
Debating Drones in the Global Information Age

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This article examines the proliferation of drone technology, including the growing use of armed drones by state actors, media organizations, non-profits, and development and humanitarian actors. It analyzes the benefits and costs of “drone journalism” and offers recommendations for developing guidelines and frameworks for an integrative use of drones given the myriad of legal, moral, economic, and security concerns that arise from multiple uses of drone technologies across different sectors.

INTRODUCTION

Human beings are prone to invent. We build. We destroy. We thrive and we perish. As the philosopher John Stuart Mill wrote in 1869, “It is questionable if all the mechanical inventions yet made have lightened the day’s toil of any human being.”¹ Emergent technology can disrupt the intricate balancing act of human rewards and punishment. Nowhere are those debates more salient than in the arena of war and peace, where the advent of sophisticated weaponry, artificial intelligence, pilotless vehicles, advanced 5G networks, etc. incur both benefits and costs.²

One vital area of discussion today is the phenomenon of drone technology. Drones, also known as unmanned aerial vehicles (UAVs) or remotely piloted aircraft systems (RPAS), have changed the landscape of modern-day warfare, responses to humanitarian crises, and the contours of the information age.³ Although originally designed as weapons, drone technology has found its way into civilian use for purposes such as product deliveries, and within the media and information space. Drones are used both during conflict as warfighting tools and during crises as a source of

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information for development and humanitarian response. Indeed, drones are used for everything from media coverage of the weather to targeted killings in full-scale war. Examining the intersection of drone technology across multiple fields enables a more holistic approach to the topic, because it enables a more integrated cost-benefit analysis.⁴

Drones for Public Diplomacy

In some countries like the United States, the military use of drones remains classified information; in others, like Israel, the government does not admit to possessing drones, but experts have nonetheless tracked their development and use.⁵

While some countries avoid any public disclosure of drone programs, others tout them. Iran shows off its drone technology in propaganda to demonstrate its international prowess.⁶ China flaunts its drone technology at public exhibitions.⁷ Besides using drones as public examples of military prowess, China also uses drones for covert surveillance, especially in international waters to patrol around disputed islands in the South China Sea. Its expanding drone program has influenced other countries like the United States to invest more heavily in the technology.

Drones in Changing Conflict Zones

Drones were developed and used in World War I by both the Americans and the British. Their early model was known as “The Kettering Bug,” a small radio-controlled aircraft. Reconnaissance UAVs were deployed during the Vietnam War as decoys in combat. After 9/11, drones joined the U.S. counterterrorism response, which used uninhabited armed vehicles to strike at non-state organizations like ISIS.⁸

Today, drones are a reality of warfare. More than 100 militaries use some level or form of armed or unarmed drone capability, and a growing number have experience using these systems in combat.⁹ In the equivalent of an arms race, drones are being traded and sold to influence the outcomes of conflicts.¹⁰

Since the late 1980s, scholars, experts, think tanks, and journalists have dedicated enormous resources to analyzing drones, particularly in global conflicts. An entire center at Bard University, the Center for the Study of the Drone, is dedicated to the use of drones, and annual reports monitor their usage.¹¹

Although most foreign policy observers focus on the use of U.S.

drones in active war zones like Afghanistan, Syria, Iraq, and the wider Middle East, drone warfare is proliferating in sub-national conflicts with a tit-for-tat outcome, as in the case where a Saudi-led coalition launched a military strike on Houthi rebels in Yemen in response to a drone attack aimed at Abu Dhabi.¹² Drones are increasingly exported from countries like Turkey in situations like the Nagorno-Karabakh conflict, and to tip the balance of power in Ethiopia.¹³ Prime Minister Abiy Ahmed pulled off a stunning reversal in the year-old conflict with the help of armed drones supplied by the United Arab Emirates, Turkey, and Iran.¹⁴ Unlike a major international armed conflict, governed clearly by traditional international norms and laws, sub-national conflicts using drones challenge ethical rules, and expands the potential humanitarian damage to civilians.

Additionally, adding to the use of conventional and advanced weapons, drones are being used in Ukraine by both sides of the conflict. Russia uses them to rapidly locate and fire onto Ukrainian positions, whereas Ukraine purchased Turkish-made drones in 2019 for defensive measures.¹⁵ The expanding deployment of drones in active wars risks lengthening conflicts and complicating the paths to diplomacy. With so much technology coming from so many different directions, warring parties are loathe to lay down their arms.

The Consequences of U.S. Drone Strikes

When armies utilize uninhabited vehicles armed with precision weapons, the damage can be enormous. Yet the public sees little of the actual strikes, in contrast with traditional armed conflicts characterized by higher levels of battlefield transparency.¹⁶

In-depth reporting on the impact of U.S. armed drones by *The New York Times* and others shed light on the increasing concerns over inadvertent killing and destruction despite the “precision” nature of drone warfare. *The New York Times* has an ongoing project to capture the data on the impact of drone strikes.¹⁷ This data has revealed that:

- In January 2022, three people were killed and six were injured after Yemen’s Iran-aligned Houthi movement claimed responsibility for an alleged drone attack on the United Arab Emirates. Shortly afterward, the Saudi-led coalition claimed that it had managed to down eight drones launched in the direction of Saudi Arabia.
- In 2015, U.S. forces thought they were hitting a terrorist in Iraq; they killed a child. In 2016, a bombing mission against an ISIS target went awry and killed 120 innocent villagers in northern Syria.¹⁸

- In 2017, an Iraqi family and three nearby civilians lost their lives when a U.S. bomb hit the wrong target.
- In 2019, dozens of civilians were killed in a drone bombing in Syria.

Furthermore, in Afghanistan during August 2021, American officials said a drone strike in Kabul had destroyed a vehicle packed with bombs, but further investigation revealed the strike killed ten members of one Afghan family. Alongside death and destruction came questions of accountability, reparation, and legal recourse for victims, and an official apology by the U.S. government. But instead, the information was hard to uncover; it took a Freedom of Information request for *The New York Times* to be able to fully report on the details of the incident, and the loss of civilian life from drones has led many experts to reevaluate their use, reflecting the costs and trade-offs inherent in any drone debate.¹⁹

Foreign policy scholar Audrey Cronin has argued recently for sharply curtailing drones for military use in Afghanistan for counter terrorism over-the-horizon tactics. According to Cronin,

“By increasing its reliance on drone strikes, Washington will be embracing a tactic that played a major role in the United States’ strategic defeat in Afghanistan...Errant strikes, especially those that hit children, can inflame local populations and help extremists recruit new members. Despite years of withering “decapitation strikes” against terrorist leaders, one estimate found that there are more than four times as many Islamist extremists worldwide now as there were on September 11.”²⁰

Clearly, drone errors that cause civilian physical injuries and mental trauma tend to radicalize populations and deepen conflict.

Other experts have suggested stricter rules and restrictions on military uses of drones, conceding that drone attacks have played an important role in fighting terrorism and weakening and killing insurgents, including the leadership of al-Qaeda, the Islamic State (ISIS), and various other terrorist groups. These experts argue that we cannot always have troops everywhere. In a recent *Foreign Affairs* article, authors Paul Lushenko, Sarah Kreps, and Shyam Raman examined former President Obama’s approach to airstrikes in Pakistan and found that a standard of near certainty precision for U.S. drone strikes reduced civilian casualties. They note that “stringent targeting standards might save innocent lives in theaters such as Iraq and Syria, too,” without compromising counter-terrorism goals.²¹

Drones as a Tool of Development

As the sophistication of drones has increased with better targeting capabilities and range, so has their use expanded in non-military sectors. According to the FAA, there were almost a million drones registered in the United States in 2019. The ways we use drones range from recreational use to commercial application to weather reporting.²²

Drone technology can be lifesaving for humanitarian assistance. Information is vital during international strife, and drones provide an overhead view of events including floods, earthquakes, and hurricanes.²³ In countries lacking robust telecommunications and transportation infrastructure, drones allow for relatively low-cost responses to human disasters with timely assistance. The World Bank is actively engaged in projects using drones. Drones can make fast product deliveries of wiring, supplies, and tools and are utilized in strengthening transportation systems and internet connectivity throughout such countries.²⁴

There are many examples of drones assisting in crises:

For one, drones surveilled the aftermath of the Nepal earthquake in 2015, and the information captured facilitated the delivery of assistance. Several agencies used drones for search and rescue missions and to map out toppled monuments, ruined heritage sites, and devastated homes.²⁵ More recently, vaccination delivery for Nepal using drones is considered state-of-the-art humanitarianism.²⁶

In another case of humanitarian disaster response, drones enabled access to difficult to reach regions in Tonga following a volcanic eruption in the Pacific Island nation in January 2022. This was not the first time drones were used in this capacity: the World Bank used drones to support the government of Tonga in its Rapid Damage Assessment after Cyclone Gita. A fleet of the World Bank's drones were transported to Tonga with the support of the Australian government. Drone mapping proved crucial to helping Tonga's government determine priority areas for recovery and reconstruction.²⁷ Drones have also proven useful in the case of vaccine delivery, as in 2014, when Doctors Without Borders pioneered the use of drones to deliver vaccines and medicine in Papua New Guinea, while the World Health Organization used a similar program in Bhutan and India for medical support during epidemics.²⁸

The International Organization for Migration has been using drones since 2012 to respond to victims displaced by natural disasters. Other aid organizations deliver vaccines to Haiti or help with connectivity during emergencies.²⁹ Drones assist with elevation studies and cartography.³⁰

Finally, the World Wildlife Fund uses drones to prevent poaching in Namibia. Drones can also plant seeds and pollinate crops.³¹

Drone Journalism

Just as information is critical for warfare and development, it is a fundamental tool for media organizations. Reporting can be enhanced by visual imagery from basic photography to more advanced forms of broadcasting. Hence, the arrival of “drone journalism.”³²

“Drone journalism” as a formal field of study emerged in 2011 when *The New York Times* announced its use of the technology.³³ In that year, various news organizations attempted to cover protests in New York during the Occupy Wall Street movement. Media outlets benefitted from the work of a citizen journalist, Timothy Pool, who sought to provide a live feed of Occupy Wall Street, offering a unique perspective with footage from a modified helicopter that circled the protests.

That year also saw the use of a drone by a Polish firm, RoboKopter, to cover protests in Warsaw. Again, technically a form of surveillance, it was controversial, leading many to question national security, privacy, and freedom of information.³⁴

Two years later, the British Broadcasting Corporation (BBC) launched an 18-inch, six-rotored, unmanned drone to report on a controversial high-speed train being planned for travel from London to Manchester.³⁵

What photojournalists and news gathering organizations have grown to understand is that images captured from above ground—or even below ground—with relatively low-cost drone technology can enhance timely stories, but not without causing controversy and conflict with law enforcement and national security officials. Drones can capture images that a basic camera on the ground simply cannot, enhancing viewer opportunity and allowing important stories to come to light. However, civilian drones have the potential to get in the way of ongoing military assistance operations, causing conflict. For example, law enforcement officials often cite drone interference during drug busts or sting operations. It is perhaps ironic that news organizations use drones to amplify audience reach and news coverage of military conflicts around the world while the same technology is used by armies to wage war.³⁶

Despite their negative reputation, some drones do good work. CNN’s Karl Penhault narrated drone footage for his coverage of typhoon Haiyan in the Philippines.³⁷ Take Josh Haner, a “photo futurist” for *The New York Times* and one of the early adopters of drone technology. Josh said,

“The first drone images I made were on a trip to Greenland’s ice sheet, where I captured images of a meltwater river flowing across the top of the ice...I used a drone to show that the second-largest lake in Bolivia had dried up, leaving boats stranded in the sand and a fishing community having to reinvent itself. More recently, I was able to get an aerial angle of the giant moai statues on Easter Island showing their proximity to an eroding coastline, which would not have been possible any other way.”³⁸

Drones are a logical extension of media development. What began as simple radio technology for journalists in the late 1800s morphed into satellite television in the 1960s and the Internet of Things in the 1980s. Alongside traditional television news came the expansion of cable television with a range of viewing choices, and the parallel exponential increase of social media reach and influence. Demand for news also grew as choices expanded. Media organizations had long used airborne technology to cover weather beginning with news helicopters in the late 1950s.³⁹

As with all technological advances, difficult issues surround drone journalism when it comes to sources and attribution. Traditional media involves reporters asking if they can record a conversation or use a quote “on the record.” But drones don’t seek permission. Nobody signs a waiver when a drone captures a crowd. This puts an enormous burden on news organizations and the citizens they cover to use it responsibly and respond when increasing limitations are placed on the media organizations by governments.

In September of 2021, the *El Paso Times* in Texas used drones to track migrants. That information flow was disrupted by federal officials charging that the use of such technology could be dangerous to Border Patrol and interfere with law enforcement. Court cases emerged as media outlets challenged the bans based on First Amendment freedom of speech issues. The opposing side argues of the potential for interference in missions.⁴⁰ Often, in the quest to report on drone usage by governments, media outlets are blocked and find ways around the barriers.^{41, 42}

Regulation of drone activity varies country by country with complex rules around registration and usage. The Reporters Committee for Freedom of the Press has been examining journalistic and ethical questions, seeking to understand where and when there are legitimate security issues and how reporters might face unfair barriers to coverage.⁴³

Moreover, there is the added problem of disinformation today and ensuring that news coverage is independent from state control. Authoritarian regimes often seek to limit the flow of information and drones for media

purposes could pose challenges. Major powers like Russia and China are constantly employing new tools to stop information-gathering—tracking online internet activity and quashing freedom of the press. Often these restrictions are not visible. Whether or not they can track drone coverage and make the same kinds of arrests, detentions, and hacking of journalists in the sky as on the ground is at issue.^{44, 45}

Recommendations for Drone Technology Sector by Sector

Given the challenges implicated with the growing use of drones, how do we assess the new drone arena and create frameworks that address multiple challenges for media, crisis response, and the military? As drones become more widespread in many fields, how do we avoid a world of “drone swarms,” and congested skies where conflict among drones eclipses the stories they cover?

First, on the military side, we need a data-driven way of declassifying and estimating injuries from armed drones and death in airstrikes from precision drones. Information about the impact of military incidents from drone use is illuminating for historical purposes but also to engage societies in action and to temper the impulse to engage in conflict. If people don't see war in the traditional sense of uniforms and weapons, they are not likely to protest it. But if the damage from airstrikes and drone attacks can be measured and made visible, the public will be able to better contextualize the human toll.

Second, we need to encourage drones for development to address a multitude of crises like climate change, migration patterns, energy needs, and public health issues like the pandemic. The University of Southern California's Institute for Global Health is conducting online courses on the use of drones for global health.⁴⁶ Given the pandemic raging around the world, this kind of model can be broadened to include multiple stakeholders just as climate change creates new models of cooperation with the developing world.

Third, as the field of “drone journalism” evolves, it must include training of reporters on the proper, safe use of the technology and the ethical dimensions of drones vis-à-vis privacy. Drone journalism often lacks the human judgment of a skilled reporter and editor, using footage that is raw, covering events unfolding live, sometimes without context.⁴⁷

There are many journalism programs around the United States and the world offering courses about drones, some of which are worth mention:

- The College of Journalism and Mass Communications at the University of Nebraska-Lincoln established the Drone Journalism Lab in November 2011 as part of a broad digital journalism and innovation strategy.⁴⁸
- The University of Missouri School of Journalism has a program training the next generation of what they call “dronalists,” including controlling drone traffic at news scenes, protecting First Amendment and airspace rights while using drones for news coverage, creating a culture of safe, responsible drone operators in the media.⁴⁹
- University of Kentucky journalism students are learning to gather news in a drone journalism class which focuses on aerial reporting and drone coverage.⁵⁰
- The Poynter Institute in Florida, a major media training organization, offers courses on the ethics of drone journalism. More than 325 journalists and journalism educators have been trained in ethical and safe drone flying procedures. There are workshops on producing a “code of drone journalism ethics” on journalism and photojournalism ethics policies.⁵¹

CONCLUSION

Difficult as it may seem, we need a global approach to drones. Every country should have a national action plan on drones incorporating civilian, media, and military usage.

A master plan on drone technology will always be limited by the variability in countries with differing forms of government and by the multiple uses of drone technology across sectors. But we must aggregate ideas in a more centralized way to address how nations can work together to establish global rules regarding drone usage. Many of our institutions and ways of approaching international affairs are based on old-fashioned ways of looking at regional instead of global issues. Many of today’s problems require completely new multilateral organizations. In the case of drone technology, a regional approach will not suffice given the global nature of events, crisis response, humanitarian assistance, and public health.

The United States should play a leadership role in moving the drone conversation forward, which begins with getting its own house in order. Indeed, American technological prowess and strong legal research on drone usage would help in leading other nations to fashion new rules. In the United States, for example, the legislative branch is often in conflict with

the executive branch, and drone technology is a source of enormous debate between agencies. Congress seeks to regulate drone activity to avoid civilian casualties.⁵² The Biden administration is conducting its own review.⁵³

Developing countries and non-state actors also need to be part of the dialogue. Since drone usage is of transnational importance, it is vital to have a global roadmap on drones akin to what is taking place in cyber security to align ethical, legal, and political concerns. Authors like Seth J. Frantzman, noting the absence of a unified global approach to deal, are suggesting a “drone doctrine”—an entirely new framework incorporating legislation and codes of behavior on the military side and laying out the risks of drones by non-state actors against the United States and other countries. According to Frantzman, “Terrorist groups already have sophisticated engineering they use to build bombs. There was no reason they wouldn’t eventually build drones.”⁵⁴ That raises new questions of anti-drone defense systems to interfere with unwanted drones or UAVs.

Similarly, arguments that occur around the use of drones are laborious. Valuable time is lost that could be put into the actual work of drone policy, with appropriate guidelines to prevent injury and death. In the end, societies require transparent rules of the road to navigate challenges and opportunities, especially with innovations that can have life-saving value but with attendant risk.

Technology marches on. Every nation seeks to have cutting-edge innovation to produce and deliver goods, protect its people, and respond to crises while delivering state-of-the-art information. When it comes to drone technology, balancing risk and reward must animate this vital global conversation. The next drone event is just around the corner. *f*

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