other public bodies, such as law enforcement agencies. For example, legislators could make use of this research when faced with the issue of regulating criminal behavior of AI systems. In fact, part of the research' results were already presented to high-ranking members of law enforcement agencies enrolled in a master on AI in criminal justice. Furthermore, this research could also affect the technological advancement of AI systems, stimulating industries to include considerations on criminal liability in their production processes. Finally, in the future the findings of the study could be integrated into education, e.g., by including tailored lectures in courses at universities. The lectures could be given to students belonging to different faculties (e.g., law, philosophy, data science, mathematics) and foster interdisciplinary research in the future.