

**More From 160 Years of Atlantic Stories**[Explore This Series](#)

# The Killing Machines

How to think about drones

By Mark Bowden



A Pakistani child sifts through the rubble of a destroyed religious seminary after it was struck by a U.S. drone strike on November 21, 2013. (AFP / Getty)

SEPTEMBER 2013 ISSUE

SHARE ▾

## I. Unfairness

**CONSIDER DAVID.** The shepherd lad steps up to face in single combat the Philistine giant Goliath. Armed with only a slender staff and a slingshot, he confronts a fearsome warrior clad in a brass helmet and chain mail, wielding a spear with a head as heavy as a sledge and a staff “like a weaver’s beam.” Goliath scorns the approaching youth: “Am I a dog, that thou comest to me with staves?” (1 Samuel 17)

David then famously slays the boastful giant with a single smooth stone from his slingshot.

ADVERTISEMENT

A story to gladden the hearts of underdogs everywhere, its biblical moral is: *Best to have God on your side*. But subtract the theological context and what you have is a parable about technology. The slingshot, a small, lightweight weapon that employs simple physics to launch a missile with lethal force from a distance, was an innovation that rendered all the giant’s advantages moot. It ignored the spirit of the contest. David’s weapon was, like all significant advances in warfare, essentially unfair.

As anyone who has ever been in combat will tell you, the last thing you want is a fair fight. Technology has been tilting the balance of battles since Goliath fell. I was born into the age of push-button warfare. Ivy Mike, the first thermonuclear bomb, capable of vaporizing an entire modern metropolis, of killing millions of people at once, was detonated over the Pacific before my second birthday. Growing up, the concept of global annihilation wasn’t just science fiction. We held civil-defense drills to practice for it.

Within my lifetime, that evolution has taken a surprising turn. Today we find ourselves tangled in legal and moral knots over the drone, a weapon that can find and

strike a single target, often a single individual, via remote control.

Unlike nuclear weapons, the drone did not emerge from some multibillion-dollar program on the cutting edge of science. It isn't even completely new. The first Predator drone consisted of a snowmobile engine mounted on a radio-controlled glider. When linked via satellite to a distant control center, drones exploit telecommunications methods perfected years ago by TV networks—in fact, the Air Force has gone to ESPN for advice. But when you pull together this disparate technology, what you have is a weapon capable of finding and killing someone just about anywhere in the world.

Drone strikes are a far cry from the atomic vaporizing of whole cities, but the horror of war doesn't seem to diminish when it is reduced in scale. If anything, the act of willfully pinpointing a human being and summarily executing him from afar distills war to a single ghastly act.

One day this past January, a small patrol of marines in southern Afghanistan was working its way at dusk down a dirt road not far from Kandahar, staying to either side to avoid planted bombs, when it unexpectedly came under fire. The men scattered for cover. A battered pickup truck was closing in on them and popping off rounds from what sounded like a big gun.

Continents away, in a different time zone, a slender 19-year-old American soldier sat at a desk before a large color monitor, watching this action unfold in startlingly high definition. He had never been near a battlefield. He had graduated from basic training straight out of high school, and was one of a select few invited to fly Predators. This was his first time at the controls, essentially a joystick and the monitor. The drone he was flying was roughly 15,000 feet above the besieged patrol, each member marked clearly in monochrome on his monitor by an infrared uniform patch. He had been instructed to watch over the patrol, and to "stay frosty," meaning: *Whatever happens, don't panic.* No one had expected anything to happen. Now something was happening.

The young pilot zoomed in tight on the approaching truck. He saw in its bed a .50-caliber machine gun, a weapon that could do more damage to an army than a platoon of Goliaths.

---

## Explore the September 2013 Issue

Check out more from this issue and find your next story to read.

[View More](#)

---

A colonel, watching over his shoulder, said, "They're pinned down pretty good. They're gonna be screwed if you don't do something."

The colonel told the pilot to fix on the truck. A button on the joystick pulled up a computer-generated reticle, a grid displaying exact ground coordinates, distance, direction, range, etc. Once the computer locked on the pickup, it stayed zeroed in on the moving target.

"Are you ready to help?" the colonel asked.

An overlay on the grid showed the anticipated blast radius of an AGM-114 Hellfire missile—the drone carried two. Communicating via a digital audio link, the colonel instructed the men on the ground to back away, then gave them a few seconds to do so.

The pilot scrutinized the vehicle. Those who have seen unclassified clips of aerial attacks have only a dim appreciation of the optics available to the military and the CIA.

"I could see exactly what kind of gun it was in back," the pilot told me later. "I could see two men in the front; their faces were covered. One was in the passenger seat and one was in the driver's seat, and then one was on the gun, and I think there was another sitting in the bed of the truck, but he was kind of obscured from my angle."

On the radio, they could hear the marines on the ground shouting for help.

"Fire one," said the colonel.

The Hellfire is a 100-pound antitank missile, designed to destroy an armored vehicle. When the blast of smoke cleared, there was only a smoking crater on the dirt road.

"I was kind of freaked out," the pilot said. "My whole body was shaking. It was something that was completely different. The first time doing it, it feels bad almost. It's not easy to take another person's life. It's tough to think about. A lot of guys were congratulating me, telling me, 'You protected them; you did your job. That's what you are trained to do, supposed to do,' so that was good reinforcement. But it's still tough."

One of the things that nagged at him, and that was still bugging him months later, was that he had delivered this deathblow without having been in any danger himself. The men he killed, and the marines on the ground, were at war. They were risking their hides. Whereas he was working his scheduled shift in a comfortable office building, on a sprawling base, in a peaceful country. It seemed unfair. He had been inspired to enlist by his grandfather's manly stories of battle in the Korean War. He had wanted to prove something to himself and to his family, to make them as proud of him as they had been of his Pop-Pop.

ADVERTISEMENT

---

“But this was a weird feeling,” he said. “You feel bad. You don’t feel worthy. I’m sitting there safe and sound, and those guys down there are in the thick of it, and I can have more impact than they can. It’s almost like I don’t feel like I deserve to be safe.”

After slaying Goliath, David was made commander of the Israelite armies and given the hand of King Saul’s daughter. When the Pentagon announced earlier this year that it would award a new medal to drone pilots and cyber warriors, it provoked such outrage from veterans that production of the new decoration was halted and the secretary of defense sentenced the medal to a review and then killed it. Members of Congress introduced legislation to ensure that any such award would be ranked beneath the Purple Heart, the medal given to every wounded soldier. How can someone who has never physically been in combat receive a combat decoration?

The question hints at something more important than war medals, getting at the core of our uneasiness about the drone. Like the slingshot, the drone fundamentally alters the nature of combat. While the young Predator pilot has overcome his unease—his was a clearly justifiable kill shot fired in conventional combat, and the marines on the ground conveyed their sincere gratitude—the sense of unfairness lingers.

IF THE SOLDIER who pulls the trigger in safety feels this, consider the emotions of those on the receiving end, left to pick up the body parts of their husbands, fathers, brothers, friends. Where do they direct their anger? When the wrong person is targeted, or an innocent bystander is killed, imagine the sense of impotence and rage. How do those who remain strike back? No army is arrayed against them, no airfield is nearby to be attacked. If they manage to shoot down a drone, what have they done but disable a small machine? No matter how justified a strike seems to us, no matter how carefully weighed and skillfully applied, to those on the receiving end it is profoundly arrogant, the act of an enemy so distant and superior that he is untouchable.

“The political message [of drone strikes] emphasizes the disparity in power between the parties and reinforces popular support for the terrorists, who are seen as David

---

fighting Goliath,” Gabriella Blum and Philip B. Heymann, both law professors at Harvard, wrote in their 2010 book, *Laws, Outlaws, and Terrorists: Lessons From the War on Terror*. “Moreover, by resorting to military force rather than to law enforcement, targeted killings might strengthen the sense of legitimacy of terrorist operations, which are sometimes viewed as the only viable option for the weak to fight against a powerful empire.”

Is it any wonder that the enemy seizes upon targets of opportunity—a crowded café, a passenger jet, the finish line of a marathon? There is no moral justification for deliberately targeting civilians, but one can understand why it is done. Arguably the strongest force driving lone-wolf terror attacks in recent months throughout the Western world has been anger over drone strikes.

The drone is effective. Its extraordinary precision makes it an advance in humanitarian warfare. In theory, when used with principled restraint, it is the perfect counterterrorism weapon. It targets indiscriminate killers with exquisite discrimination. But because its aim can never be perfect, can only be as good as the intelligence that guides it, sometimes it kills the wrong people—and even when it doesn’t, its cold efficiency is literally inhuman.

So how should we feel about drones?

## II. Gorgon Stare

THE DEFENSE DEPARTMENT has a secret state-of-the-art control center in Dubai with an IMAX-size screen at the front of the main room that can project video feed from dozens of drones at once. The Air Force has been directed to maintain capability for 65 simultaneous Combat Air Patrols. Each of these involves multiple drones, and maintains a persistent eye over a potential target. The Dubai center, according to someone who has seen it, resembles a control center at NASA, with hundreds of pilots and analysts arrayed in rows before monitors.

This is a long way from the first known drone strike, on November 4, 2002, when a Hellfire missile launched from a Predator over Yemen blew up a car carrying Abu Ali al-Harithi, one of the al-Qaeda leaders responsible for the 2000 bombing of the USS *Cole*. Killed along with him in the car were five others, including an American citizen, Kamal Derwish, who was suspected of leading a terrorist cell based near Buffalo, New York. The drone used that day had only recently been reconfigured as a weapon. During testing, its designers had worried that the missile’s backblast would shatter the lightweight craft. It didn’t. Since that day, drones have killed thousands of people.

John Yoo, the law professor who got caught up in tremendous controversy as a legal counselor to President George W. Bush over harsh interrogation practices, was surprised that drone strikes have provoked so little hand-wringing.

"I would think if you are a civil libertarian, you ought to be much more upset about the drone than Guantánamo and interrogations," he told me when I interviewed him recently. "Because I think the ultimate deprivation of liberty would be the government taking away someone's life. But with drone killings, you do not see anything, not as a member of the public. You read reports perhaps of people who are killed by drones, but it happens 3,000 miles away and there are no pictures, there are no remains, there is no debris that anyone in the United States ever sees. It's kind of antiseptic. So it is like a video game; it's like Call of Duty."

The least remarkable thing about the system is the drone itself. The Air Force bristles at the very word—*drones* conjures autonomous flying robots, reinforcing the notion that human beings are not piloting them. The Air Force prefers that they be called Remotely Piloted Aircraft. But this linguistic battle has already been lost: my *New Oxford American Dictionary* now defines *drone* as—in addition to a male bee and monotonous speech—"a remote-controlled pilotless aircraft or missile." Even though drones now range in size from a handheld Raven, thrown into the air by infantry units so they can see over the next hill, to the Global Hawk, which is about the same size as a Boeing 737, the craft itself is just an airplane. Most drones are propeller-driven and slow-moving—early-20th-century technology.

In December 2012, when Iran cobbled together a rehabilitated version of a ScanEagle that had crashed there, the catapult-launched weaponless Navy drone was presented on Iranian national television as a major intelligence coup.

"They could have gone to RadioShack and captured the same 'secret' technology," Vice Admiral Mark I. Fox, the Navy's deputy chief for operations, plans, and strategy, told *The New York Times*. The vehicle had less computing power than a smartphone.

Even when, the year before, Iran managed to recover a downed RQ-170 Sentinel, a stealthy, weaponless, unmanned vehicle flown primarily by the CIA, one of the most sophisticated drones in the fleet, it had little more than a nifty flying model. Anything sensitive inside had been remotely destroyed before the Sentinel was seized.

James Poss, a retired Air Force major general who helped oversee the Predator's development, says he has grown so weary of fascination with the vehicle itself that he's adopted the slogan "It's about the datalink, stupid." The craft is essentially a conduit, an eye in the sky. Cut off from its back end, from its satellite links and its data processors, its intelligence analysts and its controller, the drone is as useless as an eyeball disconnected from the brain. What makes the system remarkable is everything downrange—what the Air Force, in its defiantly tin-eared way, calls PED (Processing, Exploitation, and Dissemination). Despite all the focus on missiles, what gives a drone its singular value is its ability to provide perpetual, relatively low-cost surveillance, watching a target continuously for hours, days, weeks, even months. Missiles were mounted on Predators only because too much time was lost when a fire

mission had to be handed off to more-conventional weapons platforms—a manned aircraft or ground- or ship-based missile launcher. That delay reduced or erased the key advantage now afforded by the drone. With steady, real-time surveillance, a controller can strike with the target in his sights. He can, for instance, choose a moment when his victim is isolated, or traveling in a car, reducing the chance of harming anyone else.

I recently spoke with an Air Force pilot who asked to be identified only as Major Dan. He has logged 600 combat hours in the B-1 bomber and, in the past six years, well over 2,000 hours flying Reapers—larger, more heavily armed versions of the Predator. He describes the Reaper as a significantly better war-fighting tool for this mission than the B-1 in every measure. The only thing you lose when you go from a B-1 to a Reaper, he says, is the thrill of “lighting four afterburners” on a runway.

From a pilot’s perspective, drones have several key advantages. First, mission duration can be vastly extended, with rotating crews. No more trying to stay awake for long missions, nor enduring the physical and mental stresses of flying. (“After you’ve been sitting in an ejection seat for 20 hours, you are very tired and sore,” Dan says.)

In addition, drones provide far greater awareness of what’s happening on the ground. They routinely watch targets for prolonged periods—sometimes for months—before a decision is made to launch a missile. Once a B-1 is in flight, the capacity for ground observation is more limited than what is available to a drone pilot at a ground station. From his control station at the Pentagon, Dan is not only watching the target in real time; he has immediate access to every source of information about it, including a chat line with soldiers on the ground.

Dan was so enthusiastic about these and other advantages of drones that, until I prodded him, he didn’t say anything about the benefit of getting to be home with his family and sleep in his own bed. Dan is 38 years old, married, with two small children. In the years since he graduated from the Air Force Academy, he has deployed several times to far-off bases for months-long stretches. Now he is regularly home for dinner.

The dazzling clarity of the drone’s optics does have a downside. As a B-1 pilot, Dan wouldn’t learn details about the effects of his weapons until a post-mission briefing. But flying a drone, he sees the carnage close-up, in real time—the blood and severed body parts, the arrival of emergency responders, the anguish of friends and family. Often he’s been watching the people he kills for a long time before pulling the trigger. Drone pilots become familiar with their victims. They see them in the ordinary rhythms of their lives—with their wives and friends, with their children. War by remote control turns out to be intimate and disturbing. Pilots are sometimes shaken.

"There is a very visceral connection to operations on the ground," Dan says. "When you see combat, when you hear the guy you are supporting who is under fire, you hear the stress in his voice, you hear the emotions being passed over the radio, you see the tracers and rounds being fired, and when you are called upon to either fire a missile or drop a bomb, you witness the effects of that firepower." He witnesses it in a far more immediate way than in the past, and he disdains the notion that he and his fellow drone pilots are like video gamers, detached from the reality of their actions. If anything, they are far more attached. At the same time, he dismisses the notion that the carnage he now sees up close is emotionally crippling.

"In my mind, the understanding of what I did, I wouldn't say that one was significantly different from the other," he says.

---

DRONES COLLECT THREE primary packages of data: straight visual; infrared (via a heat-sensing camera that can see through darkness and clouds); and what is called SIGINT (Signals Intelligence), gathered via electronic eavesdropping devices and other sensors. One such device is known as LIDAR (a combination of the words *light* and *radar*), which can map large areas in 3-D. The optical sensors are so good, and the pixel array so dense, that the device can zoom in clearly on objects only inches wide from well over 15,000 feet above. With computer enhancement to eliminate distortion and counteract motion, facial-recognition software is very close to being able to pick individuals out of crowds. Operators do not even have to know exactly where to look.

"We put in the theatre [in 2011] a system called Gorgon Stare," Lieutenant General Larry James, the Air Force's deputy chief of staff for intelligence, surveillance, and reconnaissance, told me. "Instead of one soda-straw-size view of the world with the camera, we put essentially 10 cameras ganged together, and it gives you a very wide area of view of about four kilometers by four kilometers—about the size of the city of Fairfax, [Virginia]—that you can watch continuously. Not as much fidelity in terms of what the camera can see, but I can see movement of cars and people—those sorts of things. Now, instead of staring at a small space, which may be, like, a villa or compound, I can look at a whole city continuously for as long as I am flying that particular system."

Surveillance technology allows for more than just looking: computers store these moving images so that analysts can dial back to a particular time and place and zero in, or mark certain individuals and vehicles and instruct the machines to track them over time. A suspected terrorist-cell leader or bomb maker, say, can be watched for months. The computer can then instantly draw maps showing patterns of movement: where the target went, when there were visitors or deliveries to his home. If you were

---

watched in this way over a period of time, the data could not just draw a portrait of your daily routine, but identify everyone with whom you associate. Add to this cellphone, text, and e-mail intercepts, and you begin to see how special-ops units in Iraq and Afghanistan can, after a single nighttime arrest, round up entire networks before dawn.

All of this requires the collection and manipulation of huge amounts of data, which, James says, is the most difficult technical challenge involved.

“Take video, for example,” he says. “ESPN has all kinds of tools where they can go back and find Eli Manning in every video that was shot over the last year, and they can probably do it in 20 minutes. So how do we bring those types of tools [to intelligence work]? *Okay, I want to find this red 1976 Chevy pickup truck in every piece of video that I have shot in this area for the last three months.* We have a pretty hard push to really work with the Air Force Research Lab, and the commercial community, to understand what tools I can bring in to help make sense of all this data.”

To be used effectively, a drone must be able to hover over a potential target for long periods. A typical Predator can stay aloft for about 20 hours; the drones are flown in relays to maintain a continuous Combat Air Patrol. Surveillance satellites pass over a given spot only once during each orbit of the Earth. The longest the U-2, the most successful spy plane in history, can stay in the air is about 10 hours, because of the need to spell its pilot and refuel. The Predator gives military and intelligence agencies a surveillance option that is both significantly less expensive and more useful, because it flies unmanned, low, and slow.

Precisely because drones fly so low and so slow, and have such a “noisy” electronic signature, operating them anywhere but in a controlled airspace is impractical. The U.S. Air Force completely controls the sky over active war zones like Afghanistan and Iraq—and has little to fear over countries like Yemen, Somalia, and Mali. Over the rugged regions of northwestern Pakistan, where most drone strikes have taken place, the U.S. operates with the tacit approval of the Pakistani government. Without such permission, or without a robust protection capability, the drone presents an easy target. Its datalink can be disrupted, jammed, or hijacked. It’s only slightly harder to shoot down than a hot-air balloon. This means there’s little danger of enemy drone attacks in America anytime soon.

Drone technology has applications that go way beyond military uses, of course—everything from domestic law enforcement to archeological surveys to environmental studies. As they become smaller and cheaper, they will become commonplace. Does this mean the government might someday begin hurling thunderbolts at undesirables on city sidewalks? Unlikely. Our entire legal system would have to collapse first. If the police just wanted to shoot people on the street from a distance, they already can—they’ve had that capability going back to the invention of the Kentucky long rifle and,

before that, the crossbow. I helped cover the one known instance of a local government dropping a bomb on its own city, in 1985, when a stubborn back-to-nature cult called Move was in an armed standoff with the Philadelphia police. Then-Mayor Wilson Goode authorized dropping a satchel packed with explosives from a hovering helicopter onto a rooftop bunker in West Philadelphia. The bomb caused a conflagration that consumed an entire city block. The incident will live long in the annals of municipal stupidity. The capability to do the same with a drone will not make choosing to do so any smarter, or any more likely. And as for Big Brother's eye in the sky, authorities have been monitoring public spaces from overhead cameras, helicopters, and planes for decades. Many people think it's a good idea.

The drone is new only in that it combines known technology in an original way—aircraft, global telecommunications links, optics, digital sensors, supercomputers, etc. It greatly lowers the cost of persistent surveillance. When armed, it becomes a remarkable, highly specialized tool: a weapon that employs simple physics to launch a missile with lethal force from a distance, a first step into a world where going to war does not mean fielding an army, or putting any of your own soldiers, sailors, or pilots at risk.

### III. The Kill List

IT IS THE MOST EXCLUSIVE LIST in the world, and you would not want to be on it.

The procedure may have changed, but several years back, at the height of the drone war, President Obama held weekly counterterror meetings at which he was presented with a list of potential targets—mostly al-Qaeda or Taliban figures—complete with photos and brief bios laid out like “a high school yearbook,” according to a report in *The New York Times*.

John Brennan instituted weekly conclaves—in effect, death-penalty deliberations—where targets were selected for summary execution.

The list is the product of a rigorous vetting process that the administration has kept secret. Campaigning for the White House in 2008, Obama made it clear (although few of his supporters were listening closely) that he would embrace drones to go after what he considered the appropriate post-9/11 military target—“core al-Qaeda.” When he took office, he inherited a drone war that was already expanding. There were 53 known strikes inside Pakistan in 2009 (according to numbers assembled from press reports by *The Long War Journal*), up from 35 in 2008, and just five the year before that. In 2010, the annual total more than doubled, to 117. The onslaught was effective, at least by some measures: letters seized in the 2011 raid that killed Osama bin Laden show his consternation over the rain of death by drone.

As U.S. intelligence analysis improved, the number of targets proliferated. Even some of the program's supporters feared it was growing out of control. The definition of a legitimate target and the methods employed to track such a target were increasingly suspect. Relying on other countries' intelligence agencies for help, the U.S. was sometimes manipulated into striking people who it believed were terrorist leaders but who may not have been, or implicated in practices that violate American values.

Reporters and academics at work in zones where Predator strikes had become common warned of a large backlash. Gregory Johnsen, a scholar of Near East studies at Princeton University, documented the phenomenon in a 2012 book about Yemen titled *The Last Refuge*. He showed that drone attacks in Yemen tended to have the opposite of their intended effect, particularly when people other than extremists were killed or hurt. Drones hadn't whittled al-Qaeda down, Johnsen argued; the organization had grown threefold there. "US strikes and particularly those that kill civilians—be they men or women—are sowing the seeds of future generations of terrorists," he wrote on his blog late last year. (See Johnsen's accompanying article in this issue.)

Michael Morrell, who was the deputy director of the CIA until June, was among those in the U.S. government who argued for more restraint. During meetings with John Brennan, who was Obama's counterterrorism adviser until taking over as the CIA director last spring, Morrell said he worried that the prevailing goal seemed to be using drones as artillery, striking anyone who could be squeezed into the definition of a terrorist—an approach derisively called "Whack-A-Mole." Morrell insisted that if the purpose of the drone program was to diminish al-Qaeda and protect the United States from terror attacks, then indiscriminate strikes were counterproductive.

Brennan launched an effort to select targets more carefully. Formalizing a series of ad hoc meetings that began in the fall of 2009, Brennan in 2010 instituted weekly conclaves—in effect, death-penalty deliberations—where would-be successors to bin Laden and Khalid Sheik Mohammed were selected for execution before being presented to Obama for his approval. Brennan demanded clear definitions. There were "high-value targets," which consisted of important al-Qaeda and Taliban figures; "imminent threats," such as a load of roadside bombs bound for the Afghan border; and, most controversial, "signature strikes," which were aimed at characters engaged in suspicious activity in known enemy zones. In these principals' meetings, which Brennan chaired from the Situation Room, in the basement of White House, deliberations were divided into two parts—law and policy. The usual participants included representatives from the Pentagon, CIA, State Department, National Counterterrorism Center, and, initially, the Justice Department—although after a while the lawyers stopped coming. In the first part of the meetings, questions of legality were considered: Was the prospect a lawful target? Was he high-level? Could he rightly be considered to pose an "imminent" threat? Was arrest a viable alternative?

Only when these criteria were deemed met did the discussion shift toward policy. Was it smart to kill this person? What sort of impact might the killing have on local authorities, or on relations with the governments of Pakistan or Yemen? What effect would killing him have on his own organization? Would it make things better or worse?

Brennan himself was often the toughest questioner. Two regular meeting participants described him to me as thoughtful and concerned; one said his demeanor was “almost priestly.” Another routinely skeptical and cautious participant was James Steinberg, the deputy secretary of state for the first two and a half years of Obama’s first term, who adhered to a strict list of acceptable legal criteria drawn up by the State Department’s counsel, Harold Koh. This criteria stipulated that any drone target would have to be a “senior member” of al-Qaeda who was “externally focused”—that is, actively plotting attacks on America or on American citizens or armed forces. Koh was confident that even if his criteria did not meet all the broader concerns of human-rights activists, they would support an international-law claim of self-defense—and for that reason he thought the administration ought to make the criteria public. Throughout Obama’s first term, members of the administration argued about how much of the deliberation process to reveal. During these debates, Koh’s position on complete disclosure was dismissively termed “the Full Harold.” He was its only advocate.

Many of the sessions were contentious. The military and the CIA pushed back hard against Koh’s strict criteria. Special Forces commanders, in particular, abhorred what they saw as excessive efforts to “litigate” their war. The price of every target the White House rejected, military commanders said, was paid in American lives. Their arguments, coming from the war’s front line, carried significant weight.

Cameron Munter, a veteran diplomat who was the U.S. ambassador to Pakistan from 2010 to 2012, felt that weight firsthand when he tried to push back. Munter saw American influence declining with nearly every strike. While some factions in the Pakistani military and Inter-Services Intelligence believed in the value of strikes, the Pakistani public grew increasingly outraged, and elected officials increasingly hostile. Munter’s job was to contain the crisis, a task complicated by the drone program’s secrecy, which prevented him from explaining and defending America’s actions.

Matters came to a head in the summer of 2011 during a meeting to which Munter was linked digitally. The dynamics of such meetings—where officials turned to policy discussions after the legal determination had been made—placed a premium on unified support for policy goals. Most participants wanted to focus on the success of the battle against America’s enemies, not on the corrosive foreign-policy side effects of the drone program.

At the decision meetings, it was hard for someone like Munter to say no. He would appear digitally on the screen in the Situation Room, gazing out at the vice president, the secretary of defense, and other principals, and they would present him with the targeting decision they were prepared to make. It was hard to object when so many people who titularly outranked him already seemed set.

By June of 2011, however, two events in Pakistan—first the arrest and subsequent release of the CIA contractor Raymond Davis, who had been charged with murdering two Pakistanis who accosted him on the street in Lahore, and then the Abbottabad raid that killed bin Laden—had brought the U.S.-Pakistan partnership to a new low. Concerned about balancing the short-term benefits of strikes (removing potential enemies from the battlefield) and their long-term costs (creating a lasting mistrust and resentment that undercut the policy goal of stability and peace in the region), Munter decided to test what he believed was his authority to halt a strike. As he recalled it later, the move played out as follows:

Asked whether he was on board with a particular strike, he said no.

Leon Panetta, the CIA director, said the ambassador had no veto power; these were intelligence decisions.

Munter proceeded to explain that under Title 22 of the U.S. Code of Federal Regulations, the president gives the authority to carry out U.S. policy in a foreign country to his ambassador, delegated through the secretary of state. That means no American policy should be carried out in any country without the ambassador's approval.

Taken aback, Panetta replied, "Well, I do not work for you, buddy."

"I don't work for you," Munter told him.

Then Secretary of State Hillary Clinton stepped in: "Leon, you are wrong."

Panetta said, flatly, "Hillary, *you're* wrong."

At that point, the discussion moved on. When the secretary of state and the CIA director clash, the decision gets made upstairs.

Panetta won. A week later, James Steinberg called Munter to inform him that he did not have the authority to veto a drone strike. Steinberg explained that the ambassador would be allowed to express an objection to a strike, and that a mechanism would be put in place to make sure his objection was registered—but the decision to clear or reject a strike would be made higher up the chain. It was a clear victory for the CIA.

Later that summer, General David Petraeus was named to take over the intelligence agency from Panetta. Before assuming the job, Petraeus flew from Kabul, where he

was still the military commander, to Islamabad, to meet with the ambassador. At dinner that night, Petraeus poked his finger into Munter's chest.

"You know what happened in that meeting?" the general asked. (Petraeus had observed the clash via a secure link from his command post in Afghanistan.) "That's never going to happen again."

Munter's heart sank. He thought the new CIA director, whom he liked and admired, was about to threaten him. Instead, Petraeus said: "I'm never going to put you in the position where you feel compelled to veto a strike. If you have a long-term concern, if you have a contextual problem, a timing problem, an ethical problem, I want to know about it earlier. We can work together to avoid these kinds of conflicts far in advance."

Petraeus kept his word. Munter never had to challenge a drone strike in a principals' meeting again during his tenure as ambassador. He left Islamabad in the summer of 2012.

By then, Brennan's efforts to make the process more judicious had begun to show results. The number of drone strikes in Pakistan and Yemen fell to 88 last year, and they have dropped off even more dramatically since.

The decline partly reflects the toll that the drone war has taken on al-Qaeda. "There are fewer al-Qaeda leadership targets to hit," a senior White House official who is working on the administration's evolving approach to drone strikes told me. The reduction in strikes is "something that the president directed. We don't need a top-20 list. We don't need to find 20 if there are only 10. We've gotten out of the business of maintaining a number as an end in itself, so therefore that number has gone down."

ANY HISTORY OF how the United States destroyed Osama bin Laden's organization will feature the drone. Whatever questions it has raised, however uncomfortable it has made us feel, the drone has been an extraordinarily effective weapon for the job. The U.S. faced a stateless, well-funded, highly organized terrorist operation that was sophisticated enough to carry out unprecedented acts of mass murder. Today, while local al-Qaeda franchises remain a threat throughout the Middle East, the organization that planned and carried out 9/11 has been crushed. When bin Laden himself was killed, Americans danced in the streets.

"Our actions are effective," President Obama said in a speech on counterterrorism at the National Defense University in May.

Don't take my word for it. In the intelligence gathered at bin Laden's compound, we found that he wrote, 'We could lose the reserves to enemy's air strikes. We cannot fight air strikes with explosives.' Other communications from al-Qaeda operatives confirm this as well. Dozens of highly skilled al-

Qaeda commanders, trainers, bomb makers, and operatives have been taken off the battlefield. Plots have been disrupted that would have targeted international aviation, U.S. transit systems, European cities, and our troops in Afghanistan. Simply put, these strikes have saved lives.

So why the steady drumbeat of complaint?

#### IV. Drones Don't Kill People. People Kill People.

THE MOST ARDENT CASE against drone strikes is that they kill innocents. John Brennan has argued that claims of collateral carnage are exaggerated. In June 2011, he famously declared that there had not been “a single collateral death” due to a drone strike in the previous 12 months.

Almost no one believes this. Brennan himself later amended his statement, saying that in the previous 12 months, the United States had found no “credible evidence” that any civilians had been killed in drone strikes outside Afghanistan and Iraq. (I am using the word *civilians* here to mean “noncombatants.”) A fair interpretation is that drones unfailingly hit their targets, and so long as the U.S. government believes its targets are all legitimate, the collateral damage is zero. But drones are only as accurate as the intelligence that guides them. Even if the machine is perfect, it’s a stretch to assume perfection in those who aim it.

For one thing, our military and intelligence agencies generously define *combatant* to include any military-age male in the strike zone. And local press accounts from many of the blast sites have reported dead women and children. Some of that may be propaganda, but not all of it is. No matter how precisely placed, when a 500-pound bomb or a Hellfire missile explodes, there are sometimes going to be unintended victims in the vicinity.

Ground combat almost always kills more civilians than drone strikes do. When you consider the alternatives, you are led, as Obama was, to the logic of the drone.

How many? Estimates of body counts range so widely and are so politicized that none of them is completely credible. At one extreme, anti-American propagandists regularly publish estimates that make the drone war sound borderline genocidal. These high numbers help drive the anti-drone narrative, which equates actions of the U.S. government with acts of terror. In two of the most recent Islamist terror attacks as of this writing—the Boston Marathon bombing and the beheading of a soldier in London—the perpetrators justified their killings as payback for the deaths of innocent Muslims. At the other extreme, there is Brennan’s claim of zero civilian casualties. The true numbers are unknowable.

Secrecy is a big part of the problem. The government doesn't even acknowledge most attacks, much less release details of their aftermath. The Bureau of Investigative Journalism, a left-wing organization based in London, has made a strenuous effort, using news sources, to count bodies after CIA drone strikes. It estimates that from 2004 through the first half of 2013, 371 drone strikes in Pakistan killed between 2,564 and 3,567 people (the range covers the minimum to the maximum credible reported deaths). Of those killed, the group says, somewhere between 411 and 890—somewhere between 12 percent and 35 percent of the total—were civilians. The disparity in these figures is telling. But if we assume the worst case, and take the largest estimates of soldier and civilian fatalities, then one-quarter of those killed in drone strikes in Pakistan have been civilians.

Everyone agrees that the amount of collateral damage has dropped steeply over the past two years. The Bureau of Investigative Journalism estimates that civilian deaths from drone strikes in Pakistan fell to 12 percent of total deaths in 2011 and to less than 3 percent in 2012.

No civilian death is acceptable, of course. Each one is tragic. But any assessment of civilian deaths from drone strikes needs to be compared with the potential damage from alternative tactics. Unless we are to forgo the pursuit of al-Qaeda terrorists entirely, U.S. forces must confront them either from the air or on the ground, in some of the remotest places on Earth. As aerial attacks go, drones are far more precise than manned bombers or missiles. That narrows the choice to drone strikes or ground assaults.

Sometimes ground assaults go smoothly. Take the one that killed Osama bin Laden. It was executed by the best-trained, most-experienced soldiers in the world. Killed were bin Laden; his adult son Khalid; his primary protectors, the brothers Abu Ahmed al-Kuwaiti and Abrar al-Kuwaiti; and Abrar's wife Bushra. Assuming Bushra qualifies as a civilian, even though she was helping to shelter the world's most notorious terrorist, civilian deaths in the raid amounted to 20 percent of the casualties. In other words, even a near-perfect special-ops raid produced only a slight improvement over the worst estimates of those counting drone casualties. Many assaults are not that clean.

In fact, ground combat almost always kills more civilians than drone strikes do. Avery Plaw, a political scientist at the University of Massachusetts, estimates that in Pakistani ground offensives against extremists in that country's tribal areas, 46 percent of those killed are civilians. Plaw says that ratios of civilian deaths from conventional military conflicts over the past 20 years range from 33 percent to more than 80 percent. "A fair-minded evaluation of the best data we have available suggests that the drone program compares favorably with similar operations and contemporary armed conflict more generally," he told *The New York Times*.

When you consider the alternatives—even, and perhaps especially, if you are deeply concerned with sparing civilians—you are led, as Obama was, to the logic of the drone.

---

BUT DON'T DRONE STRIKES violate the prohibition on assassination, Executive Order 12333? That order, signed by Ronald Reagan in 1981, grew out of revelations that the CIA had tried to kill Fidel Castro and other leftist-leaning political figures in the 1960s and '70s. It was clearly aimed at halting political assassinations; in fact, the original order, signed in 1976 by Gerald Ford, refers specifically to such acts.

Attempting to prevent acts of mass murder by a dangerous international organization may stretch the legal definition of armed conflict, but it is not the same as political assassination. Besides, executive orders are not statutes; they can be superseded by subsequent presidents. In the case of President Bush, after the attacks of September 11, Congress specifically authorized the use of lethal operations against al-Qaeda.

When Bush branded our effort against al-Qaeda “war,” he effectively established legal protection for targeted killing. Targeted killing is a long-established practice in the context of war. According to international treaties, soldiers can be killed simply for belonging to an enemy army—whether they are actively engaged in an attack or only preparing for one, whether they are commanders or office clerks. During World War II, the United States discovered and shot down the plane carrying Admiral Isoroku Yamamoto, the commander in chief of the Japanese navy, who had been the architect of the attack on Pearl Harbor. The order to attack the plane was given by President Franklin Roosevelt.

But beyond what international treaties call “armed conflict” is “law enforcement,” and here, there are problems. The 1990 United Nations Congress on the Prevention of Crime and the Treatment of Offenders laid out basic principles for the use of force in law-enforcement operations. (The rules, although nonbinding, elaborate on what is meant by Article 6 of the International Covenant on Civil and Political Rights, to which the United States has agreed.) The pertinent passage—written more than a decade before weaponized drones—reads as follows:

Law enforcement officials shall not use firearms against persons except in self-defense or defense of others against the imminent threat of death or serious injury, to prevent the perpetration of a particularly serious crime involving grave threat to life, to arrest a person presenting such a danger and resisting their authority, or to prevent his or her escape, and only when less extreme means are insufficient to achieve these objectives. In any event, intentional lethal use of firearms may only be made when strictly unavoidable to protect life.

Once the “war” on al-Qaeda ends, the justification for targeted killing will become tenuous. Some experts on international law say it will become simply illegal. Indeed, one basis for condemning the drone war has been that the pursuit of al-Qaeda was never a real war in the first place.

Sir Christopher Greenwood, the British judge on the International Court of Justice, has written: “In the language of international law there is no basis for speaking of a war on al-Qaeda or any other terrorist group, for such a group cannot be a belligerent, it is merely a band of criminals, and to treat it as anything else risks distorting the law while giving that group a status which to some implies a degree of legitimacy.” Greenwood rightly observes that America’s declaration of war against al-Qaeda bolstered the group’s status worldwide. But history will not quarrel with Bush’s decision, which was unavoidable, given the national mood. Democracy reflects the will of the people. Two American presidents from different parties and with vastly different ideological outlooks have, with strong congressional support, fully embraced the notion that America is at war. In his speech at the National Defense University in May, Obama reaffirmed this approach. “America’s actions are legal,” he said. “Under domestic law and international law, the United States is at war with al-Qaeda, the Taliban, and their associated forces.” He noted that during his presidency, he has briefed congressional overseers about every drone strike. “Every strike,” he said.

Bin Laden himself certainly wasn’t confused about the matter; he held a press conference in Afghanistan in 1998 to declare jihad on the United States. Certainly the scale of al-Qaeda’s attacks went well beyond anything previously defined as criminal.<sup>[P]</sup> But what are the boundaries of that war? Different critics draw the lines in different places. Mary Ellen O’Connell, a law professor at the University of Notre Dame, is a determined and eloquent critic of drone strikes. She believes that while strikes in well-defined battle spaces like Iraq and Afghanistan are justified, and can limit civilian deaths, strikes in Pakistan, Yemen, Somalia, and other places amount to “extrajudicial killing,” no matter who the targets are. Such killings are outside the boundary of armed conflict, she says, and hence violate international law.

PHILIP ALSTON, a former United Nations special rapporteur on extrajudicial, summary, or arbitrary executions, concedes that al-Qaeda’s scope and menace transcend criminality, but nevertheless faults the U.S. drone program for lacking due process and transparency. He told *Harper’s magazine*:

[International] laws do not prohibit an intelligence agency like the CIA from carrying out targeted killings, provided it complies with the relevant international rules. Those rules require, not surprisingly when it’s a matter of being able to kill someone in a foreign country, that all such killings be legally justified, that we know the justification, and that there are effective mechanisms for investigation, prosecution, and punishment if laws are violated. The CIA’s

response to these obligations has been very revealing. On the one hand, its spokespersons have confirmed the total secrecy and thus unaccountability of the program by insisting that they can neither confirm nor deny that it even exists. On the other hand, they have gone to great lengths to issue unattributable assurances, widely quoted in the media, both that there is extensive domestic accountability and that civilian casualties have been minimal. In essence, it's a 'you can trust us' response, from an agency with a less than stellar track record in such matters.

President Obama has taken steps in recent months to address Alston's concerns. He has begun transferring authority for drone strikes from the CIA to the Pentagon, which will open them up to greater congressional and public scrutiny. He has sharply limited "signature strikes," those based on patterns of behavior rather than strict knowledge of who is being targeted. (Because most signature strikes have been used to protect American troops in Afghanistan, this category of drone attack is likely to further diminish once those forces are withdrawn.) In his May speech, he came close to embracing "the full Harold," publicly outlining in general terms the targeting constraints drafted by Koh. He also made clear that the war on al-Qaeda will eventually end—though he stopped short of saying when. American combat troops will be gone from Afghanistan by the end of next year, but the war effort against "core al-Qaeda" will almost certainly continue at least until Ahman al Zawahiri, the fugitive Egyptian doctor who now presides over the remnants of the organization, is captured or killed.

Then what?

"Outside of the context of armed conflict, the use of drones for targeted killing is almost never likely to be legal," Alston wrote in 2010. Mary Ellen O'Connell agrees. "Outside of a combat zone or a battlefield, the use of military force is not lawful," she told me.

Yet this is where we seem to be headed. Obama has run his last presidential campaign, and one senses that he might cherish a legacy of ending three wars on his watch.

"Our commitment to constitutional principles has weathered every war, and every war has come to an end," he said in his May speech. "We must define the nature and scope of this struggle, or else it will define us. We have to be mindful of James Madison's warning that 'no nation could preserve its freedom in the midst of continual warfare.'

The changes outlined by the president do not mean we will suddenly stop going after al-Qaeda. If the war on terror is declared over, and the 2001 Authorization for Use of Military Force (AUMF) is withdrawn, then some other legal justification for targeting al-Qaeda terrorists with drones would be necessary, and would likely be sought.

“We believe we have a domestic and international legal basis for our current efforts,” Ben Rhodes, who is Obama’s deputy national-security adviser for strategic communications, told me. “If you project into the future, there are different scenarios, you know, so they are kind of hypothetical, but one is that you might have a narrower AUMF that is a more targeted piece of legislation. A hypothetical: the Taliban is part of the AUMF now, but we could find ourselves not in hostilities with the Taliban after 2014.” In that case, the military authority to attack Taliban targets, which account for many drone strikes and most signature strikes, would be gone. Another scenario Rhodes sketched out was one in which a local terrorist group “rose to the level where we thought we needed to take direct action. You might have to go back to Congress to get a separate authorization. If we need to get authority against a new terrorist group that is emerging somewhere else in the world, we should go back to Congress and get that authorization.”

You can’t know in advance “the circumstances of taking direct action,” Rhodes said. “You may be acting to prevent an imminent attack on the United States or you may be acting in response to an attack, each of which carries its own legal basis. But you have to be accountable for whatever direct action you are taking,” rather than relying on some blanket authority to strike whomever and whenever the president chooses. “You would have to specifically define, domestically and internationally, what the basis for your action is in each instance—and by each instance, I don’t mean every strike, per se, but rather the terrorist group or the country where you are acting.”

Seeking such authorization would help draw the debate over continued drone strikes out of the shadows. Paradoxically, as the war on terror winds down, and as the number of drone strikes falls, the controversy over them may rise.

## V. Come Out With Your Hands Up!

ONCE THE PURSUIT of al-Qaeda is defined as “law enforcement,” ground assaults may be the only acceptable tactic under international law. A criminal must be given the opportunity to surrender, and if he refuses, efforts must be made to arrest him. Mary Ellen O’Connell believes the Abbottabad raid was an example of how things should work.

“It came as close to what we are permitted to do under international law as you can get,” she said. “John Brennan came out right after the killing and said the SEALs were under orders to attempt to capture bin Laden, and if he resisted or if their own lives were endangered, then they could use the force that was necessary. They did not use a drone. They did not drop a bomb. They did not fire a missile.”

Force in such operations is justified only if the suspect resists arrest—and even then, his escape is preferable to harming innocent bystanders. These are the rules that govern police, as opposed to warriors. Yet the enemies we face will not change if the

war on terror ends. The worst of them—the ones we most need to stop—are determined suicidal killers and hardened fighters. Since there is no such thing as global police, any force employed would likely still come from, in most cases, American special-ops units. They are very good at what they do—but under law-enforcement rules, a lot more people, both soldiers and civilians, are likely to be killed.

It would be wise to consider how bloody such operations can be. When Obama chose the riskiest available option for getting bin Laden in Abbottabad—a special-ops raid—he did so not out of a desire to conform to international law but because that option allowed the possibility of taking bin Laden alive and, probably more important, because if bin Laden was killed in a ground assault, his death could be proved. The raid went well. But what if the SEAL raiding party had tripped Pakistan's air defenses, or if it had been confronted by police or army units on the ground? American troops and planes stood ready in Afghanistan to respond if that happened. Such a clash would likely have killed many Pakistanis and Americans, and left the countries at loggerheads, if not literally at war.

There's another example of a law-enforcement-style raid that conforms to the model that O'Connell and other drone critics prefer: the October 1993 Delta Force raid in Mogadishu, which I wrote about in the book *Black Hawk Down*. The objective, which was achieved, was to swoop in and arrest Omar Salad and Mohamed Hassan Awale, two top lieutenants of the outlaw clan leader Mohammed Farrah Aidid. As the arrests were being made, the raiding party of Delta Force operators and U.S. Army rangers came under heavy fire from local supporters of the clan leader. Two Black Hawk helicopters were shot down and crashed into the city. We were not officially at war with Somalia, but the ensuing firefight left 18 Americans dead and killed an estimated 500 to 1,000 Somalis—a number comparable to the total civilian deaths from all drone strikes in Pakistan from 2004 through the first half of 2013, according to the Bureau of Investigative Journalists' estimates.

The Somalia example is an extreme one. But the battle that erupted in Mogadishu strikes me as a fair reminder of what can happen to even a very skillful raiding party. Few of the terrorists we target will go quietly. Knowing they are targets, they will surely seek out terrain hostile to an American or UN force. Choosing police action over drone strikes may feel like taking the moral high ground. But if a raid is likely to provoke a firefight, then choosing a drone shot not only might pass legal muster (UN rules allow lethal force “when strictly unavoidable in order to protect life”) but also might be the more moral choice.

The White House knows this, but it is unlikely to announce a formal end to the war against al-Qaeda anytime soon. Obama's evolving model for counterterrorism will surely include both raids and drone strikes—and the legality of using such strikes outside the context of war remains murky.

---

BEN RHODES AND OTHERS on Obama's national-security team have been thinking hard about these questions. Rhodes told me that "the threat picture" the administration is mainly concerned with has increasingly shifted from global terrorism, with al-Qaeda at its center, to "more traditional terrorism, which is localized groups with their own agendas." Such groups "may be Islamic extremists, but they are not necessarily signing on to global jihad. A local agenda may raise the threat to embassies and diplomatic facilities and things like [the BP facility that was attacked in Algeria early this year], but it diminishes the likelihood of a complex 9/11-style attack on the homeland."

If terrorism becomes more localized, Rhodes continued, "we have to have a legal basis and a counterterrorism policy that fits that model, rather than this massive post-9/11 edifice that we built." This means, he said, that post-2014 counterterrorism will "take a more traditional form, with a law-enforcement lead. But this will be amplified by a U.S. capability to take direct action as necessary in a very narrowly defined set of circumstances." What U.S. policy will be aiming for, Rhodes said, is "traditional [law-enforcement-style] counterterrorism plus a limited deployment of our drone and special-forces capabilities when it is absolutely necessary."

To accommodate the long-term need for drone strikes, Obama is weighing a formal process for external review of the target list. This might mean appointing a military-justice panel, or a civilian review court modeled on the Foreign Intelligence Surveillance Court, which oversees requests to monitor suspected foreign spies and terrorists in the United States. But this raises thorny constitutional questions about the separation of powers—and presidents are reluctant to concede their authority to make the final call.

HOW SHOULD WE FEEL about drones? Like any wartime innovation, going back to the slingshot, drones can be used badly or well. They are remarkable tools, an exceedingly clever combination of existing technologies that has vastly improved our ability to observe and to fight. They represent how America has responded to the challenge of organized, high-level, stateless terrorism—not timidly, as bin Laden famously predicted, but with courage, tenacity, and ruthless ingenuity. Improving technologies are making drones capable not just of broader and more persistent surveillance, but of greater strike precision. Mary Ellen O'Connell says, half jokingly, that there is a "sunset" on her objection to them, because drones may eventually offer more options. She said she can imagine one capable of delivering a warning—"Come out with your hands up!"—and then landing to make an arrest using handcuffs.

Obama's efforts to mitigate the use of drones have already made a big difference in reducing the number of strikes—though critics like O'Connell say the reduction has come only grudgingly, in response to "a rising level of worldwide condemnation." Still, Obama certainly deserves credit: it is good that drones are being used more judiciously. I told Ben Rhodes that if the president succeeds in establishing clear and

careful guidelines for their use, he will make a lot of people happy, but a lot of other people mad.

"Well, no," Rhodes said. "It's worse than that. We will make a lot of people mad and we will not quite make people happy."

No American president will ever pay a political price for choosing national security over world opinion, but the only right way to proceed is to make targeting decisions and strike outcomes fully public, even if after the fact. In the long run, careful adherence to the law matters more than eliminating another bad actor. Greater prudence and transparency are not just morally and legally essential, they are in our long-term interest, because the strikes themselves feed the anti-drone narrative, and inspire the kind of random, small-scale terror attacks that are bin Laden's despicable legacy.

In our struggle against terrorist networks like al-Qaeda, the distinction between armed conflict and law enforcement matters a great deal. Terrorism embraces lawlessness. It seeks to disrupt. It targets civilians deliberately. So why restrain our response? Why subject ourselves to the rule of law? Because abiding by the law is the point—especially with a weapon like the drone. No act is more final than killing. Drones distill war to its essence. Abiding carefully by the law—man's law, not God's—making judgments carefully, making them transparent and subject to review, is the only way to invest them with moral authority, and the only way to clearly define the terrorist as an enemy of civilization.

---

