

## The Use of Warbots: A Matter of Moral Responsibility

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There are currently strong debates over the use of robots on battlefields, mainly focusing on the morality of such systems and their potential ability to act ethically (Arkin, 2009; Krishnan, 2009; Wallach and Allen, 2009). Whilst a discussion on the matter is undoubtedly necessary, it seems that much time is spent discussing this issue, while the real concern when it comes to dealing with robots is neither their intrinsic morality, nor the possibility that they would become autonomous. The real concern is: who will be held responsible for the actions committed by such machines, especially if they are fitted with weapons?

Robots are already widely used in warfare (Sharkey, 2007; Singer, 2008, 2009; Arkin, 2009a; Krishnan, 2009). They are entrusted mainly with information gathering or mine clearance missions. Furthermore, the use of weaponized robots has received a lot of attention by many countries (Sharkey, 2007). The use of such systems would come in the line of technological changes generally speaking and in the continuation of weaponry evolution, i.e. as weapon technology advances, so does the use of weaponized robot systems.

Most of the debates about the robotization of the battlefield are focusing on remotely controlled systems and particularly of remotely piloted aircrafts. This is highlighted by the contributions gathered in this issue of the electronic review *Dynamiques Internationales* dedicated to the impact on international relations of the use of robots in warfare. In this issue the complexity and the extent of the subject is underlined by the contributors. Some would certainly consider that drones are not robots.

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Others would say they obviously are for there is no clear and universally accepted definition of robots<sup>1</sup>. After all if Roomba Vacuum Cleaners are considered as robots, it would seem weird not to accept that drones are robots too.

The first paper of the review, written by Jai Galliot, offers us a unique treatment of the particular problem of jus post bellum when it comes to think the use of unmanned systems and its impact on the transition from conflict to peace. Through the examples of the conflicts in Afghanistan and Iraq, Galliot stresses the need to think about the consequences of the use of remotely controlled systems by pointing out that war must be fought “in such a way that it leaves the door open to lasting peace”. As he writes it, “killing noncombatants or destroying their homes and murdering their loved ones means fostering conditions that are antithetical to enduring peace and likely to give rise to radical insurgence”. The uniqueness of his paper not only lies in his compelling rational, but also in the fact that this topic suffers undoubtedly a lack of reflection and that he provides us with a comprehensive analysis of jus post bellum in the light of modern conflicts waged with technological means. Galliot's paper is thus a convincing call to consider with deep attention the potential “critical but often overlooked role in hampering war's end and limiting prospects for lasting peace”. There is no doubt that his work will be essential to the on going debates about the robotization of the battlefield. The perception of unmanned systems by the population of the countries against which we already fight, and will have to fight in the future, is clearly a stake that must be dealt with. This is stressed by Adrien Schu who uses the case of US drones strikes in Pakistan to show that the way remotely operated aircrafts are perceived plays a central role in their acceptability. As Schu explains Pakistan is “obsessed by the preservation of its territorial integrity”, yet former President Pervez Musharaf allowed strikes by drones operated by the CIA, in Pakistan. According to Schu this paradox is due to the “political acceptability” of unmanned systems which appear to “symbolically soften the violation of Pakistan’s sovereignty”. But as he puts it, this acceptability is “particularly precarious” and the USA must not consider that it can use drones as it pleases. Writing that drone strikes could, eventually, “harm the political support they enjoy”, Schu agrees to some degree with Galliot about the potential counterproductive consequences of an unmastered use of drones. The robotization of the battlefield, of which the use of remotely controlled systems is only one example, raises many issues related to the relation between men and machines in war.

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<sup>1</sup> For insightful in-depth developments on that matter see Sébastien Mazoyer, Jérôme de Lespinois, Emmanuel Goffi, Grégory Bouterin, and Christophe Pajon (eds), *Les drones aériens: passé, présent et avenir. Approche globale*, Préface par le général d’armée aérienne Denis Mercier, chef d’état-major de l’armée de l’air. Paris: La Documentation française, 2013, 708 p.

Not only in terms of perceptions. Weapon systems are more and more autonomous, at least technically speaking, and the role of man, in or on the loop, is widely debated. This gives birth to never-ending discussion upon the moral and legal aspects of what we commonly call autonomous systems. The complexity of these debates is emphasized by the absence of consensus concerning the definition of autonomy. In their paper, Florian Gros, Thierry Pichevin, Eric Pomès and Catherine Tessier, give an interesting overview of the many ways autonomy can be understood. More than that, they stress that the responsibility inherent to the “sharing of tasks in a man-machine system” is more and more complex. The authors tackled the difficult problem of responsibility through its ethical and legal approaches showing that moral autonomy is far from being reached by robots. Therefore, moral responsibility is hard to apply to robots and legal responsibility cannot be reduced to the implementation of the laws of war. However, we are on the path to robots autonomy, and we must think about its potential consequences in warfare. According to Gros, Pichevin, Pomès and Tessier, there is nothing new under the sun of warfare and the robotization of the battlefield is nothing else than an evolution: the “presence of a new tool for the forces”. Coralie Suissa conversely argues, following Peter Singer, that we are facing a “robolution” providing us with “brand new functionalities” that would potentially modify both the organization of military units and the exercise of the profession of arms. Furthermore, the use of remotely controlled systems on the battlefield would represent a substantial asset against terrorists since they “provide [the US] government and agencies enrolled in counter-insurgency with the mean to get used to the new warfare paradigm”. According to Suissa, it is important to take into account the negative impact of the use of drones upon the strategy consisting in winning hearts and minds before considering the deployment of robots on the battlefield particularly if those warbots are autonomous.

At first sight, it can be concerning to imagine warfare in which the combatants are robots. This is nowhere near reality. It is even unlikely that warfare would be waged only by robots since the impact of human death remains a tool of interest for certain actors in modern conflicts<sup>2</sup>. One can easily bet that robots fighting and destroying each other would not be a great concern for public opinions and consequently the ability to leverage people feelings to make things change would be seriously undermined. If one looks closer, one can certainly point out the many advantages the use of robots would have, the most important being the fact that it would save troops lives (Krishnan, 2009).

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<sup>2</sup> This has been shown, for instance, by the use of the media by the insurgents in Afghanistan after the Uzbein valley ambush in August 2008 when 10 French troops were killed and 21 others were wounded. See « La parade des talibans avec leurs trophées français », *Paris Match*, 4 septembre 2008. One must also keep in mind the use of the media during the 9/11 attacks.

Whatever the advantages, it seems there is a real fear of robots' autonomy. This "Terminator syndrome" has, to a large extent, brought the conversation around to killer robots (Sparrow, 2007; Krishnan, 2009) making decision autonomously. Albeit of great matter, such a concern must be kept moderate. We are far from deploying kind of T-800 on battlefields! Furthermore, before fearing autonomy it would be useful to define it. An interesting question would be then: Does autonomy really exist?

All these considerations, and many others, on autonomous robots are important. Yet, it seems at least equally important to first and foremost tackle the essential issue of responsibility and to replace it at the core of the debate (Jonas, 1984; Asaro, 2006).

Thus, this paper aims at questioning the relevance of the debate over robots' morality, showing that eventually robots' development is nothing more than the normal consequence of technological evolution and that arguing over the morality of technology is vain. The following point will consider the concept of autonomy and its reality, trying to demonstrate that full autonomy does not exist. This will finally lead to show that since full autonomy does not exist, there will always be someone to be held responsible for robots behaviour as it is the case for human behaviour, and that responsibility should be the main concern when it comes to argue about robots and warfare.

### **Arguing over the morality of warbots: a waste of time**

Questioning the morality of the use of robots in modern warfare is nowadays very common. Many scholars have already worked on that question. It emerges that, as often if not always in philosophy, viewpoints on that matter can be diametrically opposite.

Some as Robert Sparrow argue that it would be unethical to use robots on battlefields given that under the rules of *jus in bello* it is necessary to hold someone responsible for any crime committed and that robots cannot be held responsible (2007). Other would say that it should be unethical to use such systems that could avoid loss in one's own troops (Strawser, 2010).

Eventually Peter Asaro seems to have a more convincing argument considering that trying to apply moral theories to robots is a waste of time and that we should concentrate our efforts on their legality (Asaro, 2006) since "the technology, like all military force, could be just or unjust, depending on the situation" (Asaro, 2008, p. 15).

Whatever the stance, one thing must be stressed: robots are already at work and there is no reason to think that this will change. On the contrary, it is easy to assume that robots will be more and more used in the near future. It only takes a look at the increasing number of Unmanned Aerial Vehicles (UAV) deployed over the past twenty years (Singer, 2009; Boutherein and Goffi, 2010) to support that robots will follow the same trend.

So why are robots used so much? The point is that they offer many advantages. The first one, and certainly the most important, is that they avoid casualties in both one's own forces and expectedly in one's adversary's camp. The need to avoid people being killed is a characteristic trend of modern militaries as "[t]echnology is our first answer to the lethal hazards of waging war" (Sapolski and Shapiro, 1996). It is widely accepted that public support for war declines when casualties are increasing and the conflict is lasting (Gelpi and al., 2009; Krishnan, 2009; Singer, 2009). This assertion must be however moderated. Support to war is not only a matter of tolerance of losses; it is also kind of a cost-benefit calculus. The importance of policy objectives and the likelihood of success of the intervention are among many elements which must be taken into account to deal with casualty aversion (Gelpi and al., 2009). However, as Sapolsky and Shapiro wrote, technology has led to the rise of unrealistic expectations about zero deaths wars (1996).

In this framework robots are undoubtedly useful and offer many advantages. They first and foremost allow avoiding people being killed in combat situation. This obviously represents a huge interest for statesmen. Using robots excludes the need to explain to the general public why troops are being killed in a conflict for which national interests are not directly at stake. Thus national agendas of statesmen would no longer be at risk especially in a time of presidential race. Then as Armin Krishnan puts it, "[t]he use of Robots would help soldiers to avoid the stress of killing (and the Post Traumatic Stress Disorder (PTSD) afterwards) in the first place by leaving this grizzly, but sometimes necessary, task entirely to machines" (2009, p. 24) This point remains disputable since one cannot maintain that the use of robots would strictly speaking allow to avoid PTSD, and it would be more reasonable to postulate that it would help minimizing it. Another interest would be the potential staff cuts within the military (Krishnan, 2009, p. 35). In a time of budgetary constraints this could look like a good incentive for political heads of state and government. However, once again, this idea needs further research and empirical grounds/evidence. The cost of research and development (R&D), added to the fact that some weapon systems such as UAVs require many people to operate them, must be integrated into the cost-effectiveness equation.

Eventually, it seems obvious that since machines do not feel fatigue, they would offer permanence and consequently provide forces with greater pattern of life analysis and situational awareness. These advantages are only examples and they can obviously be counterbalanced with disadvantages such as the cost of such machines, their potential technological failures and vulnerability, the lowering of the threshold of entering into war by states and so on. The point here would be to know how advantages and disadvantages would be balanced by statesmen regarding real or perceived national interests. It would be for instance hard, if not immoral, to balance lives and cost of R&D.

So it seems that the question is not the ethicality of robots or technology widely speaking, but rather the benefits one could expect from the use of such machines. This assessment also applies to the ethicality of the use of standoff machines. Here again, it is a waste of time asking if armed robots would be morally acceptable. Lots of systems fitted with guns and missiles are already used (Singer, 2008; 2009). Unmanned Combat Aerial Vehicles such as the Predator or the Reaper are certainly the best known example, along with Unmanned Ground Vehicles like the Foster-Miller TALON. These machines have been deployed despite all the moral concerns they could raise, and even if their reliability and precision can be disputed, it seems hardly challengeable that they are quite efficient in terms of lives saved.

The history of warfare is made of technological evolution putting distance between adversaries. Appeared in 900 B. C. in Europe, crossbows posed moral problems for they were considered as cowards' weapons. They were, for that matter, banned from battlefields during the second Council of the Lateran in 1139. Later in 1516, Ariosto in his epic poem *Orlando Furioso*, condemned the use of guns and carbines (Goffi, 2010). The recourse of strategic bombing, advocated by Giulio Douhet and William L. Mitchell, was disputed as well. What must be kept in mind here is that it is a normal evolution for weapons to be operated at a distance. Tele-operated robots are no exception, and one would say that there is nothing new under the sun of warfare ... except that weapons are becoming autonomous! Then maybe should we first question the ethicality of robots' autonomy. But here again, if the debate is undoubtedly interesting it comes up against the fact that dealing with the ethicality of autonomy presupposes that autonomy exists. This still needs to be proved.

## What is robot autonomy?

Thus autonomy seems to become the main concern about the future of robots. If it is important to think about now, one should do it on solid grounds. One must not fall into the trap of science fiction movies showing cyborgs made of steel and flesh deciding who to kill and who to leave alive. To deal with the question of autonomy, many points need to be addressed beforehand among which the difficult question of the definition of autonomy. There is no consensus about what autonomy means exactly (Jouan, 2008, p. 17). The definition depends mainly on the field from which it is studied. Philosophers such as Hannah Arendt, Immanuel Kant or Friedrich Nietzsche among many others have written about autonomy. In sociology Stanley Milgram demonstrated that the autonomy of decision-making is remarkably limited when facing authority (2004), and Samuel Huntington working on civil-military relations wrote that “loyalty and obedience are the highest military virtues” adding that “[w]hen the military man receives a legal order from an authorized superior, he does not hesitate, he does not substitute his own views; he obeys instantly” (Huntington, 1985, p. 73). In psychology much work has been conducted showing that collective history shape individual curricula (Sironi, 2007) and how autonomy is supposed to be reached through “weak or strong auto determination” (Jouan, 2008).

In the military, moral autonomy has been widely and deeply tackled, both by scholars and military members, through the question of obedience to authority. It is finally hard to say that human beings are strictly speaking autonomous. It is even harder to say that in such a constraining framework as the forces, military personnel are autonomous. To some extent it is much more concerning to see soldiers being “roboticized” through obedience and drills, than to postulate the potential moral autonomy of robots.

Then, if it is important to think about robots potential autonomy, it would not be less important to think about human autonomy. As Milgram’s study showed, human beings are a product of their individual and collective experiences. In Western countries’ cultures, but not only, authority represents a heavy social pressure. The experiment conducted in 1961 demonstrated that 65% of the subjects delivered the final massive shock of 450 volts. In quite the same experiment broadcasted on French TV Channel France 2 in March 2010, 81% of the subjects pushed the lever to the ultimate 440-volts shock<sup>3</sup>. Whatever it is-rational-legal, traditional or charismatic according to Weber’s classification-the relationship we all have with others is clearly influenced by authority. It is one of the many limits of human autonomy. There is no free spirit, this idealistic Nietzschean call for minds freed from society’s institutions.

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<sup>3</sup> Christophe Nick, *Le Jeu de la mort (Jusqu’où va la télé ?)*, France 2, 17 mars 2010, 22h46.

In a world of technology omnipresence of the media impacts on the way we see and understand the world, our ability to travel modifies our vision of others, television advertisements move us to purchase products we do not always need, videogames as well as violent movies modify our relation to life and death.

When it comes to recourse to violence human beings ability to fall into evil has been stressed many times. In *Eichmann in Jerusalem* Hannah Arendt insisted on what she calls the Banality of Evil, the easiness with which anyone can become an evildoer, may it be a passive or an active one. In a more recent book Philip Zimbardo explains how and why good/ordinary people can quite easily “turn evil” (2007). Many other examples could be cited showing that individuals’ behaviors are influenced at different degrees and with different consequences. The point here is to say that there is no empirical evidence for an a priori assumption that robots’ presumed autonomy would be more or less dangerous than human beings’ presumed autonomy.

But what are we speaking about when we say “autonomy”. Marlène Jouan identifies what she calls “four main alternatives” for autonomy. Without entering into each of them it seems interesting to make a quick overview of those alternatives. The first one is “negative or positive freedom”, the latter being the most commonly used and positing that personal autonomy is the ability of self-determination to act according to laws and principles we personally set. The second one is called “strong or weak auto determination” and refers to internal relations between the Self, as self determined, and norms with the respect to which this determination makes sense. The strong model leads to the impossibility of empirical and logical autonomy, while the weak model states that autonomy is a more “humble auto direction or self governing”. Third is “autonomy with or without substance”. Autonomy with substance is the idea according to which the link between the agent’s autonomy and his values is strictly contingent. Conversely the “substantialist” approach tries to reconcile personal autonomy requirements and morality. Eventually, the fourth alternative is “autonomy as a question of degree or all-or-nothing”, and asks if one could be more or less autonomous and if autonomy is disjunctive (Jouan, 2008, pp. 16-21).

All these developments show that autonomy is far from being simple. Then it is more than unlikely that one could maintain that human beings are autonomous but adopt a subjective stance. If human beings cannot be truly autonomous, there is no reason that this could be possible for robots. In such a case it seems vain to argue over machines’ autonomy. The odd thing here is that those who fear autonomy do not know exactly what they fear.



Since the invention of moral autonomy is due to Immanuel Kant, one could refer to its definition of the concept as “the idea of the will of every rational being as a will giving universal law”. When applied to robots the question of the rationality of machines appears. Ron Arkin made the point that robots would be better than human beings at adhering to the Laws of War (LoW) and considers that some robots are already capable of emotional sensitivity (Arkin, 2009a, b). At the same time he writes that ethical autonomy can be reached thanks to the fact that “[r]obots can be designed without emotions” and avoid “human psychological problems” (2009a). It is first worth stressing that if robots can be “designed” it means they are not that autonomous. Then, what can be understood here is that robots are able to apply the principles of the Geneva Conventions, which are scarcely disputable. But do we really expect robots to apply strictly, i.e. in a binary way, the LoW? If the implementation of the Laws of War was just a matter of “do or do not” one would certainly know it and the LoW would be relatively easily implemented. What makes it difficult to implement the LoW in modern conflicts is the fact that they are not adapted to new ways of fighting wars. They are not adapted to non state actors. They are no longer adapted to modern weaponry, mainly to weapon by destination such as planes or cell phones, not to mention robots (Sharkey, 2007). The difference on the ground is made by human’s ability to go beyond the rules and evaluate the situation through different lenses such as morality. Following Arkin’s idea that we can design robots without emotion means making them unable to evaluate a situation outside of a purely legal framework. Any reliable jurist or military personnel familiar with combat would call this perfect nonsense. The implementation of the LoW in counter-insurgency cannot be thought without recourse to nuances in the assessment of a particular situation. Feelings are definitely important in many cases. Moreover, if robots were capable of feelings they would also be subject to psychological injuries. What makes the complexity, and certainly the beauty, of the human brain is its ability to think in an abstract way, not its ability to respond to constraints in a Manichean way. Furthermore it is a mistake to consider that the implementation of rules is synonymous with moral autonomy.

It appears that if robots are to be more regularly used to kill in a combat situation, they should not be too different from human beings and even benefit from certain rights (Krishnan, 2009; Littman, 2009). This is not to be achieved.

The big issue is certainly to determine how different human beings are from robots, and how close one wants them to be at the end. Technology is clearly a mere continuation of humanness (Butler, 2009). Nowadays robots are almost human and humans are sometimes almost robots. The use of artificial limbs or electronic implant to treat neurological diseases, are steps to kind of a “cyborgization” of human beings.

Even the use of cars or other means of transportation, the extension of memory through computers and hard disks, the use of pocket calculator or communication devices, are amongst technological extensions of humanness. We already are exocypborgs, meaning that if we sometimes have technological devices inside our bodies, we continuously have our bodies inside technological devices. We undoubtedly already are on the path of what Katherine Hayles calls « posthumanity » (Hayles, 1999, 2004). This blurs the line between human beings and robots, and makes the debate around autonomy, if not a waste of time, a biased argument.

It seems then that if there are no indisputable evidences that autonomy exists, one could conclude that there will always be someone to be held responsible for robots behavior. This comment also goes to human beings. As far as conflicts are concerned, responsibility/liability is often shared by the hierarchy of the soldier who misbehaved on the battlefield. This leads us to the main issue regarding the use of warbots: who will be held responsible if they commit misdeeds?

### **A matter of responsibility**

Thus, if robots' morality and autonomy are not at the core of the question of the use of robots in warfare, it seems that what is at stake is the fundamental and deeply studied issue of responsibility.

The question of responsibility must be dealt with through two different angles. The first is the legal approach aiming at determining who is responsible regarding the law and what should be the sanction for potential misdeeds. This point has been stressed many times (Quintana, 2008; Sparrow, 2007; Arendt, 1964) and it is clear that there is a lack of rules that could be applied to the use of robots in warfare. Legal responsibility is a matter of jurists, and is a tough job to be done. However, one must not be naïve and call upon the formal interdiction of robots waiting for laws that would frame their use. No state with the capacity to deploy robots that would provide it with serious advantages on battlefields will relinquish even for moral motives. Thus, if jurists must work on this topic they will have to integrate the fact that states are not really prone to accept constraints that would deprive them of strategic or political advantages. But this point must be handled by law specialists.

The second angle is the moral one. In this instance, responsibility needs to be addressed at different levels.

If one posits that full autonomy is not to be reached for robots, one would legitimately consider that they will always be a human being behind any machine. And even in the case robots would be, say, partially autonomous there will always be someone who designed the machines, a programmer who built the software, someone who decided to purchase and use it, etc.

Thus, from the scientists who work on the development of new robotized weapons, to operators who control such weapons in combat situation through statesmen who decide upon their use on battlefields on behalf of their people, there will always be someone to be held responsible for immoral action (as well as for illegal ones). Then the question is who will assume this responsibility? (Quintana, 2008; Sparrow, 2007; Cummings, 2006).

As it is the case for law, moral responsibility could be both collective and individual (Quintana 2008; Arendt 1964, 1968). This has been deeply dealt with by Hannah Arendt. Even if the framework of her thoughts was specific, some points are nevertheless relevant with our topic. In *Responsibility and Judgment* Arendt stressed that collective responsibility is political and is the one “which every government assumes for the deeds and misdeeds of its predecessors and every nation for the deeds and misdeeds of the past” (Arendt, 1964, p. 27). However she wrote that it is impossible to shift responsibility from individuals to systems, putting forward that no one can escape his personal responsibility by arguing that one was a cog within the system. Then responsibility for Arendt must be held by each individual, even the smallest cog, regarding his role and particular position, and regarding the whole environment in which misbehavior occurred (Arendt, 1964, p. 43).

Political leaders are no exception since a leader is “never more than *primus inter pares*, the first among his peers” (Arendt, 1964, p. 47). This question is not new in warfare history and not specific to the use of robots as shown by the trials of Nazi or Japanese leaders after World War II or the trials of Slobodan Milosevic and Augusto Pinochet later on. Even if these cases referred to legal judgments, determining personal responsibilities is a matter of justice and there could not be justice without sanction toward people responsible for immoral, as well as illegal conducts (Walzer, 2000, p. 288).

However, looking for personal responsibilities can easily lead to kind of a scapegoat-hunt. The point is that collective responsibility must not be avoided. This is specifically relevant for democracies since as Walzer writes “[d]emocracy is a way of distributing responsibility” (2000, p. 299). Even if this statement needs moderation, there is no doubt that all citizens who are entrusted with the right, if not the duty, to vote, are morally, as well as legally, responsible for decisions made by their representatives. Thus, if robots must be used on battlefields, there is a collective responsibility for the concerned nation as a whole and for each its citizens taken individually. This is why there is a strong need to launch a real debate amongst peoples of countries already, or about to be, equipped with such machines. The debate must not be limited to states and government heads.

All of us are, individually and collectively, responsible toward humanity for likely consequences of the use of robots in warfare. This responsibility lies in the realization that humankind is one, and that each misdeed toward other is a misdeed toward one self. Humankind must be here addressed through otherness as Emmanuel Levinas suggests it. It is the encounter with the face of others which makes murder difficult if not impossible (1982, 2003, p. 26). It is this encounter which gives birth to one's responsibility toward others. The anonymity created by the use of standoff weapons and robots is rather unfavorable to this kind of approach. Consequently, personal moral responsibility will be something more and more difficult to seize for most of us if war is to be waged through machines. This is obviously true for citizens, but it is far more for military personnel.

The distance between soldiers and their enemies, created by the use of robots will have a strong impact on the relation to death (Grossman, 2009) and will likely lower the threshold of entry into violence both for servicemen and states (Roughneen, 2009; Quintana, 2008). It is the responsibility of all of us to think about it now. Technology is undoubtedly taking us toward new responsibilities given that technology could easily turn into a threat (Jonas, 1984). Hans Jonas argues that we should act in accordance with an imperative stating that we must never behave against the permanence of genuine life<sup>4</sup> since "one may risk his own life but not that of humanity" (1984, p. 11). This is kind of cosmopolitanism, and in this framework there is a responsibility of all toward all. According to Hans Jonas there are three conditions for responsibility: first "the acting makes an impact on the world"; then "such acting is under agent's control; and finally the agent "can foresee its consequences to some extent" (1984, p. 90). All three conditions are clearly gathered when it comes to think about robots in warfare.

Eventually, we all have a personal moral responsibility in the development and use of weaponized robots. This responsibility is directed toward humankind, toward others (Levinas, 1982, 2003). This means that since we already have elements providing us with some visibility over future consequences of these machines, we must start thinking about the stakes of war in which robots will be more and more present. This must be done collectively since holding responsibility for conduct one has not been directly involved in, is the price to be paid to live in society (Arendt, 1968). But this must also be done individually for there is no way to dilute one's responsibility into a system (Arendt, 1964). Thus, back to the use of robots on the battlefield, no one could be exempted from responsibility from statesmen to citizens, through scientists, programmers and military members.

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<sup>4</sup> The imperative is stated as follow: "Act so that the effects of your action are compatible with the permanence of genuine human life".

## Conclusion

Questioning the morality of the use of robots in modern warfare is nowadays very common. This being said one should stress that the real issue of moral responsibility, even if seriously studied, is not clearly dealt with. Thinking about the morality of robots is certainly useful for philosophers, but it is a waste of time for practitioners. Technology is under way and it is unlikely things would change. In this framework the development and use of robots will soon be part of our everyday life. “Hubots”<sup>5</sup> will invade houses and hospitals as servants, housework helpers and caretakers. They will invade our kids’ rooms as toys, and they will inevitably be extensively used in warfare. Some will find it moral, others will not.

The fear created by these machines is certainly overestimated. The path to partial autonomy is paved with many obstacles that will be difficult to get through. However, if such autonomy is reached, even in the long run, we will have to ask ourselves what differentiates machines’ partial autonomy from human beings’ one. And then we will be able to balance both and say which one is better than the other, if either. Meanwhile there is a pressing need to define clearly what autonomy even before stating that it exists, which seems pretty unlikely.

At the end, autonomy is not the big issue. The real stake of weaponized robots used in modern and future warfare worth being tackled, is to determine moral and legal responsibilities. From this perspective it seems that there are many things to learn from the reading of Hans Jonas, Emmanuel Levinas and Hannah Arendt’s works for instance. The main points to keep in mind are here that moral responsibility aims at the preservation of humankind and that responsibility is both collective and individual. This sounds obvious at first sight, but it will need deeper work to make this clearer and practically applicable.

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<sup>5</sup> This name is borrowed from the Swedish series *Äkta människor* (*Real Humans*), by Lars Lundström.

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