Eye in the Sky

Written by Tyler Cole

In recent months, the world's media has been inundated with headlines about the implications of drone, use even as many people remain confused about what drones are. The short and simple answer is that a drone is an unmanned aerial vehicle, or UAV. They come in many shapes and forms. Essentially, it is a plane without a pilot and, if equipped with missiles and laser-guided bombs, can bring injury or death to anyone in its camera's sights. The increasing frequency with which President Obama, the CIA, and the US Military are employing drones has caused concern and anger throughout the international community. The targets of many of these strikes have shifted over the borders of Afghanistan, and into rural areas in countries like Yemen and Pakistan, specifically in the FATA (Federally Administered Tribal Area) region.

The United States government is continuing its mission of crippling the transnational terrorist organization Al-Qaeda. But, as the organization embeds itself within various cities and countries, it is increasingly difficult to track all of the group's movements. Drones are the United States' new weapon of choice because they are very difficult to detect and can deliver lethal strikes against terrorists quickly. Though drones may kill some enemies, civilians of Yemen, Afghanistan,

and Pakistan are not pleased with the United States government's new drone program. The drones kill with abandon, obliterating entire communities, killing husbands, wives, children. These drones are destroying lives. From the camera's point of view 50,000 feet up, it is hard to differentiate between a member of Al-Qaeda and a farmer. The use of these newly-weaponized drones is unethical, due to their unreliability and their tendency to cause collateral damage. In addition, the United States' use of drones has contributed to contribute to anti-American sentiment, calling into question their overall utility in the fight against terrorism.

Before going further into the disputed topic of drones, it is important to understand what exactly drones are and how they work. Drones come in a multitude of shapes, forms and models. Despite recent media attention, these UAVs are not necessarily new. The history of these pilotless vehicles dates back to the mid-1800s when, "[Austria] launched some 200 pilotless balloons mounted with bombs against the city of Venice" when the two states were engaged in conflict. Fast-forward to 1898 when, during the Spanish-American War, the, "US military fitted a camera to a kite, producing the first ever aerial reconnaissance photo" (Shaw).

With some impressive technological advances, two models of drones are the most widely used today. The first is the RQ-11 Raven, a UAV resembling a model plane that weighs only four pounds and carries no weapons. The Raven is a type of UAV that soldiers on the ground operate through a touchscreen tablet. The Raven has an 80-minute flight-time and relays infrared/daylight surveillance feeds to the pilot's tablet, which can then inform other soldiers where an insurgent is hiding (Raven RQ-11). The second model is the most well-known and controversial type of UAV: the RQ-1/MQ-1/MQ-9 Predator. Unlike the Raven, the Predator drone can be controlled from thousands of miles away, can stay airborne up to forty hours, has multiple cameras suited for various types of surveillance, and can carry lethal payloads that include four Hellfire II missiles and two laser guided bombs. Not all Predators carry such daunting payloads, as many are used strictly for reconnaissance and aerial intelligence gathering (Predator RQ-1).

Predator operations are fascinating. The drones used in Central Asia take off from bases in Afghanistan and Pakistan, but the drones are not piloted locally. Rather, once the drone is airborne, it is flown and controlled remotely from an airbase in the United States, usually from Creech Air Force Base in Nevada. Here, the drone pilot and drone's sensor/weapons operator will relay information to the soldiers in Pakistan and carry out ordered attacks. A satellite located between Pakistan and Creech AFB relays the orders from the pilot in Nevada to the drone sweeping the skies in FATA ("Drones: What they are").

After reading how these airborne machines operate, one may think that these armed drones, such as the Predator, aren't so bad. If the U.S. can eradicate high value targets (HVTs) in countries like Pakistan while American troops are here at home safe with their families, that means fewer American soldiers risking their lives on foreign soil. In Keith Burris' article, "Drones Save U.S. Lives," he clearly states that when a "drone takes out a terrorist leader, and maybe a few of his henchmen, that is a firefight saved. That is a precious, young American life saved, and that is a very good thing." Burris is right: with pilotless armed planes in the sky, there will be fewer firefights between insurgents and American troops. There will be fewer high-risk pursuits of HVTs that expose Americans to capture or death.

An advocate of drone use might also contend that they are an immediate response to acts of terrorism. Take, for example, a possible terrorist attack carried out on American soil by foreign operatives. In response to that attack, total mobilization of our forces could take anywhere between 48 hours to just over a month to get the first American soldiers overseas, as it did in the 2001 invasion of Afghanistan. Add multiple days, weeks, months, even years, in order to kill the HVTs who organized the attacks. But a Predator drone can be airborne overseas searching and destroying specific targets within twenty-four hours ("Deployment and Mobilization"). This is extremely efficient and quick compared to sending over hundreds of thousands of American soldiers, and the cost savings are incalculable.

However, the rapid mobilization capacity of drones and their ability to quickly eliminate their targets does not compensate for the high chances of failure. Technology is constantly advancing, which means nothing is ever perfect. In terms of accuracy and precision, there are many "practical concerns about drones, such as reliance on two-way satellite communications that are vulnerable to jamming by militants. In addition to external risk, the data link can fail internally, forcing the drone to revert to pre-loaded software and GPS

guidance," which can prove detrimental to missions that require complete and complex control over the weapons (Drone Warfare: Dehumanization…). There is no straightforward answer as to why some drones malfunction, as it could be anything from signal disruptions to random internal issues. Technology is not perfect. It is very difficult for militants to hack into and take over control or jam US drones because of the highly encrypted data links, but it is not impossible.

A perfect incident to highlight drone unreliability occurred in Iran in 2011 when the Iranian Army captured RQ-170 Sentinel after it experienced an internal malfunction. It is very unlikely that Iran was able to hack into the actual drone. The problem is that when the data link of a drone fails, like the Sentinel in Iran, they are supposed to autonomously fly back to the base from which they departed. Unfortunately, this drone crashed, making the "possibility of sensitive military technologies [and information gathered by the drone] failing into the hands of other countries of terrorist groups" an area of concern for the US (Shalal Esa). Clearly, if this drone was carrying weapon technologies or sensitive intelligence, those could have fallen into the hands of those who seek to harm the United States and its interest, affecting not only the military, but also Americans at home.

Many of the accuracy problems experienced by drones are due to the latency, or delay, that can occur between the drone pilot at Creech ADB, Nevada and his drone almost 8,000 miles away, in FATA, Pakistan. Think about the following hypothetical situation in which a pilot's Predator suffers from a few seconds of latency. The drone temporarily receives instructions three seconds late because of a disputation in the data link between the drone and the satellite. In this scenario, the pilot had his sights aimed on a moving truck with an HVT. However, when the pilot decides to release a Hellfire missile, the instructions are incorrect because what the pilot sees is already in the past. Now with delayed fire instructions, the missile may no longer be locked onto the truck, but instead onto a similar vehicle with a family of innocent children inside. Within a few seconds, that family is killed as the missile reaches its incorrect target. Though this scenario is disturbing to think about, it is too often a real consequence of drone use (Drone Warfare: Dehumanization…).

The increased use of drones since 2001 has produced immense collateral damage due questionable reliability and the difficulties harnessing new technology. In 2004, when armed drone campaigns were still in their infancy, collected data showed that "five or six people were killed for each defined high-value target [that was killed by a drone]," (Hudson). Figure 1 shows the number of strikes in that given period, the number of HVTs killed, and then the total deaths in the period, including the collateral damage.

Drone Strikes by Phase (Hudson)

Phase	Strikes	HVT's Killed	Total Deaths	HVT-to-Total Death Ratio
2002-2004	2	2	11	1:5
2005-2007	6	2	53	1:26
2008-2009 (end of Bush's term)	48	5	333	1:66
2009-2010 (Obama's term)	161	7	1029	1:147

Figure 1

According to the data, drone strikes are causing much more harm than good. The increase in drone strikes from Bush's terms to President Obama's first term is staggering. President Obama has increased strikes 800% over the past six years, with very few results to show for it. Between 2010-11, there were 161 strikes, only killing seven HVTs and leaving 1,022 civilians dead. From the data, it would appear that Obama's drone program is causing more deaths than necessary. The far-right column shows that for every HVT, there were five civilian deaths during Bush's 2002-2004 years. In the bottom row of Figure 1, we are able to see that under Obama in 2009-10, one HVT was killed for every 147 civilians. Those numbers are disturbing.

One might contend that every war is characterized by collateral damage. All war is hell, as Sherman said, and civilians always receive the brunt of it. But these drone campaigns are causing unnecessary collateral damage. Between 2002-2004, there were only two strikes, resulting in two HVTs killed. But the total death in the strikes is eleven, so one HVT to five civilian deaths. As Figure 1 progresses into the Obama administration, the data shows that in a two-year span (2009-2010), 161 strikes took place. That is almost triple the total for the previous six years. However, with that large number of strikes, only seven HVTs

were killed. The previous phase had only five HVT kills with forty-eight strikes and many fewer civilian deaths.

Now that drone attacks are occurring with increased frequency, a larger number of citizens are victims of drones, either directly or indirectly. Among those affected are victims who have survived strikes, or people who have witnessed the incidents firsthand. Their experience with drones cultivates a hate for the country that utilized the deadly weapons, sometimes motivating them to join the ranks of organizations or groups that United States was trying to get rid of in the first place. It's quite obvious that our drone programs are only increasing the amount of time and money we are putting into wars and countries overseas (Hudson). To understand how drones affect civilians overseas, it's critical to hear from them directly just how the United States' new weapon of choice impacts their daily lives.

The Human Impact of Drone Usage

Nine hours outside of Yemen's capital lies the small, remote mountainous village of Wessab. This is where Farea al-Muslimi was born and raised, where he and his family lived a self-sufficient lifestyle in which they grew their own vegetables, fruit, and livestock, just like the many other villagers. In Farea's ninth-grade year, he was selected to engage in an exchange program through the U.S. State Department; he was able to see the world beyond his small village, a world that no one he grew up with understood. On his trip, Farea "made exceptional friends with [his] American classmates, and had the most interesting and enriching experience one could imagine" (Friedersdorf). Upon completing this exchange program, Farea was offered a scholarship that would fund his college education at American University of Beirut, where he graduated with a degree in public policy. Since then Farea has been working as a democracy activist and a freelance journalist. Wessab recently experienced its first drone strike, one that killed five civilians, including a 4-year-old and a 6-year-old brother and sister. The following is Farea's testimony in front of Congress after a strike hit a town close to Wessab:

> **Late last year, I was with an American colleague from an international media outlet on a tour of Abyan. Suddenly, locals started to become paranoid. They were moving erratically and frantically pointing toward the sky. Based on their past experience with drone strikes, they told us that the thing hovering above us — out of sight and making a strange humming noise — was an American drone. My heart sank. I was helpless. It was the first time that I had earnestly feared for my life, or for an American friend's life in Yemen. I was standing there at the mercy of a drone. I also couldn't help but think that the operator of this drone just might be my American friend with whom I had the warmest and deepest friendship in America. My mind was racing and my heart was torn. I was torn between the great country I know and love and the drone above my head that could not differentiate between me and some [Al-Qaeda] militant. I was one of the most divisive and difficult feelings I have ever encountered. That feeling, multiplied by the highest number mathematicians have, gripped me when my village was droned just days ago. It was the worst feeling I have ever had. I was devastated for days because I knew that the bombing in my village by the United States would empower militants… (Friedersdorf)**

This testimony is considered "[one] of the most powerful testimonies on drones to ever be uttered in the halls of Congress" (Friedersdorf). Not only is this testimony chilling to read, but Farea also offers a perspective that is often overlooked when people think of the consequences of drone campaigns: the United States' continual drone strikes actually feed the beast, which is, in this case, Al Qaeda. Not only does drone usage anger the members of terrorist organizations and cause them to seek revenge upon the American "infidels" that annihilate their land and families, but it also enrages civilians. Drone strikes that accidentally stray off course and hit various Yemeni tribesmen and communities, like Farea's, encourage tribe members to take arms and side with the radical terrorists groups (Friedersdorf).

New York Times writer and Yemini citizen Ibrahim Mothana is very vocal about how the U.S. drone program creates more anti-American sentiment in the countryside and small mountainous towns of Yemen. In his article "How Drones Help Qaeda", he begins: "Dear Obama, when a US drone missile kills a child in Yemen, the father will go to war with you, guaranteed." Mothana goes on to explain that it is not the ideology of Al Qaeda that is attracting drone victims; rather, civilians are joining because of the "revenge and despair" that many feel after a strike has killed their spouses, neighbors, or even children.

He continues: "the drone program is leading to the Talibanization of vast tribal areas and the radicalization of people who could otherwise be America's allies in the fight against terrorism in Yemen," (2013). This is an enormous problem for the U.S. government and for President Obama, if they were hoping to reduce the risk of terrorism; their mentality that a few civilians are worth the death of one HVT will only encourage the very evil that inspired the drone attack. This pattern of drone usage and subsequent anti-American sentiment is a cyclical one that threatens to continue as long as drones remain a staple of American foreign policy.

Drone warfare is an ineffective anti-terrorism tool. The high-flying, pilotless drones that carry lethal missiles have proven they create more targets than they eliminate. The continued "hunt and kill" missions for Al Qaeda members have spilled into countries like Pakistan and Yemen. The victims - citizens of countries nominally allied with the United States - can all agree upon one thing: the use of these drones is wrong. Drones are not always particularly accurate and reliable. There are frequent malfunctions within the drones, and difficulties ensuring the security of communications. With each malfunction, the amount of collateral damage rises. Members of the community who have survived a missile strike or know someone who was killed by one are civilians who now feed anti-American sentiment. With such a high number of non-combatants and civilians killed, these civilians are starting to side with terrorist organizations, such as Al Qaeda, because the United States is killing their friends and family. They look for revenge and we continue to add to the flame we strive so hard to put out. Clearly, armed drone campaigns are not an effective way to eradicate terrorist organizations and we should continue to look for other counter-terrorism techniques.

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