The Rise of Drones and the Transformation of Warfare: A View from Philosophy of International Law

A ascensão dos drones e a transformação da guerra: um visão a partir da filosofia do direito internacional

Filippo Ruschi
Università degli studi di Firenze (UNIFI/Italia)
filippo.ruschi@unifi.it

Resumo

Os sistemas letais de armas autônomas tornaram-se ícones dos conflitos contemporâneos. Seu impacto, no entanto, não se limita à transformação da guerra e à evolução das tecnologias militares. Pelo contrário, é necessário examinar como os drones e robôs militares mudarão o quadro jurídico de referência. Mais especificamente, os juristas precisam refletir mais sobre o destino do Direito Internacional Humanitário, uma vez que a guerra terminou assumindo um caráter pós-humano.

Palavras-chave: Filosofia do direito internacional, direitos humanos, guerra, tecnologia militar.

Abstract

Lethal Autonomous Weapons Systems have become iconic of contemporary conflicts. Their impact, however, is not limited to the transformation of warfare and the evolution of military technologies. Rather, it is necessary to scrutinize how drones and military robots will change the reference legal framework. More in particular legal scholars need to reflect further on the fate of International Humanitarian Law once warfare has taken a posthuman character.

1 Professore Associato di Filosofia del Diritto Internazionale presso la Facoltà di Giurisprudenza dell’Università degli Studi di Firenze, Via delle Pandette, 32, Edificio 4, Dipartimento di Scienze Giuridiche, 3 andar, CEP 50127, Florença, Toscana, Italia.
Keywords: Philosophy of International Law, Human Rights, Warfare, Military Technology.

Introduction: A ‘drone’ military revolution

It is not my intention to reflect on the legality of the military use of drones. The question as to whether these weapons systems are consistent with humanitarian law is undoubtedly a subject of controversy: indeed, practices such as targeted killing, largely facilitated by drone technology, risk compromising a ius belli that is axiologically founded on the limitation of violence. As is well known, International Humanitarian Law (IHL) – starting from the twentieth-century conventions and, even earlier, from the Saint Petersburg Declaration of 1868 and the generous efforts of jurists belonging to the Institut de Droit International (Mannoni, 1999, pp. 141-198) – has devoted a great deal of attention to prisoner-of-war status, providing that the use of lethal force must be subordinate to a principle of necessity and that enemy combatants should be guaranteed the option of surrendering (Redse Johansen, 2019). More recently, the International Committee of the Red Cross (ICRC) stressed that it “would defy basic notions of humanity to kill an adversary or to refrain from giving him or her an opportunity to surrender where there manifestly is no necessity for the use of lethal force.” Lethal autonomous weapons (LAWs), however, risk destroying these guarantees by giving rise to an indiscriminate and unlimited use of lethal force.

On the other hand, when we ask ourselves about the conformity of drone technology with the current legal order, we have to confront a thorny issue: the legitimacy of the use of armed drones depends, in fact, on the paradigm adopted, i.e. whether they have been used in the context of an international armed conflict or, rather, an non-international armed conflict, or else in the context of a law enforcement operation conducted outside national territory (Meloni, 2013; Brookman-Byrne, 2017; Hajjar, 2019). The fact that, in a fluid and asymmetric international situation such as today’s, the qualification of their specific use is essentially the result of a political choice ends up making every assessment contingent and partial to say in the least (Zolo, 2000; Zolo, 2015).

The starting point I intend to adopt is another, however: rather than focusing on the question of the legitimacy of using LAWs, I am interested in reflecting on how such weapons systems end up influencing the reference legal framework and, more generally, the very notion of warfare. The basic argument is that the reliance on autonomous weapons systems has triggered a shift in the concept of war comparable to the one caused by the ‘military revolution’, which, as documented by the studies of Geoffrey Parker and Jeremy Black, and Michael Roberts before them, inaugurated the modern era. Undoubtedly, today we are only seeing the first signs, the experimental phase of this change, as we are reliving the very same situation as late medieval men faced following the development of firearms (Roberts, 1967; Black, 1991; Parker, 1996). The concept of ‘military revolution’ goes beyond the purely war-related dimension; it enables us to grasp the connection between the advent of new war technologies, the

---

2 In a diachronic perspective, see Meyrowitz (2017). On the relationship between legitimacy and necessity in the use of lethal force, see Gilad (2012).
3 ICRC, May 2009; available at http://www.icrc.org.
4 With regard to the historiographical relevance of the concept of military revolution, see Rogers (1995). From a critical perspective, see Jacob, Visoni-Alonzo (2016). There is also no lack of investigations into specific historical and political contexts: for example Parrott (2001), Glete (2002), Ágoston (2005).
development of operational doctrines and social change more in general. For example, the spread of artillery, by forcing European cities to resort to bastioned fortifications, led to a redesign of their urban layout (Lynn, 1991): a process that had significant biopolitical implications (Hirst, 2005). Similarly, the need to deploy large musket-equipped contingents imposed the allocation of enormous economic resources, which were made available by creating state bureaucracies and setting up a particular political apparatus, the fiscal State. At the same time, the spread of infantry equipped with firearms brought about a progressive decline in the role of cavalries, which had dominated European battlefields throughout the Middle Ages. This process, which was triggered by weapons development, paved the way for a profound social transformation and contributed to the rise of the bourgeoisie. So what will be the consequences of the military revolution sparked by drones? Any answer is likely to be largely speculative, but what we may be certain of is that the effects of the acceleration of war technology will not be limited to a purely military dimension.

Stealthy, lethal, autonomous

What are we talking about when we use the term armed drone or, more correctly, lethal autonomous weapon? About a weapons system that is by now technologically well-established, widely disseminated and capable of operating in every dimension: today, thanks also to Hollywood, armed drones have taken on an iconic value, but actual military arsenals include remotely controlled vehicles capable of navigating beneath the surface of the sea, as well as operating in the harshest land environments. If, however, we limit our focus to unmanned aerial vehicles (UAVs), it seems obvious that their use, despite not being new, has undergone a brusque acceleration: as early as the 1930s these aircraft were quite common, though used essentially as radio-controlled targets, i.e. basically for training purposes. However, the next generation of UAVs displayed additional potentialities: during air raids conducted by American forces against the Democratic Republic of Vietnam, this type of aircraft proved to be valuable for reconnaissance activities in a highly hostile environment. UAVs were also used to confuse and saturate air defence systems: the Israeli Air Force employed them successfully for this purpose in the Yom Kippur war. In the Kosovo war, drones already took on a more offensive role: indeed, U.S. forces made wide use of drones to identify targets which, after being ‘illuminated’ by the laser designators the aircraft were equipped with, were attacked with other weapons systems (Black, 2014, pp. 54-81; Bousquet, 2018).

The turning point came, however, in the aftermath of September 11th, when drones went from being ‘eyes’ to being full-fledged offensive tools (Chamayou, 2014, pp. 26-27). The aircraft were equipped not only with airborne cameras or laser designators, but also with highly lethal attack weapons. This was a major technological development which took hold in theatres of operation with impressive speed, comparable to the advent of armoured vehicles on battlefields in the Second World War: whereas at the start of the millennium the drones in the possession of U.S. armed forces still numbered only a few dozen, today the Pentagon’s

---

5 The phenomenon also involved a maritime dimension: see Rodger (2011). See also, though on different premises, the iconic Cipolla, 1965.
6 Infra § 3. Regarding the relationship between cinema and war violence, one cannot help citing the classic Virilio (1984). Regarding the images evoked by drone technology and its implications in respect of policy options, Rich (2010). As for the risk of distortions and false representations, see Hellmich, Purse (2017). Regarding drone aesthetics, see Stubblefield (2020).
7 For a particular focus on the technological aspects, Kakaes (2015, pp. 359-387).
8 On the development of the strategy of combating international terrorism relying on UCAVs, see Govern, Schlager (2013).
arsenals include several thousand of these automated aircraft, to which we may add – the number is unspecified – the ones used by government agencies like the Central Intelligence Agency (Braun, 2015, pp. 253-284) or U.S. Customs & Border Protection (Nieto-Gomez, 2014, pp. 191-210; M. C. Heatherly, 2014, pp. 25-37; R. Jones, C. Johnson, 2016, pp. 187-200). The fact that only a rather low percentage of this impressive fleet of unmanned aerial vehicles is intended for attack operations – actually less than 10 percent – is simply the result of an operational choice tied to geopolitical scenarios. In any case, the numerical data reveal the flexibility of this technology, which may prove decisive in highly differentiated operational scenarios. A telling indication in this regard is that by 2014 the United States Air Force was already training more drone pilots than pilots for any other human-flown aircraft (The Economist, 2014). Yet we are just at the beginning: the Pentagon estimates that in 2035 remotely piloted aircraft will make up seventy percent of USAF aircraft. But the drone race has by now a global character, so much so that analysts expect at least eighty thousand UAVs and two thousand attack drones to be produced in the next decade (Sabbagh, 2019).

In fact, the Pentagon is not alone in being an enthusiastic advocate of this kind of technology: in 2005 about forty states possessed drones. By 2012, their number had risen to seventy-six. Today it is believed that more than ninety states have remotely piloted aircraft and at least sixty-three manufacture them: from Syria to Pakistan, from Iran to North Korea, as well as practically every NATO member (P. L. Bergen, J. Rowland, 2014, pp. 300-341). Nor is it only states which possess this automated technology: Hezbollah has made ample use of Iranian-built reconnaissance drones to violate Israeli airspace, and it has shown an ability to conduct complex attack operations in Syria (Hoenig, 2014; Worrall, Mabon, Clubb, 2015, pp. 61-62; Grossman, 2018, pp. 99-103). Teheran has provided Hamas with the technological know-how necessary to operate UAVs, and Hamas has also been able to exploit Israeli drones captured in Gaza after they fell to the ground (Rossiter, 2018, pp. 113-126). However, it has been ISIS above all, which has demonstrated a considerable ability in the offensive use of drones, obtained by successfully converting models found on the civilian market (Schulte, 2019, pp. 416-433).

The ability of Ansar Allah to carry out attacks deep in the Arabian Peninsula in recent months is emblematic of this trend. Using both refitted commercial models and aircraft supplied by Iran, Shiite militias have achieved a substantial number of military successes. Alongside a tactical use in support of forces deployed on the ground, Ansar Allah has employed these vehicles for long-range actions, striking targets beyond Yemeni borders: between the spring and summer of 2019, several major Saudi airport infrastructures were the target of coordinated missile and drone attacks (Muhsin, 2019). Last September, the heavy damage caused to the Saudi Aramco Khurais oil installation and the processing facility in Buqyaq, the largest in the world, caused widespread alarm in the international community (Hubbard, Karasz, Reed, 2019). The success achieved by the armed Shiite group is all the more significant if we consider that Saudi Arabia invests nearly nine percent of its GDP in

---

9 This option raises many questions from an ethical and legal standpoint: see Banks (2015, pp. 129-159), Braun, Brunstetter (2013, pp. 304-324), as well as McDonnell (2017, pp. 34-111). See also Radan, Murphy (2011, pp. 1202-1241), which provides an inside view, since one of the authors, Ashfan John Radan, was an assistant general counsel for the CIA. The issue also has significant implications on a constitutional level. See Dudziak (2015, pp. 163-179).
10 The phenomenon is in fact far from being limited to the North American context: see Zavrsnik (2016, pp. 83-100) and Koslowski, Schulzke (2018, pp. 305-324). Regarding the use of drones in the framework of police activity, see O. Davis (2019, pp. 344-360). With regard to the broad consensus over the use of drone technology also in police operations, see Heen, Lieberman, Miethe (2018, pp. 18-37). On the other hand, the spread of drone technology beyond the military realm is just proof of the increasing link between national security logics and those of internal law and order, discussed by Barberis (2017).
11 On the legal setback related to the use of drones by non-state actors, such as Hamas, see Groof (2016, pp. 131-156).
12 The attack would be replicated at the beginning of 2020, according to Said, Nissenbaum (2020).
On the other hand, the dissemination of LAWs is justified by their relatively low cost compared to conventional aircraft, their sometimes rather simple avionics, and above all their versatility: in 2017 the Stockholm International Peace Research Institute already counted 381 models of automated systems for military use, no fewer than 175 of which endowed with offensive capabilities (Boulain, Verbruggen, 2017). There is no lack of variety: the arsenals contain drones of every size, from rucksack-portable drones intended for tactical use to aircraft capable of remaining airborne for over thirty hours and of surveying, with their highly precise sensors, one hundred thousand square kilometres of territory per day. Models have been designed which are capable of taking off from ship decks and even underwater from submarines. In addition to fixed wing drones, rotary wing drones are widely employed. But why limit ourselves to the third dimension? As mentioned earlier, military robots have undergone major development in terrestrial applications as well. Though the use of this technology was initially limited to dangerous mine-clearing or explosive ordnance disposal operations, the latest generation of these platforms features offensive weapons enabling effective engagement with the enemy. In this regard, General Robert Cone, former head of the United States Army Training and Doctrine Command (TRADOC), stated publicly that one decade from now at least a quarter of land forces will be made up of robots (CBS News, 2014). Similar developments are ongoing in the naval realm, where remote control mini submarines operate alongside unmanned surface vehicles; initially used in rescue operations, they were later employed for minesweeping and, finally, for surveillance and intelligence activities (Chadwick, 2020, pp. 132-156). The latest developments regard platforms capable of operating in underground environments, particularly useful in the urban settings where many of the ongoing conflicts are taking place, whilst on the horizon we can see inventive biomimetic engineering applications aimed at the creation of veritable combat androids.¹³

There is no point in venturing into areas of development which may today seem like science fiction. It is certain, however, that the processes of digital technological innovation will take these platforms to an extreme: we will have increasingly small, increasingly fast, increasingly lethal automated systems. Above all, their cognitive capabilities will be further increased and the remote presence of a human operator will be increasingly marginal: the outcome of this technological development will be intelligent weapons systems capable of selecting targets and deciding autonomously whether to carry through with an attack, as was reported by the United Nations Institute for Disarmament Research (UNIDIR).¹⁴

¹³ For a general overview of PMSCs, see Mohlin (2016, pp. 109-116). On the ambivalent role of PMSCs, also with reference to drone technology, see Renz (2017, pp. 305-332); Cezne, Jumbert, Sandvik (2016, pp. 45-60). Concerning the reliance on PMSCs and their technological know-how, see Tkach, Phillips (2020, pp. 102-123).

¹⁴ On the relevance of underground environments in modern-day conflicts and the tactical importance of autonomous weapons systems, cf. Richemond-Barak, 2018. Regarding the use of biomimetic technology in a military context, see Nanayakkara (2019, pp. 131-140).

¹⁵ UNIDIR, Increasing Armed UAV Transparency, Oversight and Accountability, 2017, https://www.unidir.org/files/publications/pdfs/increasing-transparency-oversight-and-accountability-of-armed-unmanned-aerial-vehicles-en-692.pdf. The issue involves the delicate subject of accountability and the normative tools to assure it, see Buchanan, Keohane (2015, pp. 15-37) and Chengeta (2017, pp. 833-890).
Towards post-human war

What significance should we attribute to the military revolution triggered by drone warfare? How should we interpret this powerful unleashing of technology? To Carl Schmitt’s readers, what is happening is only the conclusion of a process that began in the last century with the advent of air warfare and set off a wholly new Raumrevolution in the sign of fire, or rather, of technology (Schmitt, 1942). The fact that, precisely when Land und Meer was going to print, Schmitt had direct experience of the first bombing raids on Berlin, make his considerations particularly insightful, where drone warfare may be viewed as a sublimation of air warfare. In fact, the concept of enmity is analogous in a situation in which the hostis becomes just a target, is a signal on a display that must be deactivated. Where the distinction between civil and military ends up being blurred. Where there is no longer any relationship between the power exerting force and the territorial space onto which that force is projected.

Perhaps, however, even this reference to air power is ultimately obsolete and hence fundamentally misleading if one interprets the advent of unmanned combat aerial vehicles (UCAVs) as a sign of further accelerations of military technology. We may therefore wonder whether the entry of LAWs into war scenarios prefigures forms of post-human conflict that will force us to rethink the very notion of enmity and, ultimately, to establish a new nomos. (Amato Mangiameli, 2012, pp. 197-213). Caution brings us to a halt before the opening up of such problems. Though the prognosis may be extraordinarily complex, we must nonetheless look into one of the crucial factors of the diagnosis, namely, the intrinsically nihilistic nature of autonomous weapons systems. The drone is the main driver of this process, which involves a technological as well as an ethical and legal dimension. Much more effective than conventional aircraft and more lethal than satellites, remotely piloted aircraft embody the ideal of air power, vertical and immune from all physical restraints: State territory is thus neutralised and reduced to a uniform field of observation subject to sudden lethal projections of violence. In this context, drones give an exceptional intensity to the phrase global war on terror, by celebrating the advent of an all-seeing, tireless power, which above all has practically unlimited capabilities. Whereby the eye can shift into a weapon and conduct attacks at lightning speed. The paradigm of this ethereal panopticon, as Gregoire Chamayou provocatively wrote in his brilliant Théorie du drone, is no longer to oversee and punish, but to oversee and annihilate (Chamayou, 2015, p. 43).

By virtue of this ‘vertical’ power, however, not only the individual but also the very sovereignty of states is compressed, annihilated. There are heavy consequences: reports such as the one from the Stanford International Human Rights and Conflict Resolution Clinic, published back in 2012, have highlighted the tragic effects of American UCAVs’ activity on the people of West Pakistan (Cavallaro, Sonnenberg Knuckey, 2012). The constant exposure to

---

16 See also the classic Schmitt (1950). On the relationship between space, law and technology as interpreted by Schmitt and from the perspective of the international philosophy of law see Ruschi (2007, pp. 44-53); Teixeira (2009), Ruschi (2012); and, in a perspective attentive to the evolution of Schmitt’s thought, see Pietropaoli (2012). More specifically on Schmitt’s interpretation of air power, see Hussain (2011, pp. 244-250); Sferrazza Papa (2016, pp. 37-62).

17 Regarding Schmitt’s condition during the Second World War, see Mehring (2009).

18 On the current transformation of the war phenomenon and in a philosophical-legal perspective aware of the schmittian lectio, see Campione (2009); Teixeira (2010, pp. 89-106); Galli (2010). For a critical perspective, see Tesche (2016, pp. 367-400).

19 On the controversial issue of the legitimacy of strikes conducted in Pakistani territory, see inter alii Lubell (2010); Aslam (2011, pp. 313-329); Enemark (2013, pp. 37-57). On the opaque character of aerial operations carried out by the United States, see Williams (2010, pp. 871-892). For a particular focus on the effects of drone strikes on the Pakistan population, see Shah (2015).
drone surveillance and the risk of a sudden, unpredictable attack has led to a perception of vulnerability among the inhabitants. This has had severe negative psychological effects. The condition of being perpetually subject to the risk of a strike has gone hand in hand with the awareness of the state’s inability to offer adequate protection: a twofold awareness bound to have profound repercussions, ultimately calling into question the notion of protectio et oboedientia which, since Hobbes (1651, II, xxi), has been the cornerstone of state sovereignty (Chamayou, 2015, pp. 177-184). And it is worth asking ourselves whether this effect is not simply a collateral damage of drone warfare, but rather a carefully pursued objective. In other words, the use of drones is consistent with the most well-established theories of air power, from Giulio Douhet’s groundbreaking theories on the mass use of air weapons to the terror bombing widely employed in the last world war, to the Cold War theories of strategic bombing (See Douhet, 1921). Yet, drone war, because of its intensity and ubiquitous nature, represents a departure that makes it incommensurable with the previous manifestations of air power.

The nihilism triggered by the drone revolution also affects the legal notion of war as it evolved starting from the jus publicum europaeum, and which, notwithstanding all the ensuing developments and interruptions, has moulded contemporary international law too (Chamayou, 2015, pp. 158-166). Underlying this idea of war is the metaphor expressed in De jure belli by Alberico Gentili, who described warring parties as duellists, formally equal, bearing the same obligations and endowed with identical prerogatives. According to this way of thinking, the logical premise of war, as a legally relevant fact, is the circumstance that both contenders have the option of using force. The fathers of international law founded the legitimacy of war precisely on this symmetry: in the third book of De jure belli ac pacis, when Grotius (1625) highlighted the fact that the ius gentium prohibited the use of poison and assassination, he was motivated by the need to safeguard this balance, rather than by humanitarian concerns. However, the appearance of drone technology breaks down this symmetrical relationship: the logic of the duel is definitively contradicted when machines replace men and violence becomes unilateral. Certainly, one might argue that a drone could be shot down, but that is hardly a decisive consideration given that this weapons system channels violence in a single direction, while the operator controlling it is thousands of kilometres away. A remotely piloted aircraft thus becomes a hypertechnological bloodhound that tirelessly pursues its prey and, with lethal violence, kills it. As observed again by Chamayou, the war paradigm is replaced by another: that of a hunt (Chamayou, 2015, pp. 52-59).

But the extreme degree of nihilism is reached when war becomes governed exclusively by algorithms and cybernetic systems. As we are reminded by the opening frames of Stanley Kubrick’s masterpiece 2001: A Space Odyssey, accompanied by the powerful Also Sprach Zarathustra by Strauss – the famous scene of a hominid learning to use a bone as a weapon – technology has played an instrumental role in war, where a triple objective is pursued: to pre-empt an attack, to cause as much damage as possible and to strike without risking any

The debate is still open as to the actual effectiveness of these types of operations, see Paw, Fricker, Williams (2011, pp. 51-69); Boyle (2013, pp. 1-29), and Johnston, Sarbahi (2016, pp. 203-219).

20 See also Schmitt (1936-1937, pp. 622-632; Id. 1963). On Schmitt’s reading of Hobbes, see McCormick (1999, pp. 249-290), Galli (2010, pp. 780-806), Tralau (2013).

21 On the life and thought of Douhet: see Lehmann (2013); Hippler (2013). On his legacy, see Chamayou (2015, pp. 53-54); Osinga, Roorda, (2016, pp. 27-76). With regard to the evolution of operational doctrines and the consequences from a normative standpoint, see Evangelista, Shue (2014); Hasian Jr. (2016).

22 Hostis, quo cum geritur bellum et qui aequitis alteri est, see Gentili (1598, I, ii), discussed in Schmitt (1950, pp. 140-159).

23 See the subject addressed by Chamayou (2015, pp. 157-160).
response from the adversary. In this sense, robot technology has simply brought a long-lasting process to an extreme: in his iconic study on the origins of medieval cavalry, Franco Cardini highlighted that a mounted combatant already represented an archetypical figure where the synthesis between equestrian skill and art de la guerre shaped a different anthropology (Cardini, 2014). The introduction of increasingly sophisticated and lethal weapons has now caused a more and more marked compression of the human factor, if not the erasure of human race in the case of nuclear weapons.24 The advent of LAWs, therefore, is essentially the apotheosis of this historical process: automated weapons systems enable something that was once unthinkable: the possibility of engaging in combat without suffering human loss. But when this objective is reached, the last threshold will be definitively crossed and war will inevitably take on a post-human feature:25 while sentient machines dominate battlefields, enemies will suffer a definitive degradation, an extreme dehumanisation reducing them to mere electronic pulses on a computer terminal.

Conclusions

What is left of the noble institutes of humanitarian law once robotic technology takes over? Consider the rules of occupatio bellica as provided for by articles 42-56 of the Regulations annexed to the IV Hague Convention of 1907 and subsequently by the IV Geneva Convention of 1949: They set up a range of guarantees for the people of occupied territories and, at the same time, impose a number of obligations on occupiers. Now, as the 19th century doctrine had already pointed out, the occupiers’ imperium is based exclusively on their actual control of the occupied territory. In other words, for occupation to have legal consequences, it had to be effective (Mannoni, 1999, 165-167). Drone war, as we have seen, deprives the spatial dimension of any legal significance: the territory is neutralised, turning into an unbounded battlefield. In the light of what Grégoire Chamayou observed, the very concept of occupying power becomes meaningless: “It now becomes a matter not so much of occupying a territory as of controlling it from above by ensuring its mastery of the skies” (Chamayou, 2015, 53). A mastery which, in the light of the Pakistani events, can quickly turn into a deadly attack.

Or what is left of the fundamental distinction between civilian and combatant, the true cornerstone of humanitarian law? Western military ethics first, and then international law, based the humanisation of war on this differentiation. Suffice it to recall the medieval distinction between oratores, bellatores and laboratores, or Augustine’s notion of bellum iustum and the concept of debitus modus in the use of force, or what Bernard of Clairvaux writes about the dichotomy between militia and malitia in the use of weapons. These are all principles that, through a long process, have become customary in the international legal order (Manzin, 2016). Already in 1880, the famous manual on the Laws of War on Land – better known as the Oxford Manual, being the result of the generous efforts of the Institut de droit international –, had expressly provided in Art. 7 that “It is forbidden to maltreat inoffensive populations”. Now, practices such as the signature strike adopted in the employment of UCAVs, seriously risk undermining this articulated apparatus of

24 On nuclear war in a legal perspective, see the classic Bobbio (1991). On the relevance of Bobbio as a philosopher of international law, see Zolo (2008). Regarding the importance of the subject of nuclear war in the evolution of Bobbio’s thought, see Greco (2000, pp. 244-263).
25 An issue intertwined with crucial bioethical issues, see Amato (2014, pp. 182-198).
temperamenta belli, when the distinction between civilian and military is the outcome of an algorithm.

What is left, finally, of the principle of humanity, which is the axiological basis of International Humanitarian Law? Faced with a machine designed to kill the safeguards provided by the First Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field and the Third Geneva Convention relative to the Treatment of Prisoners of War simply no longer have any point. They refer to a status which is simply not compatible with the use of UCAVs.

That destructive practice so widespread among humankind that we call war is the most thorough manifestation of intraspecific violence. As ethologists suggest, among superior animals, and even more so among primates, the killing of one’s own kind is an extremely rare event, all the more so at group level. There are in fact a whole range of inhibitory mechanisms that prevent violence from going as far as the suppression of the possible antagonist. Homo sapiens, instead, is an absolutely remarkable exception. This is because it is able to activate a whole range of cultural devices whose final result is the so-called ‘pseudospeciation’: at the end of this process, members of the antagonist group are effectively perceived as belonging to a different species and, therefore, can be suppressed without any inhibitory mechanism being activated. The pseudospeciation process is not automatic: the threshold for the use of violence remains high. A series of complex practices are needed to release the brakes that inhibit intraspecific killing. In so-called traditional societies this ceremonial was linked to ritual practices of a magical-religious character, whereas today it is based on diplomatic and normative protocols, but also on the crucial contribution of the media (Zolo, 1995, 147-150).

With the rise of robotic technology, the situation is bound to change radically: the moment the machine takes the place of man, any mechanism capable of inhibiting war violence will simply evaporate. In other words, the advent of combat automatons, already anticipated by the spread of LAWs, will bring about a drastic lowering of the threshold of violence, where killing will simply be the result of an impulse in a cybernetic system.

Acknowledgments

In the course of my research I have benefited from support by the Italian P.R.I.N. ("Research Projects of National Interest") 2015 programme Soggetto di diritto e vulnerabilità: modelli istituzionali e concetti giuridici in trasformazione and the Spanish Programa Estatal de I+D+i Orientada a los Retos de la Sociedad, 2017, El logos de la guerra. Normas y problemas de los conflictos armados actuales. This essay represents the development of reflections on the transformation of the legal concept of war, which I began starting from “Il volo del drone verso una guerra post-umana? Una riflessione di Filosofia del diritto internazionale”, in Jura gentium. Rivista di filosofia del diritto internazionale e della politica globale, 13 (2016), 1, pp. 12-38 and which continued with “Il diritto, la guerra e la ‘tecnica scatenata’. Considerazioni sul drone warfare”, in R. Campione, F. Ruschi (eds.), Guerra, diritto e sicurezza nelle relazioni internazionali, Torino, Giappichelli, 2019 -- of which an abridged version is available in Spanish: ‘El derecho, la guerra y la ‘técnica desatada’. consideraciones acerca del drone warfare”, in R. Campione, F. Ruschi (coord.), Guerra, derecho y seguridad en las relaciones internacionales, Valencia, Tirant lo Blanch, pp. 45-76 -- and, more briefly, “Verso una guerra postumana: nichilismo giuridico e tecnologia dronica”, in Endoxa – Prospettive sul presente, 4 (2019), 23, pp. 45-50. I owe a debt of gratitude to Stefano Mannoni, Ferdinando Menga and Francesco Verotta for their ready advice.
References

ÁGOSTON, G. 2005. Guns for the Sultan: Military Power and the Weapons Industry in the Ottoman Empire. Cambridge, Cambridge University Press.

AMATO MANGIAMELI, A. 2012. Arte e/o tecnica. Sfide giuridiche. Padova, CEDAM.

AMATO, S. 2014. Neuroscienze e utilizzazione militare delle tecniche di potenziamento umano. Etica & Politica, 16(2): 182-198.

ASLAM, M. W. 2011. A Critical Evaluation of American Drone Strikes in Pakistan. Legality, Legitimacy and Prudence. Critical Studies on Terrorism, 4 (3): 313-329.

BANKS, W. C. 2014, Regulating Drones: Are Targeted Killings by Drones Outside Traditional Battlefields Legal?, In: P. L. Bergen; D. Rothenberg (eds), Drone Wars. Transforming Conflict, Law, and Policy, Cambridge, Cambridge University Press.

BARBERIS, M. 2017. Non c’è sicurezza senza libertà. Il fallimento delle politiche antiterrorismo. Bologna, il Mulino.

BERGEN, P. L.; ROWLAND, J. 2015, World of Drones. The Global Proliferation of Drone Technology, In: P. L. Bergen, D. Rothenberg (eds), Drone Wars: Transforming Conflict, Law, and Policy, Cambridge, Cambridge University Press.

BLACK, J. 1991. A Military Revolution? Military Change and European Society 1550–1800. London, Macmillan.

BLACK, J. 2014. War in the Modern World, 1990-2014. London, Routledge.

BOBIO, N. 1991. Il problema della guerra e le vie della pace. Bologna, il Mulino, trad. port. 2005. O problema da guerra e as vias da paz. São Paulo. Editora UNESP.

BOULANIN, V.; VERBRUGGEN, M. 2017. Mapping the Development of Autonomy in Weapon Systems. Solna, Stockholm International Peace Research Institute.

BOUSQUET, A. 2018. The Eye of War: Military Perception from the Telescope to the Drone. Minneapolis, University of Minnesota Press.

BOYLE, M. J. 2013. The Costs and Consequences of Drone Warfare. International Affairs, 89 (1):1-29.

BRAUN, M. 2014, Predator Effect. A Phenomenon Unique to the War on Terror, In: P. L. Bergen, D. Rothenberg (eds), Drone Wars. Transforming Conflict, Law, and Policy, Cambridge, Cambridge University Press.

BRAUN, M.; BRUNSTETTER, D. R. 2013. Rethinking the Criterion for Assessing Cia-targeted Killings: Drones, Proportionality and ‘Jus ad Vim’. Journal of Military Ethics, 12 (4):304-324.

BROOKMAN-BYRNE, M. 2017. Drone Use ‘Outside Areas of Active Hostilities’: An Examination of the Legal Paradigms Governing US Covert Remote Strikes. Netherlands International Law Review, 64:3-41.

BUCHANAN, A.; KEOHANE, R. O. 2015. Toward a Drone Accountability Regime. Ethics & International Affairs, 29(1):15-37.

CAMPIONE, R. 2009. El nomos de la guerra. Valencia, Tirant lo Blanch.

CARDINI, F. 2014. Alle radici della cavalleria medievale. il Mulino, Bologna.

CAVALLARO, J.; SONNENBERG, S.; KNUCKEY, S. 2012. Living Under Drones: Death, Injury and Trauma to Civilians from US Drone Practices in Pakistan. Stanford, International Human Rights and Conflict Resolution Clinic - Stanford Law School.

CBS NEWS. 2014. U.S. Army General Says Robots Could Replace One-Fourth of Combat Soldiers by 2030, Jan. 23.
CEZNE, E.; JUMBERT, M. G.; SANDVIK, K. B. 2016. Drones como veículos para a ação humanitária: perspectivas, oportunidades e desafios. *Conjuntura Austral. Journal of the Global South*, 7(33-34):45-60.

CHADWICK, K. 2020. Unmanned Maritime Systems Will Shape the Future of Naval Operations: Is International Law Ready? *In: M. D. Evans, S. Galani (eds), Maritime Security and the Law of the Sea. Help or Hindrance?*, Cheltenham, Elgar.

CHAMAYOU, G. 2013. *Théorie du drone*. Paris, La Fabrique éditions, engl. trans. 2015. *A Theory of the Drone*. New York, The New Press, trad. port. 2015. *Teoria do drone*. São Paulo, Cosac & Naify.

CHENG ETA, T. 2017. Defining the Emerging Notion of Meaningful Human Control in Weapon Systems. *New York University Journal of International Law & Politics*, 49(3):833-890.

CIPOLLA, C. 1965. *Guns and Sails in the Early Phase of European Expansion*. 1400-1700. London, Collins.

DAVIS, O. 2019. Theorizing the Advent of Weaponized Drones as Techniques of Domestic Paramilitary Policing. *Security Dialogue*, 50(4):344-360.

DE GROOF, M. 2016. Death from the Sky: International Legal and Practical Issues on the Use of Armed Drones, *In: A. Završnik (ed.), Drones and Unmanned Aerial Systems: Legal and Social Implications for Security and Surveillance*, Berlin, Springer.

DOUHET, G. 1921. *Il dominio dell’aria. Saggio sull’arte della guerra aerea*. Roma, Stabilimento Poligrafico per l’Amministrazione della Guerra; engl. trans. 1942. *The Command of the Air*. New York, Coward-McCann.

DUDZIAK, M. 2015, Targeted Killings and Secret Law: Drones and the Atrophy of Political Restraints on the War Power, *In: D. Cortright, K. Wall, R. Fairhurst (eds), Drones and the Future of Armed Conflict: Ethical, Legal, and Strategic Implications*, Chicago, Chicago University Press.

ENEMARK, C. 2013. *Armed Drones and the Ethics of War: Military Virtue in a Post-Heroic Age*. London, Routledge.

EVANGELISTA, M.; SHUE H. 2014. *The American Way of Bombing: Changing Ethical and Legal Norms, from Flying Fortresses to Drones*. Ithaca, Cornell University Press.

GALLI, C. 2010. *Genealogia della politica. Carl Schmitt e la crisi del pensiero politico*. Bologna, il Mulino.

GALLI, C. 2010. *Political Spaces and Global War*. Minneapolis, Minnesota University Press.

GENTILIS, Alberici. 1598. *De iure belli libri tres*. Hanoviae.

GILADI, R. 2012. Reflections on Proportionality, Military Necessity and the Clausewitzian War. *Israel Law Review*, 45(2):323-340.

GLETE, J. 2002. *War and the State in Spain, the Dutch Republic and Sweden as Fiscal-Military States*. London, Routledge.

GOVERN, K. H.; SCHLAGER, S. A. 2013. Guns for Hire, Death on Demand: The Permissibility of US Outsourcing of Drone Attacks to Civilian Surrogates of the Armed Forces and Challenges to Traditional Just War Theory. *Florida Journal of International Law*, 25(2):147-206.

GRECO, T. 2000. *Norberto Bobbio. Un itinerario tra filosofia e politica*. Roma, Donzelli.

GROSSMAN, N. 2018. *Drones and Terrorism: Asymmetric Warfare and the Threat to Global Security*. London-New York, I. B. Tauris.

GROTOI, Hugonis. 1625. *De iure belli ac pacis libri tres*. Parisiis.

HAJJAR, L. 2019. The Counterterrorism War Paradigm versus International Humanitarian Law: The Legal Contradictions and Global Consequences of the US ‘War on Terror’. *Law & Social Inquiry*, 44(4):922-956.
HASIAN Jr., M. 2016. *Drone Warfare and Lawfare in a Post-Heroic Age.* Tuscaloosa, University of Alabama Press.

HEATHERLY, M. C. 2014 Drones: The American Controversy. *Journal of Strategic Security,* 7(4):25-37.

HEEN, M. S.; LIEBERMAN, J. D.; MIETHE, T. D. 2018. The Thin Blue Line Meets the Big Blue Sky: Perceptions of Police Legitimacy and Public Attitudes towards Aerial Drones. *Criminal Justice Studies,* 31(1):18-37.

HELMICH, C.; PURSE, L. (eds) 2017. *Disappearing War. Interdisciplinary Perspectives on Cinema and Erasure in the Post 9/11 World.* Edinburgh, Edinburgh University Press.

HIPLER, T. 2013. Bombing the People. Giulio Douhet and the Foundations of Air-Power Strategy, 1884–1939. Cambridge, Cambridge University Press.

HIRST, P. 2005. *Space and Power: Politics, War and Architecture.* Cambridge, Polity.

HOBES, T. 1651. *Leviathan or The Matter, Forme and Power of a Common Wealth Ecclesiastical and Civil.* London.

HOENIG, M. 2014. Hezbollah and the Use of Drones as a Weapon of Terrorism. *Public Interest Report for the Federation of American Scientists,* 67(2):1-20.

HUBBARD, B., KARASZ, P.; REED, S. 2019. Two Major Saudi Oil Installations Hit by Drone Strike, and US Blames Iran. *The New York Times,* Sept. 14.

HUSSAIN, N. 2011. Air Power, In: S. Legg (ed.), *Spatiality, Sovereignty and Carl Schmitt. Geographies of the Nomos,* London, Routledge.

ICRC, *Interpretive Guidance on the Notion of Direct Participation in Hostilities under International Humanitarian Law,* Geneva, May 2009.

JACOB, F.; VISONI-ALONZO, G. 2016. *The Military Revolution in Early Modern Europe: A Revision.* London, Palgrave.

JOHNSTON, P. B.; SARBAHI, P. B. 2016. The Impact of US Drone Strikes on Terrorism in Pakistan. *International Studies Quarterly,* 60(2):203-219.

JONES, R.; JOHNSON, C. 2016. Border Militarisation and the Re-Articulation of Sovereignty. *Transactions of the Institute of British Geographers,* 41(3):187-200.

KAKAES, K. 2015. From Orville Wright to September 11: What the History of Drone Technology Says about Its Future, In: P. L. Bergen, D. Rothenberg (eds), *Drone Wars: Transforming Conflict, Law, and Policy,* Cambridge, Cambridge University Press.

KOSLOWSKI, R.; SCHULZKE, M. 2018. Drones Along Borders: Border Security UAVs in the United States and the European Union. *International Studies Perspective,* 19(4):305-324.

LEHMANN, E. 2013. *La guerra dell’aria: Giulio Douhet, stratega impolitico.* il Mulino, Bologna.

LUBELL, N. 2010. *Extraterritorial Use of Force against Non-State Actors.* Oxford, Oxford University Press.

LYNN, J. A. 1991. The ‘Trace Italiennne’ and the Growth of Armies: The French Case. *The Journal of Military History,* 55(3):297-330.

MANNONI, S. 1999. Potenza e ragione. La scienza del diritto internazionale nella crisi dell’equilibrio europeo (1870-1914), Milano, Giuffrè.

MANZIN, M. 2016. ‘Miles Christi’. La dimensione cristiana tra istituzione militare e tutela internazionale dei diritti umani. In: M. S. Birtolo, L. Scilitani (a cura di), *Il giusto testimone. Studi e interventi in memoria di Francesco Paolo Montanino.* Soveria Mannelli, Rubbettino.

MCCORMICK, J. P. 1999. *Carl Schmitt’s Critique of Liberalism: Against Politics as Technology.* Cambridge, Cambridge University Press.

MCDONNELL, T. M. 2017. Rule of Law in the Age of the Drone: Requiring Transparency and Disqualifying Clandestine Actors-The CIA and the Joint Special Operations Command. *University of Miami Law Review,* 72:34-111.
MEHRING, R. 2009. Carl Schmitt. Aufstieg und Fall. Eine Biographie. München, Beck, engl. trans. 2014. Carl Schmitt. A Biography. Cambridge, Polity.

MELONI, C. 2013. Fare la guerra conomicidimiratitra questioni morali e aspetti giuridici. Il Mulino, 62(5):852-860.

MEYROWITZ, H. 1994. The Principle of Superfluous Injury or Unnecessary Suffering. From the Declaration of St. Petersburg of 1868 to Additional Protocol 1 of 1977. International Review of the Red Cross, 34(299):98-122.

MOHLIN, M. 2016, Merchants of Security: Private Security Companies, Strategy and the Quest for Power, In: J. Berndtsson, C. Kinsey (eds), The Routledge Research Companion to Security Outsourcing, London, Routledge.

MUHSIN, D. 2019. Houthi Use of Drones Delivers Potent Message in Yemen War. The International Institute for Strategic Studies, Aug. 27. At https://www.iiss.org/blogs/analysis/2019/08/houthi-uav-strategy-in-yemen

NANAYAKKARA, T. 2019, Autonomy of Humans and Robots, In: J. Gow, E. Dijxhoorn, R. Kerr, G. Verdirame (eds), Routledge Handbook of Law, War and Technology, London, Routledge.

NIETO-GOMEZ, R. 2014, Walls, Sensors and Drones: Technology and Surveillance on the US-Mexico Border, In: E. Vallet (ed.), Borders, Fences and Walls: States of Insecurity, London, Ashgate.

OSINGA, F. P. B.; ROORDA, M. P. 2016, From Douhet To Drones, Air Warfare, and the Evolution of Targeting, In: P. A. L. Ducheine, M. N. Schmitt, F. P. B. Osinga (eds), Targeting: the Challenges of Modern Warfare, The Hague, TMC Asser Press.

PARKER, G. 1996. The Military Revolution, 1500–1800. Military Innovation and the Rise of the West. Cambridge, Cambridge University Press.

PARROTT, D. 2001. Richelieu’s Army. War, Government and Society in France, 1624–1642. Cambridge, Cambridge University Press.

PIETROPAOLI, S. 2012. Schmitt. Roma, Carocci.

PLAW, A.; FRICKER, M. S.; WILLIAMS, B. G. 2011. Practice Makes Perfect? The Changing Civilian Toll of CIA Drone Strikes in Pakistan. Perspectives on Terrorism, 5(5-6):51-69

RADFAN, A. J.; MURPHY, R. 2011. Measure Twice, Shoot Once: Higher Care for CIA Targeted Killing. University of Illinois Law Review, 4:1202-1241.

REDSE JOHANSEN, S. 2019. The Military Commander’s Necessity: The Law of Armed Conflict and its Limits, Cambridge, Cambridge University Press.

RENZ, F. 2017. The Role of Private Military and Security Companies: Corporate Dogs of War or Civilians Operating in Hostile Environments?. Schweizerische Zeitschrift für internationales und europäisches Recht = Revue suisse de droit international et droit européen, 27(3):305-332.

RICH, P. B. 2018. Cinema, Drone Warfare and the Framing of Counter-Terrorism. Defense & Security Analysis, 34(2):144-160.

RICHEMONT-BARAK, D. 2018. Underground Warfare. Oxford, Oxford University Press.

ROBERTS, M. 1967. The Military Revolution, 1560–1660, In ID. Essays in Swedish History, London, Weidenfeld & Nicolson.

RODER, N. A. M. 2011. From the ‘Military Revolution’ to the ‘Fiscal-Naval State. Journal for Maritime Research, 13(2):119-128.

ROGERS, C. J. (ed.). 1995. The Military Revolution. Readings on the Military Transformation of Early Modern Europe. Boulder, Westview Press.

ROSSITER, A. 2018. Drone Usage by Militant Groups: Exploring Variation in Adoption. Defense & Security Analysis, 3(2):113-126.

RUSCHI, F. 2007. Space, Law and Power in Carl Schmitt. Jura Gentium. Rivista di filosofia del diritto internazionale e della politica globale, 4:44-53.

Revista de Estudios Constitucionais, Hermenêutica e Teoria do Direito (RECHTD), 12(1):147-161
Ruschi | The Rise of Drones and the Transformation of Warfare

RUSCHI, F. 2012. Questioni di spazio: la terra, il mare, il diritto in Carl Schmitt. Torino, Giappichelli.
Sabbagh, D. 2019. Killer drones: how many are there and who do they target? The Guardian, November 18.
SAID, S.; NISSENBAUM, D. 2020. Saudi Air Defenses Thwarted Attack on Aramco. Wall Street Journal, Jan. 29.
SCHMITT, C. 1936-1937. Der Staat als Mechanismus bei Hobbes und Descartes. Archiv für Rechts- und Sozialphilosophie, 30 (S/N), engl. trans. The State as Mechanism in Hobbes and Descartes, In: C. Schmitt. 1996. The Leviathan in the State Theory of Thomas Hobbes. Meaning and Failure of a Political Symbol, Westport, Greenwood.
SCHMITT, C. 1942. Land und Meer. Eine weltgeschichtliche Betrachtung. Leipzig, Reclam;engl. trans. 1997. Land and Sea. Washington DC, Plutarch Press; trad. port. 2008. Terra e Mar. Lisboa, Esfera do Caos.
SCHMITT, C. 1950. Der Nomos der Erde: im Völkerrecht des Jus Publicum Europaeum. Berlin, Duncker & Humblot, engl trans. 2015. The Nomos of the Earth in the International Law of the Jus Publicum Europaeum. Candor, Telos Press, trad. port. 2014. O Nomos da Terra no direito das gentes do jus publicum europaeum. Rio de Janeiro, Contraponto.
SCHMITT, C. 1963. Der Begriff des Politischen. Text von 1932 mit einem Vorwort und drei Corollarien. Berlin, Duncker & Humblot, engl trans. 1996. The Concept of the Political. Chicago, Chicago University Press.
SCHULTE, P. 2019. Future war: AI, Drones, Terrorism and Counterterror, In: D. M. Jones, P. Schulte, C. Unringer, M. L. R. Smith (eds), Handbook of Terrorism and Counter Terrorism Post 9/11, Cheltenham, Elgar.
SFERRAZZA PAPA, E. 2016. Nuovi spazi, nuove armi, vecchi nemici Carl Schmitt e la critica filosofica del potere aereo. Jura. Gentium. Rivista di filosofia del diritto internazionale e della politica globale, 13(1):37-62.
SHAH, S. A. 2015. International Law and Drone Strikes in Pakistan. The Legal and Socio-Political Aspects. London, Routledge.
SMITH, D. 2014. Pepper-spray drone offered to South African mines for strike control. The Guardian, June 20.
STUBBLEFIELD, T. 2020. Drone Art. The Everywhere War as Medium. Oakland, California University Press.
TEIXEIRA, A. 2009. Teoria pluriversalista del diritto internazionale. Roma, Aracne, trad. port.2011. Teoria pluriversalista do direito internacional. São Paulo, WMF Martins Fontes.
TEIXEIRA, A. 2010. Global War. The Concept of Modern War Under Attack. Mexican Law Review, 2(2):89-106.
TESCHKE, B. 2016. Carl Schmitt’s Concepts of War: A Categorical Failure, In: J. Meierhenrich, O. Simons (eds), The Oxford Handbook of Carl Schmitt, Oxford, Oxford University Press.
THE ECONOMIST. 2014. Drone pilots: Dilbert at war, June 23.
TKACH, B.; PHILLIPS J. 2020. UN Organizational and Financial Incentives to Employ Private Military and Security Companies in Peacekeeping Operations. International Peacekeeping, 27(1):102-123.
TRALAU, J. 2013. Thomas Hobbes and Carl Schmitt. The Politics of Order and Myth. London, Routledge.
UNIDIR, Increasing Armed UAV Transparency, Oversight and Accountability, 2017, https://www.unidir.org/files/publications/pdfs/increasing-transparency-oversight-and-accountability-of-armed-unmanned-aerial-vehicles-en-692.pdf.
VIRILIO, P. 1984. *Guerre et cinéma. Logique de la perception*. Paris, Editions de l’Etoile. trad. port. 2005. *Guerra e Cinema*. São Paulo, Boitempo.

WILLIAMS, B. G. 2010. The CIA’s Covert Predator Drone War in Pakistan, 2004–2010. The History of an Assassination Campaign. *Studies in Conflict & Terrorism*, 33(10):871-892.

WORRALL, J.; MABON, S.; CLUBB G. 2015. *Hezbollah: From Islamic Resistance to Government*. Santa Barbara, Praeger.

ZAVRŠNIK, A. 2016, Re-bordering the Peripheral Global North and Global South: Game of Drones, Immobilising Mobile Bodies and Decentring Perspectives on Drones, *In: A. Završnik (ed.), Drones and Unmanned Aerial Systems. Legal and Social Implications for Security and Surveillance*, Cham, Springer.

ZOLO, D. 1995. *Cosmopolis. La prospettiva del governo mondiale*, Milano, Feltrinelli. engl. trans. 1997. *Cosmopolis. Prospects for World Government*, Cambridge, Polity Press.

ZOLO, D. 2000. *Chi dice umanità: guerra, diritto e ordine globale*, Torino, Einaudi. engl. trans. 2002. *Invoking Humanity. War, Law and Global Order*. London, Continuum.

ZOLO, D. 2008. *L’alito della libertà. Su Bobbio*. Milano, Feltrinelli.

ZOLO, D. 2015. *La giustizia dei vincitori. Da Norimberga a Baghdad*. Roma, Laterza. engl. trans. 2020. *Victors’ Justice: From Nuremberg to Baghdad*. London, Verso.

Submetido: 12/03/2020
Aceito: 07/05/2020