Drones vs. Privacy In The Modern Era

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Matt Kerner
Mathew Berry
Brandon Zammit
Benya Chongolnee

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Drones vs. Privacy In The Modern Era

Drones are everywhere in 2017. From covering riots to racing in competitive competitions, the era of the drone has truly begun. As with any new technology, there will be challenges that come with it particularly when it comes to privacy. Drones have the ability to be used both by the private sector and law enforcement to violate privacy, whether it is intentional or not. This debate has been taken to the United States court system and is still very much up for debate. Whether people have the right to fly high definition cameras wherever they please is a major ethical dilemma. On one hand, it gives people new freedom to see and film what they please. On the other hand, it can cause harm to many people such as invading their privacy which extremely violates Utilitarian ethics. The following report will look at the history of drones, the ethical future of the technology, and specific court cases and laws regarding privacy and drones in different countries. Having smartphones everywhere started the end of the era of privacy, and drones are going to put the nail in the coffin.

Before drones can be discussed, one must understand what the definition of a drone is. Drones, or sometimes known as unmanned aerial vehicle (UAV), is an aircraft with no human in the vehicle. It is like self driving cars, but for planes and helicopters. According to International Civil Aviation Organization, drones may be operated with remote control by a human or autonomously controlled by computers (International Civil Aviation Organization). As quoted from Harper Collins Publishers Dictionary, a drone is " an unmanned aircraft or ship that can navigate autonomously, without human control or beyond line of sight" (Harper Collins Publishers). Basically a drone is a flying remote controlled or autonomous device that can allow users to see and film into areas that would otherwise be inaccessible due to physical constraints. These physical constraints were often put into place to protect the privacy of the individual, whether it was a fence or something more. As with many technologies, research for drones started off for a military application. The Israeli military is often credited with inventing the first modern drone with their Tadiran Mastiff ship, which was launched in 1973 (Tucker). When one think of drones, they probably think of them as a new technology, but this shows that they have been in development for nearly a century. The use of UAV is rising more and more every day. The industry experts says that it is the "most dynamic growth sector of the aerospace industry in this decade" according to a study done in 2012 (Cavoukian). The study states that in 2011, the research and development for UAV was $6 billion and by 2021, the value is expected to double. Because of this investment, improved and more powerful UAV will be invented. These new inventions will be able to either help advance the community or destroy it. Due to the high interests of drones from military, domestic law enforcement, private sectors, and enthusiasts, drone technology comes with its own advantages and disadvantages.

As of late 2017, it is widely known that Amazon.com, Inc. has the ambitious plan to launch a fleet of delivery drones that would allow them to deliver their Prime packages in a record amount of time. Immediately after the announcement there was public outcry about the ethics of whether or not this would violate public privacy by allowing a high powered drone to

fly to one's front door. According to Amazon, the Prime Drones would be able to deliver a package to one's door in about 30 minutes (Amazon Corp). These Amazon Prime Air drones could pose a serious privacy threat since they have a large amount of personal details about customers, which could be abused, violating ethical standards. Besides for commerce companies like Amazon using drones to deliver packages, drones are slowly invading public spaces to capture occasions like parades, sporting events, and even riots. Drones have been spotted at many events on Purdue University's campus, including the recent addition of lights being added to the historic Ross-Ade Stadium. An event occur when a Purdue University student attempted to capture footage of the football stadium lights, but he was forced to land his drone and delete the footage because the university wanted to be the first to release the public footage of the new lights. Although this is an isolated incident, it reflects the overall fight between personal drone use and other authoritative figures trying to control what happens to the footage.

In addition to being used for capturing footage, drone competition are also gaining in popularity. According to a recent article on CNBC, there was a drone competition with the winning prize of $10,000 (Song). This large prize shows just how big of a deal drones are becoming in the recreational world. The article continues on to say that there are scouts who are going across the country looking for professional drone racers for these competitions (Song). If one of these drone racers was to use their skills to capture sensitive footage and then race away from authorities, it could lead to a large ethical problem and a major loss of privacy. Next, after understanding the functions, the privacy concerns will be examined more closely to exemplify the issues that are brought up due to this advanced technology.

As stated previously, there is a fight between personal use and authoritative use of drone technology. A large amount of people use drones as a part of their profession; however, there are people that use drones to commit immoral and otherwise deviant acts. A man in New Jersey shot down a drone that was spying on his sixteen year old daughter sunbathing. A judge ruling on the case later said the man who shot it down was acting within his constitutional rights (Bilton). There will be many more court cases just like this as judges try to interpret the 300 year old Constitution of the United States and the rights it established for drone technology. United States Senators are already trying to introduce new laws to combat drones (Glaser). Although the issue of privacy from the air would seem like a modern issue, the debate goes all the way back to the end of World War II. The United States Supreme Court case of United States vs. Causby was one of the first to take on the question of individual privacy from the air (Frank). The Supreme Court case was decided in favor of Causby. The ruling from the Supreme Court established that property owner's rights extend to 86 feet above their homes (Frank). Although this ruling seemed somewhat insignificant in the 1940s, today it is a major fighting point in the ethical debate for drone technology and privacy. Property owners' and their families have a legal right to privacy, but at 87 feet above their private homes filming is fair game according to the law of the United States.

The challenge of privacy through the air is again being challenged in the Supreme Court, although this time by a national rights group. The Electronic Privacy Information Center, or EPIC is suing the federal government in an effort to hasten the effort of creating new privacy laws to protect the public from drones (Frank). The Supreme Court will surely look to the rulings of their predecessors as they ponder the ethical and moral dilemma of possibly stifling innovation by protecting the privacy of the public.

One surprising front in the fight of drones versus privacy comes out of Hollywood. Many celebrities have found their privacy being violated as drones fly around their large estates, hoping to get a look into their private lives (Frank). This is very inappropriate because the pilot that is controlling the drones are able to make money out of the pictures or videos of the celebrities taken by the drones without the celebrity's' permission. This heavily violates the ethical frameworks because the pilot is the only person that is able to gain something from spying. Celebrities are people too; therefore, the same ethical standards that are being used to examine the masses need to be held to them. Celebrities have a large influence in the United States, and could play a large factor in new laws being created about the photography of unconsenting individuals in their homes. Perhaps it may be a movie star who is leading the fight for new laws regarding drones and privacy.

Another large fight in the Supreme Court may come in the form of States Rights'. The very issue that tore the nation apart in the American Civil War may lead to a new fight for drone privacy rights. The Federal Aviation Administration believes it has the right to regulate the drone industry as a whole, and all entities must follow its rules (Frank). The debate here comes with the belief by some that privacy rights are more of a state issue than a federal government issue. There may be future court cases to decide whether the Federal Aviation Administration has overstepped its bounds by trying to regulate an entire industry. No matter which entity is in charge of regulating the drone industry with new laws, they must make sure these laws carefully follow accepted ethical frameworks to ensure the privacy of the public.

The following portion will look at the ethics of drones using multiple ethical standard frameworks including consequentialist ethics, deontological ethics, virtue ethics. Using three ethical frameworks allows for a complete moral look at drone technology and the benefits and consequences that come with it. Drones can be used to positively impact the community as well as negatively impact the community. The results of using these drones to invade others privacy is not morally acceptable according to consequentialism. Privacy of many should be upheld over the benefit of a few individuals. With the utilitarian approach, one should choose the option that will provide the most good to the population (Bonde). According to utilitarianism ethics, using drones to gain information on others is unethical. Utilitarianism is an ethical framework that believes justification resides in the consequences of the action. The results of the teenager who lost her privacy due to the man that was spying on her could be the loss of her reputation at her school or life in general. The neighbor did not consider the rights of the young girl when he chose to fly his drone into a restricted airspace. If he had considered what he was doing from a

consequentialist approach, he would have seen just how questionable his actions were, as the results clearly speak for themselves. The privacy the girl lost would be under bodily/mental privacy, as it could make her feel violated in the most personal way. With that being said, Utilitarian ethics state that this is a morally acceptable outcome as, shooting the drone down caused greater moral good. This is compared to the action of the father allowing his daughter to live a life scarred by the actions of a perverted individual, which would be a clear ethical violation (Bilton).

In regards to the argument presented, the better option to the public would be one that increases their privacy. With the new era of public drone technology, any policies or procedures to protect privacy will be a welcomed addition to public law to ensure the current standard for privacy is not further violated. When thinking in regards to the greater good one must also have to think about it from a government and corporate perspective. It is crucial that all aspects of the community and society are examined to fully satisfy the utilitarian approach. It is important to consider what priorities are more important whether it be encouraging innovation or mitigating privacy concerns. If the United States government had stepped in and banned the development of smartphones then the world would be a very different place. The same concept applies to drones because each government defines drones differently and has differing regulations regarding drone use. If a government bans a technology there is no guarantee that the governments in other countries would follow suit. This would create a technological divide between the countries. The digital divide is very real and can cause long term damage to the economic growth of countries (Kloc). This would violate the utilitarian approach of having a positive impact on the public. The choice must be made whether economic growth or privacy is more important to people, and which will be more beneficial to them going into the future.

As quoted from the BBC "…small swarming drones might become as much a part of our environment as insects" (Hambling). Insects are everywhere, but soon drones may be even more common as the technology continues to expand and become cheaper. At the current point there is no stopping the advancement of drone technology. No one organization or government can stop their spread. The only solution that can possibly be done is regulating where and when drones can be used by the public. This also includes what rights the public has when their privacy has been violated by drones. The military is currently doing this where they recently give military bases approval to shoot down unauthorized drones flying near the Pentagon (Mizokami). The government recognizes the privacy and security of military bases, but still has doubts about the privacy rights of the public. In the future there may be much more stories of drones attempting to spy on military bases. This could become a major problem, and giving the base commanders the option to shoot down drones puts everyone on the base in danger. While spying on government actions is illegal, the issue is illuminated by the fact that flying an object creates security flaws in many facilities. Drones will also continue to be more prevalent in neighborhoods, who the owner also have the option of shooting unwanted drones down.

The challenge that drones present are people's right to own the drone in the first place, and other people's right to privacy if they don't want to be filmed or followed. The right to privacy has already been abused by drone use, such as in one extreme case where a teenage girl was filmed sunbathing at her own home (Bilton). Although cases like these may be few and far between, it still highlights that the possibility is out there for the abuse to happen. There are currently "laws to protect individuals against people stalking or spying on them in their homes, there are no federal laws in place that would protect individuals from being spied on specifically by a drone" according to April Glaser from Recode (Glaser). There is a high urgency to change drones uses in order to improve the society and move the community forward.

Another possible way for the privacy of everyday citizens to be violated is by the very officers whose job it is to protect them. Law enforcement and drone technology would seem to go hand in hand. Police could possibly use drones to chase down suspects, observe potentially dangerous situations, or even spy on suspected criminals. One would not be opposed to that as it assists with the public safety of those around; however, in that case many people overlook that big brother feel that this entails. This is where major questions come into play. According to an article by Ann Cavoukian, the United States Supreme Court ruled in 1986 that law enforcement has the right to use aerial video technology to observe suspected criminals without a warrant (Cavoukian). This ruling shows just how long the debate for drone technology has been going on, as well as how early law enforcement saw the potential in drone technology. Because this case is very ambiguous, there are still no laws that protect individuals from being harassed by drones. With this Supreme Court ruling the United States government has shown that they favor the use of mass surveillance over respecting the rights of individual privacy. This opens up a massive door of potential ethical abuse. Although the previously mentioned ruling favored more mass surveillance, the United States government seems to have favored the right of the individual in recent years.

In Ann Cavoukian's article, she mentioned a new ruling by the United States Supreme Court that protects the right of the individual (Cavoukian). The ruling came from the case of United States v. Jones, which took place in 2012. In this case the Supreme Court was looking at the question of whether or not a device tracking the movement of vehicles constituted a warrant (4). The Supreme Court ruled that in order to remotely track a vehicle, law enforcement officers would need a warrant to use such a device (Cavoukian). Drones could be considered in this category which portrays just how vague and interpretable the policy surrounding drone use actually is. With this landmark ruling the Supreme Court has shown that the debate is still ongoing and momentum could swing either way in the ethical war for the right to privacy in the era of drones.

Next, deontology will be examined which will allow for a deeper understanding of the intentions behind the decisions. The commercial use of the drones allows for individuals to engage in actions that would normally be labeled as unethical. The intentions are often to gain information that one could not gain access to otherwise. The use of drones provides a convenient

and safer way to gain intelligence that has not been seen before. Also, the intention could be to violate the privacy of an individual through the use of the drone's abilities. The argument could also be made that in the process of gathering information there was an unintentional violation of privacy. When applying various parts of deontology, it is important to analyze the universal test which states that "do unto others as you would have them done unto you." When considering the intentions mentioned before, one should ask if they would spy and invade privacy because they would want others to do that to them. If one flew a drone over their neighbor's house to gain information about them, would everyone else be okay with doing the same action? It is safe to assume that most people would not be okay with others invading their privacy and therefore it is an unethical action according to deontology. The next part of deontology discusses the fact that the actions should be based on duty. To determine whether the use of drones is ethical related to duty, the question becomes if it is a person's duty to use drones to invade others privacy. Most people would answer no to that question. Considering that topic, it would certainly be ethical to avoid the use of drones when the intention is to invade privacy. It is simply not a person's business and not their duty to engage in acts like that. Lastly, the categorical imperative considers the intention must be based out of duty and guided by reasons. When applying the use of commercial drones to the categorical imperative, the invasion of privacy must be based on valid and universal reasons. However, it is difficult to provide reasons that are universally accepted which would make the actions ethical. Some of the reasons that could be associated with the use of commercial drones is to gain an advantage over another individual by invading their personal life. That invasion also includes gaining information about someone else such as where they live or where they work. However, while reasons exist behind the decision they are not universally accepted which proves the action to be unethical. Overall, after an analysis of the intentions of utilizing commercial drones it demonstrates that the actions are in fact unethical.

Even though drones may help people makes their lives easier, the unmanned aerial vehicle itself has a lot of different reasonings why it is unethical to use drones in the public area. Virtue ethics asks if the person using the drone is being a good person. This ethics helps realize one's potential, and it is based on good character in order to build habits. One may ask "does using drones make someone a good person?" the answer to this question would be simply based on the purpose of using the drones. For example, Senator Markey stated "What happens if there are drones that are gathering, through facial recognition, who is shopping on Main Street and selling that to advertisers?" in a Recode article (Glaser). In this example, drones are able to capture every move of a person that is shopping at the Main Street. That is a scary thought to have, especially for someone who might be around Main Street frequently. Using the data collected to see who is shopping on Main Street, advertisers is able to gear their advertisement to the right person. Though that data may be sold to advertisers, it can also may be used for many unethical reasoning such as stalking people and seeing where they are at all times. When applying virtue ethics, the company collecting such data makes the use of drones unethical. The company selling the data does not know if the advertisement company is truly using that data for

the right reason, which is to benefit the greater good. The United States currently does not have any rules and laws that states that that an advertisement company is not allowed to use the data for anything else other than for advertisement purposes. If the advertisement company uses that data to spy on their customers, then the company that sold that data is responsible for providing such information. The company basically keeps track of people's every move without receiving consent from the customers. This act does not yield habits that enable the company to act according to the highest potential of our character and on behalf of values like truth, honesty, courage, generosity, integrity, and fairness.

After analyzing the challenges of drones and privacy from a variety of ethical frameworks including consequentialism, deontology, and virtue ethics, it can be safely concluded that the drones are not in the best interest to protect public privacy. Consequentialism says drone technology does not benefit the masses with their ability to violate individuals. A deontological look at the privacy question takes a look at the intentions of the individual. These individuals know if they are using drones for good or bad purposes. Those who are using drones for these non-righteous purposes make it impractical for drones to exist, since the possibility exists that they will be used for harm. Finally, virtue ethics goes into detail on on companies using data collected from drones and selling it to others for possible nefarious purposes. This is a key violation of the core of virtue ethics, as it in no way supports the greater good, it is simply causing harm and benefiting big business. Ethically speaking there will always be a challenge with technology that involves surveillance of individuals. It is possible if everyone acts in a righteous way for these technologies to exist, but there will always be some who attempt to take advantage of an ethically questionable situation. Next, the existing policies regarding drone use will be examined to allow for a deeper understanding of the legal regulations relevant to drone use and its effects on privacy.

Because drones are an emerging technology, the best way to figure out public policies for drones is to examine how they affect individual people. Drone privacy policy is scattered because there are few policies that pertain to drone use which are already extremely outdated and some regions have not even begun to think about creating new policy to regulate the drone industry in relation to privacy. In the countries and regions that do have policy for drones, the policies often conflict with each other across borders creating yet another issue. In the European Union, there are various national laws, each with different ideas on how to handle the drone versus privacy challenge. A citizen may be able to fly their drone across international borders and spy on an unsuspecting person, but have the same deviant and unethical act be illegal in their own home country. This scenario paints a picture of the fractured state of drone privacy policy abroad. The same can also be said for places like the United States and Australia. Drones have the opportunity to revolutionize the next decade, as smartphones have for the previous decade. Protecting this potential for innovation is key, but protecting the public's right to privacy is just as important. In the end, there needs to be balance between the two sides of the argument.

When taking a Utilitarian approach to the Drones vs. Privacy debate, policies both violate and embrace the framework designed to provide the most good to the most people. The Utilitarian approach can help guide politicians on the case of protecting innovation, and protecting the public interests at large.

To show just how scattered policy is when it comes to drone technology, a prime example would be to look at the situation in Europe. When it comes to France, Britain, and Germany, the countries have some policy when it comes to drones. This policy begins to breakdown in what each classifies as a drone. In Britain, a drone is classified as a unmanned flying object that is 20 kilograms or above. Germany has a similar law but the minimum weight is bumped up to 25 kilograms (DroneEnthusiast). In France any flying object in Paris is banned without government approval (DroneEnthusiast). Because countries cannot even agree on a legal definition for a drone, it is nearly impossible to regulate drone technology, when the very definition of what comprises that technology is up for debate. The only agreed upon standard between these European nations and the United States is drones are not allowed to fly near government buildings or military complexes (DroneEnthusiast). Considering that is the only common policy, there is a long way to go before drone laws become universally adopted across borders.

These scattered policies and their ineffective action are a clear violation of the public's Utilitarian right to both privacy and innovation. Drones must have a standard international definition before lawmakers can begin to debate the ethics of privacy violation. As muddled as these policies regarding drones are in the international front, the policies of the United States are even more of a scattershot.

Drone operations within the United States are guided and monitored by the Federal Aviation Administration and when one is flying a drone that individual is responsible for following those guidelines set by the Federal Aviation Administration (Federal Aviation Administration). The Federal Aviation Administration or the FAA has a rule that says that drones are not be flown near airports which is classified as a “No Fly Zone” (Federal Aviation Administration). To keep drone pilots up to date with flight restrictions there has been an implemented application called “B4UFLY” (Federal Aviation Administration). Drone operators are then able to ensure that they are operating in a safe environment for themselves and the others around. The FAA has created other guidelines to inform the recreational and hobby drone users about major safety regulations the pilots are required to obey. Although these regulations help protect the privacy of the public, the Federal Aviation Administration can legally do nothing to force people to follow their recommendations. They are simply that, just recommendations.

The United States government also has various policies and procedures that the agency is required to follow regarding their drone use in the country. A Presidential Memorandum created in 2015 by President Obama intends to encourage economic competitive edge while safeguarding the rights and privacy of citizens (Obama White House). The federal government uses drones for a variety of uses consisting of “supporting law enforcement and engaging in

scientific research" (Obama White House). As part of the memorandum agencies should protect civil rights and civil liberties by ensuring that the actions taken do not violate the first amendment (Obama White House). It is also mentioned for the need for transparency which requires that the drone activities be known to the public; however, this does bring up concerns regarding the safety of law enforcement and military personnel. The Memorandum officially states that the activities should be transparent "while not revealing information that could reasonably be expected to compromise law enforcement or national security" (Obama White House). The transparency gains public trust with regards to the federal government drone activities and proves to be crucial with public approval of the government drone use.

Recently, it has been made public that policy changes are coming for the drone operations in the United States. President Trump has directed the Secretary of Transportation to launch new initiative with the intent to validate drone operations in various jurisdictions (Federal Aviation Administration). This initiative will ensure that there is a successful integration of Unmanned Aerial Systems into the airspace so that full benefits can be utilized by the rapidly changing technology (Federal Aviation Administration). This initiative will prove to assist with the reducing public safety concerns related to drone operations while fostering innovation and encouraging those to engage with this new technology (Federal Aviation Administration). Ideally, the program will assist the Federal Aviation Administration with creating a framework for regulatory drone use in the recreational realm as well as the government operations (Federal Aviation Administration). This step toward attempting to create a framework that intends to promote drone operations while considering safety concerns may assist with more widely accepted policy surrounding drone usage. After examining the policies regarding drone operations, the policies regarding drone privacy will now be analyzed.

Citizens all over the world are concerned whether or not it is ethical for their neighbors, police, or delivery services to fly above their private property. Since drones usually carry video cameras, no one is truly stopping them from photographing or following something that the pilot does not have the right to. A case already exists regarding this debate whether or not drones violate privacy. In 1946, "the court set the limits of private airspace: if you own a house, your property rights extend 83 feet up into the air" (Frank). There are also some existing laws and regulation regarding privacy relating to drones. Electronic Privacy Information Center (EPIC) have been trying to convince the FAA (Federal Aviation Administration) to start protecting the rights to privacy from drone spying, but they have not done so yet. With that being said, there are some existing regulations that exists regarding the use of drones for recreational purposes that the FAA has outlined. The FAA stated that "aircraft must be registered if it weighs more than 0.55 pounds, unless it is exclusively operated in compliance with Section 336 of Public Law 112-95 (Special Rule for Model Aircraft)" (Meola). According to Meola, the drone also must be at least five miles from the airport unless provided with advanced notice, must yield the right of way to manned aircraft, must keep it in line of sight, must be under 55 pounds, must follow the

community guidelines. The question becomes, who will be protecting the citizens' right to privacy from drone spying when FAA is not doing so?

Many states have passed some drone-related laws to help protect its citizens such as a privacy law in Wisconsin that makes photographing nude or partially nude person illegal using drones (Frank). However, the states are unable to control where drones are allowed because it is up to the FAA to do so.

With that being said, people that fly drones are required to get a remote pilot certification (Meola). This certification costs approximately $150 and one must pass the test in order to complete the FAA Airman Certificate and/or Rating Application. Those that fail the exam may retake it after 14 days. With this being said, this step is very similar to getting a gun license. A person that wants to obtain a gun needs to get a background check and go through a firearms safety course. Even though getting a gun license can be a long process, there are still people that use the gun for immoral purposes. By simply having a person pay for the certification and passing the test, this does not stop people for using drones for immoral purposes.

Putting the United States law aside, the Europe aviation community agreed that "privacy and the protection of personal data, must be guaranteed" regarding the drone services. This regulation is a part of the Riga Declaration (Riga Declaration on Remotely Piloted Aircraft). In Riga Declaration, it is also stated that the pilot is responsible for the drone and that the pilot can be identified by the drones. This ensure that whatever the drones do, someone can be responsible for the action.

In Australia, the Privacy Act exists in order to regulate the privacy in Australia; however, it only regulates the Australian government and some private organizations. The rule does not apply to individuals or small business who are the main users of drones (Hodgkinson & Johnston). This leaves a large gray area in the market that could be taken advantage of by unethical individuals who are trying to spy on other citizens. With that being said, there are anti-stalking laws in the Australia which could be interpreted to protect individual privacy from drones. For example, according to Hodgkinson and Johnston, "Tasmanian and Queensland legislation only protects against devices that make audio recordings," while some states are concerned with visual recordings as well (Hodgkinson & Johnston). Drones are a technology that can do much more than just audio recordings, as they can capture high definition video in addition to audio. These outdated laws fail to protect the ethical right to privacy of the citizens of Australia. These scattered and outdated laws reflect the same picture being painted in other countries. Government officials are too afraid to change these laws for fear of public backlash from those who disagree. The public is taken advantage of by privacy violators, and laws can legally do nothing to protect them.

The Constitution is ultimately the total law of the land and should be referenced heavily when it comes to drone policy in the United States. United States citizens have a guaranteed right to privacy, and this must be respected by policy making officials. Although federal government officials know they must regulate the technology sooner or later, the quickest action taken seems

to be happening at a state level in an attempt to protect the privacy of citizens. California legislators recently introduced a bill that would prevent the use of drones to spy on citizens by law enforcement (McNeal). Although this passed both houses in California it was ultimately vetoed by the governor of California. The government recognizes the power that drones have and it clearly sees the benefit of allowing police agencies to continue using drone technology unrestricted. Without laws to protect civilian privacy from drones, the government could engage in mass surveillance on innocent civilians without the proper warrants (McNeal).

The Brookings article defines proposed standards that law enforcement agencies would have to follow to make sure ordinary citizens do not have their privacy unknowingly violated. The article proposes having drones only being allowed to be used by law enforcement agencies after the approval by a judge, who would then issue a warrant (McNeal). This warrant would define a very particular area that the drone could be used, and police would have to provide the judge with enough evidence that criminal activity is taking place (McNeal). This solution would satisfy the Utilitarian framework by preventing the harmful effects of mass surveillance, and therefore benefitting the majority.

The best solution for different countries to sufficiently regulate drones would be to issue a two part policy. One part would deal with privacy and needs to be issued on a global scale. This is necessary to have common ground among all especially with regards to military use as those lines are completely blurred with the lack of global policy. The second part needs to be issued on multiple national levels. Issuing this two part policy would be the best solution in regulating drones and protecting privacy worldwide, but also ensuring that the rights of the individual nations are preserved with the new implementations.

The first part of the policy should outline global privacy rights, to be most effective this should be issued by an organization such as the United Nations or the European Union so that it can have global impact. Issuing this policy on a global scale is superior over being issued on a national scale so that individual privacy does not change across borders. The United Nations was founded with the goal to protect the rights of humanity. Regulating at an international level will prevent corrupt governments from using drones to spy on and harm citizens. International level policy is the best hope to comply with Utilitarian ethics. This will positively benefit the greater amount of people all over the world. This will help individuals to have the right to privacy regardless of where that individual is located. Aside from the global privacy rights the definition of a drone needs to be defined and globally accepted to ensure successful adoption of the policies.

The second part of this policy will be issued in a national level and will regulate the use of drones within their territory. Issuing this on a national level will assist in a stronger policy enforcement and issuing policy this way allows countries to tailor policy to fit their unique needs. Such as some countries are more urban and may require stricter drone regulations and other countries are more rural and stricter drone regulations may not be necessary. This idea also gives the individual nations the right to tailor the policy around their specific values and ideals of

the cultures in the region. These policies should include punishment outlines for using drones to invade others privacy. They also need to define what counts as an drone intrusion, this definition could change depending on the country. Such as in one country a drone intrusion may be just flying a drone in someone else's property while in another country this would not constitute a drone intrusion. This also is affected by the previous laws and policies implemented regarding privacy which would set a precedent for the new drone privacy laws. The U.S. Constitution creates a different precedent than other in regions of the globe. These policies need to be defined in a broad flexible spectrum so that these regulations will be ready for the increasing amount of drones.

Based upon this analysis it can be determined that privacy versus drones is still very much an ongoing debate. To quote the European Union Transport Commissioner, "they raise concerns if citizens feel that drones intrude in their private lives…" (DroneEnthusiast). Policy makers are well aware of citizens concerns, but they still remain locked in debate today. Violating an ethical or moral duty to protect citizens rights will not stand with any framework, especially the Utilitarian framework. For now the debate will continue as there is no clear definition of drones and no agreement on proper policy to avoid stifling the growing technology. Only the future truly knows how the debate will end. All we can do for now is wait and analyse these ever changing conditions and hope that politicians consider the Utilitarian framework when deciding on new policies.

A new wave of drone policy may soon be on the horizon with the election of Donald Trump. The controversial figure has promised sweeping reform of public policy in the technology sector. President Trump believes that drones are a very important part of the future of the technology sector in the United States (Laris). Because expanding the technology sector would help a large majority of Americans, it could be argued that President Trump is taking a Utilitarian stance when it comes to drone technology. Expanding the tech industry would create new jobs which would surely benefit the many, but it would still be hurting the majority, By removing existing policy on drone testing in the United States, the President could put individual privacy in serious jeopardy if the removal of these laws is not done properly.

Among the new policies established by President Trump are drone "innovation zones" (Laris). These zones would place almost no restrictions on the prototyping and testing of drone technology. Although an area set aside for drone testing sounds like a good idea, one must look at the fine print of this policy to truly understand its scope. In President Trump's memo laying out the rules for these "innovation zones", he specifies that the size of these zones could be up to an entire state in area (Laris). These massive areas could lead to untold numbers of privacy violation, as someone could claim to be testing new drone technology, when they are really just trying to spy on other innocent people.

The drone policies of President Trump have also caused a rift between federal and local authorities. This ethical dilemma will be important as it decides whose job it is to protect the rights of the public in this new era of drones. The Trump administration and by extension the

federal government feel that they have the right to regulate the drone industry (Laris). Local municipalities have been fighting against this total government control, as they feel they know what is best for their citizens. Having local municipalities in charge of regulating drone usage may be the better side to pick according to Utilitarian ethics. If all local municipalities nationwide are able to protect the privacy of citizens, it would do a better job than a large blanket law by the federal government.

Although it would seem the federal government is set on allowing drones to freely operate, there is division forming from within the President's own political party. The Representative Jason Lewis of Minnesota, a Republican, has taken a stance against President Trump's drone policy reform. Representative Lewis says the policy of Trump "doesn't go far enough in protecting local control and the rights to privacy and property" (Laris). Representative Lewis' statement echoes the concerns of many United States citizens over their evaporating privacy.

The debate of drones versus individual privacy stretches all the way back to the end of the Second World War and will continue well into the future. World governments were woefully unprepared for the rise of drone technology. Perhaps the governments assumed drone technology would stay outside of the public sector, or perhaps they chose to ignore a problem that had been lingering for decades. Multiple contradictory court decisions and laws passed around the globe continue to dance around the ethical issue of privacy. Privacy is something that is held very dearly by people as an unalienable right. The greatest danger to privacy is the very technology invented by those trying to protect it.

All ethical frameworks that were used to examine drone technology versus privacy point to the same conclusion. If world leaders want to protect the privacy rights of the masses, they must pass laws curbing the use of such drone technology. The Utilitarian framework shows giving into the demands of the minority drone users hurts the privacy of the masses by only benefiting a small group. The Common Good approach shows leaders that giving into the demands of drone users destroys the common good that is privacy. People can no longer feel safe in their own homes. Fathers cannot feel safe allowing their daughters to sunbathe in their own backyards. What used to be a Fortress of Solitude to everyday family life can now be seen by anyone with the desire to violate the thin veil of privacy. Though there are laws and regulations that exists to give drones such restrictions, it is not enough to protect the people that do not want to be seen by the drones. In order for citizens to feel safe all over the world, there should be a movement to show how important drones privacy is for the community. This way, the government from different countries and even the UN will be able to see the urgency and importance of this case. Ethical frameworks are the only key to solving such a controversial debate, and this will be able to give the lawmakers good reasons to create a global law to protect its citizens.

Drone technology will continue to develop as archaic national laws worldwide continue to bend under the pressure of the weight of privacy violations. Without massive reforms

governments can do nothing to save the Ethical rights of the masses. Since drones are quickly changing and improving its functionalities, steps need to be taken in order to catch up to this fast-paced innovation rate. The time to take action is now, but this time is quickly running out.

References

Amazon Corp. (n.d.). *Amazon Prime Air.* Retrieved September 10, 2017, from https://www.amazon.com/AmazonPrimeAir/b?node=8037720011

Bilton, N. (2016, January 27). *When Your Neighbor's Drone Pays an Unwelcome Visit*. Retrieved November 08, 2017, from https://www.nytimes.com/2016/01/28/style/neighbors-drones-invade-privacy.html

Bonde, S. (n.d.). Brown University. Retrieved September 10, 2017, from https://www.brown.edu/academics/scienceandtechnologystudies/frameworkmakingethicaldecisions

Cavoukian, Ann (2012, August). *Privacy and Drones: Unmanned Aerial Vehicles*. Retrieved September 28, 2017, from https://www.ipc.on.ca/wp-content/uploads/Resources/pbd-drones.pdf

Dronethusiast. (2016). *EASA Sets Out Drone Regulations for Europe.* Retrieved October 31, 2017, from https://www.dronethusiast.com/easa-sets-out-drone-regulations-for-europe/

Federal Aviation Administration. (2017). *Where to Fly.* Retrieved October 31, 2017, from https://www.faa.gov/uas/where_to_fly/

Federal Aviation Administration. (2017, October 25). Retrieved October 31, 2017, from https://www.faa.gov/news/updates/?newsId=89007

Frank, M. (2016, February 10). *Drone Privacy: Is Anyone in Charge?* Retrieved October 31, 2017, from https://www.consumerreports.org/electronics/drone-privacy-is-anyone-in-charge/

Glaser, A. (2017, March 15). *Federal privacy laws won't necessarily protect you from spying drones.* Retrieved September 10, 2017, from https://www.recode.net/2017/3/15/14934050/federal-privacy-laws-spying-drones-senate-hearing

Hambling, D. (2017, April 27). *The next era of drones will be defined by 'swarms'.* Retrieved September 10, 2017, from http://www.bbc.com/future/story/20170425-were-entering-the-next-era-of-drones

Harper Collins Publishers. (n.d.). *Drone.* Retrieved September 10, 2017, from

http://www.dictionary.com/browse/drone

Hodgkinson, D & Johnston, R. (2017, August 17), *Drone Reforms Needed to Protect Privacy.* Retrieved October 21, 2017, from http://www.theaustralian.com.au/business/aviation/drone-reforms-needed-to-protect-privacy/news-story/eb161ab7d08e8af72faeeaea8a8b2740

International Civil Aviation Organization. (2011). *Unmanned Aircraft Systems: (UAS)*

Kloc, J. (2016, February 16). *Mind the Gap: The World's 'Digital Divide' Is Not Closing Anytime Soon.* Retrieved September 10, 2017, from http://www.newsweek.com/mindgapworldsdigitaldividenotclosinganytimesoon24845

Laris, M (2017, Octover 25). *Trump Administration to Allow Quick and Dramatic Expansion of Drone Use.* Retrieved November 10th, 2017, from www.washingtonpost.com/local/trafficandcommuting/trump-administration-establishing-innovation-zones-for-widespread-drone-use/2017/10/25/a004b400-b990-11e7-9e58-e6288544af98_story.html?utm_term=.f421e98f6aa2.

McNeal, G. (2016, August 23). *Drones and aerial surveillance: Considerations for legislatures.* Retrieved October 31, 2017, from https://www.brookings.edu/research/drones-and-aerial-surveillance-considerations-for-legislatures/

Meola, A. (2017, July 25). *The FAA rules and regulations you need to know to keep your drone use legal*. Retrieved October 31, 2017, from http://www.businessinsider.com/drones-law-faa-regulations-2017-7

Mizokami, K. (2017, July 18). *The Future of Drones.* Retrieved September 10, 2017, from http://www.popularmechanics.com/thefutureofdrones/

Obama White House. (2015, February 15). *Presidential Memorandum: Promoting Economic Competitiveness While Safeguarding Privacy, Civil Rights, and Civil Liberties in Domestic Use of Unmanned Aircraft Systems.* Retrieved October 31, 2017, from https://obamawhitehouse.archives.gov/the-press-office/2015/02/15/presidential-memorandum-promoting-economic-competitiveness-while-safegua

Riga Declaration on Remotely Piloted Aircraft (drones). (2015, March 6). *Framing the Future of Aviation*. Retrieved October 21, 2017 from https://ec.europa.eu/transport/sites/transport/files/modes/air/news/doc/2015-03-06-drones/2015-03-06-riga-declaration-drones.pdf

Song, K. (2017, June 19). *Drone racing is worth $100,000 in upcoming championship.* Retrieved September 10, 2017, from https://www.cnbc.com/2017/06/19/droneracingisworth100000inupcomingchampionship.html

Tucker, S. (2008). *The encyclopedia of the Arab-Israeli conflict: a political, social, and military history* (Vol. 4). Retrieved October 31, 2017