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**Autonomous weapons systems and International Law: a study on human-machine interactions in ethically and legally sensitive domains**

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DOSSIÊ TEMÁTICO: ART LAW AND CULTURAL HERITAGE  
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**AUTONOMOUS WEAPONS SYSTEMS AND INTERNATIONAL LAW: A STUDY ON HUMAN-MACHINE INTERACTIONS IN ETHICALLY AND LEGALLY SENSITIVE DOMAINS ..... 601**

Aziz Tuffi Saliba e Lutiana Valadares Fernandes Barbosa

# Autonomous weapons systems and International Law: a study on human-machine interactions in ethically and legally sensitive domains

Aziz Tuffi Saliba\*

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Amoroso, Daniele **Autonomous Weapons Systems and International Law** A Study on Human-Machine Interactions in Ethically and Legally Sensitive Domains. Napoli: Nomos. 1. Edition 2020, ISBN print: 978-3-8487-6856-1, ISBN online: 978-3-7489-0953-8, <https://doi.org/10.5771/9783748909538>

Humanity has long discussed its relationship with autonomous devices. In 1797 Goethe wrote a poem that describes a sorcerer's apprentice who bewitched a broom to do his job of fetching water. However, the broom multiplies and escapes out of his control, causing flooding. Only his master, upon return, is able to break the spell.<sup>1</sup> Similar to Goethe's bewitched brooms, Autonomous Weapons Systems (AWS) might behave in unexpected ways. The human role in the human-AWS interaction, named "Meaningful Human Control" (MHC), is an undetermined concept that is on the light spot both of the scholarship and States as a possible venue to address some of AWS's challenges. Throughout the book "Autonomous Weapons Systems and International Law". Daniele Amoroso discusses the central legal debates on AWS and provides a compelling normative model to contribute to regulating those weapons concerning MHC.

The book's aim is twofold: first, to dive into the legal analysis of AWS by scrutinizing existing international law and the challenges AWS pose to it; second, to think through a path to a global regulation on the issue. From a broader viewpoint, it also offers insights regarding a normative framework of the human-machine decision-making model shared by humans and autonomous devices. Amoroso analogizes the ongoing debate on AWS with four waves, since "(...) the focal points of scholarly attention have emerged in sequence, and have been coexisting for a while in discussions, even if those surfacing earlier have progressively lost much of their original weight and centrality."<sup>2</sup> The first wave encompasses whether AWS can comply with International Humanitarian Law (IHL), the alleged existence of an accountability gap, and the risks AWS pose to global stability. The second wave centers on the ethical and legal correctness of delegating to AWS the choice between life and death. The debates on MHC as a requisite for AWS represent the third wave. The fourth wave takes into account all these discussions and focuses on dealing with the challenges AWS raise. Amoroso's book essentially navigates in this fourth wave.

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<sup>1</sup> GOETHE, Johann Wolfgang Von Goethe. "Der Zauberlehrling"- The Sorcerer's Apprentice, 1797.

<sup>2</sup> AMOROSO, Daniele. *Autonomous Weapons Systems and International Law A Study on Human-Machine Interactions in Ethically and Legally Sensitive Domains*. Napoli: Nomos. 1. Edition 2020. P. 25 (*hereafter*: AMOROSO, Daniele. *Autonomous Weapons Systems and International Law*)

The book starts with chapter I, which introduces the book and presents a general overview of the legal debate on AWS. In chapter II, the author discusses if AWS would be prohibited under International Humanitarian Law (IHL) and International Human Rights Law (IHRL). To do so, the author defines the content of an IHL/IHRL test and then reviews AWS based on this test. He provides a lengthy analysis of the principles of distinction, proportionality, and precaution. Amoroso argues that distinction and proportionality are contingent upon technological developments, respectively the capacity to develop situational awareness and to translate a fluid notion and the skill to balance heterogeneous values into algorithms. The author elegantly refutes the argument that IHL challenges to AWS are solely dependent on technological development by arguing that precaution requires some autonomy restriction. He then calls for States to develop models of “(...) *human-weapon relationships that bring out the best in both machine and humans, by compensating their reciprocal weaknesses*”<sup>3</sup>, bringing to the surface the debate on MHC.<sup>4</sup> The author engages with the IHRL debate, which, except discussions on human dignity, often remains in the shade of AWS’s scholarship. He highlights the importance of IHRL if AWS are used to law enforcement and also, in the context of armed conflicts, about the right to life of combatants to be protected against friendly fire since, for AWS, the “(...) *distinction between a fellow combatant and an adversary’s tank is just a matter of pixels and other sensory data*”.<sup>5</sup>

Chapter III addresses the “accountability gap” AWS might create concerning individuals, States, and corporations. The book points to two “structural problems” regarding responsibility: a) the inherent unpredictability of AWS and; b) the “many hands problem”.<sup>6</sup> An in-depth analysis is made concerning the individual responsibility gap. Regarding State responsibility, the author provides a

compelling study of whether the personal accountability gap might also hinder States’ responsibility since some primary rules, such as IHL distinction and proportionality and IHRL prohibition of arbitrary deprivation of life, require intent. Thus, in those situations, the breach of an international law obligation does not occur absent the willful actions<sup>7</sup>. The precautionary duty is presented as a venue to hold States responsible in the case of negligence. It would have been interesting to read, regarding State responsibility, a critical assessment of the current regime on international responsibility of States, as Stated by the Draft Articles on State Responsibility, can address breaches committed by AWS.

Chapter IV discusses the argument that AWS are inherently wrong under the Martens Clause and the human dignity principle. The author provides an engaging debate through two paths, taking the perspective of those targeted by AWS and those delivering the force. From the view of targeted ones, he argues that it is not possible to ascertain that AWS are *malum per se*. Amoroso states that the traditional framework of *Objektformel* to verify violation of human dignity of the targeted ones is not a convincing argument against AWS. The book provides an insightful interpretation of the right not to be subjected to a decision based solely on algorithmic decision-making.<sup>8</sup> He states that such a right is emerging at least in Europe, flowing from the principle of human dignity and a progressive assessment of the *Objektformel*.<sup>9</sup> Nonetheless, he concludes that due to the few ratifications on Protocol amending the Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data (EU Convention 233), such an understanding grounded on an evolutionary interpretation of the *Objektformel* still has a long way to go. At the time the book was written, only three States ratified the modernized EU Convention 233. Significantly enough, the situation is shifting: as of March 1<sup>st</sup>, 2021, eleven States have ratified it, and only eight out of the Members of the Council of Europe have not

<sup>3</sup> AMOROSO, Daniele. Autonomous Weapons Systems and International Law. p. 117

<sup>4</sup> He recognizes that human control might be limited or excluded in situations that would be unfeasible since it would bring serious security risks (in a context where civilian protection and friendly forces are not at issue under the principle of proportionality and distinction). Under IHR and outside the armed conflict context, human control could be hindered only if a weapon with human control would pose an equal or greater risk to human life.

<sup>5</sup> AMOROSO, Daniele. Autonomous Weapons Systems and International Law, p. 59

<sup>6</sup> This refers to the situation that many people are involved in the causal chain, but it is difficult or impossible to discern who is responsible.

<sup>7</sup> AMOROSO, Daniele. Autonomous Weapons Systems and International Law, p. 147

<sup>8</sup> He does it on the basis of: Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data ETS No.108 1981; Protocol amending the Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data CETS No.223; and Regulation (EU) 2016/679 of the European Parliament and of the Council

<sup>9</sup> AMOROSO, Daniele. Autonomous Weapons Systems and International Law, 187



become a party to it yet.<sup>10</sup> It would have been interesting to read Amoroso's view on the impacts on AWS's debate if such a right prevails. From the standpoint of those delivering the force, the author provides in-depth analyses and strong arguments to the claim that AWS might be evil per se due to the inadmissibility to eliminate the human agency. He sheds light on a consensus that human agency must be retained in targeting decisions that affect individual rights. Amoroso states that "(...) *this could be pivotal to argue that a principle of international law envisaging the need to retain human agency may be derived from the "dictates of public conscience" (...)*"<sup>11</sup> as an element of the Martens Clause or, that it flows from a constraint oriented perspective of human dignity.

The normative lynch-pin for MHC was, thus, built throughout chapters II to IV: chapter II stated the necessity to assure human control in which humans play a fail-safe role as deriving from the obligation of precaution; chapter III framed human control as a feature to enable responsibility in cases of breaches of international law; and Chapter IV surfaced the requirement of MHC derived from the Human Rights and Martens clause, especially the of dictates of public conscience.

In Chapter V, the book reaches its climax and provides a problem-solving approach shaping the rules that gravitate around the notion of MHC. Amoroso focuses attention on two crucial issues of the MHC debate: one, the necessity to ensure the quality of the human role in the targeting process, and two, the "*identification of adequate human-machine shared control policies*".<sup>12</sup> The author proposes a normative model of MHC based on two branches: a) primary obligations, which are controlling tasks that a human being must develop; and b) ancillary obligations "*(...) aimed at guaranteeing that human-machine partnership conditions are fulfilled for the informed exercise of primary human obligations*".<sup>13</sup> He proposes "bridge-rules"

to ascertain the primary and ancillary MHC obligations depending on what mission the AWS will develop, where the weapon is deployed, and how it develops the targeting task. He also discusses how the proposed MHC model can be materialized and calls for a binding instrument, or a protocol VI to the CCW or a self-standing treaty, and provides some flesh and blood of this possible treaty's framework. The book's proposed legal instrument must give "(...) *more formal and substantive prominence to positive obligations*"<sup>14</sup>, which encompasses three clusters "Control Privileges," "Training," and "Design requirements". The book criticizes the one-size-fits-all approach regarding MHC by presenting presents diverse variables. Tailored treatment is laudable from an academic standpoint. Still, it might be very challenging on the ground since, for instance, war scenarios are inherently clumsy and surprise seeking, and the same weapon might be used in various venues and might have turn on/ turn of buttons that change their features.

For Amoroso, autonomy means functional autonomy, i.e., the weapon's capability to select and engage targets without a human being's intervention.<sup>15</sup> While discussing the MHC, he provides various degrees of human-machine interaction. Still, a question that remained unanswered is if a few or many of those levels of human control might hinder the proper concept of autonomy.

The Epilogue highlights that some of the AWS discussions also provide insights to tackle the challenges posed by other autonomous devices, including the book's proposed structure model of primary and ancillary obligations.

In sum, the book provides an impressive contribution to materialize the normative content of the notion of meaningful human control, which is still a fluid notion that has a prominent role in the Group of Governmental Experts' discussions on lethal autonomous weapon systems<sup>16</sup>. While States agree on the broad framework of the necessity of MHC, what precisely this means is still under construction, and this book adds essential building blocks to the debate.

<sup>10</sup> Information available at: [https://www.coe.int/en/web/conventions/full-list//conventions/treaty/223/signatures?p\\_auth=hmUd9JRO](https://www.coe.int/en/web/conventions/full-list//conventions/treaty/223/signatures?p_auth=hmUd9JRO)

Note also that Brazilian law on data protection, Law 13.709/2018 states in its article 20 a right to review if a decision is taken solely by automated means; in the same sense, Art. 49 of UK's Data Protection Act 2018 available at <https://www.legislation.gov.uk/ukpga/2018/12/section/49/enacted> Right not to be subject to automated decision-making

<sup>11</sup> AMOROSO, Daniele. *Autonomous Weapons Systems and International Law*, p. 215

<sup>12</sup> AMOROSO, Daniele. *Autonomous Weapons Systems and International Law*, p. 219

<sup>13</sup> AMOROSO, Daniele. *Autonomous Weapons Systems and In-*

*ternational Law*, p. 220

<sup>14</sup> AMOROSO, Daniele. *Autonomous Weapons Systems and International Law*, p. 257

<sup>15</sup> AMOROSO, Daniele. *Autonomous Weapons Systems and International Law*, p. 18-19

<sup>16</sup> Group of Governmental Experts on lethal autonomous weapon systems, which is convened under the auspices of the Convention on Certain Conventional Weapons (CCW)

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