Forum: Disarmament and International Security Committee (GA1)
Issue: Regulating the use of drones in active wars
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INTRODUCTION

Modern advancements in technology have led to the rise of automated and autonomous platforms throughout industries. The military sector is no exception, with a surge in autonomous and automated weapons platforms. Being developed as early as WW1, military drones were uncrewed vehicles able to operate without a pilot. Militaries across the world quickly realized the potential of unmanned vehicles and started developing them for surveillance and scouting. With technological developments that allowed more extended range in communications and live feed, drones started becoming much more critical players on the battlefield.

After being firstly thoroughly used by the Israeli army in the 70s and 80s, drone technology was pioneered by the Americans in the 90s. With the development of designs, such as the Reaper UAV, drone design became more than scouting vehicles, occupying primary roles in warfare. After the 9/11 attack and the start of the War on Terror, drones have been a crucial part of most major powers' military.

The use of drones has been the center of a series of debates, with some arguing that they are more accurate and protect military lives and others claiming that they are indiscriminate military weapons merely facilitating war crimes.

This study guide will go through the classification of UAVs, the advantages of the use of UAVs, public opinion on their use, the psychological effects of drone use in conflicts, autonomous weapons systems and the legal background of the drones' purposes.

DEFINITION OF KEY TERMS

Drones

A term referring to unmanned vehicles used after the early 1930s.

UAV (Unmanned Aerial Vehicle)

An aircraft that does not require human presence onboard for operation.

RPAS (Remotely Piloted Aircraft Systems)

A term used to describe UAVs. This term is often present in European regulations.

MAV (Micro Air Vehicle)

A classification of small size UAVs. They can be as small as 5cm and can also be autonomous. They can be used for commercial, military and research purposes.

Legal Accountability

Accountability is the state of being held responsible. Being part of Goal 16 of the Sustainable Development Goals, legal accountability describes the "capacity to demand

that a person or organization give reasons to justify their behavior and the capacity to impose a sanction if they fail to give reasons, or if their performance is poor."[1]

Armed Conflict

The term is continuously debated by experts, and there is no clear consensus on what could be described as an armed conflict. A generally accepted definition of armed conflict is "a contested incompatibility that concerns government and/or territory where the use of armed forces between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths in one calendar year."[2]

Automated Weapon Systems

Automated weapon systems are platforms that are capable of carrying weapons (such as explosive ordnance) and do not require human presence onboard.

Autonomous Weapon Systems

Autonomous weapon systems are weapons platforms capable of operating with minimal human direction. An example of such platforms is the American Global Hawk drone, the operators of which are only required to order its take-off and landing.

UCAV (Unmanned Combat Aerial Vehicle)

A term used to describe military drones that are capable of carrying lethal ordnance, such as missiles.

PTSD (Post Traumatic Stress Disorder)

According to medical professionals, "post-traumatic stress disorder (PTSD) is a mental health condition that is triggered by a terrifying event —either experiencing or witnessing it. Symptoms may include flashbacks, nightmares and severe anxiety, as well as uncontrollable thoughts about the event."[3]

BACKGROUND INFORMATION

Historical background

Warfare-oriented pilotless vehicles started being developed as early as World War 1 using radio-controlled navigation systems or without any navigation at all. Kettering Bug is a characteristic example of such efforts. This aerial torpedo was developed by the US Army and started being produced on January 1918. With the Great War concluded, its production was halted.

In the interwar period, the development of such vehicles continued. The British and Americans used Unmanned Aerial Vehicles for target practice for their aircraft pilots

[1] "Accountability." *World Health Organization*, World Health Organization, 29 Sept. 2016, www.who.int/health-laws/topics/governance-accountability/en/.

[2] http://www.undp.org/content/dam/norway/img/sdg-16-oslo-2016/Erik%20Melander.pdf

[3] "Post-Traumatic Stress Disorder (PTSD)." *Mayo Clinic*, Mayo Foundation for Medical Education and Research, 6 July 2018, www.mayoclinic.org/diseases-conditions/post-traumatic-stress-disorder/symptoms-causes/syc-20355967.

and anti-aircraft gunners. An example of such aircraft is the British “De Havilland DH82B”. The term “drone” came into use during that period.
During the Vietnam War, UAVs were used more broadly, mostly for reconnaissance. Drones started taking up new roles, such as dropping propaganda material or being used as decoys.
However, drone technology was far from reaching its potential until the 1980s, when technological advancements allowed for more precision navigation, video footage transferring and delivery of ordnance.


Figure 1: The “Kettering Bug.”[4]

Classification

Naturally, there are numerous types of drones designed to be used in a series of diverse scenarios. UAVs are often categorized by their use, platform and weight.
Figure 2: Classification of drones based on weight according to the United States

Category	Size	Maximum Gross Takeoff Weight (MGTW) (lbs)	Normal Operating Altitude (ft)	Airspeed (knots)
Group 1	Small	0-20	<1,200 AGL*	<100
Group 2	Medium	21-55	<3,500	<250
Group 3	Large	<1320	<18,000 MSL**	<250
Group 4	Larger	>1320	<18,000 MSL	Any airspeed
Group 5	Largest	>1320	>18,000	Any airspeed

*AGL = Above Ground Level
**MSL = Mean Sea Level

Owlcation, 10 Oct. 2017, owlcation.com/humanities/World-War-1-History-The-Kettering-Bug-Worlds-First-Flying-Bomb.

Department of Defense.[5]

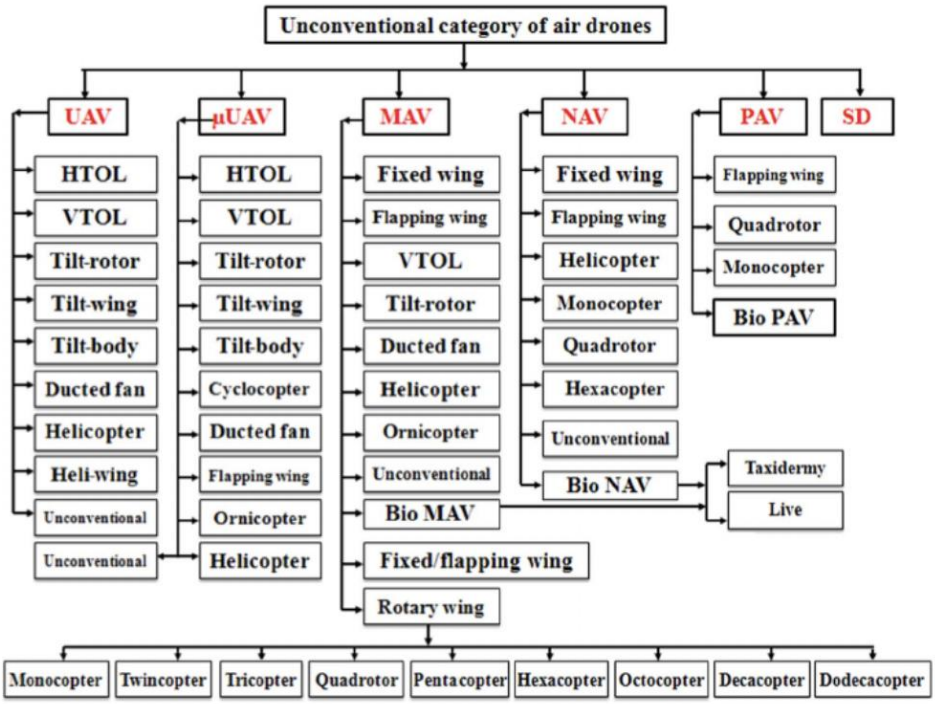
Classification based on size is also oftentimes used. *Very small UAVs* do not exceed 50 cm in length. These aircraft are extremely small, easily transferred from location to location and exceptionally nimble when flying. They can have flapping or rotary wings, or a more conventional design. The choice has to be made on the basis of its intended purpose. For example, flapping wings allow for landing in small surfaces. In conflict, they can be used for biological warfare or espionage. An example of such aircraft is the Israeli IAI Malat Mosquito. This particular aircraft weighs 250 grams and can carry a payload of another 250 grams.[6]

Small UAVs have "at least one dimension greater than 50 cm and no larger than 2 meters."[7] Most of these aircraft have a conventional fixed-wing design and are launched by the operator's hands or a special catapult. These drones are mainly used for surveillance, espionage and scouting. An example of such aircraft is the American RQ-11 Raven which has a range of 10 km.[8]

Medium UAVs are aircraft that have a wingspan of around 5-10 meters and can support a 100-200 kg payload.[9] They are too large for carrying one person, but they have smaller dimensions than a light aircraft. These drones are also used for surveillance, espionage and scouting, but they usually have a greater range than smaller drones. *Medium UAVs* often have a conventional fixed-wing design, but the use of rotary-wing platforms has been rather widespread too. One such drone is the British Thales Watchkeeper which weighs approximately 450 kg and can fly for as long as 17 hours.[10]

[5] "Classification of the Unmanned Aerial Systems." *Classification of the Unmanned Aerial Systems | GEOG 892: Unmanned Aerial Systems*, www.e-education.psu.edu/geog892/node/5.
[6] "Mosquito Micro Unmanned Aerial Vehicle." *Airforce Technology*, www.airforce-technology.com/projects/mosquitomicrouav/.
[7] "Classification of the Unmanned Aerial Systems." *Classification of the Unmanned Aerial Systems | GEOG 892: Unmanned Aerial Systems*, www.e-education.psu.edu/geog892/node/5.
[8] "RQ-11 Raven Unmanned Aerial Vehicle." *Army Technology*, www.army-technology.com/projects/rq11-raven/.
[9] "Classification of the Unmanned Aerial Systems." *Classification of the Unmanned Aerial Systems | GEOG 892: Unmanned Aerial Systems*, www.e-education.psu.edu/geog892/node/5.
[10] "Watchkeeper Tactical UAV." *Army Technology*, www.army-technology.com/projects/watchkeeper/.

Large UAVs have a wingspan of more than 10 meters and weigh more than a light aircraft. These aircraft often use fixed-wing design and are predominantly warfare-oriented. They can be used for long-range communications or surveillance, while they are also capable of delivering significant amounts of payload on the battlefield. An example of such aircraft is the US General Atomics Predator which has a wingspan of



17 meters and multiple variants, some of which are able to deliver explosive ordnance.[11]
Figure 3: Flow chart with the multiple combinations of characteristics of drones based on their type.[12]

Another common factor that differentiates one drone from another is range and endurance. *Close range UAVs* can have a range between 5 and 50 km. Lower cost variants, like the Raven, are remarkably similar to model airplanes; they can fly up to 5-10 km for no longer than 60 minutes and cost around $10,000. They are used mainly for surveillance and reconnaissance. *Short-range UAVs* often have a range of around 150 km and are capable of continuous flight for as long as 12 hours. They are also primarily used for surveillance and reconnaissance. *Mid-range UAVs* have an operational radius of 600 km, while some operate at extremely high speed. They can be

[11] "MQ-1B Predator." *U.S. Air Force*, 23 Sept. 2015, www.af.mil/About-Us/Fact-Sheets/Display/Article/104469/mq-1b-predator/.
[12] *(PDF) Classifications, Applications, and Design Challenges* ... www.researchgate.net/publication/316673697_Classifications_applications_and_design_challenges_of_drones_A_review.

used for surveillance and reconnaissance, as well as for gathering meteorological data. *Long-range endurance UAVs* can fly 300 km away from the base and do so for 36 hours while staying at as high as 30,000 feet.[13]

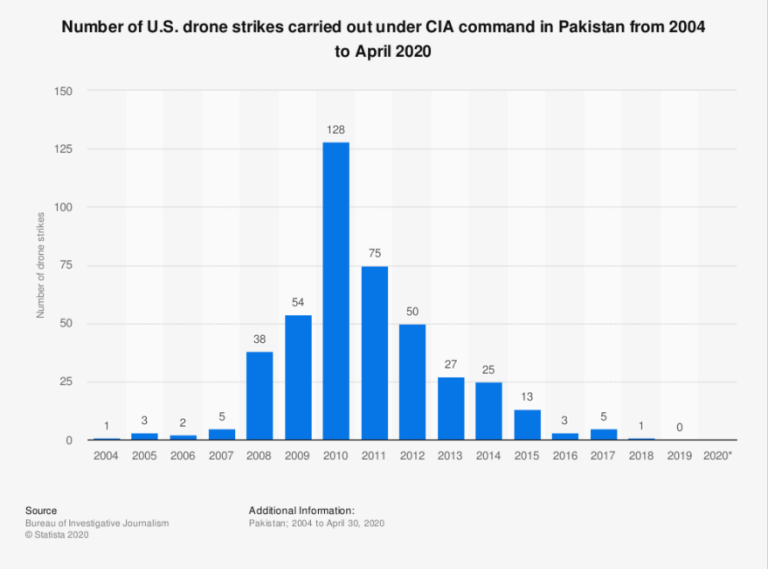
Since these classifications may be confusing, the study guide will mention the **four main types of drones in military service**. Micro-drones and nano-drones are often no bigger than a small bird. They are used for short-range scouting and are usually carried in the backpacks of personnel, just like the British Black Hornet. Small tactical drones are the ones that soldiers can carry but their size exceeds 50 cm. They are often deployed by a simple hand tossing, like the German Aladdin. Medium-sized reconnaissance drones are the most popular, like the Israeli Heron drone. Large drones are the most well-known aircraft of the type. These can conduct extended endurance operations for either reconnaissance purposes or even for carrying and deploying explosive ordnance. The American Reaper drone can deliver missiles or bombs to targets 1000 km away.

Advantages of use

The use of drones in military operations is a tactic that has been adopted by most major military forces. The main advantages that militaries across the globe have considered are the following: 1. **Using drones keeps personnel out of harm's way.** It is essential to understand that, because of that, the military forces all over the world can protect their soldiers. Countries can then also claim much more humble casualty reports, thus not sparking public outcry against their foreign policy. 2. **Drones are also much more affordable than aircraft with similar capabilities.** Most crewed military aircraft are more capable than their unmanned counterparts, but rarely do conflicts require the absolute best from the material used. For example, when a modern army faces guerrillas armed with infantry weapons, using either a multi-million-dollar 5th generation fighter jet or a $100,000 drone to spot them and drop a bomb will probably have no effect on the outcome of the conflict. In most scenarios, drones can cover all needs and cost less for manufacture, deployment and fuel. Thus, if a military drone is destroyed, the military loses a significantly smaller amount of money instead of losing a multimillion-dollar aircraft. Some drones are also capable of flying lower than many manned military aircraft protecting them from being detected or shot down. 3. **UAVs also have the capability of remaining on the air longer than a conventional aircraft,** with some models boasting 36 hours of continuous flight time. Pilot fatigue is also a factor that can be dismissed since drone pilots can easily pass control to someone else, which is rarely the case with manned aircraft. 4. **Drones also tend to be much more accurate in precision attacks than manned aircraft** due to the increased automation of both platform and weapons systems. At the same time, the manned counterparts only offer weapon systems automation. 5. **Crewless aircraft are also easier to be deployed than crewed aircraft,** with some of them by hand, while larger ones requiring minimal installations, and without the need of personnel transportation. It

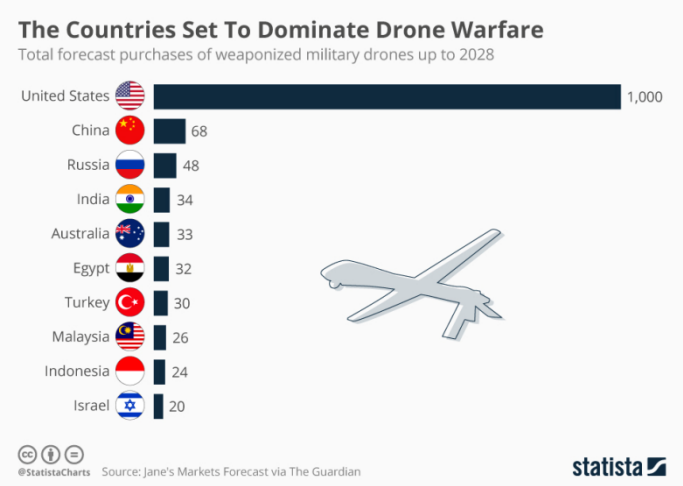
[13]"Classification of the Unmanned Aerial Systems." *Classification of the Unmanned Aerial Systems | GEOG 892: Unmanned Aerial Systems,* www.e-education.psu.edu/geog892/node/5.

is also essential to understand that drones are also faster to be deployed than manned aircraft saving precious time, and thus protecting the military interests of a force.



Scale of use:

Figure 4: The use of drones by the US CIA in Pakistan.[14]



[14] Statista Research Department. "U.S. Drone Strikes in Pakistan 2020." *Statista*, 30 Apr. 2020, www.statista.com/statistics/428296/us-drone-strikes-in-pakistan/.

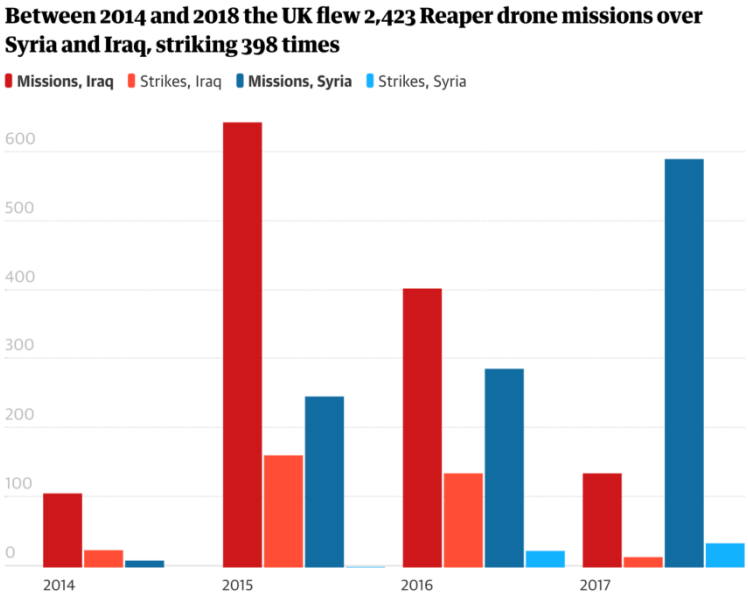


Figure 5: Forecast purchases of weaponized military drones until 2028 by country[15].
Figure 6: British sanctioned Reaper drone missions from 2014-2018[16].

A key issue is the fact that most statistics and events related to drone use are withheld and considered confidential. The US military has disclosed that almost 2,900 people have been killed by drones from 2009-2015 in 473 airstrikes outside Afghanistan, Syria and Iraq. They mentioned that 4% of the reported casualties were civilians.[17]

Major military forces and some militia groups have surveillance drones capabilities. They use these aircraft to improve their coverage and scout, as well as to have more accurate supporting fire. An example of a militia group with drone capabilities is the Lebanese Hezbollah, which, in its conflict with Israel, has been using the Iranian Ababil drone that has a wingspan of 3.25 meters and can be launched from a truck-mounted catapult.[18] Drones are used not only by the military of countries but

[15] McCarthy, Niall, and Felix Richter. "Infographic: The Countries Set To Dominate Drone Warfare." *Statista Infographics*, 19 Nov. 2019, www.statista.com/chart/20005/total-forecast-purchases-of-weaponized-military-drones/.
[16] Sabbagh, Dan. "Killer Drones: How Many Are There and Who Do They Kill?" *The Guardian*, Guardian News and Media, 18 Nov. 2019, www.theguardian.com/news/2019/nov/18/killer-drones-how-many-uav-predator-reaper
[17] Sabbagh, Dan. "Killer Drones: How Many Are There and Who Do They Kill?" *The Guardian*, Guardian News and Media, 18 Nov. 2019, www.theguardian.com/news/2019/nov/18/killer-drones-how-many-uav-predator-reaper.
[18] Rfe/rl. "Are These Really Iranian Drones?" *RadioFreeEurope/RadioLiberty*, Radio Free Europe / Radio Liberty, 17 Aug. 2012, www.rferl.org/a/transmission-iran-drones-syria/24680025.html.

also by their law enforcement and federal agencies. The US Border Patrol and Navy utilize the MQ-8 Fire Scout, a hovering helicopter-like drone to help in anti-smuggling operations.

The future of drone warfare is expected to be very diverse. Following the development of the American Predator drone, the US DARPA (Defense Advanced Research Projects Agency) and the DoD (Department of Defense) started funding studies on the practicality and efficiency of micro-drones (no longer than 15 cm), after 1997. Israel has conducted similar studies and both countries have started developing micro UAVs. As mentioned in this study guide, micro-drones development has come a long way and some expect that these vehicles will possibly become standard-issue for infantry.

Uninhabited Combat Air Vehicles (UCAVs) are considered to be another key part of the future of military drones. These aircraft have much larger platforms and aim at higher levels of autonomy and more extended range. Experimental aircraft, like the Boeing X-45 and the Grumman X-47, resemble the B2 stealth bomber and have 1/6th to 1/3rd the mass of a fighter jet. It is argued that the aim for these aircraft is to replace manned fighters and bombers in high-threat situations. Research is also being conducted in extremely high-endurance UAVs, some of which are using solar panels to commit to days of flight.

Public opinion on drones

Public opinion on the use of drones is divided. Some argue that their use is excessive and they oppress mostly civilians, while other maintain that they protect troops. In a study conducted by Monmouth University, 11% of participants answered that they were “too confident” that US Federal law enforcement agencies use drones appropriately, while 36% were “somewhat confident”, 18% “not too confident”, 31% “not confident” and 4% unsure.[19]

A poll conducted by Fox News in 2013 said that the majority of Republicans, Democrats and Independents supported the use of drones to kill suspected terrorists on US soil, while condemned the idea of killing a suspected terrorist that happened to be an American citizen. According the poll, 32% of people agreed that the US President should have the capability to order drone strikes to kill suspected terrorists on US soil, 63% disagreed and 5% did not answer.[20]

Other studies, such as one conducted by the Fairleigh Dickinson University, also show that the US public support the use of drones with 75% of interviewees answering that strikes against individuals, who are deemed a threat by the US, are necessary. A poll by Huffington Post showed that “56% of Americans say that the drone program should be used to target and kill high-level terrorists, while only 13% say that anyone suspected of being associated with a terrorist group should be targeted.”[21] A study by

[19] *Crime*, www.pollingreport.com/crime.htm.
[20] *Crime*, www.pollingreport.com/crime.htm.
[21] Linkins, Jason. “No, The Public Does Not Have A Widespread, Uncritical Embrace Of The Drone Program.” *HuffPost*, HuffPost, 7 Dec. 2017, www.huffpost.com/entry/drone-program-poll_n_2696352?guccounter=1&guce_referrer=aHR0cHM6Ly9lbi53aWtpcGVkaWEub3JnLw&

Pew Research showed that, after interviewing civilians from 20 countries, the vast majority opposed the use of armed drones.[22]

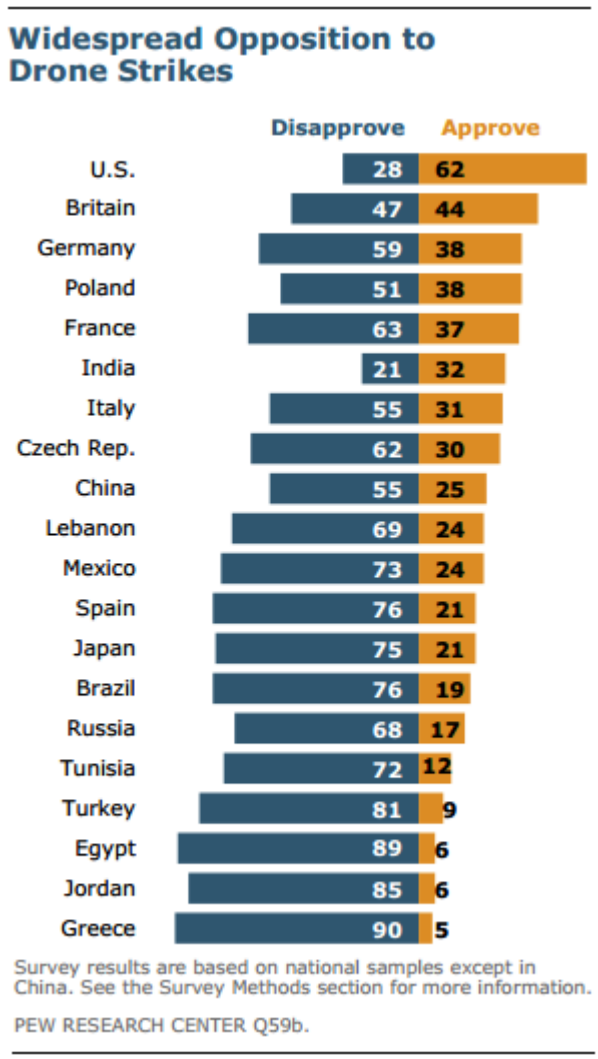


Figure 7: International support for the use of drones.[23]

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[22] Drake, Bruce. "U.S. Use of Drones, Under New Scrutiny, Has Been Widely Opposed Abroad." *Pew Research Center*, Pew Research Center, 30 May 2020, www.pewresearch.org/2013/02/06/u-s-use-of-drones-under-new-scrutiny-has-been-widely-opposed-abroad/.

[23] Drake, Bruce. "U.S. Use of Drones, Under New Scrutiny, Has Been Widely Opposed Abroad." *Pew Research Center*, Pew Research Center, 30 May 2020,

Many argue that the reason behind the lack of support for drone warfare outside the US is the lack of appropriate media coverage. Media often focus on the events themselves and not on the procedure that drone users go through before ordering a drone strike.[24]

Autonomous Weapon Systems

It is also important to clarify that not all military drones operate under the constant watch of pilots and other personnel. Although no military currently operates drones with lethal capabilities in autonomous mode, a debate has already initiated, since the technological capabilities of operating such vehicles are already available. These aircraft will be able to detect the enemy and attack without human interaction. These aircraft are supposed to react more quickly and without bias, while they follow the rules of combat more efficiently and appropriately.

However, these platforms will be unable to have human sensibility. In complex conflicts, the use of autonomous platforms will complicate the situation and will probably enrage the public. AWSs also remain a political challenge, with machine failures causing more outrage than human shortcomings. It is claimed that AWSs are a greater security risk. With the platform based solely on written code, an error or a hack can claim the vehicle, while, in the case of a human-operated aircraft, the operator can always try to regain control. If a drone is completely autonomous, there is the question of accountability. Who will be responsible for an accident?

Psychological impact of the use of drones

The use of drones has a significant psychological impact on both operators and the targeted population. A large number of drone operators suffer from PTSD (Post Traumatic Stress Disorder) primarily due to the fact that they have killed civilians and children or participated in operations that are of questionable moral value. Unlike bomber pilots or fighter pilots, after their strike, drone pilots loiter above their targets for a kill-count and thus see the effects of their weapons in extreme detail. Some also sound the alarm on the impact the use of drones has on soldiers' psychology. When soldiers are distanced from the horrors of war, they are unable to understand the deterrents of conflict, while possibly being extremely cynical. The fact that these pilots are essentially 10 minutes away from the war zone each workday severely damages their work-life balance and worsens their situation.

Scientists are also struggling to identify the effects of drone warfare on civilian populations, while many studies have been completed up to now. The forensic psychologist Peter Schaapveld conducted research in Yemeni, a major front of drone

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www.pewresearch.org/2013/02/06/u-s-use-of-drones-under-new-scrutiny-has-been-widely-opposed-abroad/.

[24] Carr, David. "Debating Drones, in the Open." *The New York Times*, The New York Times, 11 Feb. 2013, www.nytimes.com/2013/02/11/business/media/the-inconvenient-but-vital-drone-debate.html?_r=0.

warfare. He concluded that almost 90% of the population suffered from PTSD.[25] Research in the Gaza Strip has also concluded that a large part of the population of children is triggered by the sounds of drones buzzing above them. The University of Stanford has also concluded that in Pakistan and Afghanistan, drone warfare has kept a large part of the minors away from school. Civilians avoid helping people injured by drone strikes since rescuers are often hit by follow-up strikes. People also tend to avoid large gatherings in open spaces. In other terms, it can be argued that people are often forced to live under a state of constant terror. However, according to the Red Cross, conducting such research is extremely difficult, since locations that have been targets of drone strikes are mostly still at war.

Morality

The moral issues behind the use of drones in armed conflicts are heavily debated. The central part of the debate is around armed drones which carry an explosive payload. Some journalists have been arguing that the use of drones in counter-terror operations by the US military stand against the values of the US constitution. Under the former US President, Barack Obama, reports have claimed that the administration had been creating “kill lists” for targets in Somalia, Afghanistan, Syria and other fronts, without authorization from Congress and thus going against his promises of abandoning the war on terror of the Bush administration.

It is argued that while drones have been strategically successful in attacking Al-Qaeda and the Taliban, more than 24% of the victims are civilians. Statistics on fatalities are often contradictory since it is difficult to be entirely sure on the identity of individuals. While they do diminish military casualties, they make it harder to seclude the targets from the non-targets. As an example, when the leader of the Taliban in Pakistan was killed by a drone strike when being driven in convoy, his wife and father-in-law were also killed. Military forces that utilize drones argue that they have a responsibility to protect their countries from the enemy and that the number of dead civilians from the use of drones is considerably lower than that after a bombing or a ground offensive. According to them, in order to fight terrorism, collateral damage, including the loss of civilian lives and damage to civilian infrastructure, is acceptable. Responding to the calls by terrorist groups for UN involvement in the use of drone strikes, the pro-drone lobby has argued that these groups violate international law and simultaneously require its enforcement.

Legal background for the use of drones

Currently, the legal framework for armed conflict does not explicitly mention drones, UAVs or autonomous weapon platforms. However, all weapon systems must comply with international humanitarian law, which means that, even if there is no specific legislation regarding the use of drones, autonomous or automatic weapon

[25] Salama, Vivian. “Death From Above: How American Drone Strikes Are Devastating Yemen.” *Rolling Stone*, Rolling Stone, 25 June 2018, www.rollingstone.com/culture/culture-news/death-from-above-how-american-drone-strikes-are-devastating-yemen-97688/#ixzz3YocHjBIz.

platforms still have to, for example, distinguish between civilian and combatant populations and civilian and combatant infrastructure. When used, they should not target civilian populations and infrastructure or carry prohibited weaponry (like chemical or biological weapons). Under international humanitarian law, the use of weaponry that can more precisely target combatants and avoid harming civilians is preferred, and, in some scenarios, drones can offer these advantages. *In case of using drones in non-conflict scenarios, both national and international* law must be enforced.

To ensure the legality of the use of drones in various situations, one must check the appropriate body of law in effect. For example, to answer whether drones are legally used in maritime patrols, one must go through local or national law, international maritime law etc. However, not always do parties agree on the body of law which is applicable in each scenario. Some agents might argue that rules of law are applicable in certain scenarios, while some others will disagree. Some try to apply international law in relation to geographical boundaries, but this method render some areas blurred.

Legal background of armed drones

Under international law, armed drones are considered neither illegal nor indiscriminate in their targeting. They are comparable to manned aircraft or to weapons launched from the ground, seaworthy vessels or aircraft. At the center of debate is the use of drones in armed conflicts, such as in Gaza Strip, Afghanistan, Pakistan or Yemen. On the one hand, advocates of drone strikes argue that these attacks are much more precise resulting in less civilian casualties. On the other hand, it has been claimed that drone strikes have been costing too many lives of civilians.

Accountability

Accountability in drone strikes has been a part of the debate on the use of such aircraft. In the case of remote-controlled platforms, the operators pilot the drone and fire its weaponry even if they are often located thousands of kilometers away from the battlefield. They operate under traditional military command following orders on their mission. Thus drone operators and their chain of command are accountable in ways very similar to manned aircraft pilots and their command. In the case of autonomous weapons platforms, however, some accountability issues arise.

MAJOR COUNTRIES AND ORGANISATIONS INVOLVED

USA (United States of America)

The United States is the primary user of drones in conflict. The US has an estimated drone fleet of more than 7,000 aircraft. After the terrorist attacks on the World Trade Center, the United States started utilizing drones to a greater extent. The US Pentagon has an estimated budget of more than 40 billion USD on drone research and development for the next ten years.[26] In 2012, the US Airforce for the first time trained more UAV pilots than manned aircraft pilots, and almost 10% of their pilots are drone pilots. A study by the US Airforce School of Medicine concluded that nearly 50% of

[26] https://cpc-grijalva.house.gov/uploads/Drones_Fact_Sheet_FCNL1.pdf

American drone operators suffer from high stress[27]. The US is also exporting drones to its allies. While there is opposition to the use of drones in the US, the majority of the public support it.

Figure 8: Casualties by US drone strikes[28].

Country	Civilians Killed	"Militants"* Killed	Total Killed**
Pakistan	153-884	2,649-3,380	2,802-4,264
Somalia	0-15	7-27	7-42
Yemen	12-94	139-764	151-858
Total	165-993	2,795-4,171	2960-5164

Israel:

Israel was the first country to use drones to a great extent. They developed the Tadiran Mastiff in 1975, which was the first UAV to take advantage of the technological feats of the era, including live feed cameras. The Israeli Aircraft Industries have been a critical stakeholder in the development and production of many such aircraft. The Israeli forces first used drones to scout large areas and locate missile sites. The Israelis passed their expertise on the sector to the Americans producing in collaboration with them a series of aircraft that were used by both powers. Israel, along with the US and China, currently leads the UAV industry boasting a multi-billion dollar industry.

People's Republic of China

China is another leader in drone industry. After 2019, the People's Liberation Army has been increasingly focusing on the development of UAVs, some of which are identical to their foreign counterparts. The country exports more than 200 UAVs per annum. [29] The Chinese industry is producing drones for both military and law enforcement use. To read more on the Chinese drone fleet, click https://thediplomat.com/2019/11/chinas-growing-high-end-military-drone-force/.

U.K. (United Kingdom)

The U.K. military is another major user of drones boasting a fleet of 500 aircraft.[30] One of the goals of the Ministry of Defense is the Royal Airforce to consist by at least a third of UAVs. Most drones used by the British are American-made.

[27] "Alone with a Joystick." *The Economist*, The Economist Newspaper, www.economist.com/united-states/2013/07/06/alone-with-a-joystick.

[28] https://cpc-grijalva.house.gov/uploads/Drones_Fact_Sheet_FCNL1.pdf

[29] "China Has Powerful Drones but Won't Use Them like U.S., Analysts Say." *South China Morning Post*, 17 Feb. 2020, www.scmp.com/news/china/military/article/3045440/china-has-powerful-military-drones-wont-use-them-us-analysts.

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TIMELINE OF EVENTS

DATE	DESCRIPTION OF EVENT
January 1918	"Kettering Bug" enters production.
1933-1943	412 De Havilland DH82B are produced.
1973	The Israeli Mastiff makes its maiden flight.
1986	A joint Israeli-American team develops the RQ2 Pioneer.
1994	General Atomics produces the MQ1 Predator drone.
21 December 2000	The DoD gives the CIA permission to arm their drones with Hellfire missiles.
11 September 2001	The 9/11 attacks take place. The US initiates a significant anti-terror campaign which championed the use of drones.

RELEVANT UN RESOLUTIONS, TREATIES AND EVENTS

Geneva Conventions

These conventions constitute the centerpiece of international humanitarian law in conflicts. They define combatants and civilians and set requirements for the use of weaponry against infrastructure and people.

Missile Technology Control Regime

This is a multilateral export control regime signed by 35 states, including the G7 in 1987. Its goal was to minimize possible damage by entities in hold of weapons of mass destruction by not sharing designs for platforms. The idea was that, even if a terrorist group got hold of a nuclear warhead, they would be unable to cause significant

damage since they would have nothing to use as a delivery system. The regime focuses on missiles and UAVs with capabilities of carrying a payload greater than 500kg. It is not a treaty and therefore it is not legally binding.

The Expanding Use of Armed UAVs and the Need for International Standards

This was the first side event of the UNGA on UAVs. It took place on October 23, 2015.

UN's Study on Armed Unmanned Aerial Vehicles

This study examines the characteristics of UAVs and how humanitarian law applies to them. It focuses on the use of armed UAVs and the accountability of their use. To read the study, click https://www.un.org/disarmament/publications/more/drones-study/.

PREVIOUS ATTEMPTS TO RESOLVE THE ISSUE

To begin with, it is important to understand that the use of drones in conflict is an issue with multiple stakeholders. This includes civilians, combatants and military personnel. International law does not mention UAVs in particular. However, international humanitarian law applies to drones as much as it applies to all other weapons. Each nation's forces have tried to provide different solutions for accountability and chain of command issues. There is no legal framework for the use of these particular platforms which have many similarities to their manned counterparts as well as some differences. And while most UAVs can be considered legally regulated by the pre-existing framework, autonomous vehicles are not covered.

POSSIBLE SOLUTIONS

One key issue that has to be resolved is the application of the law in drone operations. It is essential to understand that there is no "one-size-fits-all" approach, and solutions might require differentiation between conflicts. The interpretation of the already existing legal framework for drone operations must also be clarified.

The categorization of drones must take precedence over the adoption of any measure. They can be categorized according to their size, use and operational radius as long as there is an internationally acceptable manner for drone classification. Having done that, different legislation and restrictions can be used for each drone category.

The delegates should also understand the need for balance between military necessity, minimization of unnecessary suffering and proportionality in the use of those weapons. This could be achieved by enacting laws tailor-made for drone usage and by applying only to them.

In order to minimize traumatic experiences, the legal framework must ensure the protection of civilian populations banning the use of questionable practices, such as the double-tap method in drone strikes. The question of whether or not drones should be flying above civilian populations must also be answered.

There is no doubt that autonomous platforms are on the rise; hence, international law must be implemented accordingly. A framework that tackles the issues of accountability and use must be developed and enforced. It is also the key to prevent malicious individuals from getting hold of this extremely potent military hardware.

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