

Ethical Issues with use of Drone Aircraft

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Abstract: This analysis is aimed at identifying the ethical issues related to a variety of types of Drone aircraft as they are currently deployed in recreational, civilian/commercial and military arenas. A series of examples will be examined in order to attempt to identify the ethical problems that we confront recreational, civilian/commercial and military uses of drones. In order to carry out the ethical analysis I will first survey how drone aircraft create ethical problems and how humans play an important role in how ethical issues emerge for drones. After the identification of the ethical issues with the types of drones we can next move on to how drone aircraft may function in the future and what ethical issues may arise for the future development and deployment of autonomous drones.

Keywords- Drones, Aircraft, Military, Commercial, Ethics

The following discussion will aim to identify the ethical issues related to drone aircraft.[1] For the purposes of this discussion a drone will be defined as an unmanned airborne vehicle without a pilot on board. A drone may be navigated by remote control or by onboard computers that give the drone a degree of autonomy. The degree to which a drone can legitimately be called autonomous is a matter of controversy. There are a variety of types of drones that come in different shapes and sizes, and there are different ethical problems that arise for each of these different types of drones. The three basic categories of drones which we will briefly examine in what follows are recreational, commercial and military drones. Recreational drones are used mainly for recreational purposes. These drones could be used, for example, for hobby purposes while being flown in a park to take photographs from unusual perspectives and angles. Civilian and commercial drones could be used by business for surveillance, domestic policing, the delivery of goods and for oil, gas, and mineral exploration. Military drones are used for a variety of purposes such as reconnaissance, surveillance,

remote sensing, armed attacks and warfare. Each of the purposes for which drones are deployed have their own set of ethical issues and problems. For the purposes of this paper we will offer a brief survey of the uses of drones and the ethical problems with each of these uses. We will close by focusing on the ethical issues with autonomous drones. Drones can be classified in a variety of ways, some of which include the air space within which they operate, as well as the roles they play within the airspace within which they operate.[2]

As previously stated drones can be used for recreational purposes, such as drones flown in a park as a hobby for pleasure, or used by a photographer to take unusual photographs. Civilian and commercial drones could be used for a variety of purposes which might include surveillance around malls or for monitoring and control of road traffic, domestic policing, oil, gas, and mineral exploration, and the delivery of goods. Additional uses might include crop monitoring and spraying, fire services and forestry surveillance. Military drones are already being used for a variety of purposes such as reconnaissance, surveillance, remote sensing, armed attacks and warfare; further uses include target monitoring and designation, as well as the elimination of designated targets.

In order to understand the ethical issues involved with drones we first need to have an understanding of ethics. Ethics in a basic definition relates to agents who perform actions. Dwight Furrow in the following passage identifies the focus of ethical analysis as involving series of factors. As Furrow states, ethics is related to evaluating actions and actions are performed by those capable of being moral agents. As Furrow says, "When we evaluate an action, we can focus on various dimensions of the action. We can evaluate the person who is acting, the intention or motive of the person acting, the nature of the act itself, or the consequences." [3]

Two points can be made about what is stated in this passage. Ethical issues related to drones are based upon the idea that what a drone does is an

action, but this action is an extension of what a person does. In other words, the actions of drones are only capable of being evaluated based upon the actions of the person controlling them. If this is true and if we endorse the distinctions identified in the preceding passage and apply them to the use of drones, there are three levels of evaluation. We can evaluate the actions of a person controlling the actions of a drone, the intentions of the person controlling directing the actions of a drone, and the consequences of the actions intended by the person controlling the actions of a drone.

Unless drones are fully autonomous, we assume that the actions of drones are subject to ethical evaluation based upon the actions of the person controlling the drone, the intentions of that person and the consequences produced by the drone. Ultimately it is the person or persons, who are controlling the drone, that are subject to moral evaluation.[4] If we want to identify the ethical issues with the recreational use of drones, we need to ask, what actions are performed when drones are used recreationally, what is the character of the person controlling the drone, what are the intentions of those using the drones recreationally, and what are the consequences of the recreational use of drones?

The ethical issues emerge as the result of the interaction of how the drone is used by a user in contrast with how those who experience the way the drone is used by the user. There is the controller of the drone, the drone, and who and what is influenced by the activities of the drone. The intention of the users of drones involves instrumental reasoning and establishing a purpose for the drone (such as surveillance) as well as those affected by the purpose of the drone involves technical issue of being under surveillance. It is from this interaction between the technical use of the drone by the user and the technical use of the drone as it affects another person that ethical issues with drones arise. A preliminary ethical analysis using standard ethical principles can be developed from how the intentions of the users of a drone affects the person or persons affected by the used of the drone.

We can next turn to the ways in which the actions of drones may be evaluated. If someone flies a drone as a hobby in a park for recreational purposes, when the location is isolated, it is hard to imagine a person being annoyed by the noise. However if a person in the same location is annoyed by the noise they may claim that their right to peace and quiet has been violated. What might be at issue is the right of one person to pursue pleasure related to their hobby and right of another person to have solitude and quiet in the same public space. For one person the pursuit of a

hobby for recreation may be the cause of another person's annoyance.

If someone flies a drone in a park to take photographs as a hobby or for artistic for artistic purposes, the consequences of these actions may not have ethical issue related to them. If, however, one person inadvertently takes a photograph of another person, this could amount to an invasion of privacy. An even clearer example of an ethical issue is when a drone is used to stalk another person. Photographs taken by a drone to follow or stalk another person present us with clear ethical problems. Both examples may contribute to an invasion of a person's right to privacy. Taking photographs may impact another person's privacy. Respect is a fundamental virtue in the sense that to respect a person is to value a person. Persons have the fundamental right of having their privacy respected. When drones are used to take photographs of a person or when a person is stalked by another person, their privacy has not been respected.

Civilian and commercial uses of drones for property management companies may include surveillance around malls or for monitoring and control of road traffic, domestic policing, oil, gas, and mineral exploration, and for the delivery of goods. Many of these uses of drones involve issues related to gathering data about individuals near a mall or in road traffic. The same problems about privacy enter into the picture. These may both amount to an invasion of a person's right to privacy. An additional area of concern moving beyond this ethical problem is a situation where large numbers of drones are used for commercial purposes. One such project is Amazon's Prime Air project which is aimed at delivering packages into customer's hands in less than 30 minutes.[5] In this scenario where large numbers of drones are delivering large numbers of packages to a small area, there may difficulties created related to having too many vehicles in a limited airspace.

Consequentialism is the view that "an action is morally required just because it produces the best overall results." [6] From a customer's point of view, to be able to order and receive goods in 30 minutes could be seen as producing good consequences. The business delivering the packages would benefit and the customers receiving the packages would benefit. But on the other hand, what would be the outcome of having a large number of drones in an airspace, for example, around a university? What are the consequences of an increasingly larger number of drones filling civilian airspace? How would air traffic control be enacted around a university and for the public in general? What would the odds be of delivery drones crashing into one another, and if they

did crash into one another, what would the danger be to the public?

Military drones are used for a variety of purposes such as reconnaissance, surveillance, remote sensing, armed attacks and warfare, target monitoring and designation, and elimination of designated targets. Military drones can be used to eliminate enemies but they also create collateral damage. Military drones are effective because they are much cheaper than traditional military weapons and they have become increasingly accurate. The situation is different when viewed from the perspective of the targets and collateral damage linked to the drones. Not only are people misidentified as military targets, but there are also non-military death and casualties.

The most controversial of drones are those referred to as autonomous drones. The deployment of autonomous drones is a military goal for the coming years. This goal is stated in the following passage.

“The US military hopes that drones will be capable of changing their own missions, altering course without a human command, and buzzing through the skies in coordinated groups within the next 25 years, according to a new Defense Department report.”[7]

As previously indicated there are a number of advantages of having drones involved in military operations, particularly when it comes to the cost and precision of eliminating enemies. There is a difficulty that immediately arises, which is over the meaning of autonomy. Armin Krishnan identifies 4 types of autonomy related to drones.[8]

Tele-operation - This involves continual remote control.

Pre-programmed autonomy – This involves a range of pre-programmed computer directed behaviors.

Supervised autonomy – When problems with drones occurs drone operators make corrections

Complete autonomy – In this case a robotic/drone system can identify and handle problem that arise without human intervention.

There are advantages to using drones as previously noted, but difficulties begin to arise, when a drone becomes completely autonomous, and becomes capable of killing on its own. According to Asa Kasher, the major consequences of killing by remote control include the following advantages:

“1. Killing by a usage of a UAV does not involve any significant jeopardy to the life of the operator of the UAV.

2. Killing by a usage of a UAV can cause collateral damage.

3. Killing by a usage of a UAV does not involve significant harm to the military equipment used in the operation.”[9]

The positive consequences of using drones in contexts where killing is involved, lessens threats to operators of drones and when a drone operates from a distance lessens the possibility of the loss of equipment.

However, there are also disadvantages to the use of drones. One of the negative consequences of the military use of drones is that even when legitimate military targets are destroyed there is also the possibility of collateral damage.

What is perhaps most troublesome is what must go into the construction of an autonomous drone. In order to identify and destroy a target, there would have to be a sophisticated AI computer system on board the drone, as well a sophisticated sensory identification program, that would allow the AI on the drone, to first locate and then identify a target. While this is certainly possible at several of the 4 levels of autonomy, if a drone were completely autonomous, it would also be able to make the decision to eliminate a target and it would then actually kill that target without human intervention. What this would ultimately mean is that we would hand over the task of identifying, eliminating and killing our enemies to machines running complex AI and sensory computer programs.

From the point of view of our military and from the perspective of national defense, the goal of drone operations, is to identify and keep watch over as well as eliminate our enemies. If our defense and national security are at issue, does it really matter if humans kill our enemies or if machines kill our enemies, as long as our enemies are eliminated? This is an important issue for anyone concerned about the development of autonomous drones in the future.

But perhaps before we hand over the killing of our enemies to machines, we need to pause and reflect. What are the consequences of this decision? When we decide to turn the decision to kill over to machines have we intentionally removed the responsibility of killing from our own hands? Have we trivialized the act of killing? The study and application of ethics is a humanitarian enterprise, where we attempt to examine the affects and effects of our decisions upon people. If we give up the decision to kill our enemies to machines, do we intentionally surrender our emotional stake in the decision to kill our enemies? And when we decide to surrender our autonomy in decisions about killing, do we give up the possibility of feeling any sense of remorse that we may feel towards and about our acts of killing? I believe that as moral agents we have a

duty to ourselves to feel remorse for our acts of killing. I do not know if we can or cannot program autonomous drones to feel remorse, but I do believe that what stops us from killing, even in the context of war, is remorse.

References

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