

Abstract
PhD thesis
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Criminal Law and AI

"Progress bursts forth, it doesn't ask for permission. And in the current context, sketching out this new relationship between humans and machines is not at all easy. Especially because digital technologies have an impressive speed. Yesterday's technologies, such as TV, radio, electricity, and automobiles, took more than 50 years to reach 50 million users. They gave us all the time to get used to their innovations, to establish new rules for their use, and to organize our lives and societies accordingly. Today, digital technologies burst forth much faster, not giving us any time to organize ourselves and get used to their disruptive innovations. A clear example of this speed comes from social networks: Twitter took less than 3 years to reach 50 million users; Facebook and Instagram less than 2 years. Even the speed record belongs to Pokemon Go, which reached 50 million downloads in just 19 days!"

Criminal law must also therefore equip itself to keep pace with this rapid technological evolution, to avoid succumbing to what appears to be a new, disruptive 'shock of modernity,' which will bring about problems 'similar to those that have characterized other technological "transitions": verifying the suitability of existing norms to apply to new technologies, so as to assess whether it is appropriate for legislators to establish ad hoc, new rules, or to persist, not without possible strains validated, perhaps, at the jurisprudential level, in the application of pre-existing norms'.

If until a few years ago the main problem for all scientists involved in Artificial Intelligence research was to demonstrate the realistic possibility of using intelligent systems for common purposes, today that this goal is widely achieved, the question arises about what the future of Artificial Intelligence might be. Especially with regard to the application of intelligent systems and the consequent impact on the social and economic fabric. It becomes central, therefore, to investigate the new relationship between man and machine, in terms of morality, work ethics, and the correct use of machines respecting humans. Probably the direction that will be taken is not yet well defined, but it could lead to a new cultural and industrial revolution.

There are four possible paths of investigation that would characterize the penalistic future of artificial intelligence: a) law enforcement activities, and in particular predictive policing; b) the possible use of decision-making algorithms to resolve criminal disputes, so as to operate a sort of substitution, or at least an accompaniment, of the human judge with the machine judge; c) the assessment of criminal dangerousness entrusted to predictive algorithms, capable of drawing on and reworking enormous amounts of data in order to bring out relationships, coincidences, correlations, that allow for profiling a person and predicting their subsequent behaviors, even of criminal relevance; d) finally, the study of an AI system as the perpetrator of a crime.

All of these paths are of extraordinary interest, and some of them are already at the center of legal debate. Referring to the extensive bibliography that has developed on those topics, two additional perspectives of investigation concerning the impact that computer technologies and related forms of artificial intelligence are having and could have on criminal law should be highlighted.

A) The first perspective starts from the current process of digitization and computerization of legal material: what effects will this process have on the nature of legal norms themselves, particularly criminal ones, and especially on legislative technique?

B) The second perspective of investigation concerns the possible contribution of artificial intelligence to the formulation of the incriminating act.

C) The third perspective is based on the possibility for certain software to access data related to lifestyle habits, "residential instability," sexual tendencies, commercial preferences, "leisure time usage," or facts and characteristics capable of leading to a prognostic evaluation of dangerousness, whose boundaries and prospects need to be explored through research, at least regarding their compatibility with the rule of law.

D) The most delicate - on a philosophical and ethical level, even before a legal one - is undoubtedly that concerning the possibility of conceiving intelligent entities as perpetrators of crime. The latest generation of Artificial Intelligence systems is indeed endowed with a degree of autonomy from humans that puts the traditional model of human responsibility for criminal acts resulting from the behavior of the Artificial Intelligence entity in crisis. Less problematic is the question, especially in anticipation of further technological progress, of whether Artificial Intelligence systems can be considered autonomous legal goods deserving of criminal protection and, thereby, true victims of crime, from a perspective recently experimented with regarding "non-human" forms of life.