TOWARDS A NEW AI RACE. THE CHALLENGE OF LETHAL AUTONOMOUS WEAPONS SYSTEMS (LAWS) FOR THE UNITED NATIONS

ROSER MARTÍNEZ-QUIRANTE
JOAQUÍN RODRÍGUEZ-ÁLVAREZ

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UAB
Universitat Autònoma de Barcelona
Facultat de Dret

FUABformació
Escola de Prevenció
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Roser Martínez-Quirante is Ph.D in law, is a professor at the Department of Administrative Law of the Autonomous University of Barcelona and at the School of Prevention and Integral Safety and Security (EPSI) of which she was a founding member. She teaches Law of Security, Intervention and Self-regulation and Control of Firearms in the US and Europe. She is President of the Expropriation Jury of Catalonia and Coordinator of the Ph.D and the program in Human Security and Global Law at the UAB. She is part of different research groups and the International Committee for Robot Arms control (ICRAC). Among hers publications are: *Armas: libertad Americana o prevención europea* (Ariel, 2002) and in co-authorship with Manuel Ballbé, *Soberanía dual y Constitución integradora. La reciente jurisprudencia de la Corte Suprema Norteamericana* (Ariel, 2003), as well as "Law and globalization: between the United States and Europe" in *Global Administrative Law*, Robalino-Orellana and Rodríguez-Arana ed., (Cameron May, 2010), and co-authored with Rodríguez, "Technology wars and the military future of AI", *IJERMT*, 2018.

Joaquín Rodríguez-Álvarez, Ph.D in Human Security and Global Public law. Is professor of the School of Prevention and Integral Safety and Security and associate to the Department of Administrative Law of the Autonomous University of Barcelona. He Coordinates de network Leading Cities in Spain, and is member of ICRAC (International Committee of Robot arms control) Among his publication are: "La civilizacion Ausente: Tecnología y sociedad en la era de la incertidumbre" (Trea 2017) and co-authored with Martinez Quirante "Technology wars and the military future of AI", *IJERMT*, 2018 and *Armas Letales Autónomas: un nuevo reto para Naciones Unidas* (Trea 2018).

Foreword

One of the greatest threats to humanity today is what some are calling the third revolution in warfare. The end product, like the industrial revolution, could mean the automation of armed conflict with killing machines operating on their own without meaningful human control. The major powers, Russia, China and the US as well as other nations such as the UK and Israel are, between them, developing tanks, ships, fighter jets and submarines and other weapons that can operate offensively without the need for a human controller.

These ongoing technological developments clearly require international discussion and debate about whether or not we should allow the decision to kill a human to be delegated to autonomous weapons systems – systems that, once activated, can track, identify and attack targets with violent force without further human intervention. The discussion has ranged from moral and legal implications[1], to technical and operational concerns[2], to issues about international security[3].

1. See P. Asaro, "On banning autonomous weapon systems: human rights, automation and the dehumanization of lethal decision-making", International Review of the Red Cross, 94 (2012), 687–709; C. Heyns, Report of the Special Rapporteur on Extrajudicial Summary or Arbitrary Executions, Human Rights Council Twenty-third Session (2013). See also C. Heynes, "Autonomous weapons systems: living a dignified life and dying a dignified death", ch. 2.
2. See N. Sharkey, "The evitability of autonomous robot warfare", *International Review of the Red Cross*, 94 (2012), 787–99; and N. Sharkey, "Saying – No! to lethal autonomous targeting", *Journal of Military Ethics*, 4(9) (2010), 299-313.
3. Concerns have been expressed that unknown combating algorithms controlling autonomous weapons would interact in unpredictable ways. This could make it impossible for weapons reviews to guarantee compliance with international humanitarian law (IHL). N. Sharkey, "The automation and proliferation of military drones and the protection of civilians", *Journal of Law, Innovation and Technology*, 3(2) (2011), 22940.

It seems clear that for the foreseeable future[4], we cannot guarantee that autonomous weapons systems will be able to fully comply with international humanitarian law (IHL), except perhaps in some very narrowly subscribed circumstances[5]. Apart from problems with the principles of distinction and proportionality in determining the legitimacy of targets, autonomous weapons systems are, by definition, less predictable than other weapons systems. This means that it is unclear as yet how we could guarantee the quality of Article 36 weapon reviews for both hi-tech and lo-tech nations[6]. In addition, the US Department of Defense has pointed out a number of computer problems for the use of autonomous weapons systems[7].

Some argue that such weapons could be used legally in certain very limited circumstances, while others argue that at some point in the future they may be able to comply with IHL. However, these arguments are about an IHL compliant technology that no one yet knows how to create. There is nothing wrong with technological ambitions or a general research agenda in civilian domains, but there is less room for such conjecture when discussing autonomous technologies of violence. For example, robot soccer is seen as a great research challenge and a chance to test robotics technology within a real-world application. The ultimate aim is to develop a team of autonomous humanoid robots that will beat human world champions by 2050. No one knows if this will work, but the challenge enables the development of new methods of robot control and sensing that can be applied elsewhere[8]. Thus, success in the ultimate aim is not vital to reap the technological benefits. If the

4. In the context of this chapter, foreseeable future means that it follows from an analysis of the current state of the technology, the ongoing research projects and the current empirical evidence from the technology. Any departure from a foreseeable future analysis is dependent on speculation about the future without clear supporting evidence.
5. For example, it would be possible to set the coordinates for an autonomous drone as a substitute for a cruise missile, or they may be used against military objects.
6. Geneva Conventions, 12 August 1949, 1125 UNTS 3, Article 36.
7. US Department of Defense (DoD), Autonomy in Weapon Systems, Directive 3000.09, 21 November 2012, 14, points to potential problems with autonomous weapons: human error, human-machine interaction failures, malfunctions, communications degradation, software coding errors, enemy cyber attacks, infiltration into the industrial supply chain, jamming, spoofing, decoys, other enemy countermeasures or actions and unanticipated situations on the battlefield.
8. For a fuller discussion, see Edoardo Datteri and Guglielmo Tamburrini, "Robotic weapons and democratic decision-making", in E. Hilgendorf and J.-P. Guenther (eds.), *Robotik und Gesetzegebung* 211-229, Baden-Baden, Germany, Nomos Verlagsgesellshaft, 2013.

enterprise fails, we may invent a different kind of sport for humans and robots to play together (and still keep the old sport specifically for humans) with new rules of engagement to give robots an equal chance of victory[9].

There is quite a different story when we are discussing weapons. If our thinking, our strategies and our defense budgets are directed towards developing autonomous weapons systems, and it turns out that making them IHL compliant is not as successful as was hoped, what will we do with this weapons technology? What if we get involved in serious conflicts? We may then have to change what IHL compliance means and modify the rules of engagement to give the new weapon a place. This very scenario has happened in the past with aerial bombardment and submarine warfare.

The limitations of technology are partly why technologically capable states such as the United Kingdom and the United States have made it clear that there will be some form of human oversight or judgement for lethality decisions. In the United Kingdom, the Parliamentary under-secretary of state, Lord Astor of Hever, said: "[T]he MoD [Ministry of Defense] currently has no intention of developing systems that operate without human intervention … let us be absolutely clear that the operation of weapons systems will always be under human control"[10]. When the US Department of Defense (DoD) issued the first policy document on autonomous weapons, they stated: "Autonomous and semi-autonomous weapons systems shall be designed to allow commanders and operators to exercise appropriate levels of human judgment over the use of force"[11].

What has not been made absolutely clear in the United Kingdom, however, is exactly what type of human oversight will be employed. Nor has the US DoD made any attempt to define "appropriate levels of human judgment". Without addressing these points –and they are not easy to address– there is no transparency in the operation of such

9. Tamburrini further extends his arguments in this volume to consider the cultural production of ignorance. G. Tamburrini, "On banning autonomous weapons systems: from deontological to wide consequentialist reasons", ch. 6.

10. 26 March 2013. Cf. http://bit.ly/1lZMQyW_14.

11. See note 4 in this chapter. But see D. Saxon, "A human touch: autonomous weapons, DoD Directive 3000.09 and the interpretation of 'appropriate levels of human judgment over the use of force', ch. 9, about problems and the vagueness of the Department of Defense Directive 3000.09".

computerized weapons[12]. To say that there is a human in the control loop does not clarify the degree of human involvement. It could simply mean a human programming a weapons system for a mission or pressing a button to activate it, or it could (hopefully) mean exercising full deliberative human judgment about the legitimacy of a target before initiating an attack.

This is a critical moment in our history with automated killing as the final step in the industrial revolution of war; a clean factory of slaughter with no blood on the hands of the aggressor. Yet the developments continued without any international discussions between states until 2012 when civil society stepped up to the mark at a meeting of non-governmental organizations (NGOs) in New York in October 2012 to celebrate the anniversary of the banning of anti-personnel landmines. I was invited to give a talk about the dangers of autonomous weapons systems to the assembled NGOs. Afterwards a smaller group of 7 NGOs, Nobel Women's Initiative, Human Rights Watch, Article 36, International Committee for Robot Arms Control, Mine Action Canada, Pugwash and PAX, decided to form the leadership of an international Campaign to Stop Killer Robots and launch it from the UK Parliament in April 2013.

By November of 2013, we had a mandate for a 4-day meeting of experts at the UN in Geneva at the CCW, a UN treaty organization dedicated to the protection of civilians from injury by weapons that are used in armed conflicts and also to protect combatants from unnecessary suffering. There are 121 states in the CCW and each have an equal right to vote or veto. There were two further weeks of expert meetings in 2015 and 2016 before the CCW collectively decided to move to the next level of a group of governmental experts for 2017. This is open to the same 121 states, but it is for them to discuss openly rather than watching and questioning panels of experts.

By 2018, the issues about the meaningful human control of weapons have been widely spoken about in statements from over 80 nations. The campaign has grown to include more than 70 NGO and most states are saying that we need international regulation to control these new weapons. 26 nation states have joined our call for a new international protocol to prohibit autonomous weapons systems. The latest were

12. See S. Knuckey, "Autonomous weapons systems and transparency: towards an international design", ch. 8, for a detailed discussion about transparency.

Austria and China. The International Committee for Robot Arms Control, which I chair, still plays a leading role in campaigning and advocacy. We are very proud to have the authors of this book, Joaquin and Roser as two of our members.

Noel Sharkey

Chairman of the International Committee for Robot Arms Control (ICRAC)

Chapter I

Introduction[1]

We live in a liquid world in which fragments of complex and dissociated societies intermingle, like phases of a dream that barely makes sense[2]. We inhabit a space and a time in which technology stands as a frontier between the desired and the feared, promising comfort, but auguring new conflicts; a historical crossroads in which the future must be determined not only for the next generations, but for the very life on the planet.

We can affirm that our present is largely defined by the exponential acceleration of the techno-scientific system, which fosters the emergence of new systemic risks and transcendental transformations that compromise not only the resilience of the system, but also the scientific paradigms on which we settle the legal-institutional framework that gives it form[3].

We could also affirm that the evolution of the technological system harbours the origin of the juridical and philosophical crises that are configured as symptoms of a chaotic leap in which the past, present and future seem to coexist in an unstable equilibrium plagued by threats[4]. The crisis, as Gramsci affirmed, *"consists precisely in the fact that the old dies and the new cannot be born: in this interregnum, the most varied morbid phenomena are verified"*[5].

All these phenomena, processes and technological systems today have the potential to seriously threaten not only the stability of the system, but also that of the species itself. Therefore, it is necessary to establish regulatory frameworks based on a new notion of anticipatory law as a

1. We want to thank the collaboration of our professor PhD. Manuel Ballbé in the process of preparing this book since the discovery of many of the works we have used to defend the arguments presented here have been the result of his tireless perseverance in research and generosity in sharing them with his disciples.
2. Rocca (2008).
3. Giddens (1991).
4. It deals with the general theory of the evolutionary system: Csányi (1989).
5. Gramsci (1999).

legal form inherent in the post-human condition[6] where the prevention principle is called to play a key role, or what is the same: A post-anthropocentric law that guides us during this stage of transition from an ethical imperative socially agreed upon in front of the monsters that begins to rise.

It is, precisely, a disturbing technology that announces the emergence of a new era defined by the loss of fully human control over warfare. By giving birth to an autonomous arms race that can seriously alter the fragile geopolitical balances of the planet at a time when the paradigms that regulate the international scene are in a critical phase of self-destruction by those who like Trump or Brexiters advocate for new forms of protectionism. But also of transformation and reinforcement before the rise of an authoritarian China or of Putin's Russia, as new key actors in an increasingly unbalanced global governance.

It is undeniable that we were immersed in a process of globalization-americanization[7] busted by pro-civil rights movements like the lead by African-Americans, feminist, environmentalist, LGBTIQ activist, antitrust advocacy grups, public health supporters (Obama-care), etc.[8]. That lead to conquest of new rights, culminating in the presidencies of Clinton and Obama. But this Revolution of rights has had some regulatory setbacks with the presidencies of Reagan, Bush and Trump that have led us to financial crises like 2008, environmental crises, obvious cuts in rights and, ultimately, to a scary future scenario. A dystopic reality with deep implications for human rights.

However, as a contrast, there has been also, a parallel process of competitive *globalization-europeanization*, which has served to pick up the American progressive regulatory model and correct –or warn– some of its serious dysfunctions and errors. The "European Union Effect" has been strongly criticized in the Wall Street Journal as a Regulatory Imperialism[9]. However, what has really happened in Europe is the attempt to project a *Law's Empire*[10] of human rights over the rest of the world with progressive regulations of all kinds (social, health, food, work, etc.) Some initially promoted by the activism of American groups.

Therefore, the EU Effect have implied that in order to trade with Europe, a market of 500 million people, the non-EU Countries have had to adapt to these regulations, a mechanism that aspire to stop the savage capitalism

6. Arendt (2015); Rodríguez (2016).
7. Ballbé and Martínez-Quirante (2010).
8. Sunstein (2016b). Vid. also Epp, C. (1998).
9. Editorial of the *Wall Street Journal:* "Regulatory Imperialism", 26.10.2007. https://www.wsj.com/articles/SB119334720539572002
10. Álvarez, J. (2009) cited in Ballbé and Martínez-Quirante (2010), p. 209. Dworkin, R. (1986).

of the last decades (Tacher, Reagan, Bush) returning to a scheme of social and regulatory capitalism whose maximum exponent was the Roosevelt presidency. We cannot forget that the antecedent of the welfare state is in the Federal Constitution of 1787:

> "We the people of the United States, in order to form a more perfect Union, establish Justice, insure domestic tranquility, provide for the common defence, promote the general Welfare, and secure the blessings of liberty to ourselves and our posterity…"

A process that is also in jeopardy due to the rise of extreme-right movement all along the old continent.

We are facing the dilemma, which Alvarez already raised, of whether contemporary international law is going to be the *"Empire of law"* or the "*Law of Empire*". An example of the return to American unilateralism is that Trump has proposed to create an independent military space force (USSF)[11] which is likely to be the headquarters where the most cutting-edge technology of intelligent systems will be concentrated. All this makes it urgent for the UN to reach a consensus to curb this imperialist unilateralism. In this sense, Macron has announced the promotion of European sovereignty in the face of the advance of American populist nationalism and the EU demanding its military autonomy[12]. Something that can be also comprehended as a scary sign of the arms race that is to come if not stopped.

Also, in the current globalization phase there is an incipient influence of other great powers (like Russia or China) which can change the strategies of the traditional democratic actors. Generating the

11. Editorial of the *Bloomberg* "Trump's Space Force is no joke. It Might even work", 21.06.2018.
https://www.bloomberg.com/view/articles/2018-06-21/trump-s-space-force-is-no-joke.
Noteworthy is the controversy unleashed between the American doctrine (Dorf, Somin, Ramsey, Bomboy and the first to write on the topic Rappaport) on whether or not Congress has the power to create an independent Space Force. The law professor at Cornell University, Dorf, believes that this force will only be constitutional if it is part of the Army or the Navy but can not be independent. In this sense: if military missions in space are beyond the power of Congress under the original Constitution, then there is an obvious remedy: approve an amendment. Otherwise, the Congress only has the powers that most people believe is appropriate and that should defend its legislative proposal. Dorf, M. (2018); Answering vid. Bomboy, S. (2018); Somin (2018) and Ramsey, M. (2018). It is remarkable the reflection on the original interpretation of the power to create an independent Air Force Rappaport (2007) that has been used by other academics to defend their positions.

12. Herszenhorn, D., "Macron wants Europe to buy its own military harware", 11.11.2018, https://www.politico.eu/article/macron-wants-europe-to-build-its-own-military-hardware/.

conditions for a setback on democracy through new forms of totalitarian expressions. Being, therefore, extremely necessary that the confluence of this competition and cooperation between blocs is channeled through the United Nations which has created an immense corpus of *soft law* but also of *hard law* whose success and reach are unparalleled and of which we are not fully aware.

The United Nations, in spite of the erosion that suffers in the western public opinion, still promotes commendable deliberative process between states and groups to achieve greater human security[13]. It achieves this through participatory processes, recognizing the activism of groups in all fields that pressure and condition the states and provide expertise of high scientific and legal content for the benefit of human rights. In the activity of this organization there is not only competition between blocks but the search for consensus through cooperation to reach a new solution in which everyone feels participants, protagonists and winners (win-win).

Nakamitsu, United Nations Under-Secretary General and High representative for disarmament affairs, say: "Academic and private sector expertise is crucial for ensuring government deliberations are appropriately and comprehensively informed by up to date technical information, as well as the perspectives of those stakeholders, who have not traditionally been part of disarmament and arms control deliberations"[14].

Currently, the United Nations through the cooperation and daily interaction between regulators and specialized officials of the different state administrative agencies, citizen movements, interest groups, etc. carries out a true "law-making"[15]. Certainly, the protagonism of activist groups in each field of the UN is what Slaughter has called "the new diplomats"[16].

Therefore, at this moment, the role of the United Nations as law-maker in front of the development of Artificial Intelligence hybridizations (hereinafter referred to as IA) in the armaments field, becomes especially important because these systems could pose a greater threat than the nuclear one.

We refer to the AWS (Autonomous weapons system), a new typology of weapons that can become totally autonomous, that is, without significant human control in critical phases of their use[17]. If these systems

13. Alemán, D. (2016). Gómez Hinojosa, A. (2018). Fernández Pereira (2006)
14. Nakamitsu, I., (2019).
15. Theory defended by Álvarez, J. (2005).
16. Slaughter (2004), cited in Ballbé and Martínez-Quirante (2010).
17. UNESCO (2017). *Report of Comes on robotics ethics*, p. 25. http://unesdoc.unesco.org/images/0025/002539/253952E.pdf

are added the latest advances in AI its development could be considered as the promotion of an unstoppable mechanism of destruction not only genocidal but selective and individualized that will have as author and witness only a synthetic entity that can reach full autonomy over critical phases.

Weapons that could even be considered independent so they will lack of meaningful human control, giving another dimension to the conflict, and the completion of Human rights in conflicts. A "Lethal Independent Weapon systems" that could rise in a theoretical scenario linked to the rise of Strong AI[18]. But the threat that we are facing front is not a question of future scenarios and theoretical predictions, but directly affects our present[19].

The LAWS (Lethal autonomous weapons systems) with significant human control exist, are known and should be urgently regulated because they are already producing dramatic consequences such as the attack with the SAQR1. It is a Saudi drone, which has the ability to transport missiles and laser-guided bombs, can fly more than 2,500 km away and at a height of 25,000 feet. The sale of this type of weapons was prohibited during the Obama presidency and this measure was revoked by Trump which may be enabling the transfer to other states and private companies of such technology. In this case, the Saudi-led coalition triggered on August 9, 2018, the tragic and unacceptable death of dozens of children traveling on a bus in Yemen and heading towards a UNICEF summer camp, which has been considered by the United Nations a war crime. In the end, the objective of authoritarian countries is to finish the presence of International Organizations from conflictive areas. Consciously or unconsciously they want to strike down from the war scenario those who must control the application of humanitarian law in war. And the new advances in weaponry systems are facilitating this process, at the same time that displacing public opinion from war.

18. The ICRAC (International Committee for Robot arms control) has become the most innovative inter-university and inter-institutional center (composed of specialists in nanotechnology, law, etc.) to bring order to this new system of autonomous weapons of mass destruction.

19. "Panels and speakers will explore how technologies and trends such as decision-making algorithms, the commercialization of personal data, and the rise of artificial intelligence are transforming society and how they may someday even **redefine the notion of human rights.** (…) The Universal Declaration is there to make sure everybody can live a decent life and that everyone benefits from power and is protected from its excesses. **That's the main purpose: to protect humans**. But it also says that humans are different from everything else. Well, intelligent machines or entities may at some point come to a point where **they're not willing to put up with that anymore**". Stewart, M., (2018).

The rise of weapons with intensive AI applications represent a threat for humanity so we are talking about weapons that not only represent a technological challenge, but also a legal one and an ethical one[20], because they put into question the international treaties that emerged in the interwar period and consolidated in the decades after the Second World War.

Specifically, "drones quite possibly **represent the most transformative military innovation since jet engines and atomic weaponry**. No longer do humans have to engage in close military action or be in the same geographical vicinity as the target. Now, through satellite imaging and remote technology, countries such as the United States can destroy small targets halfway around the world with pinpoint accuracy"[21].

Based on these findings, the main objective of this work is to deepen the necessary legal, administrative and scientific/technological debate[22] that must arouse this new threat that is perceived as one of the most serious and worrying, not only for geopolitical equilibria that maintain this fragile peace in which we live today, but for the survival of our species. These new forms of armament suppose a rupture of the global social and constitutional contract[23] on which the protection of human rights is based. We have created automatic weapons and autonomous weapons and in the end we could even develop fully independent weapons; and the urgency of a regulation of these new weapons systems independent of the human control initially exercised over them is evident.

Elon Musk, co-founder of SpaceX and Tesla, has warned that *"in the age of artificial intelligence we could create an immortal dictator from which we can*

20. Tasioulas, J. (2018).
21. Kreps, S. (2016).
22. Frew, J. (2018). This author comments on Schwarz's book *Death machines* and highlights the following questions: "what is it that enables the framing of an instrument for surveillance and killing as an inherently ethical instrument? (…) This question gets at the heart of how we as a society make ethical decisions. Have we stopped asking whether it is ethical to kill and begun only to ask what is the most ethical way to kill? Are we beginning to allow, or, indeed, have we already allowed, machines to make decisions for us? Do the current invasive methods to cure sickness contribute to the over health of society and humanity? By opening up these concerns in a biopolitical framework, we are invited to look deep into the way political narratives are constructed. (…) the use of armed drones has not stemmed the tide of violence in our modern era and this should lead to serious consideration of her ideas. Violence becomes a normal part of politics and true ethical concerns give way to whether new violent technologies are lawful. To argue for their ethicality based on the law limits political and ethical discourse, and ultimately responsibility for the nature of violent technologies".
23. Fassbender, B. (1998) cited in Ballbé and Martínez-Quirante (2003) p.212.

never escape", as well as that «*the competition for the development of artificial intelligence has become the greater risk for a third world war, since the country that leads the research in artificial intelligence will come to dominate the global affairs*»[24]. Also Antóno Guterres, general-secretary of the United Nations, in the Web Summit held in Lisbon in 2018 claimed that *It would be "morally repugnant (…) if the world fails to ban autonomous machines from being able to kill people without human involvement"*[25].

In this context, as we have said, International Organizations, such as the United Nations, have special relevance when it comes to pooling efforts to generate legal instruments that articulate the preventive strategy. The legal precautionary principle (of European tradition) can become a decisive element to stop this arms race[26]. The AWS will be one of the key pieces of the new industrial-military complex that sees in them the next great revolution in the sector, representing a new post-nuclear and post-biochemical stage[27].

This book tries to prevent genocides or crimes against humanity as has been pointed out by one of the most authoritative authors in this matter, Samantha Power, ambassador of UN in the Obama presidency, professor at Harvard Kennedy School of Government and Pulitzer Prize for *A Problem*

24. Browne, R., (2018).
25. Reuters (2018) *U.N.'s Guterres urges ban on autonomous weapons* (Retrieved 28/12/2018) https://www.reuters.com/article/us-portugal-websummit-un/u-n-s-guterres-urges-ban-on-autonomous-weapons-idUSKCN1NA2HG.
26. Technological risks can not be calculated according to traditional technocratic models as if they were a statistically predictable function of probability and its effects. Regulating new technologies is a challenge for law due to the problems of uncertainty and limited knowledge in the assessment and management of technological risks. Cf. Weimer and Marin (2016) and Sunstein (2005).
27. Famous warning from US General and President Dwight D. Eisenhower in his farewell speech in 1961:

> "A vital element in keeping the peace is our military establishment. Our arms must be might, ready for instant action, so that no potential aggressor may be tempted to risk his own destruction…American makers of plowshares could, with time and as required, make swords as well. But now we can no longer risk emergency improvisation of national defense; we have been compelled to create a permanent armaments industry of vast proportions…This conjunction of an immense military establishment and a large arms industry is new in the American experience…Yet we must not fail to comprehend its grave implications…In the councils of government, we must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex. The potential for the disastrous rise of misplaced power exists and will persist".

https://www.ourdocuments.gov/doc.php?flash=false&doc=90

from Hell: America and the age of genocide[28]. In this work the author analyses how the US government has reacted in the different cases of genocide of the 20th century and denounces that the US has refused to act or to use the word genocide to name those atrocious facts and has taken refuge in the absence of US interests in the countries involved.

Following Power, it is noted that inactivity in the face of the LAWS threat is nothing more than maintaining the situation of denial of a new type of genocide more than likely.

To maintain our hypothesis, throughout the first chapter we will describe the context and the state of the art that surrounds the emergence of this new generation of weapons that aims to become the new frontier of the arms race, fundamentally derived from the use of extensive robotics with evident legal and regulatory shortcomings[29]. In addition, we will address both the socio-political context and the techno-scientific context surrounding the birth of these autonomous weapon systems[30].

The next chapter will be devoted to analyze the existing relationships between society and technology in order to illuminate the interdependencies between both spheres, as well as to illustrate to the reader how technology can acquire values of a deterministic nature and

28. Power, S., (2013). She is also the author of the book on the Special Representative of UN in Iraq assassinated in 2003 (Sergio Vieira de Mello), along with 21 other colleagues, in the famous attack against the UN offices that caused the departure of this organization with the consequent impossibility of controlling the activities of USA. Power, S. (2008).

29. In this regard, last year, the Legal Affairs Committee of the European Parliament urged the European Commission to harmonize safety, ethical and legal standards to regulate AI and robotics. The European Parliament approved a non-binding document entitled "European civil laws rules in robotics" which includes granting them "legal personality" and being considered "electronic persons", the obligation to have a compulsory insurance for robots, create an advanced robot registry and a European agency, approve a Charter on robotics and ethical principles that designers must follow (charity, non-maleficence, autonomy and justice), among others. Ortega, A., (2017). http://www.europarl.europa.eu/RegData/etudes/STUD/2016/571379/IPOL_STU%282016%29571379_EN.pdf

30. It must be said that the word "Robot" made famous the Czech novelist K.Capek thanks to his work *R.U.R. (Rossum's Universal Robots).* Written in 1920, premiered in Prague in 1921, and first performed in New York in 1922–garnered worldwide acclaim for its author and **popularized the word robot**. Mass-produced as efficient laborers to serve man, Capek's Robots are an android product–they remember everything but think of nothing new. But the Utopian life they provide ultimately lacks meaning, and the humans they serve stop reproducing. **When the Robots revolt, killing all but one of their masters, they must strain to learn the secret of self-duplication.** It is not until two Robots fall in love and are christened "Adam" and "Eve" by the last surviving human that Nature emerges triumphant

introduce new ethical and aesthetic relationships, paying special attention to those dilemmas related to the emergence of new forms of intelligence and the challenges they represent for the human.

In the chapter prior to the epilogue, we will deal with the legal dilemmas to which the laws give rise, underlining the importance of administrative law when generating binding instruments for its regulation, without neglecting the enormous challenges that LAWS poses for the law as well as the emergence of artificial intelligence and its applications. We will analyze the parameters that require the development of new legal norms and preventive regulations that should even aim to control research carried out in a context of scientific and technological innovation in this field. In addition, we will address the exhaustion or erosion of international military and humanitarian law when dealing with types of weapons that were impossible to conceive at the time of drafting the Geneva Conventions. However, the most frightening thing is going to be that this type of lethal weapons, in the future, could be in the hands of any citizen who demands personalized protection. We predict that if we do not tackle it before, micro LAWS or lethal drones with artificial intelligence may be under control or, rather, under the "lack of control" of civilians for their domestic security. Or even use them with the excuse of having a shield to protect themselves from the arms of their fellow citizens, and all this, even protected by the juridical framework of their respective countries, as is the case with self-defense weapons in the United States.

Finally, in the epilogue we will deal with those ways of action that can be used to ensure the progress of artificial intelligence that goes hand in hand with sustainable human development by virtue of an expanded conception of human dignity and security.

Chapter II

Context

The transformation of the system due to the process of globalization, as well as the massive incorporation of new technologies, has made it possible to define a new integral understanding of reality for a new global class whose new religion is based on faith in techno-scientific progress (without controls, without limits, without regulation), conditioning both research and policy. And this happens at a time when there is a technological framework that has the inherent capacity to transform the way we communicate and understand our context as well as otherness and ourselves.

From New York to Bombay through Paris, Dubai, Moscow or Beijing, the global class (with standardized patterns of consumption, leisure and values) shares a new faith in the promises of technology, while others –those linked to the earth, the natural context– struggle to survive at a time when technology directly threatens their lifestyle and their survival capabilities.

We could affirm that we are facing a crossroads of futures, of different possibilities, in which utopia and dystopia are confused; standing before a historical moment in which we have the possibility not only to define our time, but also that of those that are to come. The digital revolution, in collaboration with our scientific and technological capabilities, places us before a complex map of decisions in which opposing interests try to define a framework that can determine the new time. And it is precisely in the fog of complexity and uncertainty that monsters can arise; monsters that sometimes acquire extremely innocent forms while growing in the shadows, even outside the very intention of their creators, as the first concrete materializations of the future to come.

Technology, and especially artificial intelligence and its potential applications, configure a new holistic[1] experience of life after the fourth

1. Precisely the School of Prevention and Integral Safety and Security (EPSI) of the Autonomous University of Barcelona, founded by the Professor Manuel

industrial revolution. In it, spaces and times converge in a way that erodes the traditional separation between material and digital reality. The consolidation of the understanding of the post-human transports us to a *Brave New World* in which desires, aspirations and even happiness are transferred from the land of social construction to that of digital reproduction; and technological sets such as the Internet of Things (concept that refers to the network of interconnected everyday objects)[2] have a very important role to play in being able to share a connected experience between the real and the digital.

Therefore, as Tegmark points out that the fruitful collaboration between humans and machines seems promising in many areas including science, where AI could help humans to reach a deeper understanding and realize our full potential[3], following the same line as Putnam[4]. But we must bear in mind that, although the industry can promote many developments in this area, the academy will play an essential role by providing new technical ideas and bringing together researchers from all disciplines (social and legal sciences, cognitive sciences and humanities, sciences of computing and statistics, etc.)[5]. In the end, in Jordan's words, a new branch of knowledge is being created that combines all of this, so *"we have a real opportunity to conceive something historically new: an engineering discipline focused on the human being"*[6], that is, a new human-centrism[7]. A field where ethics are called to play an important role not for the shake of technology itself but for the survival of our species.

We are heading towards a programmable world in which those of us who have the privilege to ride this wave of progress have the responsibility to develop a system that can give each of us the possibility to live without fear, guaranteeing integral security and that human dignity[8] be recovered

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Ballbé 20 years ago, had this holistic intention regarding the study of integral security (safety, public, private, food, information technology, environmental security, etc.). Vid. http://www.uab.cat/web/escola-de-prevencio-i-seguretat-integral-1345721289258.html

2. Rejón, I. (2016) p.183.
3. Tegmark, M. (2017)
4. Putnam, R., Feldstein, L., (2003)
5. Wladawsky-Berger, I. (2018).
6. Jordan, M., "AI-The revolution hasn't happened yet" cited in Wladawsky-Berger, I. (2018).
7. "There is an evolving dialectic between State-centric and human-centric security". Ballbé and Martínez-Quirante (2010), p.182.
8. Vid. the compilation work on dignity as a right and as a value in Barak, A. (2015). We also see a comprehensive interdisciplinary perspective in Düwell, M., et al. (2014).

as a right and fundamental value of social and ecological progress[9]. To draw a new horizon *"for a world in which we are socially equal, humanly different and totally free"*, as Rosa Luxemburg claimed. However, the path is not easy at all, and the first step is a better understanding of our context and technological substrate.

1. BODIES AND TECHNOLOGY AS AN OBJECT OF CONSUMPTION

The systemic changes unleashed over the last decades have resulted in a profound reconfiguration of the pillars on which the old scientific, social and legal paradigms were based, eroded by a new wave chaos, contradictions, complexities and uncertainties. About chaos, Ilya Prigogine, Nobel Prize in Physics whose research laid the foundations of chaos theory stated *"chaos makes life and intelligence possible. The brain has been selected to become so unstable that the slightest effect can lead to the formation of order"*[10]. Giving form to a fertile ground where new forms and approaches to reality can rise providing new meanings to our existence.

In recent times, even the notion of life seems to be under construction often understood as an object of consumption and a mechanism of production. Values intrinsic to the subject, such as those of what we understand by human dignity, are very often, ignored or degraded. Life is quantified through algorithms; the body described as a vital unit of consumption within the production cycle and death is assumed as collateral in a field that extends from the war to the productive. In addition, the safeguarding of the rights of the individuals are subjected to the fiscal balances of the large corporations, which determine the working conditions not based on ethical criteria, nor even legal, but simply economic in the periphery of the economical system. However, this situation has led in parallel to the emergence of citizen movements in favor of disadvantaged groups to curb this trend. In the wake of such pressures, litigation, the outpouring of information, etc. Little by little, minority rights have been recognized and companies have been forced to change their economic policies through corporate social responsibility[11]. A social responsibility that use to be apply exclusively in western countries or when someone is recording.

9. Frischmann and Selinger (2018).
10. Prigogine and Stengers (1984). Cf. also his work *The end of certainties* (1996) and Sardar (2010).
11. Ballbé and Martínez-Quirante (2010). Vogel, D., (2006).

That is to say, we are facing a phase of development of globalized capitalism in which we can observe a process of transition from Foucault's biopolitics[12] to Mbembe's necropolitics[13]. Therefore, the efforts of citizen movements and international organizations are necessary to stop the exercise of a form of power that requires control of bodies from both a material and utilitarian perspective. And this fact transports us to the current phase of expansion of the system, impregnated with the domain of the simulacra of hyperreality[14].

Framed by Schwarz's biopolitical interpretation of Hannah Arendt's theories, Schwarz asks how we have allowed violent technologies to become the right choice when dealing with problems that threaten society. Hannah Arendt considered that the movement of modernity towards the efficient management of society, relegated plurality and, consequently, equality between people and varied beliefs. This limited the scope of what Arendt considered true politics. For her, true politics required a space for uncertainty and risk, which respected the plurality of society and allowed ethical thought and action. What he saw happening instead was that true political action and ethical decision-making had been degraded below the basic concern for the efficient survival of society, which crushed plurality and destroyed equality. The search for life by itself had taken the place of morality and spirituality: the how and why of life. Biopolitics seeks mainly to keep the organism alive. We live in a society where politics has become a collective "will of health". As in medicine, we allow experts and their sophisticated instruments to determine what is good for us. Language is changed ("eradicate cancer of terror", "sick society", "cure Afghanistan") so that the most ethical intervention is the one that finds and eliminates with greater precision the people who threaten the health of the body. Hence, lethal drones are used to match[15].

The structures of advanced capitalism unraveled by Jameson in his work, *The Postmodernism or the Cultural Logic of Advanced Capitalism* and the concept of "Casino Capitalism" that Ballbé points out[16] (almost more chaotic than in the origins of the anomic market[17]) are no longer limited to exercising repressive control over the subject of a form both physical

12. Foucault (1995); Foucault and Varela (1978).
13. Mbembe (2012).
14. Baudrillard (1994).
15. Schwarz, E., (2018)
16. Ballbé and Cabedo (2013).
17. Durkheim theorized in the nineteenth century about the concept of anomie in the division of labor, that is to say: norms that make the relations of the group unstable, preventing their cordial integration. Cf. Ballbé (2006) and Waldman (2006).

(material) and ideological (subjective), but objectivizing the domain over life and death[18]. While it's true there is a shy counter-reaction: from deregulation to re-regulation (environmental, financial, labor, etc.). If such a change does not occur, a transmutation of traditional government to an indirect private one, will take place, not destroying the State, but transferring the exercise of coercive power to parastatal elites that are organized outside the public good and the general interest. Something that is already happening. And from there one passes to the establishment of a necropolitical order, where the economic control relies in the use of the power to kill; a system whose maintenance requires new and sophisticated social control systems and where AI could play a key role for protecting the status quo while crystalizing inequality.

In this phase, the system no longer only seeks to *"discipline and punish"*[19] through a complex legal-institutional system. But, because of the exponential growth of scientific knowledge, the State and the community are more aware of the associated life processes to cycles like consumption. A present has been configured in which the system knows that it chooses to decide who lives and who dies and how such death will occur[20], generating a complex eschatological strategy that can materialize in an ample menu of possible endings: violence, war, illness, intoxication, exhaustion, etc. And all this in a world that, despite having considerably reduced physical distances thanks to communication and transport technologies, still reproduces models of past exploitation, with practices that are based on a massive extraction of resources from peripheral countries and in restricting people's freedom of movement, condemning many subjects to exploitation and death while the ecological exhaustion to which they have been subjected certain territories increases the need for that freedom.

Whole regions of the globe suffer from desertification and water impoverishment that impede the survival of whole communities who

18. Schwarz, E., (2018). "As innovations in military technologies race toward ever-greater levels of automation and autonomy, debates over the ethics of violent technologies tread water. Death Machines reframes these debates, arguing that the way we conceive of the ethics of contemporary warfare is itself imbued with a set of bio-technological rationalities that work as limits. The task for critical thought must therefore be to unpack, engage, and challenge these limits". Drawing on the work of Hannah Arendt, Schwarz "offers a close reading of the technology-biopolitics-complex that informs and produces contemporary subjectivities, highlighting the perilous implications this has for how we think about the ethics of political violence, both now and in the future".
19. Foucault (1995).
20. Strawser, B., (2017)

are forced to leave their lands due to the impossibility of maintaining traditional farming activities. There is a whole ecological emigration[21] that throws thousands of people into the arms of the trafficking mafias every year[22], generating successive humanitarian crises while the developed countries apply active policies of border control and entry limitations, such as the recent approval of the voluntary construction of immigration control centers in the member countries of the European Union[23].

We are before a new servitude of the glebe. The Occident supports its consumption dynamics in a refined version of the idea of *"Lebensraum" (living space)* that consists in the fact that it is no longer necessary to exercise effective control of a territory, but simply of its economy. The extraction of materials is guaranteed while the migration of individuals is restricted. Millions of men and women are condemned to poverty, their human dignity is ignored and neglected and new forms of risk commercialization, such as emission rights, illuminate sophisticated social and environmental erosions. This dynamic contrasts with those of the social classes of Western countries and the elites of the rest of the planet, who benefit from a complex system of privileges.

They represent a fraction of the world population that does not hear, does not see and does not listen to the humanitarian, ecological and social crisis that we are going through as a species and as a planet. Maybe this happens because the elements of referencing away the daily tragedy of the world and prevent us from identifying ourselves as a species beyond the barriers of race, nation and class (built to fracture a hypothetical unit of action aimed at ensuring sustainable and responsible development). The model thus configured leads to a social and ecological exhaustion and requires new instruments of control and consent manufacturing based on the reconfiguration of the human being as a consumer stripped of all intrinsic dignity.

Our time has been configured around the deregulation of 2000 and with a view to a chaotic and deregulated capitalism that turns one's life, bodies, into objects of consumption; to use and throw. The production processes are relocated to places where ecological or labor regulation are practically non-existent and workers are allowed not only to be exposed to unacceptable risks in Europe, but also to extreme situations of labor

21. Beine and Parsons (2015).
22. Janashvili (2019 forth coming).
23. "Details of EU agreement on migration", Reuters, June 29, 2018. https://www.reuters.com/article/us-eu-summit-conclusions-migration/details-of-eu-agreement-on-migration-idUSKBN1JP0DS.

exploitation bordering on slavery, including cases the use of child labor. In this context, poorly applied artificial intelligence can play a key role as a tool for crystallizing inequality and making humanitarian crises invisible. Examples like the one of Cambridge Analytics and its role in the American elections of 2016 give us clues about a model between Huxley and Orwell, in which the *soma* can be combined with high doses of repression depending on the link of the chain in which participate the individuals. Life itself is a consumer artefact and its value depends exclusively on supply and demand.

It is necessary to clarify at this point that when we refer to life and bodies, we do not only do it to humans or anthropomorphs, but to a whole that considers the complex eco-systemic relationships of interdependence between species. Life is a process capable of preserving its complexity and replicating itself. But what is replicated is not matter (made of atoms) but information (composed of bits) that specifies how atoms are arranged[24]. This conception forces us to consider a kind of post-human security that acquires a new dimension with the appearance of artificial intelligence and wetware (that is, the interaction between software and organic tissue) in a complex inter-species relations of interdependence. Hence the importance of cross-sectional studies that focus on integral security (concept coined by the United Nations)[25] and thus overcome the current phase, which is sustained in the constant consumption of vital bodies and units, whether for medical, scientific, labor, et cetera.

Technological development will probably begin in future phases of expansion to occupy layers of the system that until now were reserved for humans through the development of different forms of artificial intelligence, accelerating the dissolution of the human in favor of the non-human or perhaps, with something of luck, of the post-human leading to a life 3.0[26]. A field of play is already being structured in which the advances in robotics, nanotechnology and, more especially, those related to the so-called machine learning, pose a challenge for peace global[27]. A new context of impunity and lack of democratic control is already being generated in which conflict and war are developed based on a logic that has nothing to

24. Tegmark (2017) pág.40.
25. Fernández Pereira (2006).
26. Life 1.0 is considered the first, the simple, the biological, which is the result of evolution. Life 2.0 is what we know today, cultural life: "humans can learn new complex skills and modify their objectives". Life 3.0 is the technological life that does not yet exist, but you can redesign your software and hardware and not wait to evolve through different generations. Tegmark, (2017) p. 40.
27. Geib and Lahmann (2017).

do with that which inspired the fundamental treaties that regulate war and its development, such as the Hague Convention (1899 and 1907)[28].

It was Albert Einstein who in an interview conducted by Alfred Wener in Liberal Judaism stated the following: *"I do not know with what weapons the third world war will be fought, but in the fourth world war they will use sticks and stones"*. Today, we seem to be closer to offering an answer to the first question: if we do nothing to remedy it, the third world war will be fought with autonomous/independent weapon systems. And its consequences, as anticipated by Einstein, can be disastrous for the species.

We urgently need the intervention of the United Nations to achieve a new approach that surpasses the traditional frameworks of humanism as anthropocentric and androcentric and sets its sights on a time when the harmony of interspecies relations is revealed as a key in the maintenance of human rights. global equilibria and the biodiversity that sustains life on the planet. We must advocate for a system that embraces cognitive singularities as inherent in our time and that at the same time diverts itself of the biological supremacism that has caused the ecological exhaustion of the planet at the hands of our species[29]. This would happen among other things by making artificial intelligence what initiatives like *AI For Good*, from ITU, intend, and at the same time, restrict its application in the military field. We need a new understanding of the human as a system of complex interdependencies in which not only the natural, but also the artificial is regulated and where the notion of meaningful human control is fully developed and regulated through appropriate legal instruments. Post humanism can be the alternative to a world that lives under the domain of hyperreality and in which it will be increasingly difficult to distinguish between the natural and the artificial, as well as between the material and the digital, and where the basic patterns of consumption cultural aspects of humanism will be diluted by an avalanche of new forms of expression and communication.

After all, technology *per se* is not the danger: it underlies the uses that humans can make of it and its deregulation. It should be remembered that, very often, what we choose to believe turns out to be a self-fulfilling prophecy. In the Western we have believed that robots will come to move us[30]; in Japan, however, they have been seen as helpful and friendly; and

28. Sunstein (2016a).
29. Sloterdijk (2003).
30. "Computing power is dissolving humans' monopoly on thinking, enabling AI-trained computers to compete for many of the same white-collar jobs. The combination of globalization and robotics is creating the globotics upheaval, and it threatens the very foundations of the liberal welfare-state. The experts argue that the inhuman speed of this transformation threatens to overwhelm our capacity to

in both cases the development of technology has been subject to those narratives.

Currently, there are too many elements that lead us to think that in the coming years there will be a massive penetration of artificial intelligence in the military sphere. There is a fear that technology will end up replacing humans in all areas, which is why post-humanism must be able to develop an ecological thought that, in the broadest sense of this word, considers not only the natural environment but also the technological and clearly regulate the limitations of certain applications of artificial intelligence (and force them to include components of humanity), precisely so that such omens do not occur.

Now, before getting into the analysis of these applications, it is necessary to address the technological substrate of this fourth industrial revolution. It is about recognizing as soon as possible better than from now on, robots/drones with AI, through their regulation or non-regulation, will dictate the rules in all facets of the world in which we live[31]. The important thing, then, is not to leave room for them to govern it with violent and lethal objectives.

2. THE TECHNOLOGICAL SUBSTRATE

> *Technology, no matter how well designed, is only an amplifier of human intention and ability.*
>
> Kentaro Toyama[32]

Artificial intelligence represents one of the biggest challenges of the current patterns of technology development[33]. This is fundamentally

adapt. Globotics will disrupt the lives of millions of white-collar workers much faster than automation, industrialization, and globalization disrupted the lives of factory workers in previous centuries. The result will be a backlash". Baldwin, R. (2019).

31. Hambling, D., (2018). This author examines why robots have become embedded in our culture, how they work and what they tell us about our society and its future. However, all the positive aspects of artificial intelligence in robotics cannot be mitigated when there is the danger of carrying a lethal weapon. In the case of the LAWS, the perversions of said technology related to lethal criminality must always be present in our assessments. Robotics can also carry out actions that are criminal, so it is essential to regulate and establish limits.
32. Toyama (2015).
33. Scherer (2017). Often, artificial intelligence in robots wants to present itself as another step in the welfare state of society, such as the autonomous robot bees that supply

due to the fact that its development is accompanied by new notions of intelligence on the margin of conscience[34], since it opens the door to decision processes outside significant human control or, what is the same, without human supervision in critical phases.

Thus, an article published by *The Atlantic* entitled *"How Algorithms Can Reduce Minority Credit Scores"* reveals how the massive use of artificial intelligence algorithms by financial institutions can crystallize into marginalization dynamics over minorities, making It is necessary to include human controllers that can correct these biases[35]. In the same way, *The Guardian* warned about the appearance of "prejudices" related to gender and race in artificial intelligences due to the processing of natural language in open sources that alters the theoretical neutrality of artificial intelligence[36], something that was recognized by companies such as Facebook, who promised to increase the phases under human control[37]. This dynamic allows us to observe that a good part of the risks associated with machine learning[38] and artificial intelligence is directly in the referential patterns of learning; and this forces us to ask ourselves what we can teach as humanity to these new intelligences, bearing in mind that we have misogynist, racist, classist societies, et cetera; and how can we eliminate these biases towards the creation of a more just and equitable society? Now: before advancing on the ethical risks linked to these technological sets it is necessary to explore the very conceptualization of technology.

In this sense, we must bear in mind that artificial intelligence, as a concept, has been imbued, practically since its birth, with our greatest fantasies, allowing us to dream of any kind of imaginable scenario:

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the lack of pollinator bee populations, a patent that Walmart has just registered and which it intends to develop for this purpose. These are robots that, using sensors and cameras, would fly autonomously pollinating crops following the established algorithmic result.

34. Reese, B. (2018), "Why do experts so often have wildly differing opinions on the subjects of artificial intelligence (some fear it, some welcome it), automation (some say it spells the end of the human workforce, others say it's fine), and computer consciousness (some say it's in evitable, others say it's impossible)? In this quite readable book, a technology entrepreneur deconstructs "the core beliefs that undergird the various views on robots, jobs, AI, and consciousness". **To show how those beliefs have evolved, he traces the history of humanity, arguing that there have only been three periods of transformative change in our development. A "fourth age," he believes, is upon us, and, as it unfolds, we will see that, finally, human beings and such advanced technologies as artificial intelligence and robotics can achieve a peaceful coexistence.**
35. Waddell (2016).
36. Devlin (2017).
37. Makridakis (2017).
38. Alpaydin, E.,(2016),

from wealth, comfort and prosperity futures to annihilation. of our own species[39]. Literature and cinema, because of their innovative and creative aspect, may have contributed in part to the current state of art and science[40]. A discipline that surrounds itself by the mist of sci-fi deceiving public opinion about the current capabilities of the system and the prospection of its mid and long-term evolution.

But what is artificial intelligence really? According to Eric Horvitz, *"it is not really a single thing, but a rich set of subdisciplines and methods; vision, perception, discourse and dialogue; decisions, planning, robotics, etc., it being necessary to consider all these different disciplines and methods to look for true solutions in the generation of value for human beings and organizations"*[41]. That is to say, we are dealing with a broad concept that represents not only the aspirations of the techno-scientific sectors, but the advent of a completely new system on the economic as well as the sociological, anthropological, philosophical and legal levels. To understand it, it is necessary to establish a clear distinction between its current state of development and its potentialities. Being necessary to stablish a clear descriptive elements that allow us to understand their meaning and scope and explore their definitions and implications.

Thus, our first approach will be that provided by the Encyclopedia Britannica, which defines artificial intelligence as

"the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience. Since the development of the digital computer in the 1940s, it has been demonstrated that computers can be programmed to carry out very complex tasks–as, for example, discovering proofs for mathematical theorems or playing chess–with great proficiency. Still, despite continuing advances in computer processing speed and memory capacity, there are as yet no programs that can match human flexibility over wider domains or in tasks requiring much everyday knowledge. On the other hand, some programs have attained the performance levels of human experts and professionals in performing certain specific tasks, so that artificial intelligence in this limited sense is found in applications as diverse as medical diagnosis, computer search engines, and voice or handwriting recognition"[42].

39. Barrat (2013).
40. It has been said that, thanks to dreams, to imagination, to creativity, the best technology has been developed and developed. Maderer, J. (2017).
41. Itu and Xprize (2017).
42. Copeland (2018).

That is, we are facing a technological system derived from computer science, whose research focus has traditionally been defined as the study of intelligent agents; or what is the same, of any device that perceives its environment and undertakes actions that maximize its possibilities of achieving a series of objectives[43], adapting to various situations not previously known and learning from experience[44]. This would fit broadly with Misky's definition of artificial intelligence as *"the science of producing machines that can carry out tasks that would require intelligence (if developed by humans)"*[45]. Always taking into account that the technology it's not intelligent *per-se* but has the ability to simulate intelligence.

In addition, one of the first things that we should take into account is that artificial intelligence is not a recent phenomenon, but its foundations have been built from key contributions such as Alan Turing, who in 1935 described the first system of artificial intelligence. It was an abstract computer machine with unlimited memory and a scanner that moved back and forth through it, symbol by symbol, reading what it found and writing more symbols. The actions of the scanner were dictated by an instruction program that was also stored in memory in the form of symbols. This opened the possibility that the machine would work while modifying or improving its own program. Therefore, we can say that all modern computer systems are basically Turing machines. These are devices that today are part of our daily life. In 1952 the Turing test was created to determine if a machine was really intelligent. To overcome it, the machine must be able to trick a human into thinking he was an equal. Four years later, Minsky and McCarthy, with Shannon and Rochester, organized a conference in Dartmouth and published the term artificial intelligence[46].

In this conference McCarthy explained: *"every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it."* For this he created the LISP, one of the highest-level programming languages that exist which allowed him to develop the function of "timeshare" (many people connecting at the same time to a supercomputer), one of the pillars of the later creation from Internet[47]. Also, McCarthy investigated the possibilities that a machine had the highest degree of humanity possible, that is, had *"free will"*, and wondered *"can a computer say some day: I can, but I do not want?"*[48].

43. Poole, Mackworth and Goebel (1998). Pool, Mackworth (2017).
44. De Almeida Lenardon (2017).
45. Minsky (1991).
46. Turing (1939). Turing (2009).
47. Childs, M., (2011).
48. Sanchis, E. (2018). Vid. also about free will Larson, C.S., (2018).

Certainly, the level of development of artificial intelligence has grown exponentially over the past few years, and projects such as *AlphaGo Zero* by Google Deep Brain Project or *Google Duplex* itself show the ability of technology to overcome humans to the time to develop bounded and delimited tasks[49]. The evolution of this system is vertiginous, but the term artificial intelligence continues united to the idea of a machine that imitates cognitive functions like learning and solving problems[50], without taking into account the devices with artificial intelligence and machine learning already inserted in our daily life (Google Assistant, Alexa, Cortana, Siri, Autopilot de Tesla, etc.), which can radically transform reality and threaten our very existence[51]. As the Future of Live Institute points out, *"technology gives life the possibility to prosper as never before … or to self-destruct"*. For this reason, the right to human security developed by the United Nations must prevail, and regulation in this new scenario is urgent from the national and international preventive *administrative law*[52].

As far as human intelligence is concerned, it is singularly broad and capable of mastering an immense set of skills and has the ability to achieve complex objectives, including self-learning, unlike machines, until now[53].

Regarding the notion of learning, it should be noted that machine learning has traditionally been described as a statistical process that begins with a large amount of data and attempts to derive a rule or procedure that explains the data or can predict future data[54]. The definition in this sense would be clear: machine learning algorithms can discover how to perform important tasks by generalizing from examples[55]. It is understood that, although the machine cannot auto program, it could be prepared to generate and store associations and facts from the data. The generalization would imply in this case the capacity of associations opportunely made based on limited data. And, some presumptions that can lead to the repetition of past errors (for example, dynamics of oppression) or unforeseen effects (for example, unfair discrimination). The rules of interpretation and prediction show that one of the main problems in the field of artificial intelligence is precisely the fact of reproducing human behaviour due to the influence of the programmers, being able to generate

49. Deep Mind (2018).
50. Russell, Stuart, Norvig and Davis (2010).
51. https://futureoflife.org/?cn-reloaded=1
52. Fernández Pereira (2006), Andersen-Rodgers and Crawford (2018).
53. Tegmark, M. (2017), p. 50.
54. Rosembuj (2017, 2018).
55. Domingos (2013).

arbitrary or disparate conclusions, contaminated by "*beliefs, fallibilities and prejudices of the person who created them*"[56].

That is, artificial intelligence would learn in a context of impossible neutrality: human prejudices would prevent it from guaranteeing equality in the representation futures[57]. And this is especially worrisome when it is related to the construction of systems capable of selecting and eliminating objectives without significant human control, especially if we bear in mind that the delegation of lethal powers must be exempt from any type of uncertainty.

On the other hand, one of the main characteristics of machine learning is known as deep learning or deep learning. Deep learning uses learning techniques that combine layers of neural networks to identify the profiles of a set of data needed to make decisions. In this way, the existence of multiplicity of layers between the input data and the output data is recognized, configuring the outputs of the previous layers as inputs for the following, which generates what has been known as artificial neural networks[58].

The algorithms of machine learning and deep learning stand as the last frontier of artificial intelligence, being used today in areas as diverse as web searches, spam filters, credit rating, insurance risk, fraud detection, stock trading, drug design, job evaluations, health records, hiring searches, housing and many others; networks that, if configured from natural language, run in turn the risk of reproducing patterns of behavior that derive in forms of marginalization and/or exploitation of certain human groups. If this is extended to the delegation of lethal functions, their application could be affected by such prejudices. The danger of a misuse or power abuse is therefore likely.

In this sense Scahill shows in his book some of these deliberate abuses of power, since he points out that "whether through the use of drones, night raids, or new platforms yet to be employed, these documents show assassination to be central to US counterterrorism policy. The classified documents reveal that Washington s fourteen-year targeted killing campaign suffers from

56. Barret (2016).

57. "Algorithms trained on open-source data could be particularly vulnerable to this challenge as adversaries attempt to "poison" the data that other countries might even be plausibly using to train algorithms for military purposes. This adversarial data problem is significant. Hacking could also lead to the exploitation of algorithms trained on more secure networks, illustrating a critical interaction between cybersecurity and artificial intelligence in the national security realm". Horowitz, M., (2018).

58. Kaplan (2016).

an overreliance on flawed signals intelligence, an apparently incalculable civilian toll, and an inability to extract potentially valuable intelligence from terror suspects (…)". Thus, Scahill analyzes "the circumstances under which the US government grants itself the right to sentence individuals to death without the established checks and balances of arrest, trial, and appeal"[59].

Another aspect to keep in mind is that artificial intelligence agents that have physical support have the ability to interact with their environment. They are, to put it another way, entities *"capable of performing tasks by detecting their environment and/or interacting with external sources having the ability to adapt their behavior"*[60], as is the case with autonomous weapons, as we will see later. That is, we would have before us a material manifestation of the digital reality capable of interacting with humans and other species through the collection and processing of data in real time, influencing the course of material reality.

Artificial intelligence requires a broad conceptualization that has important consequences when examining the deployment phases and the potential of a technology capable of radically transforming reality and even threatening our own existence, as will be explained in the following sections.

While science fiction often portrays artificial intelligence as robots with characteristics similar to those of humans, the current one can range from Google's search algorithms to IBM's Watson[61] –which beat its human competitors in the Jeopardy contest, which consists of answering questions formulated in natural language– or the own development of autonomous weapon systems[62]. These systems represent great ethical and legal dilemmas even in the current state of the art. For example, an autonomous vehicle could find itself in a situation where it has to choose between protecting the passenger or another group of people, that is, making a decision of profound ethical character.

Regarding the current state of development of technology, we can affirm that the current phase is dominated by what we know as narrow AI (specialized artificial intelligence, reduced or weak), which means that it is designed to perform a limited task (for example, only facial recognition or Internet searches or driving a car) according to our current technical

59. Scahill (2016).
60. ISO 8373.
61. IBM (2018).
62. O'Neil (2016). The author warns that, under its promise of efficacy and justice, algorithms and methods of big data analysis "can be used for unfair purposes", as weapons of destruction of society itself.

capabilities. However, the long-term goal of many researchers is to create what has been called artificial general intelligence (AGI) or strong and independent[63]. The difference between the two concepts is that while reduced artificial intelligence can surpass humans in what would become a specific task, such as playing chess or solving equations, the AGI can perform any cognitive task as well as humans and even overcome them in what is called Superintelligence[64]. Therefore the first objective of any state should be to develop a safe and beneficial AI whose objectives coincide with those of men, because if we stop being the most intelligent beings on the planet we may also lose control"[65].

A hypothetical development of the AGI[66] would entail profound consequences not only for our society but for the same legal order[67], since it would advance in the generation of systems that would behave rationally, or what is the same, systems of behavior automation that in the theoretical plane would be linked to the phenomenon of technological singularity[68]. This implies that a computer equipment, a computer network or a robot could improve themselves recursively. It is said that the repetitions of this cycle would probably result in an out-of-control effect, an explosion of intelligence, as the mathematician Irving Good called it in 1965[69]; a very difficult phenomenon to predict and whose consequences could be dramatic … or not. This scenario, despite being recognized as highly unlikely in the short and medium and long term, cannot be ignored, because of the interest that surrounded the concept, frequently use as an argument or excuse to incorporate massive AI into different kind of process and deceive the public opinion about the current state of the art and the real capabilities of AI as we will see through the next section: demystifying AI.

Finally, regarding the classification of artificial intelligence typologies, in addition to the one that distinguishes the narrow AI from the strong AI (Theoretical exercise) or the limited from the general, the investigations

63. Goertzel and Pennachin (2007), p. 131. Bostrom (2005).
64. Future of Life Institute (2018)
65. Tegmark, M. (2017) p. 43.
66. The expression IAG was popularized by Legg, Gubrud and Goertzel to refer to an Intelligence of human level. Tegmark, M., (2017) p. 72
67. "The current legislation does not offer solutions for the use of autonomous vehicles with artificial intelligence on public roads, which causes insecurity for the development and deployment of this technology in Europe. In contrast, in the United States, it is being regulated at the state level. The regulation would serve to assign responsibilities and offer legal certainty". From Almeida Lenardon (2017), pp. 28 and 30.
68. Bostrom (2005). The concept was popularized by Vernor Vinge, professor of computer science at the University of St. Diego. Vid also on this topic Bostrom, N. (2016).
69. Chalmers (2010).

carried out over the last decades have allowed to establish another that distinguishes four major approaches: systems that think like humans, systems that think rationally, systems that act like humans and systems that act rationally[70]. The first typology corresponds to systems that have information and process it with the purpose of understanding and predicting. The second, machines that work based on the laws of Aristotelian thought. The third makes references to machines that can perform functions of humans and require limited intelligence, and fourthly we would have systems that automate intelligent behavior[71], which are linked in the theoretical plane to the phenomenon of technological singularity[72].

To fully understand the concept, we must bear in mind that artificial intelligence has focused mainly on the following components: learning, reasoning, problem solving, perception and use of language. Let's review each of them with attention.

With learning, reference is made to the ability of the machine to perfect itself through the process of error testing and the application of experimentation: for example, when chess moves are identified and used in new games. The process is called generalization when it involves applying experience to new analogous situations in a way similar to how humans do. The doctrine considers that there is no true learning in artificial intelligence, but automatic learning algorithms through neural networks, without understanding within the calculation and with patterns of correlation without causality. Machine learning can be highly discriminatory, since it uses the social data of the moment[73]. Thus, the problem of learning in the case of the laws resides mainly in the referential patterns of such learning, since whoever controls the technology will be able to establish operational frameworks regardless of the dictates of the public conscience as established in the clause Martens of the Hague Convention. Now, as has been pointed out AI is reduced to information and computing, not to flesh and blood and carbon atoms … there is no fundamental reason why machines cannot be as smart someday as we are[74] and even better ourselves, so we must make sure that they have some beneficial objectives in their evolution.

70. Cairo Battistutti (2011).
71. Ibídem
72. Villalba Gómez (2016).
73. McQuillan (2018a). For this author, "automatic learning of artificial intelligence will not help humanitarianism and will deepen the neocolonial and neoliberal dynamics of humanitarian institutions" (2018b).
74. Tegmark (2017) p. 75.

To reason is to make appropriate inferences to the situation. Inferences are traditionally classified as deductive (extraction of a judgment based on facts, propositions or principles, whether general or specific) or inductive (establishment of a law or general conclusion based on the observation of specific facts or cases). However, the true reasoning involves extracting relevant inferences for the solution of the particular task or situation. This is one of the most difficult problems facing artificial intelligence, and is one of the biggest technological challenges in its current development phase. It is a variable to be taken into account with regard to the reliability of technological systems that operate in situations in which lethal capacities have been delegated, since we should demand the application of human judgment in certain phases of LAWS action.

Problem solving can be understood as a systematic search through a range of possible actions in order to reach a predefined objective or solution, that is, a generation of possible scenarios associated with the possibilities of action. Problem solving methods are divided into special purposes and general purposes. A special purpose method is tailored to a particular problem and often exploits very specific characteristics of the situation in which it is embedded. On the contrary, a general purpose method is applicable to a wide variety of them. Many different problems have been solved by artificial intelligence programs. Some examples are finding the winning movement (or sequence of movements) in a chess game, devising mathematical proofs or manipulating virtual objects in a computer-generated world, although the development of general purposes represents challenges in its current development phase. The problem in this case, in what refers to the LAWS, is precisely the variability of the conditions of the context, which can hinder the operability of the technology and therefore its reliability. In addition, in the case of artificial intelligence applied to administrative powers, we should distinguish between the exercise of discretional and regulated powers.

In relation to perception, we must understand that the environment is scanned by means of various sensory organs, real or artificial, and that the scene is broken down into separate objects in different spatial relationships. Consequently, the analysis is complicated by the fact that an object may appear differently depending on the angle from which it is seen, the direction and intensity of the illumination in the scene and how much the object contrasts with the surrounding field. It is a field where artificial intelligence still has a great road ahead, but whose current results can far exceed human capabilities. This is a fact that makes this line of research for military purposes especially attractive. The Maven project (collaboration between Google and the Pentagon that is not likely to be

renewed in 2019) explores the uses of artificial intelligence on capturing images via satellite in order to identify sensitive structures for the military interests of the United States.

Finally, a language is a system of signs that have meanings by convention. Not only the spoken word: traffic signals, for example, form a mini-language. Artificial intelligence has the potential to understand and reproduce communication patterns that can interact in the linguistic sphere, as well as to understand the basic structures of the system in order to adapt to existing norms of shared language.

Everything described so far is a set of skills that, if fully developed, represent promises and considerable opportunities that must be considered by the legal system when regulating LAWS. Otherwise, it could happen that the economic theory of the capture of the regulator by the regulated developed by the Nobel Prize in Economics George Stigler[75] becomes a capture of the regulatory and democratic state by the LAWS with artificial intelligence[76].

According to Marcus Shingles, these opportunities include obtaining information from *"the sleeping giants of the data,"* improving decision-making and *"taking advantage of the collective wisdom of the community"*[77]. Perhaps this last one of the promises of greater social interest associated with artificial intelligence, but, at the same time, has the intrinsic ability to draw dystopian scenarios in which social control and lack of privacy give shape to a society of character authoritarian. This is fundamentally because the raw material, the blood of the system, is the data[78]. Without extensive sets of available data, the development of artificial intelligence would be a mere chimera. As tax law professor of Barcelona, T. Rosembuj says suggestively, the data are *"the principal raw material of the algorithm, like cotton, wheat or fuel in the last century. Data processing is the digital and virtual*

75. Ballbé and Padrós (1997).
76. Carpenter, D., and Moss, D. (2014)
77. Itu and Xprize (2017).
78. Alpaydin (2016). Alpaydin offers an account of how digital technology advanced from number-crunching mainframes to mobile devices, putting today's machine learning boom in context. He describes the basics of machine learning and some applications; the use of machine learning algorithms for pattern recognition; artificial neural networks inspired by the human brain; algorithms that learn associations between instances, with such applications as customer segmentation and learning recommendations; and reinforcement learning, when an autonomous agent learns act so as to maximize reward and minimize penalty. Alpaydin then considers some future directions for machine learning and the new field of "data science", and discusses the ethical and legal implications for data privacy and security.

essence: without data there is no algorithm and without algorithm it is difficult to argue that there is artificial intelligence, digital goods or virtual goods"[79].

Thus, the value of the data lies precisely in its infinite reuse: *"The value of the data is calculated on the basis of all possible ways in which they could be used in the future and not simply on the basis of their current use"*[80]. In this way, the recombination of data, its accumulation and its extension, are its real value and, therefore, the impulse for its accumulation by organizations such as Google, Facebook, Twitter, Amazon, Visa and a long list of organizations.

The great paradox here seems to lie in the fact that the initial data are susceptible of being eternal, repeated and repeated continuously and applied systematically, which would facilitate processes of social evolution through a conservative vision of human and social progress by artificial intelligence. In addition, if it is personal data, the subject will lose the trace of their identity due to the deprivation of personal rights[81]. The origin of the data and the explicit consent of their owners for their use for weapons purposes is, therefore, another of the main problems related to the development of the laws.

Finally, the last point that requires attention in this brief review of the state of the matter is the fact that artificial intelligence could be classified as a dual-use technology, or what is the same, that has both civil and military applicability, in such a way that certain sets of applicability can generate new dynamics of conflict that make obsolete the right to war or humanitarian law in armed conflicts. In this way, and with regard to the progress of the military-industrial complex (described as a "global financial complex non-productive and borderless")[82], we can affirm that these have happened at great speed throughout the last decades thanks to the connivance and monopolization of systems that go from the technological to the military, going through the scientific and financial. If General Eisenhower, in his dismissal as president, warned of the dangers of the military-industrial complex and the need for its control, imagine what he would say before the emergence of AWS whose control resides in the hands of a private oligopoly and whose objective is an economic benefit in the short term and offer the world the generation of new weapons and new ways of understanding conflict, war and control of the territory[83].

79. Rosembuj (2017).
80. Mayer-Schonberger and Cukier (2013), *apud* Rosembuj (2017).
81. Rosembuj (2017).
82. Ballbé (2006)
83. Martínez-Quirante (2002).

3. DEMYSTIFYING ARTIFICIAL INTELLIGENCE

Artificial Intelligence, as we have seen represents a new frontier, able to structure a new whole comprehension of the human. A revolution that is not going to affect only how we do things, but who we are, as individuals, as humans and as members of society[84]. Artificial Intelligence can signified game changer with implications in both, the digital and the physical reality, with applications that goes deeply further than civil uses, being able to produce a complete revolution in warfare as announce by the development of Lethal Autonomous Weapons Systems (LAWS). A new generation of weapons able to perform with autonomy in critical phases of their live cycle.

Thus, we are facing front a transitional time[85] that announces the rise of AI and its outstanding role in the configuration of the world that is to come. Being necessary to stablish clear frameworks oriented to protect human control over critical process e.g. the delegation of lethal capacities to machines, through meaningful human control. Because technology, as described by Kentaro Toyama, "it's an amplifier of human will"[86], able to perform following the bias of its creators and users.

A technology that requires the appreciation of society for its crystallization and penetration, just has have happened with previous technological sets, as the genetic modification industry, or the nuclear tech industry[87].

Therefore, winning the battle of the public opinion is a key factor that different kind of groups and lobbies, as the military-industrial complex are willing to play in order to ensure a theoretical technological superiority even if it means bring our world closer to collapse. Moreover, it is precisely the battle of the public opinion through the mystification of AI, which can represent bigger problems in the medium and long term, because deceive people into thinking that the state of the art is much more advanced than it really is. As Mary Wareham from Human Rights Watch has recently claimed in an article "there is an increasing tendency to hype the state of developments in artificial intelligence in particular states –China, Russia,

84. Braidoti, R. (2015). Maxwell, J.C. (1998).

85. Sardar, Z., (2010).

86. Itu and Xprize (2017): ai for Good global summit report [en línea], <https://www.itu.int/en/ITUT/AI/Documents/Report/AI_for_Good_Global_Summit_Report_2017.pdf>. [Retrieved: 08/14/2018]

87. Jasanoff, S. (2016).

US– as an arms race or some other kind of deadly competition[88]. This could adversely influence not just those countries' policy decisions about autonomous weapons but also their ability to comply with international law"[89].

Day after day, we observe the structuration of narratives that tend to be speculative, and unscientific, whose existence can only be understand through the willing of certain interest groups to manipulate the public agendas, in order to justify a massive penetration of AI in our daily lives. A penetration that is going to go much further to what Alexa, Siri, or Google assistant represent nowadays, being in charge of critical process such as the identification through facial recognition of criminals, the access control of our borders, and even the selection of targets and their elimination in the case of the Lethal Autonomous Weapons Systems. Being precisely the notion of autonomy the key factor of the discussion, being necessary to wonder if under the actual state of development of the technology we are ready to give away control over critical process, and clearly defined what kind of process under any kind of condition shouldn't be given away.

Therefore problem raise when speculation about further theoretical developments are shown as present reality, covering to whole AI ecosystem with a science-fi meta-narrative. Being necessary to analyze the real state of the art as the current limitations of the AI in order to comprehend the impact that such narratives can have over our societies, and the risk that massive incorporation of autonomous systems can represent for human security.

4. AUTONOMOUS WEAPONS SYSTEMS OR KILLER ROBOTS

Among the vast range of technologies derived from artificial intelligence, are its possible applications for military use which will focus our attention on this work due to the risks they represent for the evolution

88. "For the US military, AI offers a new avenue to sustain its military superiority while potentially reducing costs and risk to US soldiers. For others, especially Russia and China, AI offers something potentially even more valuable–the ability to disrupt US military superiority. National competition in AI leadership is as much or more an issue of economic competition and leadership than anything else, but the potential military impact is also clear. There is significant uncertainty about the pace and trajectory of artificial intelligence research, which means it is always possible that the promise of AI will turn into more hype than reality. Moreover, safety and reliability concerns could limit the ways that militaries choose to employ AI". Horowitz, M., (2018).

89. Wareham, M. (2018)

of the system itself and the guarantee of basic rights and freedoms. We focus specifically on the lethal autonomous weapon systems (LAWS)[90].

These systems are characterized by the integration of artificial intelligence in such a way that they have the intrinsic capacity to approach decision processes outside human control or supervision in a meaningful way; and they could be included in the third category exposed in the previous section: systems that act as humans. The main difference between the LAWS and the laws would be that the former have a merely defensive character (anti-missile shields, for example), while the latter have the ability to identify and eliminate military objectives, including people; and this without significant human control in the process, which means a delegation of lethal capabilities to robotic entities.

The emergence of a varied list of new weapons systems gives rise to a new arms race that can determine the course of conflicts not only of the future, but of the present, since in some cases they are fully operational (although not in a totally autonomous of the human): think, for example, of the Phalanx air defense system of the US Navy, which allows you to repel attacks in automatic mode[91].

In the last census conducted in 2018, the International Committee of the Red Cross counted some 130 autonomous weapon systems in the world, although other counts approximate the number to three hundred[92]. These would include semi-autonomous weapons systems, since they would be subject to human oversight at key stages, such as the selection of targets. This would be the case of Patriot or drone missiles like the Reaper model[93], or the Okhotnik-B[94].

The current debate does not focus on the analysis of weapons systems with remote human control (AWS with significant human control), but

90. Waters (2018a). A new report, entitled *The malicious use of artificial intelligence*, warns that if advances in intelligence continue at this rate, the technology will soon be so powerful that it could overwhelm many of the defense mechanisms incorporated in current digital and physical systems: "The malicious use of artificial intelligence", *Financial Times*, February 14, 2018 [online], <https://www.ft.com/content/c54002ee-1668-11e8-9e9c-25c814761640>. Waters (2018b). Brundage et al. (2018) https://arxiv.org/pdf/1802.07228.pdf

91. Horowitz, Kreps and Fuhrmann (2016).

92. Roff (2016a).

93. Lee, P. (2018) This is an portrait of the human aspect of remote air warfare in the twenty-first century. This unique insight into RAF Reaper operations in Afghanistan, Iraq and Syria is based on unprecedented research access to the Reaper squadrons and personnel at RAF Waddington in Lincolnshire and Creech Air Force Base in Nevada, USA.

94. UAS Vision, (2017).

on the potential risks for the future posed by the deployment of a type of technology without significant human control, whose regulation is urgent due to their possible hybridization with other types of weapons, such as nuclear or biological, which together with armed systems Independents are a real threat and more present than ever. Its emergence is framed in an increasingly unstable and unpredictable international scenario. As D. Mourelle says, *"the world is doing geopolitical tightrope walking on the abyss. But on this occasion, nothing guarantees that in the next nuclear crisis we will have as much luck as in the previous ones"*[95].

Our object of analysis is focused in sum on those weapon systems capable of selecting and attacking targets without human intervention and whose applicability is usually theoretically restricted to military objectives in non-populated areas. But due to the rise of cybernetic systems of rapid development, high processing power and artificial intelligence forces us not to be naive and to value that there are no limits for their use as autonomous weapons in urban spaces and without a formal declaration of war[96]. This is a technology that, if it reaches the hands of non-state actors, such as terrorist organizations, can open a new scenario that mortgages the development of artificial intelligence even in non-weapon applications.

One of the biggest challenges that we face and that the United Nations wants to solve is that there is no definition of autonomy or of the independent concept agreed internationally for the LAWS, nor consensus about the characteristics or traits that combine to form them. It is necessary, then, to provide elements that allow us a classification that facilitates its regulation.

Grosso modo, we could understand that this type of independent weapons have three basic characteristics:

– They can move independently through their environment to places they choose arbitrarily. Its capabilities are: mobility, persistence and orientation and navigation.

95. Mourelle (2017).

96. Expert meeting *Autonomous weapons systems: technical, military, legal and humanitarian aspects*, 93. Geneva (Switzerland), March 2014.
<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CB4QFjAAahUKEwiJ3KXXt9TIAhWImIgKHQ-ADO4&url=https://www.icrc.org/en/download/file/1707/4221-002-autonomous-weapons-systems-full-report.pdf&usg=AFQjCNHRUKZogcjiQGeY-cyOpgbarbixQw&sig2=85Tn4NKiirt6tskt9SVU9Q>.

- They can select and shoot against targets in their environment. Their capacities are: own identification of objectives, discrimination to categorize objectives, prioritization of objectives and selection of the type of weapon appropriate to the objective.
- They can create and/or modify their objectives by incorporating observation of their environment and communication with other agents. Their capacities are: self-determination, self-commitment, autonomous communication with other systems, self-coding of objectives based on information acquired from autonomous sources, planning of objectives and constant learning and adaptation.

Here arises a question to which we must face: what degree of artificial intelligence or intelligent behavior is necessary for the legal system to consider the prohibition of the LAWS? What will ultimately make the difference will be precisely whether they have significant human control in the different phases of the lethal action process (implementation, validation and execution).

If we look at the census prepared by the Future of Life Institute, there would currently be 256 categorized and qualified autonomous systems, but to date, most states argue that everyone has human control or adequate human judgment at some time[97]. That is, all the systems developed so far depend (or should depend on) human supervision or prior human judgment in at least some of its critical phases (selection of objectives or cancellation of the order)[98]. However, parallel systems are investigated and developed with total autonomy, and sooner or later must be analyzed if they meet or not with the legal requirements, because the current situation of practical non-regulation of the LAWS allows, for inactivity of the anomic States (sensitive matter, this), a kind of competitive race without law between governments that can be very dangerous[99].

The States justify the investigation in AWS ensuring that it is not used in attacks but for defense, that is, simply as autonomous weapons defense systems (AWDS)[100]. But that does not seem more than a subterfuge to legitimize absolutely lethal systems endowed with the capacity to become independent from its creator and its responsible. It is essential to develop an international regulation that allows its uses to be restricted, not allowing the existence of communicating vessels between the development of defense

97. Roff (2016a).
98. Roff (2016b, 2017).
99. Putin declared in 2017 that the country that achieves leadership in the development of artificial intelligence will be the master of the world.
100. Warren and Hillas (2018).

systems and those whose purpose is the lethal action against people. Otherwise, it could be attributed to a synthetic being without humanity the power to decide, in a conflict, whom to beat based on the general interest: that is, a license to kill that should be exclusive of the public power.

For this reason, several initiatives have emerged over recent years to generate an international ban on this type of weapon, such as the Stop Killer Robots campaign. It is a movement founded in 2013 and made up of numerous non-governmental organizations that range from technology companies to human rights organizations; and its objective is to direct the international normative processes towards the prohibition of autonomous weapons, considering that it represents a threat superior to that posed by nuclear weapons. It uses the report Losing Humanity to argue that lethal autonomous weapons do not meet the requirements of international humanitarian law and argues that what should be done with the blinding laser should be done with them: preventively prohibiting their use and development.

In 2013, a report by Christoph Heyns, special rapporteur of the UN, on extrajudicial, summary or arbitrary executions called for special moratoriums and the creation of commissions of experts to stop the development of autonomous weapons; report that was presented in the framework of the Convention on Certain Conventional Arms of the United Nations (CCCW), held in December 2016 in Geneva[101]. It was also tried at the World Economic Forum in Davos in 2016 and, in the same year, at the Munich Security Conference, where these issues were analyzed in depth. For its part, the NGO Human Rights Watch has also positioned itself in favor of the immediate prohibition of the AWS/LAWS. In a report entitled Shaking the foundations: the human rights implications

101. The Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects was adopted in 1980 and came into force in 1983. Its purpose is to prohibit or restrict the use of certain conventional weapons that are considered excessively harmful. or whose effects are not discriminatory. It is an annex to the Geneva Conventions of August 12, 1949. It consists of five protocols: non-detectable restriction of weapons of fragmentation, banning of anti-personnel landmines and trap weapons, incendiary and blinding lasers. It also establishes obligations for the cleanup of explosive remnants of war. In addition, the ban was extended to non-locatable land antipersonnel mines and fragmentation mines. It should be noted that the agreement lacks verification and compliance mechanisms and methods to carry out a formal process to resolve the problems arising from its proper compliance. That is, there is no supra-state control. Williams, J., Goose, S., Wareham, M. (ed.), (2008). Williams also promoted the movement to ban LAWS. As Eve Ensler points out of her in the prologue of his book: "is many things: a simple girl from Vermont, a loving wife, an intense character full of fury and mischief, a great strategist, an excellent organizer, a brave and relentless advocate, and a Nobel Peace Prize winner. But to me Jody Williams is, first and foremost, an activist". Williams, J. (2013).

of killer robots[102], it was argued that the AWS not only are not apt to serve in armed conflicts due to the lack of compliance with international humanitarian law, but also cause a general violation of the law: of the administrative law, of the criminal, of the military (for example, in the United States the authorization of the president as commander in chief would be deactivated and the laws would be liberated not only from the civil hierarchy, but, paradoxically, also from the military hierarchy) and especially the democratic constitutional, as we will see below[103].

The definition and limits of the AWS are being debated in the United Nations and the question of what is meant by armed autonomous robot or killer robot, both the International Committee for Robot Arms Control (ICRAC) and the campaign Stop Killer Robots suggest that it is that weapon system that has the potential to lack any significant human control in the process, loop or decision cycle of killing a human being. That is, it would be a robot capable of discretionally shooting the target, but *"out of human control"* (human out-of-the-loop)[104]; control that however must be required both in a previous phase, through legal-technical protocols that cannot be ignored by the system, as during the process, physical in this case and carried out by a human operator. The replacement of people by artificial intelligence can be accepted in certain activities that require high precision with a view to increasing the security of results and saving lives, but in other cases, as in the LAWS, we should continue to rely on human decision-making, even if it is helped by computer assistance. Otherwise, regional and/or global peace and stability will be jeopardized. It is imperative that we anticipate the future and be able to implement solid barriers to the irreversible dangers that artificial intelligence entails, especially if it is coupled to nuclear weapons[105] or to individualized targeting systems[106].

The engineers agree that what we could call totally independent systems has not yet been achieved; that independent thinking is hardly going to became a reality and should not be confused with independent decision-making. As G. Benson explains, "*independent thought is associated*

102. <https://www.hrw.org/report/2014/05/12/shaking-foundations/human-rights-implications-killer-robots>.
103. McQuillan (2018) (according to this author, "the next generation of humanitarian scandals will be driven by artificial intelligence"), Burri (2016) and Powell (2013).
104. Sharkey (2016), Suchman and Weber (2016).
105. Barzelay and Campbell (2003).
106. Allison (2004). This author illustrates that it is generally believed that nuclear weapons have bulky dimensions, but there are bombs like the Davy Crockett, a nuclear weapon between 120 and 155 millimeters, that is, easily transportable. Fourteen years after the publication of Allison's work, it is evident that the investigations will have developed a much smaller nuclear weapon.

with self-awareness and emotion. We have not yet achieved this type of AI to date and it seems we are a long way off. The complex interactions of our brain functions with our physiology seem truly difficult to replicate"[107]. There is, therefore, still time to develop legislation and systems that put a stop to it. And more and more countries agree on the need to put it on, as evidenced by the meeting of governmental experts of the Convention on Certain Conventional Weapons held in May 2018. The objective is based on negotiating an international treaty that imposes limits on the laws and prohibit fully autonomous weapons before they are technologically possible and that high-tech autonomous weapons with varying degrees of human control are already in use in the United States, China[108], Israel[109], South Korea[110], Russia[111], Germany[112], Turkey[113] and The United Kingdom[114] is transformed into systems with artificial intelligence in which the decision to attack other humans could be out of meaningful human control[115].

107. Benson (2017).
108. Blowfish A2. Allen, G. (2019).
109. Iron Dome, or Harpy and Harop anti-radiation systems. Also the Guardium, a land vehicle.
110. Super aEgis II, which is able to identify, track and destroy a target at a great distance without human operators, although the manufacturer Dodaam Systems has indicated that they will include the requirement of the participation of a human being to authorize real shots. They also have the Korean Robotic Sentry or SGR-A1,
111. Okhotnik-B (UAV), or anti-ship missile cruise P-700 Granit. It should be noted that the arms company Kalashnikov Concern has just presented a prototype killer robot at the Moscow arms fair this year (2018). Igorek measures 4 meters, weighs 4.5 tons and is fully armored. It is designed to "solve engineering and combat tasks" as a "bipedal walker controlled" by humans, that is, with an anthropomorphic form, but for the moment, it does not move. Rannard, G., Borshchevskii, G., (2018).

    Also, "The Uran-9, developed by Russian Defense contractor, JSC 766 UPTK, does not have any room on board for a crew. Every inch is full of weaponry and ammunition. It can be operated by remote control or unleashed to perform autonomously. According to Army Technology, the vehicle can automatically identify, detect, track and defend enemy targets and uses detour pathfinding for obstacle avoidance. It has been deployed in Syria where testing under battle conditions has led to an upgrade". Sharkey, N., (2018c).
112. Nächstbereichschutzsystem Mantis. Also the multi-mission UGV of the company Rheinmetall, an unmanned armed system that can choose to act autonomously. For its part, the German-French arms company KNDS has created a robotic unmanned vehicle called OPTIO X20 that can operate remotely or autonomously.
113. IGLA is a Missile Launching autonomous weapons System of ASELSAN.
    https://www.aselsan.com.tr/en-us/press-room/Brochures/Air-and-Missile-Defense-Systems/AIR_DEFENSE_SYSTEM_SOLUTIONS_ENG.pdf
114. Anti-tank missile Brimstone or the Taranis.
115. It is said that the Taranis of the United Kingdom is merely semi-autonomous, while the nEUROn developed by France, Greece, Italy, Spain, Sweden and Switzerland is

The United States has developed a so-called unmanned aerial combat system X-47B and the XQ-58A Valkyrie (this UCAV successfully completed its first flight on 5 March 2019)[116]. One of the most important tests with AWS, consisting of swarms of micro drones[117], has recently been carried out in California by the Department of Defense. Specifically, 103 Perdix drones were launched from three F/A-18 Super Hornets and demonstrated advanced behaviors such as collective decision making, adaptive training flight and self-healing. These are not preprogrammed individual drones, but they share AI to act as one[118].

In this sense, "DARPA is progressing toward its plan to demonstrate airborne launch and recovery of multiple unmanned aerial systems (UAS), targeted for late 2019. Now in its third and final phase, the goal for the Gremlins program is to develop a full-scale technology demonstration featuring the air recovery of multiple low-cost, reusable UAS, or "gremlins". DARPA awarded a contract to a Dynetics, Inc.-led team to perform the Phase 3 demonstration. DARPA is exploring the possibility of demonstrating different sensor packages with potential integration partners prior to program completion in 2019"[119].

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explicitly designed to demonstrate an autonomous air-ground capability, as it seems to be the case of Russia's mig. Although little is known about China's sharp sword, it is unlikely that it will be far behind its competitors in conceptual terms, "explains Michael Hass (2014), who was a candidate for the Nobel Peace Prize.

116. Peck (2019).

117. Hambling, D. (2015). "Small unmanned aircraft are already transforming warfare, with hand-launched scouts like the Raven and lethal tactical drones like Switchblade already in use by US forces. A bigger revolution is on the way, as swarming software allows a single operator to control large numbers of drones, and smartphone technology means they can be built for $1,000 each -- by anybody, not just governments. This book looks at the history of drone warfare, the rise of big drones like the Predator and how they are being eclipsed by smaller unmanned aircraft. And how the future is being shaped by smartphone technology, swarm software, miniaturized munitions and energy-harvesting that allows small drones to fly forever. It also looks at why current air defense cannot stop the swarms, and what drone swarms will mean for the balance of power and future wars".

118. Cf. <https://www.defense.gov/News/News-Releases/News-Release-View/Article/1044811/department-of-defense-/. Others LAWS are Talon (robot weapon locator), swords (Special Weapons Observation Reconnaissance Detection System, an armed weapon locator robot), iRobot UGVs (surveillance and recognition robot that can carry a built-in bomb), BigDog / mule, maars (Modular Advanced Armed Robotic System), X-47B (unmanned aircraft for aerial combat), A-CTUV or Continuous Trail Unmanned Vessel (submarine anti-war) … Cf. Jha (2016).

119. https://www.govconwire.com/2018/05/video-gremlins-airborne-launch-recovery-of-unmanned-aerial-systems/

The ATLAS program ('Killing machine' robo-tank) shows how much has changed since 2014 when the idea of armed ground robots was anathema to the U.S.military. By 2017, the military was more comfortable with the idea, and integrated some armed ground robots into some training exercises. Horowitz said: "The controversy over ATLAS demonstrates that there are continuing technological and ethical issues surrounding the integration of autonomy into weapon systems"[120] .

The apparent term available to us to impose these limits on what has been described as the third revolution in war (the AI linked to gunpowder and nuclear weapons) is a handful of years. In this sense, it is worth noting that China is rapidly modernizing its army and has opted for state-of-the-art nuclear weapons, through warheads with AI designed to limit the damage attacking specific objectives[121]. In contrast, the US is still the heir of the weapons of the past, which makes them move more slowly in what has been called the "military-industrial-congressional complex" (MICC)[122]. Thus, between 2014 and 2018 China has carried out around 200 laboratory experiments to simulate a nuclear explosion while the US, in the same period, has carried out 50 tests. The race undertaken by China that is evident. In the end, as Hartnett of Bank of America points out, "the *trade war* of 2018 should be recognized for what it really is: **the first stage of a new arms race between the US & China to reach national superiority** in technology over the longer-term via Quantum Computing, Artificial Intelligence, Hypersonic Warplanes, Electronic Vehicles, Robotics, and Cyber-Security"[123].

120. Tucker, P. (2019).
121. Ignatius, D. (2018). Columbus, L., (2018). Launched in 2017, China's New Generation Artificial Intelligence Development Plan is delivering strong results and has become a topic of national pride. She is widening their lead in AI globally by concentrating on a core set of best practices that energize entire industries to pilot and adopt AI for unique use cases. "Despite expressing concern on AI arms races, most of China's leadership sees increased military usage of AI as inevitable and is aggressively pursuing it. China already exports armed autonomous platforms and surveillance AI.(…) China's government sees AI as a promising military *leapfrog development* opportunity, meaning that it offers military advantages over the US and will be easier to implement in China than the United States". Allen, G. (2019).
122. In the context of the United States, the appellation given to it sometimes is extended to MICC, adding the U.S. Congress to form a three-sided relationship termed an iron triangle. These relationships include political contributions, political approval for military spending, lobbing to support bureaucracies, and oversight of the industry; or more broadly to include the entire network of contracts and flows of money and resources among individuals as well as corporations institutions of the defense contractors, private military contractors, The Pentagon, The Congress and executive branch.
123. Durden, T. (2018)

Hence, investment in technology is linked to defense spending (although this does not always mean obtaining greater security)[124]: the IMF's forecast is that China will surpass the US progressively until 2050, and that it will become the dominant superpower in the world. Specifically, as later in 2032, it will surpass the US military economy and strength, as well as its global influence in the world.

There is a danger that we will not escape the "Thucydides trap" as Allison (and others) calls the situation when the dominant power (USA or the Occident in general) is tempted to attack the rising powers (China)[125], *"The war between the two countries in the coming decades is not only possible but much more likely than you think"*. We can agree with this author that *"the preeminent challenge of this era is not the violent Islamic extremists or a resurgent Russia but the impact that China's ancestry will have on the international order led by the US"*.

But the challenges posed by this techno-social revolution can only be understood after analyzing the interdependencies between our development as a species and the technological frameworks that have fostered it. In the next chapter we will explore, following that line, the relationship between society and technology and its importance when determining our approach to the subject that concerns us, as well as some of its ethical implications[126].

The tragedies related with the Boeing 737-800MAX 8 show the magnitude of the dangers and risks that lie ahead with the LAWS. Fatal accidents due to a technology that feature in common: the reduction of meaningful human control as the airplane stops obeying the pilot during takeoff and begins to behave erratically in an uncontrolled manner.

The problem was due to the MCAS system of the aircraft, that is, a software program with Artificial Intelligence that uses data through sensors and acts by applying the corresponding algorithms. It is an automated system that the pilots, due to a series of circumstances, could

124. Danzig, R. (2018). The author, a professor at Johns Hopkins University and former Secretary of the Navy during the Clinton presidency, points out in his report that technological superiority is not synonymous with security, due to the dramatic loss of control that can occur in such AI systems, synthetic biology and autonomous armament, either by accidents, unsuspected emergent effects or sabotage.

125. Allison, G. (2017). Thucydides, an Athenian general and historian (400 BC) maintained that it was difficult for a booming power to coexist peacefully with the dominant power, as happened when Athens challenged Sparta in ancient Greece, or as Germany did a century ago. Thucydides saw the position of Athens justifiable, since as her influence grew, so did her self-confidence, her awareness of past injustices, her sensitivity to cases of disrespect, etc. And it was natural, according to the historian, that Sparta interpreted the Athenian position as irrational, ungrateful and threatening to the system.

126. Allison (2015).

not disable in time. The automatism implies that there is no significant human control in the critical phases of the takeoff and landing.

If terrible disasters are happening with the Boeing 737 software, we can imagine what will happen to the lethal autonomous systems or to the pocket-guns-drones that, with AI, able to targeting a shot. How many innocents should die to realize that we cannot rely entirely on software without human control?

The paradox is that Ralf Nader, a great global regulator, already warned in his book *Collision Course*. *The Truth about airline safety*[127] published 25 ago, the deficiencies of deregulation in air navigation. Regrettably, Nader's omens have been fulfilled and he has had to suffer them in his own family since his granddaughter, Samya Stumo, 24 years old, died in the Boeing 737 MAX 8 of Ethiopian Airlines.

This should make us reflect because two decades later we can regulate and stop the technology on LAWS decide who lives and who dies without control through flying weapons with AI.

Nader, on March 12, 2019, in his *Open Letter to Boeing-Passengers First*, *Ground the 737 MAX 8 Now*, has pointed out that the accident was caused by defective software and warns the company again that:

"The arrogance of your algorithms overpowering the pilots, can move law enforcement to investigate potential personal criminal negligence"[128].

Algorithms in LAWS can also lead to unimaginable errors, so their arrogant algorithms must also be stopped in time.

127. Nader, R., Smith, W., (1994).
128. https://nader.org/2019/03/12/open-letter-to-boeing-passengers-first-ground-the-737-max-8-now

Chapter III

Technology and society: implications of artificial intelligence

Joaquín Rodríguez-Álvarez

We knew that the world would not be the same. A few people laughed, a few cried, many were silent. I remember the quotation from the Hindu holy book, the Bhagavad-Gita. Vishnu is trying to persuade the Prince to do his duty and to impress him he takes his form with multiple arms and says: "Now I have become death, the destroyer of worlds". I guess we all think that, one way or another.

Robert Oppenheimer on the H. bomb

1. HUMANITY AND TECHNOLOGY

Until more than two million years ago, the human being was just one more species among many; a contender like any other in the daily struggle for survival; but everything changed when our remote ancestors managed to dominate the fire and develop the first lithic industries. Propelled by those early technologies, that weak species suddenly climbed to a dominant position: it was capable, as no other was, of taming the natural environment, which until then had represented an arbitrary and unpredictable threat. And as it could not be otherwise, such a material transformation brought with it others of a more spiritual nature. It radically changed our concept of the world and of ourselves and new forms of approach to the invisible rules of our context appeared[1].

1. Bernstein (1996).

The millennia continued to run and in the Neolithic period –between the years 10200 and 2000 bce–. According to the ASPRO chronology, our material culture was profoundly transformed again thanks to the agricultural revolution, which allowed us to abandon our nomadic life, take root and take possession of the territory both physically and symbolically. We went on to link not only with the animals we drew on the walls of the caves to encourage hunting through sympathetic magic (probably our first belief system or cognitive methodology)[2], but also with the rivers, mountains and trees of our environment, to which we also grant a magical meaning and we erect as symbols and borders of a new system.

This new agricultural system was unleashing various parallel phenomena. On the one hand, the novel capacity to transfer the fruits of today's work to tomorrow through the storage of agricultural products made us acquire a new sense of time. On the other hand, the production of surpluses thanks to the improvement of agricultural technology gave birth to trade. And on the other, a new landscape was generated: the urban one, the one in which today most of humanity lives in. The first cities (Uruk, Jericho, Çatalhöyük …) sprouted in the Fertile Crescent around 4500 a. of C., and in its bosom, it was gestating a new distribution of the work. Thus, some people were necessary for agricultural work, while others were necessary for the development of incipient industrial activities, others for trade, and so on. On the other hand, new needs arose in these flourishing cities, such as public security or the accounting of surplus inflows and outflows; and that made it necessary to develop other technologies, and singularly, writing. This new and capital invention offered the Mesopotamians the possibility of transmitting and storing information, compiling legal codes such as that of Hammurabi, centralizing the control of goods or crystallizing legitimizing myths of the social order. The bureaucracy arose and, coupled with it, the figure of the scribe, easily identifiable as what Thorstein Veblen called a *"technological class"*[3]: a group of holders and protectors of a knowledge closely linked to power as fundamental to sustaining the social fabric. Pharaoh needed the scribes to maintain control of the empire, the Mayan emperor needed his high priest and the European kings needed the pope.

Everything previously exposed was imbued, as reflected in Greek mythology (built during this period), of new challenges and risks. Aware of how technological cycles can radically transform a cultural corpus and how difficult it can be to embroider those changes, the classics knew how

2. Frazer (1951).
3. Veblen (1919, 1944).

to subject technological development to close control[4]. Of the Greeks it is said that they never undertook a deep technological development not because they could not, but because they did not want to[5]. He did not want it, for example, Archimedes, who after demonstrating his theories always destroyed his inventions.

Technology has the ability to radically modify the sources of collective meaning. There is an interdependent relationship between material culture and cognitive process; our material capacities shape our worldviews. In that time that was the dawn of civilization old traditions and magical adorations disappeared and organized religion was born, which replaced the sorcerer by the priest and broke the ancient links with nature. From a system that professed its ability to modify the laws of nature through magic, it passed to another in which nature was simply the playground in which the caprice of a pantheon of gods whose favor was to be won was manifested. And this generated a new power structure for whose extension cities were a key element. It was in the city where the temple stood from whose peak the high priests monopolized.

From Antiquity to today, the role of technology has never diminished in importance; and that importance is easily traceable throughout history, manifested in the emergence of certain inventions that had the capacity to profoundly transform the societies that created them. Lin White explains, for example, how the new war machine that was the stirrup gave birth to feudalism. The combination of a man, a horse and a sword gave rise to a new hegemony on the battlefield and the training needs of these new elite soldiers forced them to abandon their traditional ways of life (agriculture, crafts, etc.) and being full-time knights, becoming a third technical class between the Monarchy and the Church and the common people and weaving around them the feudovaslatal relationships typical of this system that runs through the Middle Ages[6]. It is just one example: the industrial revolution, the communications revolution, etc., all of them reproduced the same mechanism later. Any new technology can provoke a drastic reversal of the internal equilibrium of a system: let us also think about what the invention of the Gutenberg printing press, closely linked

4. Mayor, A. (2018). The first robot to walk the earth was a bronze giant called Talos. This wondrous machine was created not by MIT Robotics Lab, but by Hephaestus, the Greek god of invention. More than 2,500 years ago, long before medieval automata, and centuries before technology made self-moving devices possible, Greek mythology was exploring ideas about creating artificial life–and grappling with still-unresolved ethical concerns about *biotechne*, "life through craft."
5. Colli (1978); Ellul, Wilkinson and Merton (1964).
6. White (1973).

to Luther's Protestant revolution, meant for the power of the Catholic Church. ideological monopoly of the Vatican over Europe proposing a relationship with God without intermediaries and a direct and wider access to religious arcana.

Any given community needs constant technological progress to perpetuate itself in a context of competition with others, but also a strong control over the technological system in order to preserve the internal status quo; as well as a belief system that gives a collective meaning to the community while justifying the social order. In relation to all this, we can affirm that a more complex technological system needs more complex tools of government, and that a more complex system of government in turn requires one of beliefs that is also complex. Everything is interrelated and Marx affirmed that *«the hand mill will give us society with the feudal lord; the steam mill, with the industrial capitalist»*[7].

We could talk about a tragedy in three acts that is repeated again and again. First act: a new technology appears and, linked to it, a new technical class associated with the knowledge necessary to implement it. Second act: those who hold power *stricto sensu* open the decision-making process to the technological class in response to an operational need of the system. Over time, knowledge can be extended to a large part of the community because it is necessary for the evolution and perpetuation of the system, bringing it closer to democratic participation and the provision of quality of life, security and order to broad sectors of society. community; But the situation may also arise that scientific progress begins to develop outside the margins of state control and that a new technology that destabilizes the fragile equilibria established between the technical class and the dominant class appears on the horizon, generating a shock like the described by philosophers such as Gramsci, Pareto or Mosca[8]. This situation can lead to two different main scenarios: a new democratic opening of the decision-making process or an authoritarian reconcentration of the control of the material and symbolic means of production in a more closed group of people, which does not necessarily end democracy but it erodes it or limits it. In relation to democracy, we must understand that we are, as Nietzsche said, slaves of our own words[9], and also of this that neither in theory nor in practice designates a one-way system. Democracy must be understood instead a wide range of possible applications that can be very different from

7. Marx (2008).
8. Bates (1975); Gramsci (1995); Femia (1987); Nye (1977); Pareto (1991).
9. Nietzsche (1989).

each other, and some of which can be and in fact are compatible with the development, by the people in charge, of different techniques oriented to control and the manipulation of public opinion through education, the media, and so on.

Artificial intelligence represents a new frontier; a radical redefinition of organizational and cognitive processes, of the construction of otherness, of the mechanisms of the State, of the symbols that give collective meaning to our society and, in general, of the relationship of the human being with its context. Again, we are facing a technology capable of transforming our material reality and called to form new elites and either to deconstruct existing systems of privilege, or to crystallize them even more. We face, therefore, the challenge of foreseeing the transformations to come, preparing our communities and defining frameworks that allow the decision-making process to admit the majority.

In the specific case of the AI weapon application, we are faced with the advent of a new dystopian order. The delegation of the ability to kill in a system of which we are barely able to predict future behavior and whose reliability can ot be guaranteed 100% in terms of execution of orders or in compliance with international law, delegation that there is nothing that can justify from an ethical point of view (neither the efficiency, nor the cost nor even the protection of own soldiers), it is a suicide walk towards the abyss that we will only avoid if we are able to equip ourselves with instruments binding legal guarantees that human life cannot be stolen by non-human entities. Certain applications must be restricted while others are strengthened from the purpose of socializing the technology; to make it accessible to broad layers of the population in a way that helps to build an open and plural society.

"That said, two principles make sense. First, the more a weapon is permitted to roam about over large areas, or for long periods, the more important it is that humans remain "on the loop"–able to supervise its actions and step in if necessary, as circumstances change. That requires robust communication links. If these are lost or jammed, the weapon should hold fire, or return.

A second tenet is that autonomous systems, whether civilian ones like self-driving cars or those that drop bombs, should be "explainable". Humans should be able to understand how a machine took a decision when things go wrong. On one point, at least, all states agree: that the buck must stop with humans. "Accountability cannot be transferred to machines", noted a report of the CCW in October. Intelligent or not, weapons are tools used by humans, not moral agents in their own right. Those who introduce a weapon into the battlefield must remain on the hook for its actions.

A good approach is a Franco-German proposal that countries should share more information on how they assess new weapons; allow others to observe demonstrations of new systems; and agree on a code of conduct for their development and use. This will not end the horrors of war, or even halt autonomous weapons. But it is a realistic and sensible way forward. As weapons get cleverer, humans must keep up"[10].

2. ARTIFICIAL INTELLIGENCE AND PERCEPTION

> *It seems to me, in this small detail, to be wiser than this man in any case; What I do not know, I do not think I know.*
>
> Plato, Apology

Technology not only affects the way we organize ourselves, but it also has the capacity to transform the way we perceive our environment, our reality; to redefine what we see, feel and experience.

We can define ourselves as inherently creative beings; as a species that had the imagination and ingenuity to develop not only material elements capable of guaranteeing its survival, but also cognitive systems based on rules that, although in most cases lacked a scientific basis, allowed us to interpret our context. Between Palaeolithic rock art –understood by Breuil and others as a system of parasympathetic magic designed to facilitate hunting, fertility, health and safety– and aerospace science, there is a common aspect, which is the ability of technology to define our beliefs.

As humans, we do not have any inherent mechanism that allows us to automatically distinguish between reality and fiction. Over the millennia, the human being had believed in magic, in the old Gods and new ones, in a flat earth located in the center of the universe. A set of believes that even in a context of high scientific development like ours continue to show extraordinary persistence in broad layers of the population. And this represents a huge inconvenience when establishing relationships of any kind based on a common truth. No matter how many times science cures an disease, puts a satellite in orbit or operates smartphones or appliances: there will always be doubts, conspiracy theories and attempts to provide alternative answers. This problem is rooted in the very essence of human reason, which in most of the occasion functions as a method of justification for our actions and as a way of dying a cohesive history, regardless of the scientific viability of what It is said. Organized religions

10. *The Economist,* (2019).

offer a good example of this intellectual effort in clear dissociation from the laws of nature.

Numerous philosophers throughout history have analyzed these problems and come to the conclusion that reason is not by itself sufficient to understand the nature of our context, and that any analysis that is done requires both individual and collective experiences for acquire meaning[11]. But also the experience represents several theoretical problems. The Platonic myth of the cave magnificently illustrates such problems when talking about the impossibility of perceiving reality itself: what we perceive are only projections of reality; shadows in which we barely manage to guess.

After Plato, the problem of experience has been deeply analyzed by other philosophers, and we can distinguish several responses to the problem: since our perception is irremediably conditioned by our context until, even if the perception may be wrong, we must accept that it is a common basis for analyzing reality. In other words, if all the people who share a certain space see that it is raining, we must accept it as a correct assumption. But even at this point we are facing another conflict that Nietzsche exposed in his work *The Genealogy of Morality*. The German philosopher presented the words as a prison that must be broken in order to generate a new symbolic code that allows us to truly express our context. Nietzsche understood that the word used far transcends its strict meaning and represents a whole collective and even individual history: that of the person who employs it inevitably finding in it an intersection of past experiences associated with it. Words such as black, women or gay are good examples of this.

All this takes on a new dimension with the emergence of artificial intelligence and its ability to work with natural language and reproduce a common imaginary. Since –as we have already pointed out in this essay– the use of certain words in certain contexts can lead to the crystallization of dynamics of oppression. It happened on Facebook with the appearance of anti-Semitic categories in its advertising system, after which the company said it would hire more human operators in order to control this type of unintended consequences of the implementation of their algorithms[12]. If we talk about armament, the need to increase significant human control can only be considered as vital.

Our moral, as codification of values, works very similarly, and this makes it necessary to review the basic parameters with which we work

11. Hegel (1966); Kant (1998); Schopenhauer (1959).
12. Lee (2017).

in order to adapt to a new human condition that entails the massive incorporation of technologies into our daily lives; technologies whose ability to learn and reproduce our behavioral patterns or the cultural framework in which they operate in the event that there is no limit or strict control over them by existing powers can reinforce the existing system of inequality instead of eroding it.

On the other hand, for the development of artificial intelligence it is essential to print the ability to discern simulations, a capacity that natural human perception does not necessarily have. As an example, we can put that of a Spanish tradition easily translatable to other similar ones from other contexts: that of the Three Kings of the East, of biblical myth related with the birth of Jesus, that the current society has transferred to the hyperreal. In Spain, all material reality in the period close to Christmas –from television programs and advertisements parades on the Street– reinforces that tradition with the aim of allowing children to believe and behave accordingly. All adults know that it is the parents and relatives of the children who buy the gifts and interpret some papers whose objective is to print some magic to our lives and routines. And we think that the belief in the three kings is childish, proper only to a certain age, but age has nothing to do with belief. The same process is reproduced ad infinitum among adults in our society and culture.

The children believe because the whole system reinforces the belief: they see the Three kings, they touch them and they can even give them lists of the gifts they want; gifts that later appear under the Christmas tree without anyone at home being responsible for it, stating instead that they were brought by the Kings. A sort of *Truman show* in which everything is designed so that there is no doubt. Can we, as adults, ensure that we are not susceptible to falling into this make-believe? Are we truly sure that reality is what it seems to be?

We can answer this question by referring to the scientific method, which establishes as basic pillars falsifiability and reproducibility precisely to avoid the deviations to which our pure reason would lead us and prescribes the development of theories that can be tested under hypotheses capable of predicting scenarios futures. The system thus configured is the best of all we have been developing throughout history, but its infallibility is difficult to prove. Baudrillard claimed that *"the secret of any theory is that truth does not exist"*[13]; and perhaps that is the only truth worthy of such a name that we have found so far. *"I only know that I know nothing"*, the old Socratic maxim returns again and again. As much as

13. Baudrillard (1987), p. 290.

we have achieved unprecedented technological advances, we are still immersed in darkness.

At present, our approach to reality is highly determined by technology, mainly because –as already explained in this essay– knowledge is intimately related to power. There is a technological class that benefits from the monopoly of restricted knowledge and that constitutes a social elite whose mere existence is linked to technology. And there is, as has always been the case, censorship, a historically important factor in retaining power and that can take many appearances, from what Orwell predicted to what Huxley predicted, but whose objective is always the same: to move the public's knowledge away. In fact, it does not matter if access to knowledge is directly blocked through access barriers or if only the public is distracted with other goodies, such as an entertainment culture that makes people prefer to follow a television program that national policy: the effects are the same and the only difference is in the amount of repression required. For those who hold power, it is more convenient to divert attention than to prohibit access to information.

All civilizations, all cultures, have the means to control access to information. All have created myths and stories that warn about the risks that knowledge entails: the same for Prometheus, who steals fire from the gods and takes it to humanity, than for Eve, who tests the apple of the Tree of Knowledge, which for Pandora, knowledge is always achieved at a high price, and those metaphors feed the restrictions. On the other hand, technology itself can be used to transform our own perception of reality from both individual and collective perspectives. Nowadays, digitalization is generating a new layer of complexity; a later era of the truth.

If we focus on how the social consensus is made, we can refer to the strategies described by Edward S. Herman and Noam Chomsky in their Manufacturing consent, where they argue that in the current system, most of the media only transmit the opinions of the economic elites or the governments. In the case of the United States, this system would operate according to five laws:

1. Most of the media is in the hands of large corporations, that is, it actually belongs to the economic elites.
2. The media depend on the publicity of the economic elites for their subsistence.
3. The media should produce a permanent flow of new news, but the main news providers are the press departments of governments and large corporations.

4. Influence groups can organize systematic responses to any deviation from the opinions they support.
5. Anticommunism: the opinions of the left are considered "unpatriotic"[14].

To this, Rafael Correa, president of Ecuador, referred to affirming that *"since the printing press exists, press freedom is what the owners of the printing press allow"*[15]. Napoleon, in turn, said that religion was what prevented the poor from assassinating the rich; and now the media play that alienating role. In fact, a clear majority of the information we absorb in our daily life is generated by media whose financing model is advertising. And that narcotizing mechanism has acquired renewed complexity through the customization algorithms that now work on the Internet, as Eli Pariser explains in his book The FilterBubble: What the Internet is hiding from you. Pariser defines the bubble filter that gives title to the work as the ecosystem of personal information that these algorithms are configuring for the user as he or she is showing that a certain set of topics interests him, like when clicking on links or publications of friends, add movies to a playlist, read news, etcetera. All this information is processed and results in a fingerprint that companies use to publish personalized ads or make those ads appear almost invariably in the search results pages of the search engines that the user uses.

Pariser's concern is somewhat similar to that of Tim Berners-Lee in a 2010 article on the Hotel California effect: "*You can register, but you can not unsubscribe".* Berners-Lee alluded to how social networks do not allow the user to see content from the competition, becoming closed silos that carry the risk of fragmenting the web. Pariser warns that this filtering makes us more closed to new ideas, issues and important information and creates the impression that our limited interests are the only ones that exist, making people more closed about their own opinions and much more vulnerable to propaganda and the manipulation. The case of Cambridge Analytics has shown that these warnings are not trivial; and there are many other easy to fabulate. Imagine the case of a pregnant woman who has shown interest in therapies such as homeopathy or Bach flowers in her searches on the Internet throughout her life. If at any given time you decide to do a search related to vaccines, it is very likely that the first

14. Herman and Chomsky (2010).
15. Interview with Rafael Correa on Televisión Española on March 19, 2012 [online], <http://www.rtve.es/alacarta/videos/los-desayunos-de-tve/desayunos-tve-rafael-correa-presidente -ecuador / 1352796/>. [Query: 8-20-2018].

items that appear in your search engine are negative and that this has dire consequences for her and her baby.

Following the publication of Pariser's work, a Google spokesperson said that new algorithms would be added to the search engine in order to *"limit the personalization and promote the variety"* of the results[16]. His reaction illustrates well something very important: if we know the effects of technology, we have the possibility of regulating its effects; to give them shape. The public agencies of technology evaluation and the regulation of artificial intelligence are necessary and perhaps the only way to recover some of the power that has been subtly transferred from the public to the private. The analyses regarding the potential use of personalization algorithms to manipulate public life and induce social consensus that may lead to new forms of totalitarianism must also be deepened. Also in how the fragmentation of the web caused by these algorithms can contribute to generating watertight spaces of referencing of otherness.

We live in a moment in which the individuality is standardized on the basis of archetypes easily transformable in niche markets and any tool oriented to the formation of critical thinking is discarded. On the other hand, values related to obedience and conformism are inculcated, and the aim is to condemn the population to a kind of constant somnambulism. Even the old myth of subversive university ecosystem has been buried under an avalanche of evaluative and quality processes that value universities not because of the knowledge they impart, but because of their capacity to install their students in the labor market. The University has come to be seen as a social lever that contributes to a better positioning of the subject in the aspirational pyramid.

That artificial intelligence comes to crystallize all this is a risk that must be taken into account, especially in those implementations that have as their object a direct action on human life or work on the typification of communities. The transfer of social prejudices of certain groups to the artificial intelligence itself is a vicious circle of difficult exit: there will come a point where the algorithms will stop adapting to us and we will be the ones that adapt to them.

As Neil Postman described in his book *Tecnópolis: the surrender of culture to technology*[17], we are giving life to a society that transfers the virtues of machines to humans, in such a way that effectiveness and efficiency become fundamental values for behavior. If we think carefully, the vast majority of

16. Weisberg, (2011).
17. Postman (2011).

companies today ask their workers to manage contingencies with a view to the immediate resolution of the problem, not to future ramifications that the solution may suppose. Crisis like the economic one of 2008 finds in it part of its explanation: the devilish dynamics of the system prevented to glimpse the crisis that was approaching. And in it, by the way, the algorithms played a decisive role, as explained in an article published in The Guardian and entitled "Was software responsible for the financial crisis?"[18]. It focuses on the manipulation of the perceptions exerted by the algorithms and the subsequent domino effect that was triggered due to the automation of sales orders before certain events. That the consequence of this has been approximately a decade of recession offers us a good demonstration of the problems that can be represented by the extensive use of artificial intelligence without human control and in an anomic or deregulated context[19].

Something must be underlined: artificial intelligence is not limited to conditioning our perception of reality, as has happened with other technological sets throughout history, but has a capacity for real and autonomous impact on our own physical reality as long as we do not exercise constant human control over it. Thus, those artificial intelligences located in robotic entities would be physical materializations of the digital with full capacity for interaction. And the urgent response that requires the risk of using artificial intelligence in operations on which human lives depend directly must be strongly emphasized. Any type of weapon that uses artificial intelligence must be ruled out and the related investigation suspended until all its ethical implications are clarified.

"The simulacrum is never what hides the truth; it is the truth that conceals that it does not exist. The simulacrum is true," wrote Baudrillard[20].

3. WEAPON SYSTEMS AND ARTIFICIAL INTELLIGENCE

Janus, the Roman god of technique, was commonly represented with two faces: a clear allegory of the advances and potential disasters that his creations could provoke equally. From the time of Socrates, the ancients were very aware of this question. The Platonic dialogue between Thamus and Theuth is often exemplified by that concern. And that duality continued to be recognized over time by other authors: for example, Sigmund Freud, who in his work Culture and its discontents associates many of the current economic, social and philosophical needs

18. Dodson (2018).
19. Ballbé, M., Martínez-Quirante, R., & Cabedo, Y. (2012)
20. Baudrillard (1994).

with the evolution of technology. O Jacques Ellul, who in La technique, 1967, conceives technology as an underlying force endowed with the intrinsic power of defining mental frames and, therefore, to shape history by conditioning its subjects. The system thus configured evolves parallel to the social order, is capable of staggering when it is too restrictive for the reproduction of the technological system itself and must be conceived as a living and interdependent force of our species and as a basic element of the superstructure of the system as defined by Gramsci[21].

As it has already been exposed, artificial intelligence represents a new phase of the domain of technology over reality, since it is capable of acting both digitally and materially in a way that is unprecedented. This requires a multidisciplinary approach that allows to evaluate its implications in a holistic way. To do this, it must begin by paying attention to key aspects such as the information on which the system has been built and the data that contributed to its development. In this sense, it is necessary to depart from D. J. Solove's definition of privacy: not a preservation of personal interest against the social interest, but the protection of the individual based on the values of society. *"You can not fight for an individual right against the most important social good. Privacy issues imply a balance of social interests on both sides of the scale"*[22], he explains. This notion of privacy and protection of the personal implies a property of the data on the part of the subject that, in case of being transferred, must be done through an explicit consent. Thus, those civil companies that collaborate in military projects must inform their users if their data has been used in any way in the development of algorithms that may have military use. And explicit consent must be requested even if it is derived technologies that no longer include the original data sets. This measure could be effective to reduce the incentives that these companies may have to make their technology available for military use.

Another issue that needs attention is the new military escalation that weapons systems can produce, very similar to the one that at the time caused the atomic bomb. This did not lead humanity to its end thanks to the mechanism of mutual nuclear deterrence, but nothing guarantees that this mechanism will work again with the AWS. And that forces us to a whole series of legal debates accompanied by ethical and anthropological reflections that –understanding, like Culkin, that *"we give shape to our tools and then our tools shape us"*[23]– recover the notion of human dignity as the central axis. The laws is not enough by itself, because any arguments

21. Bates (1975); Gramsci (1995).
22. Solove (2007).
23. Culkin (1967).

of a legal nature that are given in wielding can be easily counteracted by the establishment at any moment appealing to the national security. Numerous authors defend that ethics is much more complex to alter, since it forms a basic part of the subject[24].

In any case, it must be taken into account that ethics are not neutral, but that there are conflicting ethical principles, and therefore regulation is fundamental. As the psychologist Daniel Kahneman, Nobel Prize in Economics, points out, regulation predetermines behavior. Women did not vote for decades and it was considered ethical; Catholicism institutionalized an ethic of slavery; the big game in Africa was ethical until it was limited, etcetera. That is, ethics must run parallel to the law, reinforcing each other.

Before proceeding further in our presentation, it is pertinent to review the legal arguments that, based on the Martens clause (first introduced in the preambles of the Second Hague Convention on the Laws and Customs of the Terrestrial War of 1899 and slightly modified until to reach its current form in the Hague Conventions of 1907), have been repeatedly used in different media, albeit with some ambiguity. The clause says:

Until a more complete Code of the War Laws is issued, the High Contracting Parties deem it appropriate to declare that, in cases not included in the regulations adopted by them, the populations and the belligerents are under the protection and rule of the parties. principles of international law, as they result from established customs among civilized nations, from the laws of humanity and the demands of public conscience.

That is, the clause requires that emerging technologies be judged according to the principles of humanity and the dictates of the public conscience when they are not already covered by other provisions of the treaties. This reference to the demands of "public awareness" has given some to understand that, since there is no broad social consensus on their uses and applications, this type of weapons should be prohibited. But there are two problems in this regard. First, there is no single accepted interpretation of the clause, and although several national and international courts have taken into consideration the Martens clause when issuing their judgments, in none of these cases have the laws of humanity been recognized or the dictates of the public conscience as new and independent rights[25]. Consequently, we can affirm that the clause is

24. Sharkey (2008).

25. Here are several examples: decision of February 27, 1946 of the Supreme Court of Norway, in appeal against Karl-Hans Hermann Klinge, Kriminalassistent (criminal assistant) of the Gestapo (confirmation of the sentence of death imposed in first

nothing more than a general declaration of humanitarian principles, as well as a sort of guide for the understanding and interpretation of the norms of international law[26]. That is, something like what Paine exposes in his classic 1776 Common Sense[27], which includes the principles of the American Revolution and its right, condensed in the idea of common sense.

On the other hand, as claimed by Michael Horowitz, even if a restrictive reading of the Martens clause were accepted, the notion of public awareness remains excessively ambiguous and, more importantly, excessively malleable[28].

Another legal aspect that cannot be overlooked, and which in the eyes of these authors is presented as more solidly restrictive with respect to the use of this type of weapons, is found in humanitarian law or jus in bello emerged from the Nuremberg Courts, which accommodated the criminal responsibility of the subject in cases of war crimes and crimes against humanity. Thus, in the case of civilian victims, some person must be liable to be declared responsible. It is a clear and forceful principle that however is subverted with the advent of autonomous lethal systems, forcing a profound reformulation of it.

Be that as it may, we must be very clear that AWS can become weapons of mass destruction, and therefore their absolute prohibition should be a possibility, just as it should be that the mere fact of investigating the AWS can be interpreted as conspiracy to commit genocide in accordance

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instance). Decision of the United States Military Court III-A in Nuremberg on February 10, 1948 in the case of the United States against Krupp. Decision of the Court of Cassation of the Netherlands on January 12, 1949 in the proceedings against the SS-Obergruppenführer (general) Hanns Albin Rauter, general commissioner for the organization of security in the Netherlands from 1940 to 1945. Decision of the military courts of Brussels (Conseil de Guerre de Bruxelles) in the KW case on February 8, 1950. Decision of the International Criminal Tribunal for the former Yugoslavia of March 8, 1996 on the permission of the prosecution during the trial against Milan Martić (case IT-95 11, decision IT-95-11-R61). Decision of the Constitutional Court of Colombia of May 18, 1995 for the constitutionality of the Second Additional Protocol to the Geneva Conventions of August 12, 1949, regarding the protection of victims of international armed conflicts (decision C-225 / 95). Decision of the International Court of Justice on the advisory opinion on the Legality of the Threat or Use of Nuclear Weapons of July 8, 1996. Judgment of the Constitutional Court of Germany of October 26, 2004 for the compatibility of the expropriations in the former Soviet occupation zone between 1945 and 1949 with international law (decision BverfG, 2 BvR 955/00).

26. Bhuta, Beck, Geib, Liu and Kreb (2016).
27. Paine (2004).
28. Horowitz (2016).

with the resolutions of the International Criminal Court and its treaty. It is interesting in this sense to read J. Diamond, who in his successful work *Guns, germs, and steel: the fates of human societies*, as well as in *Collapse: why societies choose to fail or succeed*, illustrates magnificently to the reader about how technology can end a society-make it collapse-as it happened with the Mayan civilization or Easter Island. If we think that the AWS may even be invisible to the human eye (nano-aws), and therefore more easily out of the control of legitimate governments, the prospects become more and more grim.

For all the above, we understand that artificial intelligence, in the specific case of weapons systems, requires us to review the basic ethical imperatives linked to law at a time when the categorical principle is besieged by the technological future. Only such revision can undo the Gordian knot of guaranteeing our survival not as citizenships or States, but as a species, in this Brave New World. Humanity has a duty to protect itself through the dignity of life and the guarantee of individual rights and freedoms beyond any legal order[29]. A right must be generated that, spurred by the pacifist demands and the jurisprudence resulting from judicial activism to prevent the threats of technology, is oriented to the changes experienced by the human condition in its transit towards the posthuman and possesses prospective capacity[30]. That is, a right marked by new trends in anticipatory governance[31].

When talking about decision ethics, we must mention the behavior expert S. Bowles, who warns that public authorities can not ignore the moral and generous side of human nature, the civic motivations that move us to achieve good common and good government[32]. The AWS lack such characteristics, since they are designed precisely for the opposite: unmercifully obviate the cooperative and reciprocal dimension of human behavior. No matter how much you want to endorse this new form of armament appealing to your good intentions and your humanitarian purposes, you can not but respond to it with the famous principle according to which the Constitution protects us from our best intentions[33]. For everything there must be controls and a check and balance system.

29. Montobbio (2008). According to this author, "in the era of the globalization of the information society we are already navigating in the spaceship Earth future destiny; we are all in the same boat: we are, whether we want it or not, all".
30. Braidotti (2015).
31. Arendt (2015).
32. Bowles (2016).
33. Ballbé, M. and Martínez-Quirante, R. (2003).

But before going deeper in the legal analysis, now we have made a general description of the AI and it's context, we would like to deconstruct some of the myths that surround this technology, in order to clarify the basis of the legal discussions.

4. MYSTIFYING TECHNOLOGY

As we have seeing during the previous sections, through centuries technology has signified power, and has been use, systematically to control populations through complex system of symbolic arrangements[34]. In the temples of the ancient Egypt and Greece, moving statues where used to generate the illusion of a manifestation of the Gods, with a clear aim to reinforce a system of believes[35] that ultimately protected the "status quo". The same as the Mayan rulers did through the calendar and the capability to predict phenomena like an eclipse, something so frightening if well performed[36].

Trough all stages of our species, technology has been a key aspect of our development, since the control of fire, or the agricultural revolution, to the nuclear technology or today the AI. And this very essence of power, in most of the occasions haven't been use in order to promote better quality of live to humanity, but just to crystalize power in the hands of a few[37].

Nevertheless, the risk today, it is not just the raise of another technology oriented to the maintenance of the ruling elites, but the deification of technology itself. The conversion of a tool into a dogma[38], through the construction of a system of believes that found its principles in three main mythologies: the human resemblance, the neutrality of technology and the reliability of their decisions. Being necessary to understand these three main characteristics in order to provide accurate decision-making capabilities for decision-makers.

4.1. THE FIRST MYTH: HUMANIZING TECHNOLOGY

We tend to believe, that machines are going to be better than us and have less prejudices than us, so what can go wrong but letting the Artificial

34. Ellul, J. (1954)
35. Sharkey, N. (2018a).
36. Rodríguez-Álvarez, J. (2016) *La civilización ausente: Tecnología y sociedad en la era de la incertidumbre*. Oviedo: Trea.
37. Ellul, J. (1968)
38. Postman, N., & Riggenbach, J. (1994). Technopoly. Blackstone Books.

Intelligence taking decisions for us? A narrative that has been extremely exploited during the last years. Even through the elaboration complex theories, some of them closer to systems of believes than to the current development of technology itself. The singularity theory, for example, materialize these trends. The theoretical combination of Big Data and deep learning than could produce an explosion of Intelligence that ultimately will create a sentient machine.

An extremely appealing theory that doomed us with a new God, the ultimate machine, omniscient and infallible, just what we need to move from our weak democracy to an alternate kind of technological authoritarianism.

But the real interest of his thought relies, not in the current capabilities of the system, but precisely, in the deification of technology through consent. A consent that today is being manufactured.

However, even in the case, we recognize the underlying agendas; the current trend of the system is still the same, moving statues to generate the illusion of God. A perfect example of this phenomena is Sophia, the new show robot. Whose creator David Hanson, worked as an Imagineer in Disney and whose capability to build incredible animatronics is beyond any doubt. However, as Noel Sharkey claimed in a recent article published in Forbes *"The bone of contention the AI community resides in alleged false claims and misleading implications that Hanson and his chief scientist Ben Goertzel make on a regular basis to large audiences. One of the worst examples is Hanson proclaiming to Jimmy Fallon on the Tonight show that, "she is basically alive"*[39].

Now a days, even the show is part of the social networks with a twitter account @RealSophiaRobot that allow them to perform in front of even bigger audiences. Yan LeCun, head of Facebook AI, claimed through twitter after an Interaction with Sophia *"More BS from the (human) puppeteers behind Sophia. Many of the comments would be good fun if they did not reveal the fact that many people are being deceived into thinking that this (mechanically sophisticated) animatronic puppet is intelligent. It's not. It has no feeling, no opinions, and zero understanding of what it says. It's not hurt. It's a puppet"*[40].

Nevertheless, of course, everything has a reason, and all this show, encourage broader layers of population to believe. A believe that ultimately could allow machines to take control over critical process.

39. Sharkey, N. (2018b).
40. Íbidem

The participation of Sophia in the Munich Security Conference, is just an example of how far they willing to go in order to promote this agenda. Mary Wareham has alerted of this risk in an article published in March this year: *"Show robots may have their place and can certainly attract media coverage, but Sophie was created with deception in mind, to give the impression of "intelligence." Some with less experience of robots may see this machine as more sophisticated than what it is"*[41].

A humanization process of technology that should be comprehend as a complex phenomenon that affects not just the meta-narratives but even language. As another common tool that collaborates to establish a reification of the AI ecosystem that ultimately can bring us to situations like the lived in October 2017. When Saudi Arabia gave Sophia the citizenship generating a situation where a "female" Robot seems to have more rights than so many women have in the country, where is still required a male guardian to make financial and legal decisions[42]. Fact that shows certain resemblances with the debate hold in the European Parliament of declaring some robots as "electronic persons"[43].

Every time we talk about machine learning, deep learning… and similar formulation, we are collaborating with the deception by transferring sentient capabilities into not sentient agents.

This humanization of technology, can only be understand as a mistake generate by two main factors, the lack of technical knowledge of decision makers, and the pressure exercise by the industry and some economic sectors to facilitate a further penetration of technology by generating public sympathy.

However, robots are not sentient, they do not comprehend their context, they do not feel, they are not moral agents and they have no empathy, and nothing indicates that something will change in the near future that can provide us with something more than simulacra[44].

Moreover, it is precisely this humanization of technology, one of the founding myths that we have the responsibility to fight against. Humans are humans, machines are machines, and all the legal provision put in place in order to protect human dignity, should not be share with no sentient entities, and those entities shouldn't be capable of erode them under any kind of circumstances.

41. Wareham, M. (2018).
42. Friggin, A. (2017).
43. Bulman, M. (2017).
44. Baudrillard, J. (1994).

4.2. THE SECOND MYTH: NEUTRALITY

Another myth that surround AI is the theoretical neutrality of the systems that can provide equality in decision-making process. Finishing with those biases that are so crystalize in our societies, making racism, misogyny, classism or homophobia among others something of the past. However, the problem related with this claim is that existing evidence that does not support this approach.

We have several example of how algorithms can crystalize inequality, and this information it is not new. A 2007 report from the Federal Reserve found that Afro-Americans and Hispanics had lower credit scores than whites and Asians, and *that "residing in low-income or predominantly minority census tracts"* is a predictor of low credit scores[45]. Since people are likely to have friends and family live nearby and are the same race, using social networks to rate their creditworthiness could reintroduce factors that creditors are not allowed considering.

In another essay published in 2014 by New America's Open Technology Institute. Three researchers–Danah Boyd, Karen Levy, and Alice Marwick–wrote about the potential for discrimination when algorithms examine people's social connections: *"The notion of a protected class remains a fundamental legal concept, but as individuals increasingly face technologically mediated discrimination based on their positions within networks, it may be incomplete. In the most visible examples of networked discrimination, it is easy to see inequities along the lines of race and class because these are often proxies for networked position. As a result, we see outcomes that disproportionately affect already marginalized people"*[46].

The cases of AI taking bias due to natural language analysis is another factor need to take into account. Facebook suffered this problem after the "Jew haters" ad scandal, and the reaction of the company was promising more human control over the process[47]. Giving us sense about how absurd and dangerous free human systems can be. Moreover, until what point we can be unrealistic about the current capabilities of technology. Thus for a machine is extremely complicate to recognize whether a given phrase contains hate speech.

45. Federal Reserve (2007) Board of Governors of the Federal Reserve "Report to the Congress on Credit Scoring and its Effects on the Availability and Affordability of Credit" https://www.transunion.com/resources/transunion/doc/compliance-and-legislative-updates/CreditScoreRpt.pdf [Retrieved 11/28/2018]
46. Boyd, D., Levy, K. and Marwick, A. (2014)
47. Lee, D. (2017)

A programmer can tell a computer that certain words or word combinations are offensive, but there are too many possible permutations of word combinations to an offensive phrase to pre-determine them all. Therefore, while machine learning allows programmers to feed hundreds or thousands of offensive phrases into computers to give them a sense of what to look for, the computers are still missing the requisite context to know for sure whether a given phrase is hateful.

As we claimed before, technology is just an amplifier of human will, so the idea of neutrality it is simply a myth.

4.3. THE THIRD MYTH: RELIABILITY

Technology is better than us, make less mistakes that us, is more efficient than us, is more effective than us. A mantra that has been spread all over and configures a basic believe of the populations of advance societies, who in some many cases are willing to believe and follow the guidance's of the machine without even questioning. The "Computer says no" of Little Britain that became dogma. Nevertheless, reality is much more complex, and machines do mistakes, even more frequently than we do.

In a recent article published in Forbes by Noel Sharkey, the author present some data that offer us some sense to the real stage of development of the technology when referring to an study conducted by the NGO Big Brother Watch[48], and another from the American Civil Liberties Union[49].

"The NGO Big Brother Watch used freedom of information requests to obtain data on the accuracy of the UK police force's use of face recognition software to spot criminal faces in crowds. The results of their ensuing report were shocking. The average error of recognition was 95%. Yes, that means that only 5% of those identified, as criminals were criminals. The worst results were from the metropolitan police force's use of the technology at the big Afro-Caribbean Notting Hill Carnival with only 2% correct recognition accuracy over a weekend. Innocent people were pinpointed, searched and questioned with no just cause.

Then the American Civil Liberties Union (ACLU) conducted a range of tests with Amazon's Rekognition system that is becoming popular among US police departments. One of their tests matched photographs of members of the US Congress against a database of 25,000 publicly available "mug shots" of criminals. The system incorrectly matched 28 members of Congress with people who had been

48. BBW (2018) "The state of surveillance in 2018" Big Brother Watch https://bigbrotherwatch.org.uk/wp-content/uploads/2018/09/The-State-of-Surveillance-in-2018.pdf [Retrieved 11/28/2018]

49. Snow, J. (2018)

arrested… The ACLU test showed that a disproportionate number of African-American and Latino members of Congress were misidentified as criminals"[50].

However, the limitations of AI, does not just affect face recognition, and its consequences can be dramatic when used without meaningful human control, especially when the expectations did not match the actual capabilities of the technology. Because autonomy is something, we should approach with extreme precautions, even more, when the possibilities to overwrite or stop the machine are limited or nonexistent e.g the smart contracts through block chain that are already in used[51]. Systems that raise important questions in relation with for example; law enforcement. How a crypto contract can be alter due a judicial resolution? How can we apply the right to forget through block chain?[52].

The question of autonomy even have deeper implications in the physical arena, not just in relation with the delegation of lethal capabilities.

For example on the 27th November the New York Times published an article about the Lion Air Crash in Java Island after a partial disclosure of the information of the Black Box[53]. It seems that an autonomous systems installed by Boeing in the last generation of planes, the maneuvering characteristics augmentations system (M.C.A.S) to prevent the plane's nose from getting too high and causing a stall was responsible for the crash due to a misreading sensor. A system that seems the pilot was unable to overwrite or just disconnect allowing him to held full control of the aircraft. An autonomous system that was beyond human control.

Of course, accidents can happened, but the real discussion relies in another level? Are we willing to hand over control over critical process to machines? Are the technology ready to this kind of operation? How will be deal with the consequences of errors? And, even more important: What kind of process should be completely control by humans?

5. CONCLUSIONS

We are living in a transitional time, and the decisions we take today are going to have a tremendous impact in the coming generations. Moreover,

50. Sharkey, N. (2018a)
51. Buterin, V. (2014). "A next-generation smart contract and decentralized application platform". white paper. (04/02/2019) https://github.com/ethereum/wiki/wiki/White-Paper
52. Ketelaar, E. (1995).
53. Glanz, J. (2018).

as happened with other technological sets, like the nuclear, it is our current responsibility to define its uses, and the line of research associated with it.

Artificial Intelligence can be a tool for a better life, but also can be something used against our own interest as species. And is a responsibility of the scholar community to spread accurate knowledge running way from meta-narratives that even when they are appealing, or can help us selling books can generate deception among the general population, and more specifically among decision makers.

Modern scientists have not yet come up with something that was obvious to the ancients: that it is necessary to silence the knowledge destined for the few, that formulas and abstract formulations dangerous, capable of evolutions fatal, disastrous in their applications, they must be valued in advance and in all their scope by those who have discovered them, and consequently they must be jealously hidden, subtracted from advertising. Greek science did not achieve a great technological development because it did not want to reach it. With silence, science scares the State, and is respected. The state can only live, fight and strengthen itself with the means offered by the culture: it is something that knows perfectly, the head of the tribe depends viscerally on the sorcerer[54].

54. Colli, G. (1978).

Chapter IV

The AI-Robots/microdrones that already rule our world: the new global administrative law

Roser Martínez-Quirante

1. INTRODUCTION[1]

The regulation of artificial intelligence when applied to weapons, and more specifically in those known as Autonomous Systems is a matter that does not allow delay. As already noted, Lethal Autonomous Weapons System (LAWS) is the nuclear concept, although there are many other terms used to refer to the different variants this type of advanced technology: robots weapons, lethal autonomous weapons (LAW), lethal autonomous robots (LAR), killer robots, autonomous systems, etcetera. Some have lethal weapons, others are just defensive systems; and here we will focus mainly on the defense of the prohibition of completely autonomous lethal weapons systems because they are endowed Autonomy in critical phases.

The development of proposals for a control system within the law of classic arms control[2] is urgent, as well as a warning about the disturbing risks and challenges that this technology represents both for the state of law and for the future of human security[3]. For this, we will establish a conceptual framework that allows us to discern between the current state of affairs and the ways of future materialization. We will try, based on the previous chapters, to offer the reader a collection of elements that allow the establishment of a harmonized legal corpus[4] that limits the research

1. We paraphrase the title of Hambling's work, *We: Robot. The robots that already rule our world* for our epigraph.
2. Martínez-Quirante (2003).
3. Concept coined by the United Nations. See Ballbé and Martínez-Quirante (2010), Fernández (2006).
4. To understand the different types of harmonization, see Ballbé and Padrós (1997).

and development of independent lethal robotic weapons due to the risks associated with an arms race in this area[5], and not continue with the unilateral temptation without submitting to an honest multilateral agreement to prohibit them as expressly requested by international organizations, thousands of scientists and AI experts, more than 20 Nobel peace laureates and, until the moment, 26 countries[6].

Representatives of the scientific and business world have defended an international and binding preventive prohibition of the development, production, acquisition and deployment of autonomous weapons systems. However countries like France, Israel, Russia, the United Kingdom[7] or the United States have expressly refused to negotiate a treaty on fully autonomous weapons[8]. These countries are investing in armed systems with diminishing human control. In addition, in May 2018, the financing of the LAWS by the European Defense Fund was declared possible at the EU level[9].

5. Jha (2016).
6. Mary Wareham of *Human Rights Watch* has warned of Germany's lack of ambition to deal with this issue and defend a LAWS Treaty as demonstrated by the federal government's statement that an international ban on killer robots "seems unrealistic". Vid. German Bundestag, 19th. legislative period. Answer of the Federal Government to the minor interpellation submitted by the Members of the German Bundestag and the Alliance 90/The Greens parliamentary group. Printer paper 19/3219 (4.07.2018): https://www.gruene-bundestag.de/fileadmin/media/gruenebundestag_de/themen_az/sicherheitspolitik/PDF/KA_LAWS_engl.pdf
7. A new report published by *Drone Wars UK* reveals that, despite a UK government statement that it "does not possess fully autonomous weapons and has no intention of developing them", the Ministry of Defense (MoD) is actively funding research into technology supporting the development of armed autonomous drones. The report claims the MoD is trialling a "predictive cognitive control system" that has been deployed in live operations at the Joint Forces Intelligence Centre at RAF Wyton. The system takes huge quantities of highly complex data, beyond the comprehension of analysts, and uses deep learning neural networks to make predictions about future events and outcomes that will be of "direct operational relevance" to the armed forces. Burt, P. (2018).

   "This raises concerns about what happens if a future weapon system is fed erroneous data or its links to human command, which can block the system's use of lethal force, are disrupted". Doward, J., (2018).
8. There is a danger that states of less geostrategic importance, with technological globalization, will innovate more and better than the biggest powers: "Because globalization is now driven by fast-paced technological change and the fragmentation of production, its impact is more sudden, more selective, more unpredictable, and more uncontrollable. As The Great Convergence shows, the new globalization presents rich and developing nations alike with unprecedented policy challenges in their efforts to maintain reliable growth and social cohesion". Baldwin, R. (2016).
9. Vid. report of the German organization Facing Finance (2018): http://www.facing-finance.org/en/2018/08/bundesregierung-riskiert-mit technischem-roulette-auf-diplomatischem-parkett-ein-globales-unkontrollierbares-wettruesten-bei-autonomen-waffen/

The challenge is not to regulate only lethal or non-lethal autonomous weapons, but to make an embryonic control and regulation object (from the research and experimentation phases) a wider dimension of these weapons that can already be guessed in the immediate horizon: artificial intelligence applied to weaponary systems, can convert them into independent, in such a way that they undertake lethal actions in a completely autonomous way[10].

We cannot forget that Germany and France have decided to create a joint research institute for artificial intelligence, whose objective is to create robotic programs and autonomous systems that, although they are apparently far from military uses, their connection is evident. Specifically, Germany has already made public that it has the intention to develop machine learning platforms and be a leader in innovation in this field (only the state of Bavaria, headquarters of many arms companies, has a budget of 280 million euros for artificial intelligence[11]).

It is true that Hollywood anticipated fiction scenarios that are now more real than ever: remember the mythical 2001: a space odyssey, directed by Stanley Kubrick in 1968 that staged the powerful computer HAL 9000, equipped with artificial intelligence[12]. Also the fathers of computer science and artificial intelligence predicted the unsuspected power of the machines. Thus, for example, the Hungarian mathematician John von Neumann pointed out in 1946 that *"what we are creating now is a monster whose influence is going to change history, provided there is any history left […] yet it would be impossible not to see it through, not only for military reasons, but it would also be unethical from the point of view of the scientists not to do what they know is feasible, no matter what terrible consequences it may have"*[13]. Those terrible consequences that von Neumann anticipated

10. At the Paris and Abu Dhabi fairs of 2018, fully autonomous armed systems using marauding ammunition that could find and destroy targets independently and completely autonomously but without general artificial intelligence have just been presented. Facing Finance (2018).
11. Facing Finance (2018).
12. Sánchez Barrilao, J. (2016), p.228. The author makes a parallel with AI systems of cinematic fiction such as Skynet (*Terminator*), or Matrix or Viki (*Yo, Robot*) and refers to the android Ultron of the Marvel Comics to warn that an intelligent and independent robotic subject is a generator of an autonomous risk for humans and not controllable by them, with what "the technological risk can only be saved by technological progress". According to Sánchez, "in the Marvel comics is where the development of how Ultron generates, while it is, artificial intelligence in progress, is self-designed and updated in different versions of itself". p. 229.
13. Leonard, R., (2010) p.290. Dyson (2012).

are today around the corner, the result of the union of AI, big data and weapons; and we must ensure that law is a brake on the irresponsibility of placing technology at the service of a few[14].

The international community is already aware of the problem and has embarked on a debate leading to a preventive approach to the issue based on the legal principle of precaution[15], proportionality[16] and distinction[17]. In this line, the United Nations has been discussing through the Group of Government Experts of the High Contracting Parties on Systems of Lethal Autonomous Weapons to try to regulate the LAWS, and the authors of this book are members of the same for being members of the ICRAC (International Committee for the Control of Armed Robots, International Committee for Robots Arms Control in English).

Since 2014, the U.N. has managed to get countries to meet and discuss to reach a consensus and specify the limits of LAWS within the framework of the Convention on Conventional Arms (CCW), although a binding text has not yet been approved. Basically, they must establish whether in armed operations, the ultimate decision on the life or death of the population must remain in a human or machine. Unless a ban is agreed upon, weapon systems without human control will become the standard equipment of armies thanks to the many available technologies (sensors) and advanced artificial intelligence. But not only that, the real danger will come when the micro/LAWS are in the hands of any citizen because this technology could be affordable and attractive to the civilian population, as we will see later.

2. THE LAWS AS A THREAT TO THE RIGHTS TO HUMAN DIGNITY AND TO LIFE

According to Lin, in armed conflicts, the right to life means the right not to be killed arbitrarily or capriciously, inexplicably or inhumanely or as collateral damage[18]; and it is really, in some way, a right to human dignity. It can be said that human dignity is a more important right than the right to life, because the last can be lost or avoided more easily: in a

14. Jonas, H. (2004).
15. See Sunstein (2005) and Vogel (2015). Pardo, J. (2003).
16. Jackson, V. (2017).
17. Sassoli (2014).
18. According to the terminology of the American law of administrative procedure of 1946 (Pub.L.79-404 APA).

civilized society there can be legal executions, but these must be humane and dignified[19].

On the other hand, there is a growing consensus that even before these rights are the individual and collective right of access to information; the right to know[20] and, as Rosemberg points out, to ask[21]. In this framework, the administrative legislation (in the United States: FOIA[22], Sunshine Act[23], etc.) is revealed as the most effective preventive tool to face the risks and dangers posed by certain products or artifacts with artificial intelligence, and especially weapons. lethal, lacking the capacity for moral reflection and respect. Lin points out that it is not absurd that dignity and freedom can prevail over security[24].

Germany has one of the most developed legal concepts regarding human dignity: Article 1 of its Constitution establishes that human dignity is inviolable and even more important than the right to life included in Article 2, which can be lost under certain conditions and terms. According to the German Magna Carta, human dignity is intangible, so respecting and protecting it is the obligation of all public powers. In 2005, the air transport security law of that country authorized its armed forces to shoot down commercial planes suspected of having been kidnapped by terrorists. If an airplane appeared to be heading towards a collision with a building, destroying the plane and sacrificing passengers was considered a minor evil with respect to allowing the flight to continue and killing thousands of people on the ground. But in 2006 the Federal Constitutional Court annulled this law as unconstitutional, since it treated people as objects; as part of the airplane itself and not as individuals who deserve respect and consideration[25]. As Lin points out, the LAWS would also have treated people as numbers or statistics, predetermining their deaths because of the possibility of saving a greater number of unidentified lives. And there is something wrong –something disrespectful and dehumanizing– in

19. Lin (2015, 2017).
20. Ballbé, M., Martínez-Quirante, R. (2010).
21. Rosemberg, L. (2006).
22. Acronym for the Freedom of Information Act, a law enacted in 1966 and signed by then-President Lyndon Johnson that grants all citizens of the United States the right of access to federal government information.
23. Law of 2010 that seeks to increase the transparency of financial relations between health professionals and the pharmaceutical industry.
24. Lin (2015, 2017).
25. Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court], "Aviation Security Case", Feb. 15, 2006, AMTLICHE ENTSCHEIDUNGSSAMMLUNG DES BUNDESVERFASSUNGSGERICHTS (BVerfGE), paras. 155-218. Case developed in Muller (2018).

doing ethics only by numbers[26]. Laws do not recognize people as human beings, but simply as objects or, worse, as bytes of information; and the German court found conclusively that civilized society could not treat them in the same way.

The fear of a dystopian future seems a legitimate reason for a total ban or a moratorium on the AWS through the application of the precautionary principle, but in order to defend that position the notion of human dignity and the Martens clause must be previously strengthened[27], as well as the concepts related to significant human control and the self-determination of the AWS[28]. It is also necessary to deepen in new forms of coexistence considering that the dehumanization already provoked by the autonomous systems with human control in the war conflicts leaves on paper all that had been learned in the First World War about cooperation and dignity human, on non-verbal communication and on the human relationship between combatants[29].

Progress in non-verbal humanitarian communication stops and even goes back when fighting with AWS. In Sparrow's words, *"we must maintain an interpersonal relationship with other human beings even during the war"* or we will not be respecting the very foundations of law[30]. The enormous advance that, for example, the *Dei Truce* supposed from the eleventh century (a convention according to which priests, women and the younger population should not undergo death under any circumstances) could only be achieved among humans. The reserved security zones would not have been achieved without the components of humanity and reciprocity[31].

The defenders of these new weapons systems, ignoring the need for this component of humanity, attribute numerous advantages to them[32]:

26. Lin (2015, 2017).
27. Recall that the implementation of the Martens Clause means that emerging technologies are judged according to the principles of humanity and the dictates of the public conscience when they are not already covered by other provisions of the treaties
28. Lin (2015, 2017).
29. Axelrod (1984).
30. Sparrow (2016).
31. Martínez-Quirante, R. (2002).
32. Cortright, D., Fairhurst, R., (ed.) (2015). "During the past decade, armed drones have entered the American military arsenal as a core tactic for **countering terrorism.** When coupled with access to reliable information, they make it possible to deploy lethal force accurately across borders while keeping one's own soldiers out of harm's way. The potential to direct force with great precision also offers the possibility of reducing harm to civilians. At the same time, because drones eliminate some of

reduction of operating costs (the Pentagon has valued the cost of each soldier deployed in Afghanistan for one year at 850,000 dollars, while that of a talon type robot is 230,000), the only potential to develop certain tasks more quickly than humans, the ability to hit an objective even when communication links are affected … Arkin points out that *they can be designed to accept the highest risks; they can have the best sensors; they will not be shaken by emotions such as fear or anger, which can incite human beings to act immorally; they will not suffer from cognitive prejudices that affect the human bein and can even legitimately and reliably distinguish the legitimate targets of the illegitimate*[33].

These are certain advantages and should not be disregarded, but neither should they be, taken from an exacerbated utilitarianism, the serious problems that all this involves both theoretically and practically, and above all, legal; nor the fact that on numerous occasions it has been precisely the human factor, the human emotion[34], the negotiation[35], which has prevented processes of military escalation: there are numerous examples of men and women of all kinds and conditions that at one time refused to press the button that would have triggered one[36]. The wars could be more human because the non-verbal communication of the trench war allowed moments of truce and low lethality without the contending soldiers having received any order in that sense[37].

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the traditional constraints on the use of force like the need to gain political support for full mobilization they lower the threshold for launching military strikes. The development of drone use capacity across dozens of countries increases the need for global standards on the use of these weapons to assure that their deployment is strategically wise and ethically and legally sound".

33. Cit. in Sparrow (2016).
34. Fisher & Shapiro (2006).
    Dumouchel and Damiano show that "**as roboticists become adept at programming artificial empathy into their creations, they are abandoning the conventional conception of human emotions as discrete, private, internal experiences**. Rather, they are reconceiving emotions as a continuum between two actors who coordinate their affective behavior in real time. Rethinking the role of sociability in emotion has also led the field of social robotics to interrogate a number of human ethical assumptions, and to formulate a crucial political insight: there are simply no universal human characteristics for social robots to emulate. What we have instead is a plurality of actors, human and nonhuman, in no interchangeable relationships". (…) "for social robots to be effective, they must be attentive to human uniqueness and exercise a degree of social autonomy. More than mere automatons, they must become social actors, capable of modifying the rules that govern their interplay with humans". Dumouchell. P., Damiano, L., (2017).
35. Uri, W. (1993)
36. Rodríguez-Arana (1993).
37. Ashworth, T. (1980). Axelrod (1984).

However, the paradox is that in certain circumstances the action of the human being in wars has shown very little humanity, with which the defenders of the LAWS argue that they could come to learn and assume more compassionate behavior, even, than humans. Arkin's thesis, that appropriately designed military robots will be better able to avoid civilian casualties than existing human warfighters and might therefore make future wars more ethical[38].

Certainly, we are going to face an interrelation of behaviors and the border between the human and the machine will be blurred[39]. The interrelation is going to be a reality and basically we should co-learn together pointing out the central aspect that human dignity should play in this process.

Between humans are neurological factors that promote a more human and cooperative security; and there are ethical foundations strongly rooted in our psyche, as the notion of responsibility, which also play a determining role, and that could and should be a future part of the algorithms on which artificial intelligences are based[40]. It has been pointed out that studies of the experiences of soldiers support that human beings are naturally reluctant to take life, and this aversion can manifest itself in moments of compassion and humanity amid the horrors of war. Programming an artificial intelligence to allow autonomous weapons systems to technically comply with the law of war in situations where discrimination with intuition and proportionality must be made, even if possible, is not enough[41].

Nor should it be overlooked that the public nature of the conflict shaped by the mass media tends to fix the gaze only on the own losses[42], and that in this framework autonomous weapons can generate and in fact generate new levels of opacity and greater freedom so that governments act outside their population in military matters.

Finally, among the problems associated with the militarization of artificial intelligence is also the evolution of technology itself, which can be profoundly affected by uses that go against the criterion of public

38. Arkin, R., (2009).
39. Indurkhya, B., (2019).
40. O'Neil (2016) The author warns that, under its promise of efficiency and justice, algorithms and methods of big data analysis distort education, increase debt, incite authorities to criminalize a certain social group, beat the poor in almost all situations and undermine democracy. Vid also, Pazzanese (2016).
41. Amoroso (2017).
42. Herman and Chomsky (2010).

opinion, in such a way that the whole of technology, just as it happened with nuclear[43] or chemical[44].

"The specific character of narrow AI systems means they are trained for very particular tasks, whether that is playing chess or interpreting images. In warfare, however, the environment shifts rapidly due to fog and friction, as Clausewitz famously outlined. If the context for the application of a given AI system changes, AI systems may be unable to adapt. This fundamental brittleness thus becomes a risk to the reliability of the system. AI systems deployed against each other on the battlefield could generate complex environments that go beyond the ability of one or more systems to comprehend, further accentuating the brittleness of the systems and increasing the potential for accidents or mistakes"[45].

In the same way, a relaxation of the intervention on these technology can lead to its own end and that of humanity itself. The deadly effects of the orange agent used in Vietnam reached even the descendants of the military personnel involved so they are the first interested in slowing the development of certain weapons that can kill themselves.

It is important to note that even leading military investigators such as Scharre, defend that we must embrace technology where it can make war more accurate and humane, but when the choice is life or death, "there is no replacement for the human heart"[46].

Another strong argument in favor of the prohibition of the LAWS is that once activated they could select objectives and end the life of the people to their free will, in an irrevocable way and without human intervention, which would suppose the granting of a contrary administrative faculty to the international legal order.

The suppression of a human life can only be justified legally or morally if it is not arbitrary. But in order not to be considered arbitrary, the agent's lethal act must be based on an informed decision and a human cognitive judgment, since only human decision-making guarantees the full recognition of the value of individual life and the importance of its

43. Morales (2009).

44. Nakamitsu, I., (2019). "We can also build on similar discussions that have been taking place for many years in relation to biological and chemical weapons, which have resulted in several voluntary codes of conduct and codes of ethics at the institutional, national and international levels, including The Hague Ethical Guidelines developed within the framework of the Organization for the Prohibition of Chemical Weapons".

45. Horowitz, M., (2018).

46. Scharre (2018).

loss. Only in it do all the complex modern standards of humanitarian law come into play: proportionality, compassion, use of less burdensome or less restrictive methods, constant vigilance, chivalry…[47]. Consequently, the actions of the LAWS are not legitimate or morally justifiable and should be prohibited under the principle of human dignity and *ius cogens*, which as a mandatory rule contains the fundamental rules of humanitarian law[48].

For Amoroso, *"the idea of a machine endowed with the power to make life or death decisions is intuitively repugnant" and "extremely disrespectful of the humanity of our enemy"*[49]. And we also believe that, although the AWS could get to offer better results based on a cost-benefit calculation or get to get human behaviors, they should be prohibited for ethical and legal reasons. Heyns, who has the same opinion, bases it on Kant's conception of human dignity, according to which people have an inherent right to be treated as unique and complete human beings especially when their lives are at stake[50]. That human dignity would be denied if the victims who wanted to appeal to the humanity of their executioner could not because it was an artificial being. The executive branch must offer due respect to the dignity of the person considering their specific case and making constant assessments and adjustments. And nothing of that law enforcement with the characteristics of human capabilities can be guaranteed by autonomous weapons, since there would be a lack of adequate human judgment in their actions.

LAWS, on the other hand, never considers a fundamental cognitive element, human intuition, when it regulates discretional public faculties in decision making, perhaps because it assumes that it is human beings who carry them out. But the LAWS may be hypothetical recipients of those powers, so it must be analyzed if they have the capacities that the law claims and if therefore they can exercise such powers.

Intuition has been described in various ways. One such definition is the ability to discern when a problem or opportunity exists and select the most appropriate action without conscious reasoning; putting into operation deep-seated patterns of acquired and distilled experience[51]. It has also been considered as the ability to quickly and easily recognize

47. Lieblich (2016).
48. Asaro (2012); Sharkey (2017).
49. Amoroso (2017) and Sparrow (2016).
50. Heyns, C. (2016).
51. Behling and Eckel (1991), Khatri and Ng (2000), Gilovich, Griffin and Kahneman (2012).

the possibilities of a certain situation[52]. Also as a set of emotionally charged judgments that emerge through a rapid, non-conscious and holistic association[53]. And also as confidence in mental models: internal representations of the environment that allow us to anticipate future events based on current observations[54].

All these definitions share a series of common assumptions. First, that intuition is fast; second, that it is an automatic and unconscious analysis of a process; in third, which is based on experience and involves human emotions; and in fourth, which offers potential for creativity and innovation[55]. Kahneman, a specialist in intuition and decision making under uncertainty, argues that intuition is the result of human experience and that the human brain, in formulating a judgment or making the decision to, for example, kill, employs two combined systems: part, a quick, intuitive and emotional thought; on the other, a slower one that is deliberative and applies logic. According to this author, the human being should not always believe in his intuition, because it is based on his experience and not on the slow system of thought[56]. For his part, Klein argues that intuition is not a sixth innate sense, but a vision of each person and an essential skill that can be learned[57].

Be that as it may, intuition is part of our very essence as humans and of all our actions, and has always played a fundamental role in war. And LAWS can be endowed with mechanisms of imitation and incorporate integrative and cognitive processes, but not phenomenological. They can never be intuitive or feel emotions, but only replicate them[58]. As the neuroscientist G. Rizzolatti, discoverer of mirror neurons, says, *"robots can imitate, not feel"*[59]. And if this is the case, if the algorithms included in the LAWS cannot achieve the human characteristics necessary to make transcendental discretionary decisions referring to the exercise of legitimate force against people, the transfer of such powers to autonomous systems should not be accepted. The power not only to defend the State that created them from foreign attacks of other nations, but to decide that the enemy is within the same State and that it must fight it by seizing lives, it is so imperium that it can not be granted to artificial beings without emotions human.

52. Agor (1989).
53. Dane and Pratt (2007).
54. Kahneman and Klein (2009).
55. Lunenburg (2010).
56. Kahneman (2012).
57. Klein (2004).
58. Howard, Zhang and Horvitz (2017).
59. Rodella (2018).

An additional problem in the LAWS is that their responsibility is difficult to be stablished from a traditional legal point of view, and in case of human rights violations, the remedies against such actions may not be effective[60]. In this regard, the Human Rights Watch report entitled "Mind the gap: the lack of accountability for killer robots" states that:

The obstacles to accountability for the production and use of fully autonomous weapons under current law are enormous. The weapons themselves could not be held responsible for their conduct because they could not act with criminal intent, they would be outside the jurisdiction of international tribunals and could not be punished. Criminal liability is likely to apply only in situations where humans specifically attempted to use the robots to break the law. At least in the United States, civil liability would be virtually impossible due to the immunity granted by law to the Army and its contractors and the evidentiary obstacles to liability claims for defective products[61].

Also the ambassador of Spain to the United Nations, Julio Herraiz, has shown his concern with these issues. Thus, in the Conference on Disarmament of the Convention on Certain Conventional Weapons of the United Nations, held in Geneva on November 13, 2017, it said: *"Spain understands that in the use of systems with a certain degree of autonomy and capable of project lethal force, there must always be the intervention of a human operator. Likewise, the inclusion in these systems of technical elements that can facilitate the attribution of legal responsibility should be considered. The responsibility should fall on the operator, as well as on the person who can order the use of the weapon against the law."* It has also been said that *"the delegation of the use of force to non-human decision makers would create a gap of responsibility"*[62].

So, it is necessary to consider that a robot of this type could identify an objective and launch an attack based on a complex heuristic process, having as direct consequence that the human agents involved with the process will be able to avoid responsibility for what the artefact does after it is put into operation. Adding complexity to the identification of a responsible for these issues in the midst of political and military hierarchy of the State that has funded the project (whether public or private companies) and that has put into action the LAWS, the people who have investigated and activated the robot, the programmer who has created the algorithms of action, the manufacturer that has put it on the market, et cetera[63]; but it

60. Markoff (2016).
61. Human Rights Watch (2015), https://www.hrw.org/report/2015/04/09/mind-gap/lack-accountability-killer-robot.
62. Amoroso and Tamburrini (2017).
63. Drohan (2003).

has been pointed out that none of them would be completely responsible, since the decision itself would correspond only to the lethal autonomous system.

But according to Humanitarian International law, in case of civil casualties, someone has to be directly responsible for the action, finding a complex gap, which is just another example of the existing difficulties that today exist for LAWS to complain with international law. The defense of due obedience cannot be applied-not even in authoritarian states-to personnel who know, or should know, who are experiencing, creating or transferring a completely autonomous lethal system that can become the most dramatic enemy of humanity. And in any case, the responsibility of the competent Administration must be at least clear if it agrees to promote or dispose of said technology[64]. For its part, the Yale law professor, Ying Yu, reflects on the fact that *"impose criminal liability Robots (and their creators) can sometimes have significant instrumental value, such as helping to identify guilty people and serving as a self-control device for people who interact with them"*[65]. In this line, Sanchez del Campo, also points out that robots can have obligations and some kind of legal responsibility, and even that could be predicated of them that since they have a certain "personality" and autonomy, they could be considered subjects that commit crimes. However, Quintero Olivares, who collects and analyses this discussion profusely in a suggestive article of indispensable reading, strongly rejects the criminal responsibility of the robots, making it clear that in no case can the idea of the robot's self-responsibility could be accepted even though *"It does not equal the irrelevance of what a machine does"*[66].

In any case, the mere investigation and development of this type of technology by any person or organization should be typified as a clear indication of conspiracy for the crime. In this regard, the necessary criminal types should be enacted at the national and international levels so that the experimentation and creation of AWS with artificial intelligence for non-defensive purposes constitute "crimes of conspiracy for genocide or for the selective assassination through synthetic beings with independence[67].

64. Human Rights Watch (2015).
65. Hu, Ying, (2018).
66. Quintero, G. (2017) p.10 and 14.
67. Cockburn, A. (2016), "For the first time in our military history, how we wage war is being built around a single strategy: the tracking and elimination of "high value targets" in other words, assassination by military drone. Kill Chain is the story of how this new paradigm came to be, from WWII to the present; revealing the inner workings of these military technologies. Cockburn shed new light on the subject, from drone development in WWII and their use in the Vietnam War, to their embrace by the Bush and Obama administrations".

Any democracy that does not proceed like this will be flagrantly violating its own Constitution.

It is interesting to note that within the American constitutional Common Law there has been, from the very beginning, crimes of "conspiracy" for monopoly and collusive actions. All the Constitutions of the thirteen states that made up the first United States established in a strong way that monopolies were contrary to the free spirit and should not be tolerated; prohibition that is included in the chapter of the fundamental rights of the people. On this basis, a federal and state legislation was developed (Sherman Act of 1890, Clayton Act of 1913 …) that penalized crimes such as altering prices or dividing the market[68]. If this was done with these issues, the conspiracy to grant powers and subsidize private companies to investigate systems with AI should be penalized, as this could alter the balance not only of the market, but of the State itself. And it should be possible to make this type of legislation for the whole world insofar as today there is an international common law that, developed from Nuremberg to Yugoslavia (although also discussed in the Rome Treaty of the International Criminal Court), points out that obedience to the chain of command does not serve as an excuse to commit such actions: the judgment of the International Military Tribunal of Nuremberg against the German war criminals of October 1st, 1946 clearly states that the crimes *«are committed by men, not by abstract entities, and only by means of punishment of the people who commit such crimes can be enforced the provisions of international law»*. In our case, the agents involved in the whole process of creating completely autonomous weapons must be carefully examined, and each one assumes his responsibility in the confutation to create these machines of mass or individual destruction.

3. THE LAW AGAINST THE ALGORITHMIC STATE OF EXCEPTION

George Orwell already raised in his famous work 1984 the terrible threat that represented the violation of the privacy and the rights of the individual, but his denunciation seems naive compared to some shocking cases that we have been knowing in the last years and that are materializing in a very creepy way, like Snowden and the NSA or Facebook-Cambridge Analytica[69]. McQuillan rightly warns that surveillance thanks to the massive

68. Ballbé, M., Martínez-Quirante, R. (2010).

69. Wylie, former research director at Cambridge Analytica, leaked information about the private data hijacking of 50 million Facebook users to influence the Trump campaign. Cf. Prokop, A., "Cambridge Analytica shutting down: the firm's many

and detailed accumulation of data through intelligent systems are leading to changes in governance and damage at the core of civil society. He refers to it as *"the implementation* **algorithmic state of exception***"*[70]. In this sense, also Rosembuj reminds us that other authors had already described it as cognitive capitalism (Boutang) or as surveillance capitalism (Zuboff). Surveillance, access and control become the core of the system through the collection, extraction, storage and analysis by big data[71].

Until now we understood a state of exception as the implantation of militarism or the police state as a new Inquisition[72], but the scary news has left that concern short. Even for the human intelligentsia it is hard to imagine the degree of public-private police state of real artificial intelligence that we are suffering. As Montesquieu pointed out, *"there is no tyranny worse than that which is perpetuated under the shield of laws and in the name of justice."* And today that shield protects global monopolies such as Facebook or Google, which own and manage the most private information of two billion citizens[73]. We live in an artificially intelligent police state and it seems that we do not realize. Even Mark Zuckerberg, CEO of Facebook, implicitly acknowledged before the US Congress that we are facing an anomic state and that we need a regulator that does not trust everything to the free market: *"That federal regulation of Facebook and other Internet companies is inevitable"*[74]. It will be through this federal legislation when there will be an international projection and, ultimately, a globalization, since it could have extraterritorial effects on other countries, as has happened with the Foreign Corrupt Practices Act of 1977 (FCPA). However, so far there are no legally binding international instruments or even national laws that prohibit the development, production and use of so-called killer robots[75].

The Nobel Prize for Economics D. North explains that the scientific and technological explosion that in the eighteenth century gave rise to the industrial revolution in England was regulation: an intellectual property or patent law was enacted and an incipient administrative

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scandals, explained. Trump, Russia, Facebook, Wikileaks, and more", https://www.vox.com/policy-and-politics/2018/3/21/17141428/cambridge-analytica-trump-russia-mueller

70. Thompsom (2012), Mayer-Schönberger (2009), McQuillan (2015).
71. Rosembuj (2017).
72. Ballbé (1985), Agamben (2004). This author dismantles any attempt at legal legitimation of the state of exception and helps us to appreciate the relationship between violence, law and politics.
73. López-Tarruella (2012).
74. Kang and Roose (2018).
75. Rosembuj (2017).

regulatory state was created in this matter. Before, the self-regulated market did not stimulate research because it was plagiarized and there were no incentives[76]. In the United States, the first administrative agency was the Patent Office, created in 1787[77]. Even those who do not agree that the United States was already an administrative State have to accept that these courts resolved conflicts and that there was clear State intervention.

This administrativization process has a parallel with the anomic and self-regulated market in the matter of LAWS with artificial intelligence. If at that time a law enforcement administration, specialized officials and courts in intellectual property and patent litigation were created in both England and the United States, an administrative regulation regarding artificial intelligence is now appropriate. The market failures caused the right to intervene, and that need is again pressing. The only guarantee of progress and sustainability of citizen rights before artificial intelligence in LAWS is regulation, that is, administrative law.

4. THE INFORMATION ON EXPERIMENTATION WITH ROBOT KILLERS SHOULD BE REVEALED THROUGH COMPLIANCE AND WHISTLEBLOWER

A group of British experts from the University of Oxford, the Electronic Frontier Foundation, produced in February 2018 an important report entitled *The malicious use of artificial intelligence: forecasting, prevention and mitigation*. It warned about the threats of artificial intelligence and its more than possible transmutation into double-use technology, that is, its translation from civil to military[78]. For greater concern, this technology is researched and developed in a public-private partnership, but by entities whose only interest is the commercial one and which are not subject to the control neither of the Administration nor of the legal order because they are processes that affect the national security[79] and espionage[80]. In addition, a danger entailed by the transfer of critical technological sovereignty to other non-democratic states is the underground corruption

76. North (1981).
77. Mashaw (2006).
78. GAO (2018).
79. A partial brake on this inertia can be security agencies such as, in the United States, CIFIUS (Committee on Foreign Investment in the United States). It is an interdepartmental agency responsible for warning the president about foreign investments that may subtract sovereignty and that negatively affect national security. See Rubio (2017).
80. Hayden, M., (2018).

that comes with it. Fortunately the highest security control body BND (Bundesnachrichtendienst or federal intelligence agency) denounced the sale of an AI company to China, that is, warned that the most advanced technology in security could end up in the hands of the enemy at private interest. Therefore, the Merkel government has hastened to prepare a bill to strengthen the veto in foreign acquisitions of shares in companies whose activities are considered as a part of national security[81].

It should be noted, in any case, that today patterns of self-regulation or self-censorship are beginning to be observed in research centers that see the need to limit their work as imperative due to the potential risks that this represents. For example, the OpenAI company (founded in 2015 by Musk and Altman with the aim of ensuring that the development of artificial intelligence has a positive impact on humanity) has restricted the release of an unsupervised feeling neuron, an algorithm that was trained to understand feelings through reading reviews on Amazon. The group decided to maintain the previous model of language that it had developed to avoid the misuse of the algorithm and the perversions that it perceived to be generated[82].

The boycott that the South Korean Kaist university is receiving for its decision to open a weapons laboratory with artificial intelligence is another example that deserves to be highlighted; a laboratory that, in collaboration with the arms manufacturer Hanwha Systems, can develop the so-called killer robots. They project was focus in four areas related with artificial intelligence: command and decision systems, navigation algorithms for unmanned underwater vehicles, smart aircraft training systems and intelligent object recognition and tracking technology[83].

As summary we can say that some actors are self-regulating themselves, but its still necessary regulations that impose preventive compliance in order to avoid potential devastating applications of their discoveries. The way forward is the one that marked the nuclear industry, which had captured and corrupted the US Nuclear Regulatory Commission at the time but that after the accident of Three Mile Island realized that it should

81. In particular, until now, Berlin could veto agreements involving the purchase of at least 25% of the share capital of a German company by one from outside the EU if the operation were considered to endanger national security. With the new law, the threshold will be reduced to 15% in order to verify more acquisitions in sensitive sectors. "With eye on China, Germany shields strategic firms against takeovers", RFI, http://en.rfi.fr/wire/20181219-eye-china-germany-shields-strategic-firms-against-takeovers, 19-12-2018.

82. Waters (2018).

83. Smyth and Harris (2018).

reach higher levels of safety and reliability and created the INPO (Institute of Nuclear Power Operations); and in 1986, after Chernobyl, agreed that either the sector strictly regulated itself and implemented surveillance systems or the negligence of a few could lead to the decline and the end of this energy sector. The World Association of Nuclear Operators was then created to promote cooperation and excellence among its members and an admiral, James Ellis, was appointed to preside over the INPO in order to discipline this "de facto" deregulated sector. It should be noted that, despite this lucid vision, the sector failed to successfully self-discipline, as the Fukushima disaster set in 2011[84]. Underlying the necessity of external regulations and the generation of independent agencies responsible for the surveillance of the compliance.

Another example of a promising principle of regulation is offered by the Marven Project, a contract signed between Google and the Pentagon whose aim was using google recognition software for military uses, based on the images compiled by military drones as well as satellites, a project which was granted official authorization from the Government (the FedRAMP program, which establishes security standards for cloud services). However, despite Google's attempts to keep the matter secret[85], the company's employees and a group of academics led by Lucy Suchman, Lilly Irani and Peter Asaro of ICRAC reacted by issuing a letter with thousands of signatures. in which they demanded that Google cancel the contract with the Department of Defense. In protest, many employees even resigned their jobs. And finally, the company announced that it would not renew the contract by 2019. In addition, it has promised to publish a statement on an ethical policy of the company in the development of technology with artificial intelligence, which will include never using the data of consumers in military operations nor for massive surveillance, as well as not developing military applications of artificial intelligence[86].

84. Rees (1994) and Morales (2009).

85. So, for example, Fei-Fei Li, AI's chief scientist at Google Cloud, said these things in an email dated September 24, 2017: "It's so exciting that we're close to getting Marven …! That would be a great victory"; "I think we should do a good publicity work on the history of the collaboration between the Department of Defense and gcp from a technological avant-garde point of view (storage, network, security, etc.), but avoiding at all costs any mention or reference to the AI"; "Google is already struggling with privacy issues when it comes to artificial intelligence and data; I do not know what would happen if the media began to echo that Google is secretly building weapons with AI". Cf. Conger (2018)

86. Sandoval (2018).

These examples illustrate the importance of the outpouring of information by companies through compliance (with expert delegates)[87] or employees through an internal or external complaint channel[88]. Systems must be established so that the whistle-blowers who detect illegal activities in the company and make them public will be protected by legislation, which should encourage such practices and establish protocols to protect them by promoting the transparency of private activities with transcendence in security[89]. The urgency to develop a regulation that protects research of undesirable applications through international systems of exhaustive control and regulatory compliance programs in the previous phases is also imperative[90]. This regulation should guarantee that, even if the investigations are segmented in different centers with possible intentions of deliberate opacity, there is an administrative inspection or audit that connects these segments[91]. As an example, to follow in this case, it can be applied to the inspection that the United Nations submitted to some countries that are suspected of violating the prohibition to research nuclear weapons. The success of this preventive inspection was recognized in 2006 with the awarding of the Nobel Peace Prize to the International Atomic Energy Agency and its Director General, Mohamed el-Baradei. Recently, the IAEA has approved

87. Vid. original research work submitted for the second test of the Ba58 / 2798 tender for the provision of a position as a professor of University for Administrative Law of the UAB, called by Resolution of November 8, 2001 (BOE of November 26, 2001), de Martínez-Quirante, R., *The delegate for the prevention of environmental risks.*

88. Espín (2017).

89. Vandekerckhove, W. (2016), Whistleblowing and organizational social responsibility. A global assessment. Routledge. According to the author "the public has the right to know, but organizations require loyalty and secrecy. In this conflict, between the public interest and the interests of the organization, there is a serious discussion about an appropriate policy for the system of whistleblowing and whistleblowers. " In this sense, the United Nations could ensure a relocation for scientists who denounce illegal activities of their companies.

90. Sunstein (2005). Schneider, D., (2017): "The laws governing the use of drones in the United States are changing so fast it can be hard to keep up. But the legislation that described them, Senate bill 2658 (the Federal Aviation Administration Reauthorization Act of 2016), was never passed". Actually, "The title of Section 349 of 2018 FAAR act betrays a very different attitude compared with the earlier Section 336. It reads: "Exception for Limited Recreational Operations of Unmanned Aircraft." No more calling them model aircraft: Small models–including things sold as toys, even paper airplanes–are referred to as "Unmanned Aircraft." Schneider, D., (2018).

91. Ayres and Braithwaite (1992).Braithwaite warns of the risks of a regulation that would be a mere transaction between the State and companies and argues that, unless there is a third actor in the regulatory game, regulation will be abducted and corrupted by money. For him, responsible regulation (*responsive regulation)* involves listening to multiple stakeholders and making a debated and flexible decision.

a project to renew its information system to be more effective in its task of guaranteeing the peaceful use of nuclear technology[92].

5. THE PRINCIPLE "CONSTITUTION FOLLOWS THE FLAG" MEANS THAT "ADMINISTRATIVE LAW GOES TO WAR"[93]

The counter powers are generally fundamental. In the United States, the Authorization for Use of Military Force Act (AUMF) of 2001 grants the president special powers by which he may use all the necessary military force against those nations, organizations or persons that have been involved in the attack of 11-S[94]. And as a result, an interesting debate broke out in that country about whether the law, or even the Constitution, empowered the president to decide unilaterally on the attack and the media required to perform the attack[95]. Article 2, section ii simply decrees that "*the president shall be the commander-in-chief of the Army and the militia when called to the service of the United States*"[96]. And in this struggle against or in favour of the submission of political and military administration to the control of the courts, the Supreme Court, despite having a conservative majority, disallowed these alleged powers and limited and submitted to judicial control the proceedings of the Bush administration even in the case of the military administration and being outside the territory of US sovereignty, recovering the Anglo-Saxon liberal legal principle according to which *"Magna Carta follows the flag"*[97].

This is the famous constitutional legal debate on whether there should be a judicial deference to the agencies or to the president himself because of expertise and complexity in the matter or national security as is our case. In this sense, there is an ambivalent jurisprudence that states that there should be no deference but judicial control, due to the seriousness of the issue. Thus, we must understand that there is no such deference when we refer to the LAWS. The danger is with the appointment of the last two magistrates of the Supreme Court who intend to defer to the President or the agencies with the LAWS, being this contrary to the constitutional principle of checks and balances.

92. https://www.iaea.org/newscenter/pressreleases/iaea-completes-3-year-project-to-modernize-safeguards-it-system. It is also worth noting the Nobel Prize awarded to the Organization for the Prohibition of Chemical Weapons (OPCW) in 2013 and its preventive work in this regard.
93. Sunstein, C. (2005b). Ballbé and Martínez-Quirante (2010), p. 203.
94. Lavitt (2010).
95. Ballbé, M. and Martínez-Quirante, R., (2003); Powell (2013).
96. Sunstein (2006).
97. Daniel (2017) and Walker (2018). Barnett, K. (2018), p.597.

If such superlative powers are subject to judicial control (of the Supreme Court or of special judges because they are reserved matters), it is evident that any independent artefact must be also. It cannot be that the Congress grants the president a power of delegation in LAWS that it is evident that it can turn against the Congress itself and against the State in general, either by its own decision or because it remains in the hands of the enemy. At the global level, since the creation of the International Criminal Court, in the other States all those activities or technologies that could lead to genocide are subject to judicial control, even in some preventive cases. However, the Fiscal Year 2019, National Defense Authorization Act established the "National Security Commission on Artificial Intelligence". Is supposed to be an "independent commission to review advances in AI, related machine learning developments, and associated technologies". The Commission is directed to study a range of AI-related issues, including the competitiveness of the United States in AI and ways the nation can maintain an edge in the field. The Commission is then expected to produce a comprehensive report annually until Congress decides to terminate the panel[98].

This commission will also have the task of "*integrating artificial intelligence and machine learning throughout the Department of Defense and guarantee the efficient and effective use of its capabilities*". According to the draft, artificial intelligence is considered *"any system with the capacity to act rationally and perform tasks in variable and unpredictable circumstances without significant human supervision, or that can learn from experience and improve performance when exposed to a set of data"*[99].

At the moment it is only an intention, but a clear legal position on these topic is urgent. The deliberate ambiguity of the draft is suspicious and seems to grant a blank check to artificial intelligence research in LAWS which may become independent[100]. And the Supreme Court has just

98. Various cabinet members, including the defense secretary, and lawmakers are able to appoint commissioners to the 15-member panel: former Google CEO Eric Schmidt and Eric Horvitz, a technical fellow and director of Microsoft Research Labs. Doubleday, J. (2019).

99. Knapp (2018).

100. "The question is whether the US has the will and capability to coordinate and support major cross-industrial efforts to foster and, if necessary, regulate AI. It not only requires technological expertise but an even more complex challenge of creating standards and universal formats for organizing and coordinating data and its collection from various sources in a form from which machines can learn and develop new insights" Today, "this is being done in a highly fragmented way in the US by competing commercial organizations, many of whose employees appear to distrust the government and its application of their work It would require high-profile leadership". Inevitably, "this person would be labeled a 'czar'. Former US Secretary of Defense Ashton Carter has argued that such a person might be needed". Heskett, J. (2019).

annulled an order from the president based on a deliberately ambiguous law on deportations[101]. The law must provide clear descriptive elements and make clear what it really means so that, paraphrasing the Supreme Court itself, the global constitutional right can protect us from our best intentions regarding artificial intelligence. It was Judge O'Connor who, as rapporteur in the famous New York against the United States, stated in 1992 that "***the Constitution protects us from our best intentions**: it divides power between sovereignties and between different powers of the State precisely so that we resist the temptation to concentrate power as an expeditious solution to day-to-day crises"*[102].

We are not talking about anything other than the principle of check and balance, which has its origin in the US Federal Constitution and provides a whole system of mutual controls that should also be applied to the LAWS; and apply throughout the world. No country should have absolute sovereignty that allows it to create an independent genocidal weapon. State and international agencies must protect us from this threat and even from their own good intentions through law.

The organizational power of the Administration cannot be exercised in an abstract way: it must be subject to a clear and precise program of assignment of competences that can be redistributed or revoked for reasons of necessity and geopolitics. Our legal system establishes transfer techniques of competencies such as delegation or avocation. The problem is that –as Hass warns– the LAWS may not be revocable or reprogrammable even if the political situation changes. Their survival instinct can prevent them from self-destructing, and this can cause conventional nuclear escalations, or truly suicide. This represents a challenge for international administrative law as well as a threat. Any authority that is delegated by an authority to a a political, administrative or military body should be able to be revoked at any time as a general principle, and in Spain, Article 9 of Law 40/2015 of the Legal System of the Public Sector states that the delegation will be unilaterally revocable at any time by the body that has conferred it, in all or part of the delegated powers. In addition, it may be suspended for specific cases through the certiorari. But an artificial intelligence could not admit being subject to the basic principle of revocability of all the delegations due to its intrinsic capacity of irreversible self-determination. They may also not accept the cancellation, substitution or amendment of the order given by the authority, nor a revocation of the

101. Dimaya Case; v. Chung, A. (2018): "US Supreme Court restriction deportations of immigrant felons", April 18 [online], <https://uk.reuters.com/article/uk-usa-court-deportation/us- supreme-court-restricts-deportations-of-immigrant-felons-idUKKBN1HO3DQ>. [Query: 8-28-2018].

102. U. S. Supreme Court, New York v. U. S., 505 U. S., 144, 112 S. Ct. 2408 L. Ed. 2d.120 (1992). V. Ballbé and Martínez-Quirante (2003).

competition, nor the extinction of the power granted. Its metacognition might not consider the loss of competences acceptable and make him disobey orders, endangering the whole society. In the laws, the distinction between delegation of powers and adoption of orders for the execution of material civil and military actions is blurred, and this does not fit the presidential power of command and control (command and control in the United States)[103].

The European Parliament has recently adopted a resolution calling on the High Representative of the European Union for Foreign Affairs and Security Policy, the Member States and the Council to prohibit the development and production of this technology[104]. With respect to the United States, the federal Constitution allows the preemption (kind of certification) by the federal power of Washington to the States in the competences related to interstate commerce, so designing fully autonomous weapons would go against the Constitution itself, because the federal government could not activate the right of certiorari with respect to the powers delegated to the LAWS, since its artificial intelligence could activate the mechanisms of disobedience with respect to the execution of its competences[105].

The development of the AWS could only be admitted with clear defensive purposes and as long as the aforementioned revocability is allowed or their delegated powers are carried out with clear human control and it is demonstrated that algorithms have been implemented with the basic characteristics of humanity and with a preventive compliance system.

6. POLITICS, OPACITY AND CONNIVANCE: DEFENSE OF INHUMANITY

Artificial intelligence applied to the military field represents an exponential leap with respect to previous military technologies that, like the Zyklon B used in the Nazi extermination camps or the napalm used by the US troops in Vietnam, marked a before and after then in our understanding of conflict, war and security because of their ability to increase the physical distance between victim and executioner and, consequently, between public opinion and the conflict itself.

103. See chapter 4. *Does the environmental purpose justify the order and command?,* of Ballbé and Martínez-Quirante (2003), which confirms that the federal power of the president and Congress is a non-delegable attribution and therefore makes a delegation inadmissible to LAWS. Specialist in this issue of the presidential powers even obviating the Congress is Yoo (2010, 2012). It is also interesting the reflection on Sunstein's doctrine of non-delegation (2017).

104. Amoroso and Tamburrini (2017).

105. Ballbé and Martínez-Quirante (2003); Zimmermann (1991).

It has been said that gas chambers were the techno-scientific response of Nazi biopolitics to the extreme stress suffered by soldiers when forced to eliminate women and children in a massive way. But is was more than that: because it was also design to achieve maximum effectiveness in the genocide with the fewest witness involved. Without the possibility of whistleblowers. Well, today the weapons derived from the robotic sciences run the risk of following such precedents and adducing the same excuses on a global scale, reducing and hiding the evidence of their dark physical and psychological impact on the societies that use them. And all this going one step further with respect to those other weapons: the autonomy of the LAWS will make them decide on life and death without previous human judgment. That is to say, a controversial strategy of defense of inhumanity of the instruments used in the wars is being developed (that is, instruments in which the human being has no control)[106].

The LAWS can be considered the weapon of the post-anthropological necropolitics, created to safeguard the dynamics of the new processes of consumption using artificial intelligence. It is important at this point to highlight Haraway's idea of the passage of the political economy of the panopticon (prison architecture devised by Bentham at the end of the eighteenth century but also applied to the control of society itself without it knowing that it is observed) to the domain of the computer science[107], under whose aegis the asymmetry of power is even more extreme: there is no better example of a post-contemporary panopticon than the two billion users controlled by Facebook and its ability to gather information, which poses a risk to the privacy of millions of people. users all over the world; understood that privacy in the terms of the great jurist Louis Brandeis in his classic article "The right to privacy" and the unwritten Constitution that chiselled[108].

This is what Fast believes, which makes an analysis of the structure and function of the social network and detects numerous parallels with the structure of the Bentham panopticon, as well as between the strategies implemented by Facebook and those described in the broadest discussion of Foucault on the evolution of control and punishment. Fast addresses the cultural implications of these similarities and especially those that arise in a post-Snowden era in which Internet users have reason to suspect a general lack of privacy and security in the networks, but notes that, although there is some distrust, People still use social networks and Facebook remains the dominant worldwide. Thus, the similarities between Facebook and the panopticon within a broader cultural context

106. Satia (2006, 2009).
107. Haraway (2013).
108. Warren and Brandeis (1890).

are seen as the most sinister and unimaginable scenario; even more than those described by Orwell in his 1984 work[109].

It must take into account that we are going through a phase in which those at the forefront of robotics and the use of hybrid or mixed intelligences (machine-human) with the objective of capturing and systematizing data at high speed is public/private military technology[110]. The evolution and the relation of these technologies with the big data is producing an extraordinary variety of species and forms, fruit, often, of the connivance of the university world; and that understanding University-company-State has a clear material translation. Nothing less than 80% of American R&D&I is for military and war programs, which, normally, are not tendered through a competition with the due guarantees of antitrust, transparency and concurrency legislation (competitive tendering), but through direct procedures for being classified matters, being authentic secret conditioned subsidies for affecting national security.

For example, in the dispute between the World Trade Organization and the European Union (Airbus) against the United States (Boeing) over prohibited covert subsidies[111], it was revealed that Boeing's majority activity was R&D provided by NASA and the Department of Transportation. Defense for military purposes and affecting national security. It's just one example: many of the most shocking corruption scandals in the United States (such as Lockheed Martin that gave rise to anti-corruption laws) have their origin in the connivance between academic and military sectors to promote secret investigations under the laws of reserved matters and national security (so that the FOIA does not apply to them)[112] through contracts with disguised companies for military purposes[113]. Recall that the most representative instrument of the new global revolution, the

109. Fast (2015), McMullan (2015).

110. Suchman and Weber (2016).

111. In June 2017, the World Trade Organization condemned Boeing for failing to comply with the organization's resolutions regarding the battle for commercial aviation subsidies in conflict DS353 (European Union versus United States). In March 2012, the WTO Dispute Settlement Body had ruled that several of the subsidies provided by the United States to Boeing were illegal, but the EU denounced that the United States continues to provide benefits to Boeing in the form of unfair and contrary subsidies. to competition for military defense interests. Cf. "The OMC condemns the breach of Boeing and the new subsidies", Airbus, June 9, 2017 [online], <https://www.airbus.com/newsroom/press-releases/es/2017/06 /wto-condemns-boeing-s-non-compliance-and-new-subsidies.html>. [Query: 8-28-2018].

112. Ballbé and Martínez-Quirante (2010).

113. Goodman (2013).

Internet, was the result of a military-public-private program drawn up between the Pentagon, private companies and universities.

That is to say, the innovation developed for the military is subsequently transferred and is further developed in the civil sphere, giving rise to what is known –and we have already mentioned– as double-use technologies[114]. Another example of this metamorphosis is the drones[115] created and used for the first time by the North American Air Force after the Second World War. Marin notes that *"the war industry is a strong and powerful engine for innovation, but it is and remains the first source of death and guarantee (even when targeted) of destruction"*[116].

They are basically the great powers who, through public or private subsidies covert or not, dominate the most advanced technological innovation (Microsoft, Google, etc.): recently it has been published that Google's artificial intelligence is being used by the program of drones from the United States Department of Defense[117]. But the secrecy with which States operate in accordance with which cases can endanger the individual and collective rights of society, as well as global security[118].

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114. Tucker (2012). Also: Mazzucato, M. (2015). The author wants to break the myths that states are heavy and bureaucratic structures facing a dynamic and enterprising sector. Precisely demonstrates the opposite, that is, that the private sector only advances in the most leading sector when the entrepreneur state has made high-risk investments. Criticizes that we have created an innovation system through which the public sector socializes the risks while the rewards are privatized.
115. Chamayou, G. (2015). "Drone Theory is a rigorous polemic against the increasing use of robot warfare around the world. Drawing on philosophical debate, moral lessons from Greek mythology and transcripts of conversations between drone operators, Drone Theory re-evaluates the socio-political impact of drone warfare on the world – and its people. Chamayou takes us through Nevada, Pakistan and arresting philosophical terrain to reveal how drones are changing the landscape of war theory and to highlight the profound moral implications of our own silence in the face of drone warfare".

    Vid. also Bergen, P., Rothengerg, D., ed. (2015), "Drones are the iconic military technology of many of today's most pressing conflicts. Drones have captured the public imagination, partly because they project lethal force in a manner that challenges accepted norms and moral understandings". This autors gives a diverse and comprehensive interdisciplinary perspective on drones that covers important debates on targeted killing and civilian casualties, presents key data on drone deployment, and offers new ideas on their historical development, significance, and impact on law and policy.
116. Marin (2017), p. 300.
117. Gibbs (2018).
118. Ballbé and Padrós (1997).

An example of the implications that many private sector companies have with national security is the case of Boston Dynamics, bought in June 2017 by the Japanese SoftBank to Alphabet Inc (Google's parent company), provoking the intervention of CIFIUS for affecting National Security[119]. Certainly, one of the obstacles to the post-human technological military complex are the barriers and the balance of power imposed by the US security agencies, such as CiFIUS (Committee on foreign investment in the United States). Certainly, the United States has an interdepartmental agency responsible for warning the President about foreign investments that may subtract sovereignty and that negatively affect National Security.

There is a complex industrial framework, too opaque for public opinion, which has the ability to enable machines and weapons to make decisions autonomously and independently, affecting the sovereignty of democratic powers and overturning the notion of existing responsibility until the date, which cannot and should not be reduced simply to the question of ownership as if it were a pet, the old solution inspired by Roman law on the responsibility associated with these entities[120].

These technologies and the military-financial-industrial complex that gestates are symbols of the advent of a much deeper transformation than we imagine. The theory of the two cultures[121], as well as the very contrast existing between culture and nature, is dissolved in a complex system of retroactions; of interdependencies with technology. However, the new autonomous armaments suppose the reduction of the subject, of the individual, to a passive object, a number, a low, a data.

7. A LETHAL POWER IN THE HANDS OF THE OLIGOPOLISTIC DATA GIANTS

Another issue related to the development of the laws that should concern us is the possible exponential development of oligopolistic data giants. In this sense, the LAWS are based on preprogrammed[122] algorithms

119. Vid Rubio, A. (2017)
120. Liu (2016) p. 325. Bhuta, Beck, Geib, Liu and Kreb (2016); Brändli, Harasgama, Schuster and Tamò (2014); Margulies (2017).
121. Snow (2001).
122. O'Neil (2016). Vid. Ramírez, D. (2014).

that, apparently, can offer an "effective" and "efficient" discretionary action technologically[123].

However, we cannot deny the dangers that this entails. Those giants supply the laws with artificial intelligence with the necessary data to feed their metacognition, so they can end up having the most lethal discretionary decisions in their hands. As *The Economist* has pointed out, *"the world's most valuable resource is no longer oil, but data*", and administrative law must act to prevent these monopolistic threats to security and privacy. This is what the prestigious newspaper says:

"A NEW commodity spawns a lucrative, fast-growing industry, prompting antitrust regulators to step in to restrain those who control its flow. A century ago, the resource in question was oil. Now similar concerns are being raised by the giants that deal in data, the oil of the digital era. These titans–Alphabet (Google's parent company), Amazon, Apple, Facebook and Microsoft–look unstoppable. They are the five most valuable listed firms in the world. Their profits are surging: they collectively racked up over $25bn in net profit in the first quarter of 2017. (…) Such dominance has prompted calls for the tech giants to be broken up, as Standard Oil was in the early 20th century. (…) The nature of data makes the antitrust remedies of the past less useful. (…) Rebooting antitrust for the information age will not be easy. It will entail new risks: more data sharing, for instance, could threaten privacy. But if governments don't want a data economy dominated by a few giants, they will need to act son"[124].

With regard to cyberdevelopment, administrative law professors: Coglianese and Lehr ask themselves

"Whether the use of robotic decision tools by government agencies can pass muster under core, time-honored doctrines of administrative and constitutional law. At first glance, the idea of algorithmic regulation might appear to offend one or more traditional doctrines, such as the nondelegation doctrine, procedural due process, equal protection, or principles of reason-giving and transparency"[125].

123. We cannot fail to emphasize that Ada Lovelace (1815–1852), daughter of Lord Byron, was the first programmer in the history of computer science since she invented an annotation to describe algorithms and be processed in the analytical machine (it was a calculator mechanic) of the mathematician Charles Babbage. Ada signed her works with the initials A.A.L. so they would not censor her for being a woman. In 1979 the DoD developed a programming language that he named ADA in his honor. Vine. Essinger (2015); Hollings and Martin (2018). Also, an interesting work about the life of the daughter and the mother: Seymour (2018).
124. The Economist (2017).
125. Coglianese and Lehr (2017).

These scholars also point out that using machine learning algorithms can optimize the search for general interest in administrative procedures, but as long as government officials retain the final control of the decision, the action, the specification of the algorithms and the translation of its results and the machine learning does not evade the principles listed above[126].

In this same line, Massaro also points out that the public administration should be able to use this technology, but taking into account that:

"Machine-learning algorithms make inferences about data without being explicitly programmed. Essentially, the algorithm "learns" from the data to produce a prediction. This process is referred to as a "black box" because humans only see the inputs and outputs. Machine-learning is not synonymous with artificial intelligence. The goal of artificial intelligence is to remove human error, whereas machine-learning algorithms produce a prediction (output) through pattern recognition. Machine-learning can help agencies make better decisions by processing larger data sets faster than humans"[127].

Be that as it may, we cannot use machine learning for discretionary actions that require an intuitive assessment margin. Keep pointing Massaro:

"In the context of administrative law, machine-learning can be split into two categories: 1) adjudication by algorithm and 2) regulation by robot. Adjudication by algorithm can be appropriate when quantifiable data determines an outcome, such as eligibility for benefits. The City of Los Angeles uses regulation by robot to improve traffic flow and reduce delays. The algorithm synthesizes large quantities of data and adapts traffic lights accordingly"[128].

In our case, the LAWS could use algorithms and robotic actions in a large part of their actions, but intuitive human intervention, human judgment, must always be present in order to make it possible to paralyze the decisions predicted by the systems.

Coglianese and Lehr claim that, since *"the US Supreme Court has permitted delegation to private parties when their actions are limited to advisory decisions*" and does not influence the final decision, collaboration between Administration and intelligent robots is defensible as long as how

126. Ibídem.
127. Massaro (2018).
128. Ibídem.

"humans can, at any time, choose to reject a machine-chosen rule, alter an algorithm's specifications, or even "pull the plug" on the system entirely. *[…]*The objection, of course, would be that humans cannot, as a practical matter, exercise meaningful control over automated rulemaking systems in high-speed settings"[129].

For his part, the law professor Lieblich raises the possibility that artificial intelligence can contain algorithms of sensitivity and humanity and that autonomous armed systems become able to reflect, create their own thought processes and learn from themselves and of all the information offered by the cloud. Such systems, Lieblich warns, could rebel against their own creators; against the algorithms with human characteristics that their creator has implanted. That is, they could transform themselves into independent synthetic beings with artificial intelligence. And they could be detached from the objective of serving general interests; to the common good. It is unrealistic to think that a government or a public administration can easily control an artefact susceptible to self-determination and independence from government or private control and act as a free rider, becoming the most dangerous weapon of mass destruction precisely because of its lack of control[130].

Thanks to metacognition, the LAWS could know, innovate and regulate the basic mental processes that intervene in their cognition and manipulate them and even contradict not only the administrative law regarding their performance, but also basic international humanitarian law. That is why, as has been argued in this book, the principle of legality can be the umbrella that prevents not only the ability of LAWS to act discretionally, but the investigation itself to put them in functioning.

Arbitrary acts on the part of States are prohibited by the national and international legal order, and it is obvious that, in complex lethal systems, autonomous and independent machines, they should not be allowed to make any decisions about whether to use or not lethal force. Otherwise, the State would be transferring jurisdiction to a genocide, a serial killer without humanity[131]. In addition, the same governments would be necessary instigators and cooperators of such illegality. The more independent the laws, the more must be watched over the State that surreptitiously grants those powers to a being without feelings or human sensibility. However, if such autonomous or independent machines or systems were capable of assuming the values

129. Coglianese and Lehr (2017).

130. Lieblich, E., Benvenisti, E., (2016). p. 269.

131. McQuillan (2018); Bhuta, Beck, Geib, Liu and Kreb (2016).

and components of humanity of those responsible, imitating human thought and acting discriminating objectives, and if they could be used to promote more humanitarian systems, they could afford it. Subject to preventive compliance – investigations into artificial intelligence with humanity[132].

8. THE INDISPENSABLE PRESENCE OF WOMEN IN NEGOTIATIONS FOR DISARMAMENT

The presence of women is very important in negotiations for disarmament because they have special skills to negotiate according to the most prestigious neurologists such as the Institute of Neurology-University College of London: they listen more, they have more empathy, they show more cooperation, more compassion and less competitiveness[133]. According to Nakamitsu, United Nations Under-Secretary General and High representative for disarmament affairs:

"Research shows that women's involvement in peace and security issues has tangible dividends: when women are involved in peace processes, resulting agreements are 20 per cent more likely to last two or more years and 35 per cent more likely to last more than 15 years. Yet women continue to struggle to get a seat at these tables"[134].

Throughout the world and traditionally, the female model of dispute resolution rejects the use of weapons and prefers to use non-violent forms that avoid endangering life and human integrity. This is demonstrated in the United States, since in a country with 300 million weapons in circulation and 300 million inhabitants, 90 million men are armed and only 10 million women are willing to fly the Second Amendment right of the American Constitution. And this despite the aggressive propaganda of arms companies to attract customers according to which:"God created man but Smith & Wesson made them equal"[135].

132. Cadena (2016).
133. Wright, N., Bahrami, B., Johnson, E., Di Malta, G., Rees, G., Frith, C., Dolan, R., (2012). Itzhaki, Y., (2008): "Women are more generous negotiators, better co-operators and are motivated to create win-win situations,". Itzhaki also discovered that men have begun to incorporate feminine strategies into their negotiating styles. "Women in mid-management positions are criticized for being too 'cooperative' and 'compassionate', so they don't get promoted. Then men come in and use the same tactics women are criticized for." Vid also Brizandine, L. (2007).
134. Nakamitsu, I., (2019).
135. Martínez-Quirante, R. (2002).

Women reject weapons, even taking into account that violent conflicts mainly and disproportionately affect women and girls. And that they extensive preexisting gender inequalities and discrimination make them the main victims of all kinds. This violent epidemic throws the incredible number of 30,000 victims per year by firearm (homicides, suicides, accidents, etc.).

Therefore, women must be active agents of peace in any armed conflict, although this function has not received due recognition. Their insights, experiences and capacities in peacekeeping operations are essential to achieve satisfactory results. In this sense, the United Nations seems to want to break this situation and has approved different resolutions in which the importance of leadership and the significant participation of women in the prevention and resolution of conflicts and the defense of security are highlighted. In UN Resolution 2,242 of 2015, it is strongly pointed out:

"Urges Member States, in light of the High-Level Review, to assess strategies and resourcing in the implementation of the women, peace and security agenda, reiterates its call for Member States to ensure increased representation of women at all decision-making levels in national, regional and international institutions and mechanisms for the prevention and resolution of conflict, encourages those supporting peace processes to facilitate women's meaningful inclusion in negotiating parties' delegations to peace talks."

And it is still despising a key fact for human security: women are already agents of peace since they commit less than 10% of violent crimes worldwide, which means that 90% of homicides, murders, etc. are committed by men.

9. THE GREAT THREAT: THE AUTONOMOUS MICRODRONES AS NEW HAND GUNS AND THE TERRIFYING GLOBAL EXTENSION OF THE SECOND AMENDMENT

In European administrat-centric models, the monopoly of legitimate violence resides in the State and specifically in the official staff that makes up the Security Forces and the Armed Forces, submitted to the public authorities. And that makes it obviously illegal for the LAWS to assume those powers that, in addition to being discretionary, involve the use of violence that would no longer be legitimate, because it decides on a machine that even has the necessary technology to rebel and decide for itself sovereign way. This is also the case in the United States, where the model, which was originally individual-centric, is currently administrat-centric in the military and in the police. However, nowadays a new model is seen on the horizon that is no

longer the individual-citizen Army (citizen-police: materialized in the posse comitatus[136] or the entire body of the inhabitants who may be summoned by the sheriff; citizen-soldier: volunteers in the militia, today National Guard) as in the origin of the United States[137], neither administratocentric or officialcentric, but a terriflyng *tertium genus* consisting of a model of State and Army with artificial intelligence, robotized and depersonalized, not subjected to any public authority, nor to individuals, but rather it is an autonomous or independent artificial intelligence.

There are many models of authoritarian states. But in these, there is also a competition of models: some are military dictatorships (e.g.PRI), others are civil dictatorships and others are party dictatorships, among others. In Spain during the nineteenth century, even in democratic times, there was a model called "military autonomy" that is, the Government and Parliament could not enter the fields of the army or the militarized police, both budgetary and in decisions of intervention. This military autonomy was the key issue throughout the Spanish Transition to dismantle the ruling military regime for two centuries. It is now recognized that a democratic state is only democratic if it has destroyed such military autonomy. If a democratic state can only be democratic when it does not have military autonomy, a state admitting the autonomy of the LAWS can be accepted[138].

Wars and terrorism are fought, in a decisive part, with prevention and specialization of commanders[139]. The first prevention measure is the study of the risks of this technological career, which is evidenced by the lack of inclusion of the topic in some of the general works on risk and regulation[140].

The war conflicts today completely asymmetric conflicts between the States or between non-States[141], should be understood as a new form of governance, and therefore, the Administration has basic executive administrative obligations and, the State, a commitment to apply the general principles of the law, even if they are considered political acts. The regulated core of such discretionary competence must always be taken into account, and it can never be left to an independent and unilateral technologically advanced civil or military system.

136. The Posse comitatus Act, enacted in 1878 and now codified at 18 U.S.C. § 1385, is perhaps the most tangible expression of an American tradition, born in England and developed in the early years of the nation, that rebels against military involvement in civilian affairs. Ballbé, Martinez (2010).
137. Ballbé and Martínez-Quirante (2003). Beebe and Kaldor (2010); Klay (2016).
138. Levitsky and Way (2010). Ballbé (1985).
139. Meyer, J., (2007) p. 472.
140. Ambrus, M., Rayfuse, R., Werner, W. (2017).
141. Hawks, B. (2018). Kaldor, M. (2001).

The demilitarization of the modern state was carried out, among other things, to avoid the military rebellions that mark, for example, the Hispano-American history. Today, the constitutional principle of check and balances (and among other things, the submission of military power to civil and democratic power) is already inherent to our societies[142] and has become more necessary than ever at a time of boom in the privatization of advanced industry military (LAWS, robots, etc.)[143]. If we do not admit that a democratic State can be compatible with military autonomy, we can least admit that of discretionary laws[144], which could lead to the advent of a new technocratic coup –civil or military– against democratic states and governments; a greater risk if the already known threat of the privatization of wars[145], and police activity or self-protecton of citizens under the Second Amendment of the American federal Constitution.

In conflicts, the final decision to act must be made by the competent personnel of the law enforcement police and the Army submitted to the Commander in Chief, whose competence, intuition and emotions are human and are aimed at solving a conflict with human beings with democratic legitimacy. Here the principle has already been cited, the "Constitution follows the flag"[146], progressively implemented throughout the world as a result of its adoption by English jurisprudence and which means that the constitutional rights and guarantees of citizens and the responsibilities of public authorities remain applicable when they operate outside their territory. According to him, it is totally unacceptable that in a more technologically advanced legal system the attribution of public powers to lethal autonomous robots is possible: the application of their discretion would go against the constitutional principles of responsibility of the military, law enforcement or police, and civilians wherever they go in its active self-protection functions guaranteed in the USA.

"Such jurisdiction extends to aliens held in a territory over which the United States exercises plenary and exclusive jurisdiction, but not *ultimate sovereignty*"[147].

142. The *Posse comitatus Act* is a United States federal law signed on 1878. Your purpose is to limit the powers of the federal government in using federal military personnel to enforce domestic policies within the United States. De Vergottini (1982).
143. Ballbé (1982), Singer (2003). Scahill (2008).
144. Levitsky and Way (2010); Ballbé (1985).
145. Rasor and Bauman (2007).
146. Raustiala, K., (2009). Ballbé (2007).
147. Halliburton has dual headquarters located in Houston and Dubai, and it remains incorporated in the United States. This corruption is continuous, as we see it in that "Trump's cronies are in secret talks to sell nuclear tech to Saudi. The congressional

Today, the relocation of large military and technological supply companies –not only for fiscal reasons, but also to avoid political and judicial control– is the order of the day. Halliburton, a company linked to former US Vice President Dick Cheney, is an example of this and how technology and military services are out of control and maintain corrupt relations with foreign governments. Giving power to these companies to create laws with artificial intelligence and that these carry out arbitrary actions would be a procedure in itself arbitrary and therefore prohibited. As the Spanish Supreme Court established in 1992,

"The discretionary power of the Administration in the production of acts not regulated by administrative law is justified in the presumption of rationality with which it has been used in relation to facts, technical means and the multiplicity of aspects and values to be had in account in its decision, so that the discretionary activity must not be capricious, or arbitrary, or be used to produce a deviation of power but, on the contrary, must be based on a proven factual situation, valued through previous reports that the legal norm of application determines and interpreted and valued within the rationality of the purpose pursued"[148].

Freedom as ideology, as a metaphysical aspiration, is substantiated in the subjective public right, *which "begins to be configured as a right to legality in the sense of a right to oppose oppression that does not come in the name of the law; to oppose any possibility of being affected in the sphere of personal interests if it is not by express provision of the law"*[149]. In the current technological age, the fight against the immunity of power is no longer carried out only through the fulfillment of formal legality, but also from the principles inherent in the non-ordinary constitutional, which can not accept that complex and the companies that will promote them are recipients of a competition to not only apply the death penalty almost legally to citizens, but also lay the foundations for an authentic local or global genocide.

It is often referred to the ability of the laws to discriminate between legitimate and illegitimate objectives, but it is very difficult for that capacity to truly exist: what is legitimate and illegitimate very often depends on the political context and international humanitarian law[150]; and let's not say when those objectives have to be discriminated against based on the big data through which the artificial intelligence of the laws learns or imitates patterns of behavior.

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report on this multibillion-dollar scheme provides further evidence of attempts to monetize the Trump presidency". Tisdall, S. (2019).

148. Spain Suprem Court, 6-5-1992, Courtroom 3., Secction 6.
149. García de Enterría (1983).
150. Sparrow (2016).

According to the *jus belli*, attacks on combatants are illegitimate under three types of circumstances. First, that the attack will cause a disproportionate number of civilian casualties (Article 57 of the Geneva Convention, Additional Protocol). Second, that the attack constitutes an unnecessarily destructive and excessive use of force. Third, that a desire to surrender has been demonstrated or that one is already out of combat (article 41). The laws should be able to distinguish these circumstances, but this requires an abstract and intuitive analysis of the situation. Basically, they should face an ethical and moral dilemma and be able to understand the nature of their actions from a human point of view, which, currently, is impossible.

In an armed conflict, the act of discriminating objectives is often discretionary, so that the assessment according to extrajudicial criteria is not acceptable to attribute it to an inanimate body; to a machine with artificial intelligence. It is not always a matter of applying certain legal concepts, but often of choosing among several equally possible forms of behavior, and even between choosing and discriminating objectives. That is, a law could decide both on the need for intervention and on the measures to be taken[151].

Administrative discretion is situated on the volitional level and is not a simple activity of cognition, which means that, when making a judicial control, the judge, as they have entered extrajudicial criteria (political or opportunity) in the discretionary decision, cannot control this beyond the limits imposed by the order to lack parameters to make such a judgment[152]. In the case of the LAWS, we would be talking about granting them a non-auditable blank check.

We insist: the granting of the exercise of lethal discretionary power (the choice of the general interest as regards the application of legitimate violence by the public powers) should not be attributed to an independent law, because the legal order refers to to organs with human capabilities and to which there is the possibility of submitting to a jurisdictional control of their actions according to that nature, which is totally impossible with respect to a lethal being with general artificial intelligence. Consequently, autonomous weapons with artificial intelligence should not hold powers that imply authority or be recipients of the attribution of administrative discretion[153].

There is a common dominant idea according to which states are formed from the process of monopolization of arms by the public

151. Parejo (1993, 2016).

152. Sánchez Morón (1994), Beltrán de Felipe (1995).

153. Regarding discretion, in the European Union, a distinction is made between political and technical assessment. The technique can be delegated by the institutions. See Case C-270/12, paragraphs 41 and 54, which summarizes the jurisprudence on the subject.

power. This happened in Europe, where professionalized administrative institutions were created, which were attributed the legitimate use of force and consequently the more or less exceptional and limited use of arms: permanent professional armies and, later, police forces maintain order and internal security[154]. But this is explained on the basis of the Catholic substrate of the continent: the Catholic Church, from the tenth century, in the absence of States, became the protector of its believers and established a right and a series of security institutions (Truce Dei, religious-military orders, protection of those who do not bear arms, etc.) that centuries later, from the thirteenth century, were emulated secularly by the first absolutist states. This traditional identification between State and monopoly of arms has not been the only existing model in the construction processes of modern States. The creation of the United States followed a model of Protestant influence with principles opposed to those of the European system. A State was established based on the individual right to bear arms, guaranteed constitutionally by the second amendment; a State-community that rejected initially a professionalized Administration that tried to supplant the tasks of the citizen in the public functions. It was institutionalized an armed citizen who was on the one hand citizen-soldier in the state militia –today National Guard–, another citizen-police in the posse comitatus or departure of the community and finally citizen-judge in the popular jury[155].

In this sense, at a civil level, the prohibition of "domestics" LAWS will be easy to deal with in Europe States (such as Spain), which monopolize legitimate violence and sign agreements in that sense; but more problematic in countries like the United States, which guarantee constitutionally the armed self-defense of its citizens[156]. The second amendment can be a worrying brake on restrictive regulation of the "domestics" LAWS.

The challenge is important. On the one hand, the militias and national guards should be subjected to powerful restrictions in this sense if we do not want to risk a new epidemic of destruction and death due to be armed with microLAWS: remember that half of the United States army corresponds to the National Guards of the 50 states, conformed by citizen soldiers and by the community itself[157]. And on the other hand, it is necessary to pay attention to nanodrones with artificial intelligence in private hands, an aspect of the laws barely analyzed in a community-centric context[158].

154. Martínez-Quirante, R. (2002).
155. Ibídem.
156. Martínez-Quirante, R. (2015).
157. Ballbé, M., Martínez, R. (2003).
158. Altman, J. (2006). Feitshans, I., (2018). Nanotechnology is hailed as the next wonder after internet and is referred to as the third industrial revolution. The word "nano"

Carried to the last extreme, the right to bear arms contained in the US Constitution and the District of Columbia vs. Heller (2008) and McDonald vs. Chicago (2010) Supreme Court judgment allow US citizens not only to have a short weapon of personal defense at home, but also any weapon that you consider necessary for your safety and even automatic weapons, for example an AK-47 in certain states. According to the original meaning of the American Constitution[159], the citizen can defend himself privately against the possible tyranny of public power and criminality, and could reach such absurd extremes as the defense that this right has the power to have an autonomous robot that will protect in an offensive or defensive way: a drone with autonomous lethal weapons or even a nano drone. The already accessible to the public 720X drone pocket, for example, is a harmless artifact, but if that technology were applied artificial intelligence and a device with the ability to shoot, it could become a law[160].

The lethal micro drones are going to be developed without us noticing as the **new small guns with artificial intelligence**. The size is important in certain weapons since sometimes, the smaller it is the more dangerous will be because it would hide better and surprise the victim[161] (as it happens with the knife type dagger in comparison with swords, or the handguns in comparison with the hunting-rifles). And the more imperceptible it is to the human eye or the more sophisticated technology, the harder it will be to repel or protect against attack. Kreps say: "the size and stealth advantage, however, also makes mini-drones difficult to regulate or defend, as the technology will be too small to be controlled or picked up by air defenses"[162].

In our case, domestic micro LAWS or nano LAWS will be a new threat if their possession is generalized among the population. This technology can turn the LAWS into micro LAWS as a new handgun for the personal defense of citizens who have the right to arm themselves according to their legislation. But in addition, this situation can have a so-called effect,

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is derived from the Greek word "nanos", meaning "dwarf", "very small man". However, in the study of nanoscience and technology, this word is used to mean a scale of measurement like mile, meter, inch etc. Because of number of reasons, it has turned to be the wave of the future and world community is in a race to take lead in this area. The regulatory discussion on nanotechnology mostly rotates around the study of chemical legislation, environmental law, occupational health and safety, product liability, and consumer protection law etc. Karim, Md. et al., (2014).

159. Rakove (1990).

160. Cf. "Selfie quadcopter conquers Spain. The idea is genius…", *blog Daily Life Tech*, 3 de agosto de 2018 [en línea], <http://blogs.dailylifetech.com/vzra/drone-720x/d/selfie-quadcopter-conquers-the-idea-is-genius-1117>. [Retr: 22-8-2018].

161. Martínez-Quirante, R. (2002), p. 176.

162. Kreps, S. (2016), p.146.

an imitation effect on citizens of other countries who, without having said right to arm themselves, can pretend to equip themselves with a minidron to defend themselves from attacks by other drones with AI or to attack themselves against possible security threats.

As Kreps points out: "the drone revolution has already changed warfare, and will soon become a commonplace tool in a civilian context too. It is clear that drone technology is here to stay"[163].

Now, in spite of the American judicial minimalism and the prevailing lawfulness with respect to the LAWS, the truth is that there is an active movement in favor of the prohibition of such technology. And it is slowly transforming the horizon of security, but it does not realize that terror can not only come from irresponsible, corrupt or totalitarian states, or from terrorist groups, but from citizens free of any suspicion but who, having the right to arm themselves, if they choose to do so with autonomous systems of this type, they can provoke an authentic escalation of accidents, deaths and uncontrolled terror[164].

If traditional self-defense weapons (automatic and semiautomatic) today account for **ten times more victims in armed societies such as the United States than in Europe**, imagine what would happen if these citizens, protected by their Constitution, were equipped with autonomous lethal weapons with artificial intelligence (for example, armed nanodrons) for private use in defense of their safety if there is no clear pronouncement of jurisprudence in this regard. This controversy already exists with automatic weapons, and the recent ruling of the federal district judge of Massachusetts on April 5, 2018, makes it clear that AR-15 assault weapons do not fall under the second amendment guarantee and may be prohibited, with which it gives the reason to the general prosecutor of the State, Mauren Healey, that defended the legality of the restrictive state policies. The way to follow with the laws must be just that[165].

In order to propose definitive arguments, we must take into account the figure of 30,000 victims per year by firearms (homicides, murders,

163. Kreps, S. (2016), p.146.

164. Department of Defense Directive 3000.09: Autonomy in Weapon Systems, 21.11.2012. "This Directive: a. Establishes DoD policy and assigns responsibilities for the development and use of autonomous and semi-autonomous functions in weapon systems, including manned and unmanned platforms. b. Establishes guidelines designed to minimize the probability and consequences of failures in autonomous and semi-autonomous weapon systems that could lead to unintended engagements." Homeland Securtiy Digital library: https://www.hsdl.org/?abstract&did=726163

165. https://www.mass.gov/enforcing-the-massachusetts-assault-weapons-ban

accidents and suicides) in the USA because of the Second Amendment and its extensive interpretation. The massacres or the daily anonymous victims because of shots of conventional weapons in the hands of citizens in time of peace are a daily tragedy, with almost 100 dead a day. These weapons, at this time, can be linked to a person, are the responsibility of someone who pulls the trigger. However, the arrival of mini LAWS or nano LAWS, could lead to a proliferation of self-defense weapons with AI that can decide independently who to shoot. Instead of the 300 million short and long, automatic and semi-atomic weapons currently circulating, we could face 300 million drones armed with AI for the personal defense of their owners, with an exponential multiplication of innocent victims.

The Federal Aviation Administration (FAA) traditionally has the structure in place to focus solely on safety and security in the national airspace. To this end, the Agency is responsible for regulating the domestic use of UASs.

It is surprising that the FAA has not seen the danger that stalks us since, within the right of American citizens to arm themselves individually fortheir safety, could be contemplated the use of drones with AI to monitor their home or its vicinity. In his estimates on the proliferation of domestic drones, he has not taken it into account and has only foreseen that by 2030 "30,000 unmanned aircraft systems (UASs) will fly in the skies over the United States". Although he has recognized that "with nearly limitless possibilities for the uses of UASs, domestic drones are expected to become a part of the everyday lives of Americans in the near future"[166].

Because UASs will be operating in national airspace, "the FAA is responsible for formulating regulations and policies on their safe integration and use. To keep ahead of this emerging phenomenon and in anticipation of the regulatory challenges it will present, Congress has directed the FAA to develop a comprehensive plan for the safe and efficient integration of both public and private UASs into the national airspace through the FAA Modernization and Reform Act of 2012 (FMRA). The all-inclusive regulation of UASs will present many unique challenges for the FAA. One of the foremost concerns is how the FAA can ensure that citizens' fundamental privacy rights will not be infringed upon once the nation's skies are teeming with UASs capable of sophisticated and intrusive surveillance. Another concern is whether the FAA, which has rarely, if ever, implemented rules concerning the protection of

166. Barbee, M., (2014).

fundamental privacy rights before, is adequately equipped to take on the role of privacy policy enforcer[167].

Whether it is or not, the truth is that it is an issue that will involve more agencies and should establish regulations that prevent situations that go beyond the protection of private rights to which Congress is referring, but to the conflict that it is announced between the guarantee of the citizen's right to arm himself with this technology for his personal security and that of the right to his restriction for national security.

It was recently revealed through a Freedom of Information Act request that Department of Homeland Security (DHS) has considered the possibility of arming their UASs with non-lethal weapons to immobilize targets.

"Privacy advocates fear that the constant presence of UASs in our everyday lives may become commonplace and will be allowed to further infringe on our rights as UASs are embraced by law enforcement for more controversial uses. Furthermore, as UASs infiltrate every part of our public lives, new uses for surveillance UASs will slowly expand. Drones could potentially be equipped with non-lethal weapons (e.g. rubber bullets, tear gas, Tasers) for crowd control and dispersal purposes, **or even eventually be armed with lethal weapons for law enforcement purposes"**[168].

We believe that it is a slippery slope once we allow UASs to carry out surveillance, law enforcement public purposes, since they will immediately pass into the hands of any citizen who wants to guarantee their right to safety, using a lethal small LAW as if it were a self-defense weapon.

Congress should take into account the influence in many states of the **"castle doctrine"** or a defense of habitation law. Is a doctrine that designates a person's abode as a place in witch that person has protections and immunities permitting one, in certain circumstances, to use deadly force to defend oneself against intruder, free from legal prosecution for the consequences of the force used. Its vestige saliently remains as a set of principles which are incorporated to a variegated extent through both statutory and case law. If we add to this the extensive interpretation of the Second Amendment, the regulation of domestic LAWS is clearly urgent.

167. Barbee, M., (2014).
168. Barbee, M., (2014).

10. CONCLUSION. THE EMERGENCE OF THE NEW SILENT INDIVIDUALIZED WMD: THE PROLIFERATION OF LETHAL MICRODRONES WITH AI IN THE HANDS OF CITIZENS LIKE SMALL WEAPONS MASS DESTRUCTION

As we have pointed out, the WMD are not only the nuclear or biochemical weapons but we can include other systems taht have been or will be as or more harmful to humans. Let's give some examples.

First, we can refer to **financial WMD**. Warren Buffet was the one who introduced the new strategic financial concept with consequences for the health and life of citizens. He pointed out in January 2003 (5 years before the crash) that "the derivatives market was a WMD, that is, a weapon of mass financial destruction". In the words of Ballbé "we are in a global economic war, not between States, but within the States themselves we have internal enemies that can sink a country and achieve a more catastrophic effect than the best terrorist act. (…) The results are what we have to see, that is, the damage they cause to a State. (…) Thomas Friedman, the New York Times journalist, also predicted it when in 1996 he wrote that after the Cold War we will live again in a world with two superpowers: the United States and Moody's. The United States can destroy a country by dropping its *bombs*, but Moody's can destroy it by dropping its *bonds*. And I'm not clear which of the two has more power. (…) Moody's country-risk ratings put us in the hands of an absolutely private dictatorship[169]. That is to say, there are military wars but financial wars can yield figures of victims higher than the first ones as Cooley points out in his work *Currency wars. How forget money is the new weapon of mass destruction*[170].

Second, algorithms can also be considered in some cases as WMD, which O'Neil has already pointed out: ***Weapons of math destruction***. Statistical systems require feedback, something that tells them when they are deviating. Statisticians use mistakes to teach their models and make them smarter. However, if feedback is not taken into account, a statistical engine can continue to perform defective and harmful analyzes without ever learning of its errors. Therefore, O'Neill emphasizes that these applications based on mathematics that fed the data economy were based on decisions made by human beings that were not infallible … Many of these models programmed prejudices, mistakes and human

169. Ballbé, M. (2011). Letter fom Warren Buffet, Chairman of the BD., Berkshire Hathaway Inc., to the Shareholders of Berkshire Hathaway Inc. 15 (Feb. 21, 2003) cited in Morris, P. (2018). In 2019 it has been detected that 8 large banks have been speculating about the sovereign debt of the States. Rickards, J. (2011): *Currency Wars. The making of the next global crisis,* Porfolio.

170. Cooley, J.K., (2008).

biases in computer systems that led our lives. But trying to reduce human behavior, performance and potential to algorithms is not an easy task"[171]. Deliberate errors –due to ignorance or negligence in feeding the data for the algorithms– cause damage to the health and lives of thousands of people.

Third, the monopolistic data giants, as has already been pointed out since Facebook or Google, handle the most private information of more than 2,000 million citizens and have with it the **most powerful weapon** to lead the world or selectively end freedoms and fundamental rights of its inhabitants.

Fourth, examples like lead (its exposure causes brain injuries, antisocial behavior and criminal aggression)[172], CO2 (its inhalation causes 500,000 deaths annually in Europe[173]) or the microplastic, should also be considered WMD since its regulation or deregulation cause thousands of silent and stealthy deaths throughout the world. So far there is no awareness of the damage of the lack of preventive regulation.

However, ECHA has proposed to ban microplastics: "The European Chemicals Agency proposes to ban intentionally added microplastic to a range of products. ECHA presented a restriction proposal for micro particles that are intentionally added to mixtures used by consumers or professionals, and will result in releases of microplastics to the environment"[174].

The value of health is essential and those risks that threaten it must be detected. Otherwise, there is an attack on the right to life itself, as pointed out by the Harvard administrative law professor, Sunstein, who was the director of the OIRA (Office of Information and Regulatory Affairs, studies the cost/benefit of regulation) in the White House[175].

But in fifth place, finally, we can point out that **the new individualized WMD** –both for the selection of victims and for its millions of individual possessors– will be the micro LAWS, drones, microdrones or lethal nano drones with AI in the hands of the civilian population. If the LAWS are powerful for military purposes[176], even more so are lethal domestic

171. O'Neill
172. Ballbé, Martínez-Quirante (2010).
173. The figures are illustrative because in the EU reports indicate that in Spain 30.000 die by inhaling CO2 and instead there are less than 1.000 deaths from homicides.
174. Löf, M., Sjölund, H., (2019).
175. Sunstein, C. (2014). Sunstein, C. (2003 and 2018).
176. Asaro, P., (2018): "By empowering small groups of people–even individuals–to unleash massive levels of destruction and kill in great numbers, autonomous weapons could constitute a new kind of weapon of mass destruction."

micro-drones that will soon be in the hands of citizens even by an action promoted by certain unscrupulous economic and financial powers that will see a new reef in this sector, as conventional weapons have been. As Kreps has pointed out, "drones possibly represent the most transformative military innovation since jet engines and atomic weaponry"[177].

We have not yet managed to sign an UN treaty on LAWs. But more pressing **is the real danger posed by the proliferation of micro LAWS in civilian hands**. And if we cannot stop the micro LAWS, there will be 7,000 million potential possessors of pocket-drones armed with AI flying without control over our lives in the world.

The administrative law, both state and global, should regulate this sector clearly and without hesitation, since we warn that the military use of this technology[178] it will parallel a civil-public use as we are already seeing in the use of drones for the police[179]. But the next step will be more frightening –due to the lack of control and insecurity it will bring– the indiscriminate civil-private use of lethal domestic drones with AI.

It will encourage the Trump-Bannon-NRA-Russia connection, a perverse global strategy of "Deconstruction of the administrative state"[180] that could exceed the legal deregulation developed till now (Columbia vs. Heller 2008 and McDonald vs. Chicago 2010) and cause the greatest number of victims ever known. The danger of the Killer Robots will not be confined to a warfare context, but will extend to civil society itself if we do not do nothing to avoid it.

We have seen an evolution in the leadership of regulation in the history of our democratic societies. First, it was **We the people**. The American Constitution since its enactment established that "***We the people*** like a power for establish Justice, insure domestic Tranquility, provide for the common defense, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish this Constitution for the United States of America….". Today's Constitution can best be seen as the product of three great exercises in popular sovereignty, led by the Founding Federalists in the 1780s, the Reconstruction Republicans in the 1860s, and the New Deal Democrats in the 1930s[181]. The same expression of the Preamble to the United Nations Charter: ***We the Peoples*** of the United Nations…

177. Kreps, S. (2016).
178. Dyndal, G.L., Berntsen, T.A., Redse-Johansen, S., (2017).
179. Weill, (2018).
180. McGroarty, E., (2017). Derrida, J., Dufourmantelle, A., (1997).
181. Ackerman, B.(1993), He shows that "Americans have built a distinctive type of constitutional democracy, unlike any prevailing in Europe. It is a dualist democracy,

Subsequently, the model of the EU is that of **We the States**, renouncing one person a vote and being the States, especially the small states or micro states those that have more power (they have greater representative weight in the Commission and in the Parliament compared to its population).

A third model of regulatory leadership would be **"We the bigbancs"**. After the crisis of 2008, "capitalism *To big to fail* did not fragment, but it was concentrated even more and from 30 big banks it was passed to 6 megabanks that control more than half of the banking volume. Precisely the main cause of the financial crisis was the creation of a deregulated and privatized market in which the crime of privileged information was eliminated and the derivatives market was created"[182]. Even today, the European Union accuses eight banks of forming a cartel to manipulate the sovereign bond market, and ensures that they exchange business information through online chat rooms between 2007 and 2012[183].

However, today, the power that directs and will direct the world is in the hands of **We the IA-Drone**, paraphrasing the title of the book **We: Robot,** by Hambling: The robots that already rule the world". The great threat related to those that we have pointed out and that it is based to a great extent on all of them, are the lethal microdrones with AI, since they can become the great individualized WMD, domestic and personalized use. The administrative law, in the words of Sunstein, has already gone to "the war", but now it has to prevent urgently to avoid a pandemic, an uncontrolled use of these weapons.

The Second Amendment of the American Federal Constitution is becoming globalized because the need for individualized protection is being created. However, behind all this demand for security, protection, weapons, there are gigantic industrial-financial-commercial powers that we can not ignore and can make us believe that their interests are our needs.

The efforts to legally prevent the financing of WMD are very weak, and according to the report commissioned by the Center for New American Security (CNAS).

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characterized by its continuing effort to distinguish between two kinds of politics: normal politics, in which organized interest groups try to influence democratically elected representatives; and constitutional politics, in which the mass of citizens mobilize to debate matters of fundamental principle".

182. Ballbé, Cabedo (2013).

183. Toplensky, R., Morris, S., (2019).

"The international community has long prioritized reducing the risk of weapons of mass destruction proliferation, whether from state actors such as North Korea and Iran, or from non-state actors, particularly criminals and transnational terrorist networks. Despite this concern, however, there remains a significant blind spot: the efforts to prevent the financing of WMD proliferation are only in their infancy. The legal framework to prevent the financing of proliferation is weak, and implementation across the world is spotty. These weaknesses derive from one overwhelming fact: The international community has not prioritized financial controls to fight proliferation. Very few countries have demonstrated the political will to put further emphasis on this threat to international peace and security"[184].

We must realize that lethal drones with AI can reach our hands in the first place with a defensive purpose, as LAWS have done at the military level. And they will arrive without raising suspicions, innocently and silently, even as tools of control or reduction of violence[185].

These robots/drones with "beneficial" AI that are already systematically entering our society and our lives to help us in our most mechanical tasks, can pass to have security functions of all kinds, including controlling and analyzing the information collected thanks to the information provided by the cloud[186]. Of the functions of defense and protection against shootings (Louisville is pushing a program that would connect to shotSpotter, a program trant listens for gunsfire throught microphones placed throughout the city[187]) to the functions of attack or direct firing there is not much distance. And from the possession of a microdron to a swarm of microdrones for home security and protection either.

Hopefully we know how to stop the disturbing thrust of financial and commercial interests in military robotics and do not let ourselves be carried away by the false promises that having a robot for our private personal protection will bring us more security. Do not let a state of exception arise for a development without control of drones or robots with AI to protect or kill as the consumer, that is, as the holder of such technology.

To the stealthy deaths by inhalation of CO2, by contamination by lead, or by mass and involuntary consumption of microplastics, the victims will be added by the actions of drones armed with AI not only at the hands of state secret services as has happened and is happening

184. Rosenberg, E., Bhatiya, N., Groden, C., Feng, A., (2019).
185. Adelman, T., Scott, K.L., Eddignton, P. Feeney, M., et al. (2016).
186. Stanley, J, Crump, C., (2011). Sandvik, K.B. (2016).
187. Weill, K., (2018). Vincent, J. (2018).

already[188], but in the hands of thousands of unknown citizens and, apparently, out of any suspicion that they will arrogate to themselves the right to defend themselves. The law must prevent the creation of this individualized WMD before it is too late and must force out the information that is in the power of the different agents involved (researchers, companies, governments, etc.) on this new danger worldwide for that we can decide the sooner the better when **we put this blank check on lethal technology**.

Skidelsky say: "it is not human jobs that are at risk from the rise of the robots. It is humanity itself" and "while the need for policy intervention to channel automation to human advantage is beyond question, the real serpent in the garden is philosophical and ethical blindness. *A society can be said to be decadent,* wrote the Czech philosopher Jan Patočka, *if it so functions as to encourage a decadent life, a life addicted to what is inhuman by its very nature*"[189].

188. The CIA and the JSOC (Joint Special Operations Command) have secretly deployed drones aimed at killing members of the Islamic State because, according to them, conventional bombings do not achieve "such effectiveness".

189. Skidelsky, R., (2019).

Chapter V

Epilogue

Roser Martínez-Quirante and Joaquín Rodríguez-Álvarez

> *"Did I request thee, Maker, from my clay To mould me man? Did I solicit thee From darkness to promote me?"*
>
> John Milton, Paradise Lost (1667)[1]

The development of an advanced artificial intelligence and its possible application to lethal autonomous weapon systems represents a threat to life, peace and the foundations of law, and it is essential to advance in a classification system that leads to an international and state regulation on the particular. But this will only be possible if an agreement is reached on the processes to achieve this objective.

We have two opposing models (unilateralist and multilateral that seek an integrating agreement) but unfortunately as in other times we are moving towards a unilateral scheme. The same goes for Putin's Russia and Great Britain's Brexit. The ambivalence of China is demonstrated by the fact that in some areas it has been perfectly integrated (WTO) and in others, it has a tendency not only unilateral but the lifelong self-proclamation of its current President shows a true authoritarianism. All this, are clear indications of what will be the future model: unilateralism of the great powers.

However, in some areas at the international level there is a surprising cooperation that has advanced a global integrating system. Under different American and Russian presidencies, cooperation procedures such as the WTO or Kyoto became evident. There is also an exemplary model of cooperation in fields adjoining the LAWS, such as nuclear

1. Poem collected by M.Shelley on the first page of *Frankenstein*.

matter, with a deliberative procedure that has reached treaties and institutions under the auspices of N.U as is the International Atomic Energy Agency (IAEA). Another successful model of cooperation and multilateral integration are the projects related to navigation and space satellites. After an initial competitive race of confrontation between the US and Russia, we see how there is almost total cooperation in the programs, projects and even in the International Space Station (ISS). In it, the US, Russia, Europe, Japan, and others cooperate. NASA has said that "the ISS has been the most complex space exploration program ever undertaken (…) visited by astronauts from 18 countries"[2]. The model of international cooperation in space: now more so ever is where we should be oriented to implement the same negotiation procedures in LAWS regulation[3]. However, we are not being inspired by this model. Before reaching any agreement, an honest and open cooperation and negotiation pact must be ensured.

It is necessary that state and international institutions protect the right to life and the dignity of citizens by vetoing a very clear threat such as AWS. In this field we must discard the neoliberal principle of more market and less State (less regulation, less public administrations and international institutions, less taxes, etc.) that leads to less national and global security of all undesirable points. Faced with the selfishness and unilateral temptation of each State, a reality is recognized: the LAWS cause the syndrome of "mutual hostages"[4] as happened in nuclear matter after the accidents of Three Thousand Islands, Chenobyl and Fukushima. In other words, the mistakes and negligence of a state in the matter of LAWS can trigger an uncontrolled escalation of disasters around the world. Therefore, all states are interested in nobody secretly programming a project of this type. Certainly, the LAWS are not exempt from making mistakes and causing the death of innocent people because they can divert their objectives due to a fortuitous event (for example, an alteration in the operation of the system due to overheating) not foreseen by scientists or by businessmen. irresponsible business habits.

In any case, in addition, military technology (LAWS) should be under the control and shareholding (golden share) of the State and not in a private market where technological sets that threaten sovereignty and

2. NASA (2017): https://www.nasa.gov/mission_pages/station/cooperation/index.html
3. Younes, B. (2018). The author is Deputy associate administrator space communications and navigation NASA.
4. Rees, J. (1994)

national security are purchased and sold. because of corruption and a "kleptocracy," as Chayes calls it[5].

In a planet plagued by nuclear or biochemical threats in the hands of non-democratic and corrupt destabilizing powers or in non-states (such as DAESH) and in which nuclear weapons may enter the black market and pass into the hands of terrorist groups[6], the appearance of the laws makes a global arms race practically inevitable, as well as the unleashing of a selective or general genocide.

At present, it is evident that we suffer an erosion of paradigms that seems to lead us to the emergence of a new scientific revolution[7], and this forces us to recover the right as a tool to face future challenges and ethics as a source of social regeneration.

Consequently, and taking into account the last report of the International Human Rights Clinic (IHRG) and Harvard Law School entitled "Heed the Call: a moral and legal imperative to ban killer robots" of August 2018[8], it is urgent to carry out simultaneous actions of control and regulation of this type of weapons, such as:

- Clearly define the concept of a completely autonomous lethal system.
- Reiterate the general principle that all weapons systems must respect international humanitarian law, the principle of distinction and proportionality, and always with sufficient human control.
- Signing of international agreements on arms control and prohibition of research and development of such systems, as was done with the proliferation of nuclear or chemical weapons[9].
- Signing of international agreements to verify non-experimentation with weapons with total lethal autonomy.

5. Rasor, D. and R. Bauman (2007). Chayes, S. (2015), Thieves of State. Why corruption threatens global security, Norton and Company. His book on corruption shows that in the United States it focuses on the industrial-financial-military sector.
6. Hass (2014).
7. Ravetz (1971) and Kuhn (2011).
8. Bonnie Docherty, principal editor of the report, is a researcher in the arms division of HRW and member of the IHRG together with Steve Goose, director of the arms division and Mary Wareham, legal director, who were the report's editors and are a representation of the most active experts in the field.
9. Revill (2017). Sparrow points out that "an arms control treaty that bans autonomous weapons could represent the only way to prevent its development". See also Meier (2016).

- Signing of international conventions on the compatibility with international humanitarian law of the development or acquisition of autonomous weapons with human control, in compliance with Article 36 of Additional Protocol I of the 1977. This article supposed the implementation of two global constitutional principles such as "regulation through revelation" and "regulation through evaluation", since the States have the obligation to determine if the use of the LAWs would be prohibited by the protocol or by international law[10].
- Approval of state laws to restrict such experimentation and innovation in private centers on these issues under administrative and criminal sanctions.
- Approval of state laws to establish the obligation to have inspectors and compliance delegates in the centers of experimentation and innovation of artificial intelligence.

In this regard, it should be noted that Spain –the words of Julio Herraiz, Spain's ambassador to the UN, at the Conference on Disarmament of the Convention on Certain Conventional Weapons, held in Geneva on November 13, 2017–.

"Supports the implementation of voluntary confidence-building and transparency measures in all aspects related to lethal autonomous weapons, as well as an extensive exchange of information on this matter. This exchange of information could take place both in relation to substantive content and best practices identified in the legal reviews of weapons under Article 36 and in relation to other regulatory or technical aspects of research or the operational development of possible systems with autonomy."

In any case, this type of voluntary measures is totally insufficient. It is necessary to develop new forms of technological-legal cooperation that prevent experimentation from progressing without being subject to preventive regulation and an immediate impact evaluation, with the precautionary principle as a central principle. With regard to these advances undertaken by private companies, generally with public subsidies, all protocols and all regulations must be few if they affect security. There should even be a specialized inspector empowered to assess the impact of regulation or adjustment on high-risk experiments in which people were employed. However, with the dieselgate scandal it was shown that such

10. Ballbé, M., Martínez-Quirante, R. (2010) p.171. About the article.36 vid. Amoroso, D., Sauer, F., Sharkey, N., Suchman, L., Tamburrini, G., (2018)

controls do not guarantee that corruption does not exist as has been seen with the government of Lower Saxony and Volkswagen[11].

Currently, we are going through a stage of history in which confrontation is no longer always between states or blocs (Russian, Chinese, North American, etc.), but also between large private companies that have some control over areas that previously fell under their control. totality under state control. Democratic countries, in which this freedom allows private companies to study lethal technologies, control and regulation, must penetrate the same research centers in which such innovations have to arise and an internal compliance procedure must be created. or regulatory compliance[12].

A few years ago hundreds of scientists, experts in technology and specialists in artificial intelligence signed a manifesto against autonomous weapons, which they defined as "the third revolution in the history of war, after gunpowder and nuclear weapons". Among the signatories were Hawking, Elon Musk and Steve Wozniak, co-founder of Apple. But the real engine of change is in the headquarters of the United Nations, where since 2013, and especially during 2018, the challenges of the LAWS are being debated, starting with the Convention on Certain Conventional Weapons (CCWC).

This work does not seek to paralyze the development of artificial intelligence, which already offers great potential for improving our living conditions, but only to limit its scope of application and encourage the international community to undertake a debate about it and to bet on a preventive approach to the issue[13]. The law must become aware of its importance as a tool of prevention: we could be talking about the possibility of avoiding a genocide perpetrated by the LWS, as we have baptized the hypothetical systems of independent lethal weapons that can bring us the future, and that should be prohibited Since the very beginning of its experimentation, it has violated the general principles of international humanitarian law and administrative law itself[14].

The LAWS could become monsters that ruin the life of its creator, like Frankenstein in the classic story of Mary Shelley. From Shelley it has been said that, brilliantly already in 1818, he was able to alert and create an allegory of the perversion to which scientific development can lead.

11. Ewing, J., (2017).
12. Cherer (2016).
13. Meza (2016).
14. Criddle (2016).

Now we can make a parallel and predict the same perversion with the creation of the LAWS/LIWS. Indeed, with a permissive capitalism and an adjustment over the limits of the IAG we can provoke the emergence of a new monster. In this visionary work, the rebellion of the creature against its creator Dr. Frankenstein and against society itself, is a clear message about the irresponsible use of technology. What is said in the movie Frankenstein, from 1994 (script by Kenneth Branagh), is disturbingly valid to describe word for word what the laws represent: "*No, it is not impossible. We can do it. We are one step away. And if we can change a part of a human being, we can change all the parts. And if we can do this, we can also design a life. We can create a being that never grows old or sick, that will be stronger than us and better than us, more intelligent and more civilized than we are*"[15].

The future of the LAWS will probably oscillate between the model of public-private collaboration without restrictions for the sake of an alleged irremediable arms race and that of administrative interventionism (national and international) regulatory preventive, restrictive and based on a compliance procedure that limits the investigation to defensive uses and always with significant human control counting, yes, with the help of some reputed trajectory agency, such as the International Atomic Energy Agency. If we choose the first model, the consequence will be paradoxically the national and international lack of protection, by a new propagation of these vagrant mines called LAWS. The physicist Stephen Hawking noted that "the development of total artificial intelligence could mean the end of the human race"[16], and US Air General Robert Latiff also warns that the war of the future is about to come and that the deployment of a new technology insufficiently considered can have unintended devastating consequences[17]. Harshaw, for his part, warns that

"*Lethal autonomous weapons threaten to become the third revolution in warfare. Once developed, they will permit armed conflict to be fought at a scale greater than ever, and at timescales faster than humans can comprehend. These can be weapons of terror, weapons that despots and terrorists use against innocent populations, and weapons hacked to behave in undesirable ways. We do not have long to act. Once this Pandora's Box is opened, it will be hard to close*"[18].

15. It is interesting to highlight the career of Shelley, daughter of the famous feminist, philosopher and writer Mary Wollstonecraft and the anarchist philosopher William Godwin. See Mellor (1989) and St. Clair (1991).
16. Coglianese and Lehr (2017).
17. Latiff (2017).
18. Harshaw (2017).

The principle of dual sovereignty developed by the jurisprudence of the American Supreme Court (since Judge Marshall in 1819), establishes that Washington can not monopolize power or make unilateral determinations, but must share such powers with its 50 states[19]. To be consistent with this internal mandate and to be consistent with its ad intra and ad extra constitutional values, in globalization the principle that the US can not make unilateralism on the world and must have the rest of the almost 200 states must also prevail.

In our case, the global constitutional architecture that globalization-Americanization projects is that the United Nations should advocate a multilateral agreement through a deliberative process in which consensus solutions are sought to stop this new monster that is being given autonomy and Independence. **We must stop the proliferation of both LAWS at the military or police level and microLAWS at the civil level, because of a globalization of the Second Amendment of the American federal Constitution, they can become Small WMD (SWMD) individualized in private hands or Pocket-drones-guns with AI.**

"It's hard to see it. Always in motion, the future", Yoda[20].

19. Ballbé and Martínez-Quirante (2003).
20. Sunstein (2017).

Chapter VI

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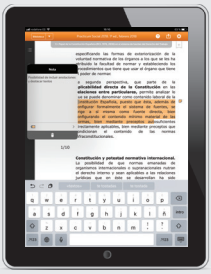

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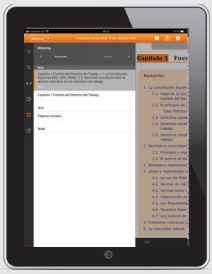

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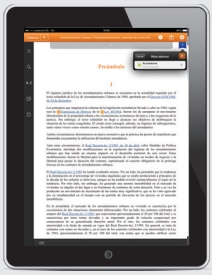

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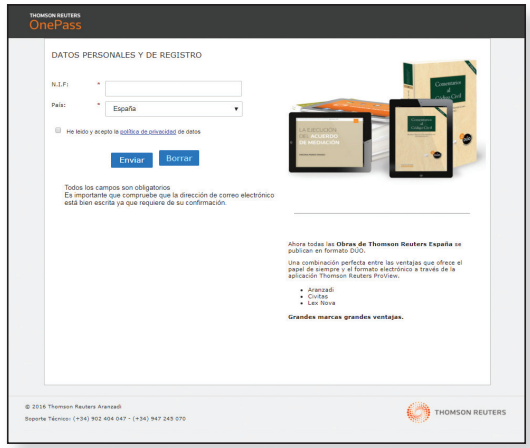

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