

Practice Makes Perfect?: The Changing Civilian Toll of CIA Drone Strikes in Pakistan

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Abstract

U.S. officials have recently claimed that the CIA has sharply reduced the number of civilian casualties resulting from covert Predator and Reaper drone strikes in the Taliban-controlled agencies of Northwest Pakistan. Critics, especially in Pakistan, along with human rights NGOs have, however, questioned these claims. This article examines independent databases tracking the drone strikes and finds that there is significant support for the U.S. officials' claims, or at least for their more moderate assertions. It also briefly reviews the explanations that have been offered for the declining civilian death toll from drone strikes. It shows that there is reason to believe that this development is the deliberate result of adjustments to CIA targeting procedures and improvements in spy networks and technology, and thus is likely to prove broadly sustainable at least for the immediate future.

Introduction

U.S. officials have been widely cited in recent months claiming that the CIA has sharply reduced the number of civilians killed in its covert drone program in Pakistan even as it rapidly increased the overall number of strikes. Some reports in the Pakistani and international press, however, have continued to claim very large numbers of civilian fatalities, and some NGOs have expressed skepticism about American officials' claims, citing in particular a lack of independent corroboration. This begs the question of who is correct, those who claim that the drones are "killing 99% civilians" in their strikes, or U.S. government officials who speak confidently of a drastic decline in drone deaths? [1] Is there any corroboration of the U.S. government's claims that the drones are now killing fewer civilians than before?

This article is devoted to answering these questions. It will demonstrate that several independent studies on drone strikes in Pakistan point to a declining civilian death toll that broadly supports the more cautious claims of U.S. officials. The databases also, however, contradict U.S. officials' boldest public claims which include assertions that the drone strikes have avoided civilian casualties entirely for periods of up to a year. The databases also show that the proportion of civilian casualties has crept up slightly in the first three quarters of 2011 in comparison with the standard of accuracy achieved in 2010. Nonetheless, on the basis of reported explanations for the improved precision of strikes, most of which are connected with tactical and technological adaptations on the part of the U.S., this article suggests that the bulk of the improvement is likely to be sustainable at least for the immediate future. By consequence, U.S. officials have, and are likely to retain at least for a time, a powerful case for maintaining or even intensifying the strikes.

The article begins with a brief overview of the drone program (Section 1) followed by a summary of some of the controversy, and especially legal controversy, surrounding it, which illustrate the centrality and importance of the issue of civilian fatalities (Section 2). It then turns

to a more detailed review of contrasting claims regarding the actual number of civilian casualties being caused by drone strikes in Pakistan (Section 3), followed by a review and analysis of the independent evidence currently available (Section 4). Finally, it turns to the possible explanations for the changing civilian death toll and the likelihood of maintaining the new rate (Section 5).

1. *The Drone Campaign*

On June 18, 2004, the United States began what could be described as its “most extensive targeted assassination campaign since the Vietnam War” by killing a Pashtun tribesman, Nek Muhammad, in the village of Wana in South Waziristan. [2] Muhammad was finishing dinner at the house of his friend, the local tribal leader Sher Zaman Ashrafkhel, and talking on his cell phone when a Hellfire missile exploded in the midst of the festivities killing at least five of the diners. In addition to Nek, Zaman and at least one Taliban militant were reported among the dead, along with Zaman’s two sons (aged 16 and 10). [3] The source of the Hellfire missile that killed the five was a Predator drone.

In the seven years that have followed, similar drone strikes are reported to have killed at least 1661 people, and probably closer to 2000, in Pakistan’s Federally Administered Tribal Areas (FATA). [4] The strikes have been aimed at leaders, local commanders and operatives of Al-Qaeda and the Afghan and Pakistani Taliban and associated networks which carry out attacks on NATO forces in Afghanistan. The *Long War Journal*, a database set up by the Foundation for the Defense of Democracy which tracks U.S. drone strikes in Pakistan, reports that 63 “Senior Al-Qaeda and Taliban leaders” have been killed by drones thus far, the vast majority (45) from Al-Qaeda (followed by 8 Taliban and 4 Haqqani Network leaders). [5] Other suspected militants killed are reported to include low-level operatives of Al-Qaeda, the Afghan Taliban (i.e., the Quetta Shura), the Haqqani Network, and an increasing number of the Pakistani Taliban (or Tehrik-i-Taliban). [6]

The U.S. government does not officially acknowledge these attacks, which are generally carried out covertly by the CIA, but they have been widely reported in the Pakistani and international press and have been unofficially acknowledged by U.S. officials. Indeed, Peter Bergen, CNN’s National Security Analyst and the author of *The Longest War*, has described them with only mild exaggeration as “the world’s worse-kept secret.” [7]

Naturally, these lethal covert attacks on the territory of an ally have provoked controversy. The Pakistani government has repeatedly condemned the strikes as violations of its sovereignty. On November 14, 2008, for example, Pakistani President Asif Ali Zardari complained of the drone campaign that “it’s undermining my sovereignty, and it’s not helping win... the hearts and minds of the people.” [8]

Evidence has emerged over the last two years, however, which tends to cast doubt on the sincerity of the Pakistani government’s denunciations of the drone strikes. On February 12, 2009, for example, Senator Dianne Feinstein, Chairwoman of the U.S. Senate Select Committee on Intelligence, revealed that Predator drones were flown out of a base in Pakistan, presumably with the permission of the Pakistani government. [9] Pakistani officials denied Feinstein’s claim but five days later *The Times of London* published satellite images obtained from *google.earth* that

showed Predator drones on a runway in Shamsi, Baluchistan, Pakistan. [10] Indeed, it has now come to light that in 2006 President Bush obtained permission from Pakistani President Pervez Musharraf to use Predator drones to kill senior Al-Qaeda targets, albeit only in FATA. [11] Similarly, on November 12, 2008, the new Pakistani President Asif Ali Zardari privately told the Director of the CIA to “kill the seniors” (i.e., Al-Qaeda and Taliban leaders). [12]

There is strong evidence then that Pakistani authorities have given consent to drone strikes in the FATA. It has also been widely reported that Pakistani military and intelligence officials have fed information to the CIA which has supported targeting operations, and may even have picked some targets of drone attacks. [13] All of this tends to cast doubt on charges that the strikes constitute violations of Pakistani sovereignty. Pakistani government officials’ condemnations of the strikes appear to be principally intended for popular consumption to avoid a popular backlash at home.

2. *The Drone Debate*

The drone strikes have also been challenged on a number of other strategic, ethical and most importantly legal grounds. But all of these critiques converge on the problem of excessive civilian casualties. The following discussion focuses on the legal issues, and in particular the key question of the proportion of civilians being killed. In the final stages of the examination, however, it also draws on the strategic and ethical critiques to reinforce the centrality of this issue.

Legal critics of the U.S. government’s use of drones for targeted killings have attacked it from a number of angles. The UN Special Rapporteur for Summary, Arbitrary and Extrajudicial Executions has argued, for example, that the U.S. has violated its “IHL [international humanitarian law] obligations to provide accountability and transparency for targeted killings.” [14] Human rights NGOs like Amnesty International have criticized some U.S. drone strikes in harsher terms as extrajudicial killings (albeit most notably in reference to a November 2002 strike in Yemen). [15] A number of influential scholars of international law, including Christine Gray of Cambridge University, have also characterized U.S. drone strikes as assassinations. [16] But the most emphatic, outspoken and effective of these legal critics has been Mary Ellen O’Connell of Notre Dame University who has argued (i) that the strikes have mainly taken place outside of a situation of established armed conflict in which alone they might be justified; and even if this point were overlooked that they still (ii) clearly violate the humanitarian law (of armed conflict) principle of humanity and (iii) the principle of proportionality. [17]

By contrast, an impressive array of legal scholars has also advanced arguments that support the legality of the strikes. In response to O’Connell’s first point, for instance, several leading legal scholars have argued that a state that has experienced an armed terrorist attack, or is imminently threatened with one, emanating from the territory of another state which is unwilling to prevent the attack, may employ narrowly-focused military force against the terrorists on the other country’s territory in self-defense regardless of whether an established state of armed conflict exists. Ruth Wedgwood, the Burling Professor of International Law at Johns Hopkins University, writes for example,

If a host country permits the use of its territory as a staging area for terrorist attacks when it could shut those operations down, and refuses requests to take action, the host government cannot expect to insulate its territory against measures of self-defense. [18]

Wedgwood's key point here is that where states fail in their responsibility to protect other states from attacks emanating from their territory, the right to act in self-defense, including with the calibrated use of military force, reverts to the threatened state. This occurs independently of whether any established state of armed conflict exists.

Yoram Dinstein, emeritus professor of law at Tel Aviv University and perhaps the leading contemporary interpreter of the law of war, elaborates the point in the latest (fourth) edition of his seminal *War, Aggression and Self-Defense*. He employs two imaginary states, Arcadia and Utopia, for purposes of illustration:

Should Arcadia not grant its consent to a Utopian offer to send military forces into Arcadian territory, in order to eliminate the terrorist threat... , Arcadia must be prepared to bear certain unpleasant consequences. Just as Utopia is entitled to exercise self-defence against an armed attack by Arcadia, it is equally empowered to defend itself against armed bands or terrorists operating from within Arcadian territory.... The situation amounts to an international armed conflict since Utopia resorts to forcible measures on Arcadian soil in the absence of Arcadian consent.... But there is no war between Arcadia and Utopia: the international armed conflict is 'short of war'. [19]

For Dinstein, the surgical use of military force in self-defense itself creates a state of international armed conflict (albeit short of war between the host and threatened state). Moreover, Dinstein stresses that Utopia's right of action is no less compelling if Arcadia is simply "too weak (militarily, politically or otherwise) to prevent these [terrorist] operations" on its territory. [20]

In fact, in the words of Jordan Paust, Professor at the Baker Law Center of the University of Houston,

the vast majority of writers agree that an armed attack by a non-state actor on a state, its embassies, its military, or other nationals abroad can trigger the right of self-defense addressed in Article 51 of the UN Charter, even if selective responsive force directed against a non-state actor occurs within a foreign country. [21]

Paust moreover leaves no doubt about the ramifications of the right of self-defense specifically for the U.S. use of drone strikes in Pakistan:

It is also clear that the U.S. has the right to use drones in Pakistan under Article 51 of the Charter in self-defense to protect U.S. troops from a continual process of al Qaeda and Taliban attacks on U.S. Military personnel and others in Afghanistan that have emanated or been directed partly from territory in Pakistan for several years during a continuing international armed conflict and when al Qaeda and Taliban fighters move back and forth across the porous border that neither country effectively controls. [22]

Moreover, Paust stresses that such “self-defense could be permissible outside of the context of war and without consent of the territorial state from which non-state attacks emanate.” [23] Finally, it is worth noting that this appears to be precisely the argument which undergirds the claim advanced in March 2010 by U.S. State Department Legal Adviser Harold Koh (an influential scholar of international law in his own right) before the American Society for International Law that U.S. drone targeting is “consistent with its [the U.S. government’s] inherent right to self-defense under international law.” [24]

All of this suggests that the U.S. government can offer a potent rebuttal to the first charge leveled by legal critics like O’Connell. This does not necessarily mean that the U.S. has not potentially violated international law by carrying out drone strikes in Pakistan. It rather indicates that the question is an open one – that is, one on which the law is not yet settled. Moreover, given the typically slow evolution of international law, the deeply disputed character of the law relating to self-defense, and the powerful interests at stake over this question, it may very well be that the law will not be settled any time soon. At the moment, however, if Paust’s assessment of the balance of legal opinion is accurate, then O’Connell appears to be in the minority in insisting that the right to use drones is restricted only to arenas where an established armed conflict is already in progress.

There is also little compelling evidence that the strikes violate the second element of the law of armed conflict invoked by Professor O’Connell, the principle of humanity. Ironically, of all the fundamental governing principles of humanitarian law, the principle of humanity is perhaps the least formally recognized and least frequently invoked. This is perhaps because it expresses the essential spirit of humanitarian law rather than a specific provision within it. It finds expression, however, in some attempts to synthesize the law of armed conflict, for example in the United Kingdom’s *The Manual of the Law of Armed Conflict*, which broadly “forbids the infliction of suffering, injury or destruction not actually necessary for the accomplishment of legitimate military purposes.” [25]

The legitimate objective in question here is the U.S. government’s desire to protect its nationals and its allies from attacks that are being planned and prepared at bases in Pakistan. There is little evidence that the United States has more humane, or even plausible, alternatives for preempting terrorist strikes than relying on remote control drones to kill the enemy in the remote tribal region. Consequently, it is unclear that the United States is violating the principle of humanity by using drones to accomplish this legitimate military purpose. This becomes especially obvious if one contrasts the use of drones against the dangers of the main alternative tactic the U.S. has tried in the FATA – that is, the insertion of ground troops to capture or kill enemy forces. For example, the best known U.S. commando raid into FATA occurred on September 3, 2008. [26] The Special Operations Team sent in was reported to have encountered resistance and was forced to fight their way out. The result was reported to have been around 15 or 16 civilians killed, including three women and four children, according to Geo TV. [27] The head of the Pakistani Army, General Ashfaq Kayani, harshly condemned the U.S. operation and vowed that the Pakistani Army would resist such violations of sovereignty “at all costs.” [28] In the next two weeks, Pakistani troops were reported to have fired warning shots at U.S. helicopters and ground troops near the border. [29] By comparison, the costs and dangers of carrying out drone strikes

seem slight. This analysis suggests that the U.S. government can offer a potent rebuttal to the second charge leveled by critics like O’Connell.

The crux of the legal issue then seems to come down to the third charge leveled by O’Connell concerning the number of civilians killed in CIA drone strikes in Pakistan. That is fitting, because this charge that the drone strikes in Pakistan do too much harm to civilians also represents the core of the strategic and ethical critiques of the drone campaign. On the strategic front, for example, David Kilcullen (a former counterinsurgency advisor to General David Petraeus) and Andrew Exum (who served as an Army Ranger in Iraq and Afghanistan) argued in an influential *New York Times* Op-Ed for a “moratorium on drone strikes.” Their central argument was that “every one of these dead noncombatants represents an alienated family, a new desire for revenge, and more recruits for a militant movement that has grown exponentially even as drone strikes have increased.” [30] Similarly, the harm to civilians represents a central concern of ethical critics of the drone strikes in Pakistan. According to the editors of *The Christian Century*, for instance, the apparently high numbers of civilians killed in the drone strikes “raise troubling questions to those committed to the just war principle that civilians should never be targeted.” [31]

But the issue is put most urgently and specifically by legal critics like O’Connell. She charges that the strikes violate one of the most basic and sacred principles of humanitarian law – that is, the principle of proportionality. This humanitarian principle is clearly formulated in Article 57 of the First Additional Protocol to the Geneva Conventions (1977). It states that parties to a conflict must,

refrain from deciding to launch any attack which may be expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated. (Art 57(2)(iii))

Under the law governing the conduct of war, each military operation must comply with this standard.

Unfortunately, the limited information available concerning the covert drone strikes makes it difficult to determine whether any individual operation violates this principle. Such assessments depend, for example, on what civilian harm the planners could and should reasonably have foreseen given the information they had, the importance that they should have attached to the mission’s objectives given what they knew, etc. Since we know little about what they knew, it is difficult making these assessments on a case-by-case basis.

Nonetheless, a general sense of compliance can be gained by looking at the operations as a whole, and comparing the number of civilian casualties to the number of high value targets and lower level militants killed in the campaign. While the proportion of civilian casualties does not prove that any particular operation did or did not violate the principle of proportionality, a high proportion lends credibility to those that suggest that some operations must have, while a low proportion supports those who insist that none have. So the question of the proportion of civilian casualties has assumed an important position in the debate over the legality of U.S. operations. The following section highlights some of the recent debate swirling around the issue.

3. *Contrasting Counts of Civilians Killed*

U.S. officials' claims of "reduced civilian casualties" in spite of "increasing the frequency of strikes" in Pakistan have been widely cited over the last year. For example, in an article in *Foreign Affairs* in July-August 2011, Peter Bergen and Katherine Tiedemann report U.S. government representatives claiming that between May 2008 and May 2010 there were "fewer than 30 civilian deaths" produced by the drone program. [32] In an earlier article in *Foreign Policy* in April 2010, the same authors reference a U.S. official in December claiming that "just over 20" civilians had been killed in the prior two years while "more than 400" fighters had been eliminated, a ratio of just under 20 militants killed per civilian killed. [33] Similarly, a July 22, 2010, BBC story reported a senior U.S. official claiming that under Obama 650 militants had been killed as compared to only 20 civilians - a ratio of militant to civilian fatalities of 32.5 to 1. [34] Again, in an article published on *Bloomberg* on January 31, 2011, an unnamed U.S. official is reported to have claimed that "The 75 strikes launched in the ungoverned tribal region since the drone program accelerated in mid-August have killed several hundred militants without causing any deaths among civilian non-combatants" – that is, without any collateral fatalities whatsoever. [35] If this were not enough John Brennan, the U.S. Deputy National Security Adviser for Homeland Security and Counterterrorism and President Obama's Chief Adviser on Counterterrorism, further stated,

One of the things President Obama has insisted on is that we're exceptionally precise and surgical in terms of addressing the terrorist threat. And by that I mean, if there are terrorists who are within an area where there are women and children or others, you know, we do not take such action that might put those innocent men, women and children in danger. In fact I can say that the types of operations that the US has been involved in, in the counter-terrorism realm, that nearly for the past year there hasn't been a single collateral death because of the exceptional proficiency, precision of the capabilities that we've been able to develop. [36]

Mr. Brennan made this claim on June 29, 2011, so his assertion that there have been no civilian casualties resulting from U.S. counter-terrorism operations in almost a year would extend back from that day to close to the middle of 2010.

Despite these emphatic statements from U.S. officials, however, widespread skepticism remains. [37] Some reports in the Pakistani Press, for instance, have sharply contradicted U.S. claims. A March 26, 2011, report in Pakistan's *The Nation* insisted that "There is mounting evidence that those killed are ordinary Pakistani citizens, and the Al-Qaeda masterminds thus killed are few and far between." [38] On March 11, 2011, *The Pakistan Observer* reported, "The US drones or the predator planes which have been on the killing spree in Pakistan's northern belt since August 2008 and have so far killed over fourteen hundreds people with the big majority as the innocent civilians (as admitted by the international watch dogs) [sic]." [39]

Such claims are echoed and amplified in popular Pakistani discourse. In a typical statement on March 7, 2011, Maulana Samiul Haq, the chief of Jamiat Ulema-e-Islam (the Community of Islamic Scholars), a Pakistani Islamist party, insisted at a conference in Lahore that U.S. drone strikes kill "dozens of innocent people daily." [40] Similarly, Muhammad Ahmed of the *Buzz*

Pakistan website, one of the country's most popular political blogs, wrote that the "USA did more than 100 Drone attacks in Pakistan in the past 3 years, if you read news about these drone attack you will see that in these drone attack only 1% terrorists was killed and other 99% people who died in these attack was innocent civilians of Pakistan. 75% of them were 10 to 15 year old teenagers [sic]." [41]

While not embracing the critics' counter-claims, some leading NGOs have also expressed caution about taking U.S. claims at face value. Asked to comment on U.S. claims, Ali Dayan Hasan, a Pakistani representative of Human Rights Watch, pointedly stressed that U.S. officials have provided no evidence to back up their claims. "We'd like to believe the U.S.," Hasan remarked, "but we have no reason to do so." In particular, he emphasized the absence of "independent investigations of the casualty reports." [42] In a 2010 report entitled "As if Hell Fell on Me: The Human Rights Crisis in Northwest Pakistan," Amnesty International also raised doubts about the kind of casualty figures claimed by U.S. officials and called for the U.S. government "to ensure... that sufficient information is made available to the public to ensure accountability." [43]

So who is right here, the U.S. Government or its critics? Have the numbers of civilians killed been rising or falling with the intensification of CIA drone strikes in Pakistan, or is it true, as Human Rights Watch and Amnesty International suggest, that there are no independent investigations or evidence bearing on the claims made by U.S. officials?

4. Independent Data on Drone Accuracy

In fact there are at least three independent databases which track the impact of CIA drone strikes in FATA, based on Pakistani and international press reports. Overall, these separate databases independently provide general support for U.S. officials' claims that civilian casualties have sharply declined over the last year and three quarters, although not the claims that no civilian have been killed over periods as long as a year.

The agreement of these databases is particularly striking because, while they share some common data sources (most notably the Pakistani dailies and international newspapers of record), they also differ in some important ways. In particular, they place emphasis on different sources, employ different methodologies to arrive at their final numbers, and classify their data into different categories. For example, the *Long War Journal* relies heavily on U.S. intelligence sources, while the New America Foundation tries to report the full range of (often differing) numbers presented in all news reports, and the University of Massachusetts Dartmouth Research on Operational Neutralization Events (Umass DRONE) database aims for the most detailed, best sourced and most updated news reports and relies primarily on those. Also, when confronted with the deaths of persons whose status (i.e., combatant or civilian) is difficult to determine, the *Long War Journal* seems to lean towards treating them as combatants and the New America Foundation towards treating them as civilians, whereas the UMass DRONE database introduces a separate category of "unknowns" to avoid the necessity of either erring towards one side or the other. The key point here is that where the findings of these quite different databases overlap, there may be a heightened confidence as to their accuracy.

Table 1: CIA Drone Strike Databases Reporting of Civilian Deaths [44]

Source	Total Strikes	Total Killed	Estimate of Civilian Deaths	“Unknowns”	Civilian Deaths as Percentage of Total
New America 2008	33	294*	144*	-----	49.15
2009	53	547*	163*	-----	29.8
2010	118	800*	40*	-----	5
(to Sep. 30) 2011	60	399*	26*	-----	6.5
<i>Long War Jl.</i> 2008	35	317	31	-----	9.78
2009	53	506	43	-----	8.5
2010	117	815	14	-----	1.72
(to Sept. 30) 2011	53	378	30	-----	7.94
UMass DRONE2008	33	290	15	63	5.17
2009	54	582	39	86	6.7
2010	131	863	13	176	1.51
(to Sept. 30) 2011	60	422	11	96	2.61

*The New America Foundation presents their data in terms of high-low estimates. These numbers represent the average of those ranges, rounded off where necessary.

The three databases offer strong evidence that the accuracy of CIA drone strikes in Pakistan has improved significantly in the last year and three quarters. As Table 1 indicates all three databases show a sharp drop in estimated civilian deaths from 2009 to 2010 (from 163 to 40 for the New America Foundation, from 43 to 14 for the *Long War Journal*, and from 39 to 13 for UMass DRONE). This drop in civilian fatalities occurred in spite of a sharp increase in the total number of strikes from 2009 to 2010 (from 53 to 118 according the New America Foundation, from 53 to 117 according to the *Long War Journal* and from 54 to 131 according to UMass DRONE). Correspondingly, the proportion of those killed in the drone strikes who appeared to be civilians fell very noticeably in each case (from 29.8% to 5% according to the New America Foundation, from 8.5% to 1.72% for the *Long War Journal*, and from 6.7 to 1.51% for UMass DRONE). In sum, the sharp drop in civilian casualties which registered across all three databases provides some clear support for U.S. officials' claims of improved accuracy at least for 2010.

It is also noteworthy that some of the claims advanced by American officials appear to receive further independent corroboration from the cache of data recovered from Osama bin Laden's compound in Abbottabad following the operation that led to his death on May 2, 2011. For example, some of the material seems to support U.S. officials' claims that the drone campaign is eliminating a significant number of Al-Qaeda operatives (and not only a few leaders). Of course, it must be remembered that the full trove of data has not been released to the public, and that what is known are selections reported by U.S. officials. Still, what is known does suggest that the drone campaign is proving generally effective. For example, according to an article by Greg

Miller in *The Washington Post*, “Over the past year, the Al-Qaeda leader fielded e-mails from followers lamenting the toll being taken by CIA drone ‘explosions’ as well as the network’s financial plight.” [45]

Miller also cites evidence that Al-Qaeda’s leadership is being frightened and significantly disrupted by the drone strikes:

One of bin Laden’s principal correspondents was Atiyah abd al-Rahman, who served as No. 3 in Al-Qaeda before bin Laden’s death. A 2010 message from Rahman expressed frustration with the CIA drone campaign, a source of particular concern because many of his predecessors in the third-ranking slot had been killed in strikes by the unmanned aircraft.

“He was saying in the letter that their guys were getting killed faster than they could be replaced,” the U.S. counterterrorism official said. [46]

In fact, it appears that bin Laden was compelled to approve “the creation of a counterintelligence unit to root out traitors and spies” who, it was suspected, were contributing to the precision and effectiveness of the drone program. However, despite killing dozens of suspected informants, the leader of the new unit is reported to have written to bin Laden in frustration over their campaign’s lack of apparent effect in slowing the drones down. [47]

In sum then, independent databases tracking media reports of the effects of drone targeting broadly support U.S. officials’ claims of improved drone accuracy, especially for the year 2010. Moreover, some of the data recovered from bin Laden’s compound in Abbottabad provides further support for some of U.S. officials’ claims, particularly concerning the accuracy and impact of drone strikes.

Two reservations should, however, be noted. In the first place, the data for 2011 shows that numbers for civilian casualties began creeping up again. On all three databases, the numbers for the first three quarters of 2011 show a significant increase in the proportion of civilian casualties in comparison with the low standard obtained in 2010, albeit not back to the levels seen in 2008 and 2009. The New America Foundation, for example, shows an increase from 5% to 6.5%, while UMass DRONE shows an increase from 1.51% to 2.61%. The *Long War Journal* data shows an even more striking increase from 2010 to 2011 both in the proportion of civilian casualties (from 1.72% to 7.94%) and in the actual numbers of civilians killed (from 11 to 30). Still, this remains below both the proportions and actual numbers of civilian deaths recorded in 2008 and 2009 (31 killed or 9.78% of the total in 2008 and 43 killed or 8.5% of the total in 2009). So all three databases show the 2010 improvement in drone strike precision diminishing in 2011, albeit according to two of them the diminution was rather small.

A second reservation is that none of the three databases suggest that the number of civilian casualties was zero for the period of June 2010 to June 2011, as claimed by John Brennan and other U.S. officials. The New America Foundation data, for example, reports that on March 17, 2011, 13-24 “others” were killed (along with 11-12 militants) in a drone strike near Datta Khel, North Waziristan. On April 22, 2011, another 3-9 others are reported killed, along with “some” (up to 2) on December 28, 2010. [48] The UMass DRONE data shows 7 civilians killed on August 23, 2010; 4 on September 8, 2010; 2 killed on December 17, 2010; 2 killed on March

17, 2011; and 9 killed on April 22. Finally, the *Long War Journal's* reports for the first 6 months of 2011 indicate at least 10 civilians were killed (7 on August 23 and 3 on April 22). [49]

The data indicating some civilian casualties over this period has received further corroboration from an investigation recently reported in *The New York Times*. [50] The Bureau of Investigative Journalism, a not-for-profit organization based at City University in London, has published its own data, based in at least some cases on witness testimonies and field reports. This data indicates that during the period in which Deputy National Security Advisor Brennan had insisted that there were no civilian casualties, there were in fact 45, resulting from at least 10 independent strikes. [51] These strikes include a March 17, 2011, attack near Datta Khel, North Waziristan, which killed between 19 and 42 civilians, and a May 6 attack near Dwa Tooe, North Waziristan, in which six civilians were reported to have been killed. [52]

Nonetheless, even with these two reservations in mind, there remains substantial evidence supporting U.S. officials' claims of a significant improvement in drone accuracy since the beginning of 2010. Indeed, even the generally skeptical Bureau of Investigative Journalism acknowledges that much. [53] Moreover, according to two of the databases the sharp improvement in 2010 has been mainly carried over into the first three quarters of 2011, although the third database (the *Long War Journal*) does show a steeper fallback in the direction of earlier civilian casualty rates.

All of this suggests that U.S. officials can present a forceful rebuttal to the third charge leveled by Mary Ellen O'Connell and echoed by some experts on military strategy like David Kilcullen and Andrew Exum and some ethical critics like the Christian Century - who all protest that the drone strikes are simply killing too many civilians. Moreover, contrary to the suggestions of some human rights NGOs, there *is* significant independent evidence that the drone strikes are hitting relatively few civilians, and are in fact eliminating a great many militants, especially in the Al-Qaeda ranks, and are doing great harm to that organization. Insofar as this charge of high civilian casualties comprises the heart of the legal critique of the drone strikes (not to mention the strategic and ethical critiques), the Obama administration would then appear to be in a position to forcefully defend the policy. Moreover, U.S. officials can vindicate the President's repeated public commitments to conduct the struggle against violent extremism in ways consonant with the rule of law at least with regard to his intensification of drone strikes in Pakistan. [54]

It is worth asking, however, will the administration be able to maintain this strong position in the future? In particular, insofar as there is some evidence of an erosion in the level of targeting accuracy achieved in 2010, it is important to consider whether targeting precision can be sustained. The key to answering this question lies in understanding how the improved accuracy was achieved in the first place.

5. Possible Explanations for Improving Drone Accuracy

Several explanations for the improved accuracy of CIA targeting have been suggested. First, U.S. officials have pointed to improved intelligence. [55] Most importantly, there are said to be "increased numbers of U.S. spies in Pakistan's tribal areas", presumably producing more and

better targeting information. [56] In September 2010 *The Washington Post*, for example, reported that the CIA had begun to run a program from bases in the border region of Pakistan where they controlled spies in the FATA. These spies reported the whereabouts of Taliban and Al-Qaeda militants to the CIA drone operators who then took them out. [57]

There have also recently been some interesting reports suggesting that intelligence based on the data recovered from bin Laden's compound may itself be contributing to the improved accuracy of drone strikes. In a piece in *The Atlantic Wire* in May, John Hudson speculated as follows:

Days after U.S. Navy SEALs took hard drives, memory sticks and personal computers from Osama bin Laden's hideout, both Pakistan and the U.S. have launched major offensives against suspected Islamic militants. On Friday, a U.S. drone strike reportedly killed 12 militants in Pakistan and another U.S. drone strike in Yemen, the first since 2002, killed two suspected Al Qaeda operatives. And, as reported minutes ago, Pakistani forces have rounded up 40 people in Abbottabad suspected of having connections to bin Laden. Is the massive data trove recovered from bin Laden's compound already paying off? [58]

Officials have certainly indicated that the data recovered dealt with many aspects of operational detail, and that it is their intention to identify this data and to use it to roll up as much of the network as possible. It is difficult to imagine a more devastating source of intelligence than bin Laden's own computers.

There are also reports of new and improved technology being introduced to improve the accuracy of drone strikes, most notably the use of "Pathrai" homing beacons. The use of such beacons was recently described by Brian Glyn Williams in *Studies in Conflict and Terrorism*:

These small transmitter chips have been given to Pashtun tribesmen -- who for money or out of conviction are spying on the Taliban -- to be placed in or near the enemies' houses, convoys, *hujras*, *madrassas* or compounds. The drones then home in on them with their lasers and deliver their missiles from miles away with incredible precision. [59]

It is easy to imagine how such devices could contribute to a sharp diminution in the percentage of civilians being killed in drone strikes in Pakistan.

There are also some indications that the CIA is being more careful to avoid attacks that might endanger civilians. For example, Ken Dilanian reported in a *Los Angeles Times* article at the end of February that according to both U.S. and Pakistani officials, "the CIA passed up a chance to kill Sirajuddin Haqqani, the head of an anti-American insurgent network... when it chose not to fire a missile at him from a Predator drone because women and children were nearby." [60] The article mentions two other opportunities to hit high-value targets that were passed up for similar reasons. There are also separate reports that new safeguards have been introduced into the CIA program. In particular, U.S. officials have claimed that now "each strike is approved by either CIA director Leon Panetta or his deputy, Michael Morell." [61] All of this suggests a heightened level of caution and restraint.

There are also reports that the CIA has shifted to using smaller, more precise missiles on its drones. Specifically, Joby Warrick and Peter Finn reported that the CIA had shifted from relying

primarily on 100-pound Hellfire missiles to carry out attacks to using more precise 35-pound missiles called “Scorpions,” especially in urban settings, in a move that has “kept the number of civilian casualties extremely low.” [62]

In addition, the CIA has begun to make increasing use of a new generation of killer drones known as Reapers which are able to stay aloft longer than the smaller Predator drones and are better able to track ‘pattern of life’ movements (i.e., more rigorously distinguish between innocent civilians and those militants/terrorists engaged in such activities as transporting ammunition and weapons, driving in convoys, training with weapons in terrorist camps, etc.). It is in part the CIA’s ability to spend hours patiently waiting above potential targets and monitoring them with increased precision optics that allows them to direct precise Scorpions into buildings or convoys and do remarkably little damage to those who are not the intended target. As a typical account of a Reaper strike states,

The growing reliance on the Reaper becomes apparent in the account of one operation on 29 August last year [2009]. US soldiers on the ground studied the live video, from the Reaper's camera thousands of feet up, of a fighter "pulling weapons from a cache site in a culvert under the road." He rode his motorbike to an underground cellar in a compound, "carrying weapons back and forth".

The US soldiers waited until he met a group of men, signaling back via satellite to the pilot controlling a joystick thousands of miles away in a Nevada bunker, who loosed a missile on to their vehicle. The US claimed a kill of three insurgents. [63]

These reports suggest two important points. First, the improvement in the accuracy of CIA drone targeting in Pakistan appears to be the product of a range of deliberate tactical choices and possibly a hard-won opportunity (that is, the seizing of bin Laden’s data cache). Second, even if the opportunity involved in reading bin Laden’s personal files has an expiration date (after which the operational intelligence in the cache will become obsolete), the tactical choices (such as smaller missiles and a more cautious authorization process) appear to be fully sustainable over time.

These points suggest that U.S. officials may be able to preserve a potent overall case for the use of drones to target Al-Qaeda the Taliban and their affiliates in Pakistan for the immediate future. Of course, in a dynamic conflict like that unfolding in Northwest Pakistan it is always possible that Al-Qaeda and its affiliates will successfully adapt to improved U.S. targeting – for example, by far more extensive use of human shields – thus giving renewed salience to criticisms based, for example, on drone strikes involving excessive endangerment of civilians. But such tactical adaptations may well impose strategic costs on Al-Qaeda and the Taliban as well (for example, in terms of alienating local sentiment). Moreover, until Al-Qaeda and the Taliban successfully adapt (if they do) the Obama administration has a strong rationale for maintaining and even intensifying the pressure on them produced by drone strikes.

6. Conclusion

This article has reviewed some of the controversy revolving around the U.S. drone campaign in Pakistan. It identified the question of civilian casualties as the effective heart of the debate over

the drone strikes, and examined three independent databases devoted to tracking the strikes with emphasis on their impact on local civilians. It showed that these databases contradicted the most exaggerated claim articulated by U.S. officials that civilian casualties were reduced to zero between June 2010 and June 2011. It also showed that all three databases show the proportion of civilians creeping back up in 2011, one of them quite sharply.

Nonetheless, it argued that these databases provide overall corroboration for U.S. officials' claims that the strikes have achieved significantly improved accuracy since the beginning of 2010. It also showed that there are strong arguments that this improved efficiency has been the deliberate result of American policy, technology, and increased and improved personnel on the ground. Moreover, it argues that most of the factors which have been reported as contributing to the improved accuracy of drone strikes are sustainable over time. As a consequence of this sustainability, the proportion of civilian casualties resulting from drone strikes is likely to remain relatively low for the immediate future, although the possibilities for error and misjudgment can never be wholly eradicated. As a further consequence, the U.S. is likely to continue to have a powerful justification for maintaining or even intensifying the strikes in the immediate future. In sum, the evidence examined here strongly supports the view that the drone strikes over the last year and three quarters have generally been effective and precise and probably the most humane self-defense option available to U.S. officials.

Yet there remains at least one sense in which these findings are moot. The consensus in the Pakistani press and public discourse has long been that the drones are targeting unprecedented proportions of civilians. Correspondingly, a Gallup Poll recently found that 67% of Pakistanis are opposed to the drone strikes, while 24% have neutral feelings towards them and just 9% favor them. [64] The coverage of the *Long War Journal*, the UMass DRONE database and the New America Foundation study have been rather limited in Pakistan's press and does not seem to have changed conventional wisdom on drones and civilian deaths in that country. [65] One Pakistani general stationed in the targeted tribal zones, Major General Ghayur Mehmood, did come out and state,

Myths and rumors about US predator strikes and the casualty figures are many, but it's a reality that many of those being killed in these strikes are hardcore elements, a sizeable number of them foreigners. Yes there are a few civilian casualties in such precision strikes, but a majority of those eliminated are terrorists, including foreign elements. [66]

General Mehmood, however, represents the minority opinion in his country and he was attacked by Pakistani critics for his comments. The exception here seems to prove the rule. Despite the fact that the CIA may be waging the most precise "bombing" campaign in history, it is nonetheless alienating millions of average Pakistanis. Pakistanis are prone to conspiracy theories and there is little chance that U.S.-based researchers can shift the paradigm in this country that drones almost exclusively kill innocent Pakistani civilians.

Moreover, as long as the U.S. government continues to conduct the campaign in secret, refusing to divulge any information on it or even acknowledge that it carries out these strikes at all, its officials cannot even enter the conversation. Unfortunately, as Christine Fair has observed, this leaves the field free for the very groups who are being targeted to report the impacts on the

ground and to frame the strikes for the Pakistani public. [67] In-so-far as the American objective is to isolate and degrade Al-Qaeda, the Taliban and their affiliates, this represents a serious problem. [68] To the degree the target groups are able to disseminate a common sense of victimhood to the Pakistani public, it is America rather than its enemies which is likely to be increasingly isolated in the Pakistani political conversation. Thus, for all the best intentions, the unprecedentedly accurate covert CIA drone strikes may lead to a strategic setback even as they gain a tactical success by surgically killing hundreds of FATA-based Taliban and Al-Qaeda extremists every year.

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