

Drones in Society

Team 4

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Link to Case Study:

<https://www.nato.int/docu/review/2017/Also-in-2017/autonomous-military-drones-no-longer-science-fiction/EN/index.htm>



Overview

The case study we have chosen is autonomous drones and the ethics behind using them. It is believed that there are currently no autonomous drones in use although the technology behind them is currently being worked on. It is not hard to believe that they will be able to be deployed in the very near future. With that being the case, there is a moral dilemma as to whether or not these autonomous drones, robots that do not have humans controlling them, should be allowed to make decisions such as killing people. The limiting factor in putting these drones into use is not the lack of technology but, as the article calls it, the lack of “political will”. The term “autonomous drone” has not been assigned a legal definition and therefore there are no real restrictions against them.

A major argument against autonomous drones is that there is no test that could prove they act like humans would. The drones would have to be able to handle an infinite amount of scenarios, each one being different from the last, and there is no way to test that the drone would perform as a human would in every single one of these. Some people propose that they use artificial intelligence to give the drones the ability to think but many people, such as Stephen Hawking and Elon Musk, warn against this. Some drones work off of manned aircraft but work with a certain degree of autonomy. The PERDIX is a “drone swarm”, as the article calls it; that is, 100 of these individual drones are dispatched from a manned aircraft and they work autonomously together to achieve their goal.

An argument for using autonomous drones is the extremely long and costly training that pilots must undergo. With autonomous drones, a large force can be assembled in a fraction of the time it takes to train a single pilot. The article makes sure to mention the counter argument that training the ground crew to maintain and assist the drone force would be no cheaper or quicker than educating the pilots.

There are many legal arguments, along with the ethical arguments, that can be made against autonomous drones. The first being who the drones can attack. They would still be considered a weapon and would have to abide by the Law of Armed Conflict, which states that you can only attack a lawful target. People argue that there needs to be a human decision in the process of attacking someone/something. The article mentions that the law has a little bit of leeway and requires “a reasonable commander acting in good faith”. This means that the person in charge must be assessing the military advantage the strike would bring compared to the damage it would cause.

The biggest ethical argument against the autonomous drones is that letting a robot decide to kill a human undermines the value of a human life. The ability to decide who to attack and who to not attack is difficult for even human soldiers on the battlefield, many argue it would be near impossible for an autonomous drone to do without inexcusable civilian casualties.

The counter argument to that is that the drones would be able to process much more from their surroundings at a time and wouldn't be influenced by human emotion, such as anger and fear. For this reason, some argue that they would have better decision making than their human counterparts. They also argue that the use of these drones would keep humans out of unnecessary harm in situations such as disposing of a bomb or clearing a house.

Overall the argument of autonomous drones deals with a lot of gray areas and regardless of whether or not they get implemented the situation requires much debate. The

article brings up a good final point stating, how we deal with war can “never be morally outsourced”.

Stakeholders

The main stakeholders for this case study are civilians, the government, engineers, and the Military and other Armed Forces. As we stated above, if these drones are truly autonomous and given the right to decide to attack a human or not, any civilian in a battlefield near one of these autonomous drones is at risk of being attacked or saved. In addition, the governments of all nations would have to deliberate over the legal logistics and ramifications of allowing autonomous drones into battle. The government would have to invest a lot of time and money and negotiation to reach a united consensus on the laws regarding autonomous drones. Furthermore, there are many political barriers preventing nations from agreeing on the same set of rules which might lead the negotiations into a standstill. The next main stakeholders are the engineers who would be responsible for developing these autonomous drones capable of manipulating itself through any situation. While it seems that engineers have created drones ready to deploy, engineers would face a huge pressure in ensuring these drones are free of any bugs and perform as expected. On the other hand, if autonomous drones are banned, then much of the work engineers have put into replacing humans in the battlefield would have been wasted. Last, but certainly not least, the Military and other Armed Forces is a stakeholder because the Armed Forces would shrink incredibly in size, or rather, humans would be replaced by drones. If there was ever a question of whether robots were taking human jobs, this stakeholder would be affected the most. The Armed Forces would have to completely reestablish how it ran, balancing a new human to drone ratio. Officers would have to develop new curriculum to train drones and create new job opportunities to oversee these drones.

- Civilians
- Government
- Engineers
- Military and other Armed Forces

Utilitarian Test:

1)

Unmanned military drones are known to be inexpensive, expedient, and effective. The infusion of the autonomous system is projected to mark the hallmark of technological efficiencies in military.

In the short-term, the cost of developing complicated algorithms can be very high, especially because it needs stronger safety checks than any other autonomous system we would normally find in our daily life. However, once the system is in place, the

development of autonomous system will significantly reduce the cost and overall timeframe of building fighting power.

It is well known that the cost of educating junior pilots or drone operators often exceeds that of manufacturing fighting aircrafts. Imagine how so many years of experiences are required to call them veterans. And compare this with Google's AlphaGo-like artificial-intelligence based computer pilot gaining sharper insights, knowledge, and skillsets in piloting drones than any other human veteran operators within a couple weeks of deep learning.

In addition, the computer is shielded from any emotional distress found in human counterpart. On the contrary to the popular belief, drone pilots suffer from the post-traumatic stress disorder, just as much as those in the physical battlefield, as it was found that close to 50 percent of Reaper and Predator pilots reported "high operational stress" in 2011 survey (Dao).

2)

Let us now assume the autonomous system is fully adopted. Even with all the technological advantages, we cannot discount the possibility of fatal system errors. Fighter drones carry deadly missiles and, in the future, drones will be used in carrying out nuclear missions. Several metric mishaps or simple math errors in NASA's spaceship project could cost the government a billion dollar; however, this cost can become unimaginable when the weapons of mass destruction come into play and human life is in stake. In this scenario, every stakeholder will be negatively affected. Not to mention innocent civilians living under the fear of the drones' incidental attack, the military and government, whose credibility will be irreparably damaged, are sure to lose major public supports in their military agenda.

3)

On the other hand, the autonomous military drones' utilitarian advantages do not fall short in just the installation and maintenance cost. Drones' surveillance and intelligence capabilities can surely welcome revolutionary developments with the autonomous system. 99 percent of drones' video footages are known to be wasted, not because they are wasteful, but because there is not enough manpower to review (Johnson). The advancement in the artificial intelligence can provide not only cheaper source to fully utilize all intelligence gatherings of drones, but also revolutionary insights that would not be possible to attain with human's bare eyes.

4)

What about the autonomous system adopted to the fighter drones? It is still arguable how accurate and surgical it can be in distinguishing civilians from enemy combatants. But the system's reliability will continue to increase with stronger safeguarding algorithms. And also, human drone pilots are bound to make mistakes. It is no secret

that many drone operations were subjected to severe criticisms on their unintentional, yet indiscriminate attack on innocents. Unless the drone system is discarded entirely, the major stakeholders—innocents living in the area of armed conflict—will be better off with the autonomous system, if its ability to minimize the civilian casualty surpasses that of human.

5)

It is hard to decide whether using autonomous systems in drone will pass the utilitarian test, because we do not yet know the extent of safety of the system that can be established. If the system is expected on average to make less errors than human operators do, it will pass the utilitarian test, especially considering its unmatched cost effectiveness and usefulness in intelligence capabilities.

Justice Test:

- 1) The civilians and armed forces in and around combat zones would potentially take the biggest burden because their lives may be jeopardized by this new technology; on the other hand, if this technology performs better than humans they receive the biggest benefit. The armed forces have the additional benefit that they could avoid losing lives in humanitarian and military missions if drones replace them, but this also means losing their jobs. The engineers would receive the benefit of having additional funding and support for their work in designing new autonomous systems, but also assume a new ethical burden in that they are designing systems to kill human life. The governments assume the benefits of armed forces which are likely cheaper and quicker to train.
- 2) The parties with the largest stake in the outcome are the civilians and armed forces in the line of fire. The engineers also have an important stake, but they receive a mix of burdens and benefits with the inclusion of autonomous drone warfare. Therefore, the distribution is only fair if the drones are able to perform better than humans. Specifically, they must be able to kill the correct target more reliably than a human soldier, while also creating less collateral damage and suffering.

Outcome: The military and civilian persons whose lives are at risk have the largest stake in the outcome. Based on current research, it is likely that drones will have more trouble than a human in determining the amount of collateral damage and suffering they may cause with an attack, while they may be better able to make critical decisions in a life-threatening situation. Because every endangered life has an equal stake, the use of autonomous drones in warfare is currently unethical because drones cannot accurately assess all of the pain they will cause due to a strike. In the case that they are able to do so, the use of autonomous drone warfare would be ethical because it would reduce the suffering of people in the line of fire.

Virtue Test:

1)

The US military often portrays as the world police. Since Bush administration declared “Global War on Terrorism” after September 11 attack, the US military brought force the concept of capacious war, by which it can engaged in armed conflict wherever and whenever terrorists are present. In order to gain and maintain worldwide approval with this dubious and dangerous concept, the US military has to show the public that it promotes the system of prudence, self-control, and integrity. It has to consistently present to the public that all of its operations are surgical, intended to protect the innocents from harmful forces, not putting them at risk altogether by indiscriminately abusing their military power.

2)

Does the autonomous system fit this vision? Not really. Irrespective of utilitarian consideration on whether the autonomous system results in less civilian casualties and collateral damages, the public will tend to focus on the image of computers mechanically executing the otherwise psychologically-affecting mission of targeted killing or bombing. Absences of human involvement in the matter of harming lives are alarming. We expect the decision makers in the battlefield to be moral, have some compunction in their acts of killing, even if their action is for the just cause, and avoid causing unnecessary suffering. When the drone mission results in civilian casualties, the public will be less forgiving than what would have been with the case of human mistakes.

3)

Highly technological weapons, such as ICBM and nuclear bombs are also characterized by complete remoteness, but they are limited to be used frequently due to their extreme scales. On the contrary, drones’ effectiveness and flexibility are unmatched. This practical efficiency, with which the military makes the targeted killing and bombing not as the last resort but as an easy alternative, is a manifestation of moral peril in the use of autonomous drones. Furthermore, the fact that lethal operation becomes practicable owing to extraordinary capacity of drones tends to overlook necessary moral justification in executing those operations. In other words, it seems as though, because the drones are relatively cheap and easy to utilize, the United States is *allowed* to carelessly carry out highly questionable targeted killing or bombing operations.

4)

Then how do we find the balance? As technology develops further, it becomes harder to disregard all Utilitarian (cost and technical) benefits. The military cannot always prioritize its public image, while the enemies also take advantage of technological advancements and grow more intelligent and deadly. The right way, therefore, would be to focus on the

application of artificial intelligences on drones' intelligence and surveillance capabilities. Major decision-making processes should still be mainly assigned to human operators, while the role of the computer system in the battlefield should be limited to take an auxiliary role—at least until it can convince the public that using the autonomous system will in fact result in less overall collateral damages.

Constraints

There are many constraints that we should take into consideration. One of the major components is the economic constraints. Drone programs are currently about as expensive as current training protocol for pilots, but once established, it will require less money and time to be invested into training new pilots. Thus, further developing drones could potentially lower the cost of a given aircraft as it is no longer controlled by the safety and size constraints imposed by a pilot.

Another factor to consider is the social impact of drones. While these drones would ultimately mean less lives lost by the military employing them, it could quickly dehumanize war, which would fail to have any significant kind of lasting social impact.

Last, another factor to consider is the political constraint of drone research. Drones must be subject to international laws of armed conflict, but it is unclear how they will fall into this category as the laws were generally designed with the intention of a human making rational decisions. Can an autonomous drone accurately weigh military advantage against potential collateral damage caused by its actions? More importantly, who is responsible when a drone makes a potentially large error?

Conclusion

In conclusion, the question remains, where do we go from here? It would be unwise to throw years of research and money in the drain by halting all drone research; drones have brought and will bring advantages to society. However, allowing autonomous drones to freely roam the Earth would also be detrimental. With rapidly growing technology, limitations must be set in order to maintain the peace and structure of our society. Therefore, it is important that policy makers create laws and statutes that will limit the extent in which drones can act autonomously, such as life and death situation, and allow for autonomy when no human life will be endangered (i.e monitoring, data collecting).

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