



# Audit of the Conventional Wisdom

## Attack of the Drones: Ethical, Legal and Strategic Implications of UAV Use

Lena Simone Andrews

MIT Center for International Studies

Since the onset of the wars in Iraq and Afghanistan, the United States has dramatically increased the development, acquisition, and use of unmanned aerial vehicles (UAVs). As these systems have grown, a chorus of skeptics has raised questions about the tactical, ethical, and strategic implications of this technology. These critics have questioned whether the purported technical benefits of UAVs outweigh potentially problematic ethical and strategic questions they raise. While these concerns are no doubt integral to developing a better and more responsible UAV program, it is important to distinguish between issues related to the technology itself, and those related to how it is employed. As we shall see, the concerns raised about UAV technology are mitigated more easily than apprehensions about the strategic pitfalls of UAV use and the problems of UAV oversight in the U.S. national security establishment.

### The Current Picture

The first Unmanned Aerial Vehicle—commonly referred to as a drone—was introduced into the U.S. military in 1917. The “Bug,” as it was called, was in fact an unmanned aerial torpedo, which would guide itself to a target, shut off its engine, and plummet to the ground.<sup>1</sup> The models that followed the Bug were not regularly employed until the Vietnam War, and by then they had become vastly more advanced in an array of capacities, from targeting to intelligence collection. While the early missions covered a range of tasks, the primary utility of drones was in surveillance and reconnaissance.<sup>2</sup>

#### Center for International Studies

Massachusetts Institute of Technology  
Building E40-400  
1 Amherst Street  
Cambridge, MA 02139

T: 617.253.8093  
F: 617.253.9330  
cis-info@mit.edu

[web.mit.edu/cis/](http://web.mit.edu/cis/)  
twitter: @MIT\_CIS

# Advantages of the Conventional Wisdom

Despite the continued relevance of the traditional intelligence, surveillance, and reconnaissance (ISR) missions of drone technology, the wars in Iraq and Afghanistan have provided new opportunities for the expansion of drone missions: by arming drones with precision-guided missiles, the U.S. military has integrated a strike capability onto many reconnaissance drones. More recently, we have seen plans in the works for a separate class of systems, which are being designed for the express purpose of combat missions (Unmanned Combat Aerial Vehicles, UCAVs).<sup>3</sup>

With the onset of the war in Afghanistan, drone development and use in U.S. military and intelligence agencies has increased exponentially. The budget for drones has increased steadily since 2000, going from a \$667 million allocation in FY2001 to \$3.9 billion in the FY2013 budget request.<sup>4</sup> As a result of this increased spending and widespread support among policymakers and legislators, the U.S. military's drone arsenal has increased nearly 40-fold in the past decade and is now just shy of 7,500 operational UAVs.<sup>5</sup> The increased use of drones has occurred across all the services, although the Air Force and Army lead the way in terms of numbers. However, the Navy and Marine Corps remain heavy users of drones, and have plans to increase their stocks, particularly in the form of carrier based UAVs, and unmanned underwater vehicles.<sup>6</sup> The Central Intelligence Agency (CIA) has also been an active user of drone technology, with a number of controversial success stories—most recently, the killing of Anwar al-Awlaki. In addition to expanding the scope of military and intelligence drone missions, the Department of Homeland Security and law enforcement agencies are working with the Federal Aviation Authority (FAA) to increase their access to drone technology, and commercial interest is not far behind.

## Drones: Technical Advantages

Drone advocates generally point to three technical advantages of unmanned systems: (1) drones minimize the risk to the life of the pilot; (2) drones are not subject to natural human limits (e.g. fatigue); and (3) drone development and acquisition is generally cheaper than that of manned aircraft. Undergirding all of these claims is the general versatility of drones—not only can drones be commissioned with specific uses in mind, but they provide highly adaptive platforms to upgrade and expand their missions.

*Minimizing Risk to Pilot Life:* Perhaps the most obvious benefit of drone use is that it insulates the pilot from the dangers of flying a manned aircraft. Rather than operating directly over the combat theater, UAV operators are flying drones remotely from locations in the United States, most commonly, from Creech Air Force Base in Nevada.

*Overcoming Human Limits:* The technical endurance of many drones in the U.S. arsenal often allow for 24 hours or more of constant surveillance in a single location.<sup>7</sup> The drones are maintained by rotating teams, who operate and monitor the UAVs during shifts. As a result, drones allow for relatively uninterrupted surveillance for lengths of time that far surpass the limits of human endurance and fatigue. Advocates of drones often argue that this extra time allows for more precise targeting and more discerning use of missiles.

*Low Acquisition Cost:* A less clear, but important benefit of drones is their relatively low acquisition costs. Advocates of drones generally point to the cost savings of UAVs, which are (on average) less to procure than a manned aircraft. However, there are a number of factors that often go unaccounted for in the reported acquisition amounts. As critics are quick to point out, drone lifecycle costs (like any aircraft) can be quite high, especially because drones tend to have a high proclivity to crash and get sidelined for technical reasons. More recently, the costs of drone development have far exceeded those initially proposed, further shrinking the cost savings gap.<sup>8</sup> Finally, those skeptical of drone cost savings often note that many drone programs are duplicative and poorly managed. By endowing each service with their own drone program, the military has forgone the efficiencies and potential cost savings of centralized management and joint platforms. Indeed, the Department of Defense (DOD) has acknowledged the need to streamline and integrate programs across the services, saying:

*In the fiscal environment facing the Nation, DoD, in concert with industry, must pursue investments and business practices that drive down life-cycle costs for unmanned systems. Affordability will be treated as a key performance parameter (KPP) equal to, if not more important than, schedule and technical performance.<sup>9</sup>*

Yet even with these inefficiencies, drones offer an incredible array of technical capabilities. Among others, DoD has cited a range of current and possible uses for drones—surveillance

---

**Lena Simone Andrews** is a PhD student in International Relations and Security Studies, focusing on the intersection between U.S. foreign policy and defense strategy. She holds a B.A. in Political Science and Philosophy from Tufts University. Before coming to MIT, Lena was a Senior Program Specialist at the U.S. Institute of Peace in Washington, DC.

---

*The Center hosted a Starr Forum in fall 2012 on this topic featuring MIT and Harvard scholars. Also joining the discussion via video was a Pakistani journalist based in Lahore. To watch the event, visit our web site and click on "Video Gallery".*

and reconnaissance, precision targeting and strike capability, chemical and biological weapon detection, port security, etc.—all of which come with a lower risk to the life of the pilot and higher endurance rate.

### **Ethical Criticism**

For all of the technical advantages that drones have the potential to provide, there remain a number of ethical considerations that have recently come to the surface. Among the most prominent concerns raised are the threat of civilian casualties, adherence to the proportionality and distinction principles in international humanitarian law, and the potential for overuse. Mitigating the validity of these concerns is a difficult task, and remains largely unresolved among scholars of war and ethics.

*Civilian Casualties:* The increased fielding of drones with precision-guided strike capability has raised concerns about the number of resulting civilian casualties. While estimates of civilian casualties from drone strikes do vary, the New America Foundation (NAF) recently reported that in the 2004-2012 period only 15% of drone casualties have been non-militant casualties (approximately 500 people) and in 2012 the rate was down to 1%.<sup>10</sup> But these numbers and those of other institutions—researchers at University of Massachusetts Dartmouth, Columbia University, the Long War Journal, and elsewhere, keep records of drone casualties—are hotly contested. Some have suggested that it is entirely impossible to know the exact number of non-militant casualties incurred due, in large part, to the nature of the operation itself. With little consensus on how many civilians and non-militants are being affected by these strikes, it is difficult to gauge how much traction the civilian casualty critique may have, but it remains a widespread, fundamental concern. Though this is an important critique, many scholars of war note that the civilian casualty rate of drones should be put in historical perspective. For example, shelling in France during World War II resulted in nearly 70,000 French civilian deaths.

*Proportionality and Distinction:* Beyond the number of civilians killed, drones raise an additional difficulty when it comes to the principles of proportionality and distinction in war. The principle of proportionality dictates that states evaluate the military advantage of any target against the potential loss of life and damage to civilians. Relatedly, the principle of distinction requires that states distinguish between civilians and combatants, and refrain from directing attacks against the former. Some argue that the drones are well equipped to make the sort of targeted and precise attacks that guard against violations of proportionality and distinction. Indeed, drone systems have the potential to make adherence to these principles even easier by providing diminished time constraints and clear pictures of the situation on the ground. As a result, soldiers have more accurate information on which they can base their decisions. However, the relative ease with which drone strikes can be executed and remoteness of the operating team has also led some to question whether the execution of each drone strike has adequately weighed both of these principles. The sharp rise in the number of drone attacks in the past decade implies to some that there may be excessive use of its strike capability. Coupled with the limited oversight mechanisms in place at the highest levels of policymaking, this trend has become increasingly worrisome to critics of drone use.

*Global Battlefield:* Related to the concerns of proportionality and distinction, some have noted that the debate about the overuse of

drones is, in fact, a manifestation of a larger debate about scope and nature of modern warfare. In the new global context, where the enemies of the United States are not nations but private organizations operating around the world, drones have been seen as a tool by which the U.S. can engage in relatively unchecked monitoring and targeting of enemies within the borders of sovereign states.<sup>11</sup> With the aid of this powerful tool some question whether the United States has, in effect, created a global battlefield where allied and enemy states alike are susceptible to drone attacks within their borders.

All that said, these ethical concerns are not new to the analysis of warfare. In fact, the advance of battle technologies with increasingly destructive capabilities—from the crossbow to the nuclear bomb—have a long history of constant ethical evaluation and improvement. Drones are the latest iteration of this technological growth, and the ethical concerns raised by their capabilities can be mitigated with relative ease, first and foremost by adapting protocols to reinforce the principles of proportionality and distinction.

Perhaps more troublesome than the ethics of drone technology, however, are the strategic questions about drone use since the September 11 terrorist attacks. At home and abroad, there has been a growing community of scholars and policy experts who have highlighted both the effect that drone use has had on key strategic relationships and the problems this tool has revealed related to the oversight of national security decision-making.

### **Strategic Criticism: Pakistan**

When it comes to illustrating the potentially damaging effect of drone use on strategic relationships, one must look no further than Pakistan. Strategically, drone use in Pakistan has been problematic in two ways: first, it undermines the perception of the U.S. in the region while providing few strategic gains; and second, when drone strikes are done cooperatively they raise concerns about the globalization of warfare and the role of the U.S. as the global policeman.

From a tactical standpoint, drones have provided an advantage to the United States by aiding in the disruption and destruction of terrorist networks at a rate higher than the networks can regenerate. However, the insurgents in Afghanistan and Pakistan have proven to be incredibly resilient. Despite drone effectiveness in the field, critics have called into question whether the tactical advantages of drone warfare have corresponded with strategic gains. After 10 years on the ground, some wonder if the insurgents have truly been defeated or are just “waiting out” the U.S. drawdown. Thus, while drones may have helped win the battles, critics ask if they have helped win the war.

Largely as a result of this uptick in drone use, particularly in the Northwestern areas of Pakistan, the U.S.-Pakistani relationship has been strained.<sup>12</sup> Despite private (and in some cases, implicit) acceptance of U.S. drone attacks within their borders, the Pakistani political leadership has strongly condemned U.S. drone strikes at nearly every opportunity.<sup>13</sup> Likewise, Pakistani news outlets have stepped up their coverage of civilian deaths related to drone strikes. In general, this has contributed to a diminished public perception of the U.S. in the region, and has added incredible strain to the U.S. diplomatic and military relationship with Pakistan.

Secondarily, foreign policy experts have raised concerns over recent

reports of U.S. involvement in the targeted killing of militants in Pakistan, who are primarily a threat to the Pakistani government and only tangentially a security threat to the United States.<sup>14</sup> This sort of cooperation between the Pakistani and American government might be taken as a sign of some thawing of the security relationship between the two states, but it also reinforces concerns about the vague limits of drone use, and U.S. overreach in terror enforcement. Rightly, U.S. critics have asked, if they aren't aiming at us, why are we aiming at them?

### Domestic Criticism

Apprehension about U.S. overreach in the war on terror has found its rallying cry in the lack of Congressional and legal oversight of the use of drones for targeted killing. The use of drones in targeted killings throughout the Middle East and Southeast Asia, but predominantly in Pakistan, has grown enormously since the war on terror began. Since 2004, the U.S. has approved over 300 drone strikes, and the vast majority of these have occurred under the current administration. While many of these strikes have been under the purview of the Central Intelligence Agency, the military has had a significant role via the Joint Special Operations Command. Though the U.S. has had the capability to engage in targeted killing for some time, there is no doubt that UAVs have made this mission much easier.

The expansion of drone use in targeted killing has come under increased scrutiny with the revelation that the President is being endowed with incredibly broad and largely unfettered power to approve and order attacks.<sup>15</sup> The roots of this expansive power are found in the Authorization for Use of Military Force Against Terrorists (AUMF) approved by Congress in the days after the September 11th attacks. The AUMF endows the President with the authorization to pursue “nations, organizations, or persons he determines planned, authorized, committed, or aided the terrorist attacks...or harbored such organizations or persons.”

Critics of the AUMF and its implementation have noted that it provides the President with unprecedented latitude to determine who and what “terrorists” are, while requiring no consultations with Congress or reports to the broader public. As a result, Congressional oversight on the use of drones in targeted killing has been largely ad hoc in nature and almost entirely removed from the public eye. Often, reports of drone strikes against terror suspects on the “kill list” are confidentially provided to members of Congressional intelligence committees after they have been carried out.

In the face of criticism about this process, Obama administration officials have responded by noting that the President adheres to the standard of International Humanitarian Law and U.S. legal code. However, critics have been unswayed by the “trust me” approach to the oversight of targeted killing. Anecdotally, they have pointed to instances of administration officials using vague language to delineate the criteria for target selection, and general ambiguity about the closely held procedure. Where officials have been more explicit (often off-the-record) the results have been disconcerting, and have hinted at imprecise applications of the principle of distinction.<sup>16</sup>

Relatedly, apprehension about the application of distinction has found roots in the administration's failure to clarify its strategy as either counterterror or counterinsurgency. In the first case, the standards for executing targeted killings are more stringent, as counterterror implies that the target has been actively engaged in

plots against the United States. Counterinsurgency, on the other hand, leaves more room in the selection of targets, with the potential to include those who may engage in incendiary speech against the U.S. or various anti-U.S. activities, but do not have as clear a link to specific terror plots.

Thus, critics of drone use in targeted killing have leveled three major arguments against the oversight of this program: first, explicit Congressional checks on this power have been kept out of the public debate, or worse, gone unattended; second, it provides tempting opportunities for Executive overreach; and finally, the administration's failure to detail well-defined criteria for the selection of targets and demonstrate a link to the broader strategy in the war on terror is worrisome and dangerous.

### Asking the Right Questions

All of these critiques raise valid questions about the strategy of targeted killing, and the Obama administration is beginning to take notice.<sup>17</sup> However, these important concerns should not, and do not, center on UAV technology itself. While there is no doubt that drones have made targeted killing easier, the technology is not inherently problematic—the real danger is in the purposes for which it is used. Accordingly, policymakers must be explicit about these strategy and the procedures that constrain drone use in both covert and military operations.

Though the administration appears to be moving in the direction of increased oversight of drone use in targeted killings, the responsibility ultimately lies with the broader public to push elected officials to demand more oversight and a more explicit strategy for employing these tools. There are a number of initial steps that can be taken. To start, clear guidelines for drone use in targeted killing should be developed by the White House, in consultation with Congress. These guidelines should be particularly explicit about target selection, and should be made available to the public. Second, Congress should use its control of the purse strings to insist on better reporting mechanisms: funding for drone programs should be slowed or halted until regular and transparent reporting procedures are established. Finally, the public can, and should, demand more regular communication from the White House and Congress—public hearings on global drone use should be the norm. All of these steps will force policymakers to think carefully about the strategic implications of drone use, and will undoubtedly alleviate some of the strategic concerns raised by critics.

Future funding projections suggest that the U.S. arsenal of unmanned aerial systems will only continue to increase, and these questions will remain on the table well into the foreseeable future.<sup>18</sup> The technical advances in these systems will no doubt bring greater precision, automation, and integration, and they will continue to raise important strategic questions. As these capabilities grow, public efforts to hold policymakers accountable are perhaps the greatest check against the potentially detrimental implications of drone use.

# The Audit of Conventional Wisdom

*In this series of essays, MIT's Center for International Studies tours the horizon of conventional wisdoms that define U.S. foreign policy, and put them to the test of data and history. By subjecting particularly well-accepted ideas to close scrutiny, our aim is to re-engage policy and opinion leaders on topics that are too easily passing such scrutiny. We hope that this will lead to further debate and inquiries, with a result we can all agree on: better foreign policies that lead to a more peaceful and prosperous world. Authors in this series are available to the press and policy community. Contact: Michelle Nhuch (NHUCH@mit.edu, 617.253.1965)*

## Center for International Studies

Massachusetts Institute of Technology  
Building E40-400  
1 Amherst Street  
Cambridge, MA 02139

T: 617.253.8093  
F: 617.253.9330  
cis-info@mit.edu

**web.mit.edu/cis/  
twitter: @MIT\_CIS**

## article footnotes

- 1 National Museum of the U.S. Air Force, Kettering Aerial Torpedo "Bug," <http://www.nationalmuseum.af.mil/factsheets/factsheet.asp?id=320>.
- 2 U.S. Congressional Research Service: U.S. Unmanned Aerial Systems (R42136; January 3, 2012), by Jeremiah Gertler.
- 3 Ibid.
- 4 Office of the Under Secretary of Defense (Comptroller)/CFO, Program Acquisition Costs by Weapon System, February 2012.
- 5 U.S. Congressional Research Service: U.S. Unmanned Aerial Systems (R42136; January 3, 2012), by Jeremiah Gertler. p. 2
- 6 U.S. Department of Defense: Unmanned Systems Integrated Roadmap FY2011-2036
- 7 In some cases, UAV endurance is even longer—the Army's MQ-1C Grey Eagle can hover at 25,000 feet for 36 hours before returning.
- 8 The RQ-4 Global Hawk, for example, has been plagued with cost overruns.
- 9 U.S. Department of Defense: *Unmanned Systems Integrated Roadmap FY2011-2036*.
- 10 New America Foundation: "The Year of the Drone." <http://counterterrorism.newamerica.net/drones>
- 11 The U.S. Department of State currently designates over 50 organizations as Foreign Terrorist Organizations (FTOs), all of which are based within the borders of sovereign nations.
- 12 It should be noted, however, that this is just one among many contentious issues in the U.S.-Pakistani relationship.
- 13 Within the past six months, notable headlines include: *Dawn.com* "President Zardari asks US to end drone strikes, remove mistrust" September 16, 2012; *Reuters*, "Pakistan condemns U.S. drone strikes" June 4, 2012; *The Wall Street Journal*, "Pakistan Condemns U.S. Drone Strike Ahead of Chicago Summit" April 30, 2012; *Pakistan Today*, "Pakistan condemns drone attacks in NWA," August 18, 2012.
- 14 The most scathing review of this policy can be found in, "Election Spurred a Move to Codify U.S. Drone Policy," *New York Times*, November 24, 2012.
- 15 Jo Becker and Scott Shane, "Secret 'Kill List' Proves a Test of Obama's Principles and Will" *New York Times*. May 29, 2012.
- 16 For example, see the *New York Times* editorial, "Too Much Power for a President" May 30, 2012.
- 17 President Obama acknowledged the need for more oversight in an interview with Jon Stewart on The Daily Show, October 18, 2012, remarking that he was working on a set of regulations for drone use.
- 18 U.S. Department of Defense: *Unmanned Systems Integrated Roadmap FY2011-2036*.



# Audit of the Conventional Wisdom

## Attack of the Drones: Ethical, Legal and Strategic Implications of UAV Use

Lena Simone Andrews  
MIT Center for International Studies

Massachusetts Institute of Technology  
Building E40-400  
1 Amherst Street  
Cambridge, MA 02139

