

***Expanding Space, Compressing Time and the
Psychopathology of Drones***

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ABSTRACT

Remotely Piloted Vehicles (“Drones”) pose problems for space, place and time mainly because they are misunderstood historically - in the context of the general history of weapons; and psycho-strategically – because they are insufficiently attentive to a politics of speed alloyed with a cult of the offensive. Additionally, many commentaries insufficiently acknowledge what their proliferation will cause: expansion of potential surveillance and strike capabilities to increasingly greater areas of space combined with the relative intimacy of real-time intelligence data which compresses the time in which understandings will be reached and decisions effected. Psychologically, the prevailing mood, the combination of close-up knowledge, weapons capability, and the immediate opportunity to act with lethal force at minimal cost (“bloodless” or “risk-free” war”) have the potential to create a pathological politics of temptation which, with existing trends in proliferation, will require the reconceptualization of political space and international law.

Expanding Space, Compressing Time and the Psychopathology of Drones

Introduction

Imagine an aircraft that, in a developmental sense, is in its infancy notwithstanding that the United States inventory of it is in excess of 7,000: it has legitimate and beneficial uses across an extensive range of national, state, and local government responsibilities - from traffic control, product delivery, journalism, archaeological research, televised sports coverage, medical emergencies, search and rescue, shark patrols, tracking wildfires, reporting on hurricanes, and the monitoring of crops and herds of cattle and wildlife, to other relatively unremarkable commercial and governmental functions. In the popular imagination, however, it is popularly understood as belonging to the world of “black programmes,” covert wars, and special operations conducted under the rubric of the Global War on Terror, and it is this context that concerns the following paper. Imagine, therefore, that, in this milieu, its operations are described by the former Director of the Central Intelligence Agency, and subsequently the United States Secretary of Defense, Leon Pannetta, as “the only game in town” in the war against the *Al Qaeda* leadership.

His reasoning, widely shared among those cognisant of the aircraft’s capabilities is that, tactically and strategically it is a surveillance and weapons platform (increasingly integrated), which truly revolutionises the battlefield; moreover, its potential to revolutionise not just combat, but the politics and laws of combat is such that it exerts upon many political leaders, strategists, policy-makers, decision-makers and military personnel an almost inexorable attraction. The more perceptive and history-aware analysts thus note that its advent constitutes a “transformative technology;” in effect, however, they are conceding that it is something more troubling - “disruptive technology.” Any discussion on this aircraft, let alone a dialogue or debate about it, must therefore be informed by not only a knowledge, but a critical understanding of what it is, how it is already being used, and where the trajectory of its development is headed and at what vectors. It requires, as well, an understanding that the enthusiasm for this aircraft is not so much located

within a population of technological determinists as within what is rightly called a *culture*, a community of technological reductionists.

Until quite recently, the aircraft in question was unproblematically described as “a / the drone” and its most ardent protagonists belonged to the *drone culture*. Traditionally, a drone was defined in terms of a pilotless, radio-controlled, military target-towing aircraft, and, over time, any aircraft that flew without an on-board pilot at the controls, regardless of whether it was controlled by a ground-based operator, or was capable of autonomous flight without immediate and direct human agency, remained a ‘drone.’ This omnibus term was, however, unacceptable to aviation professionals and government regulators for many and varied reasons which are outside the scope of this paper; nevertheless, it is necessary to acknowledge that a ‘drone’ is now referred to (depending on the interests of the naming agency), as: Unmanned Aircraft (UA), Unmanned Aerial Vehicle (UAV), Unmanned Aerial System (UAS), Remotely Piloted Aircraft (RPA), Remotely Piloted Vehicle (RPV), Remotely Piloted Aircraft (RPA), and Remotely Piloted Aircraft System (RPAS). These do not in any way exhaust the descriptions - they are indicative only - and they certainly do not take into account the sub-categories of the species.¹

What the referent aircraft minimally have in common is that they are unmanned, remotely controlled, and can transmit data back to a ground controller. Throughout this paper the tendency will be to use ‘drone’ and ‘drones’ if only because this accords with the usage in most even accounts - and even the technical literature used them in titles; besides, this paper deals with the genus ‘drone’ and it is neither necessary nor desirable to arbitrarily opt for one of the appellations above given its focus.

In line with the need to know of what we speak, the following - hopefully useful - background briefing is offered. For those readers familiar with the drones, this section is not required reading and they might find it expeditious to proceed to the argument proper of the paper - which begins on page 16.

¹ Marc Corcoran, for *Foreign Correspondent*, “Drone Wars: The definition dogfight,” ABC News, 1 March 2013, available at: www.abc.net.au/news/2013-03-01/drone-wars-the-definitio-dogfight/4546598 (accessed 23 January 2014 (hereafter cited as Corcoran, “Drone Wars: The definition dogfight”).

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Origin: Although used in wars of earlier vintages, drones have come to widespread, or popular notice only in very recent times: the first armed drones operated by the United States were developed as an alternative to cruise missiles (seen as far too indiscriminate and producing too much ‘collateral damage’) to kill Osama Bin Laden.²

Context: The wholesale automation, and hence the displacement of human labour in the U.S armed forces, and the increasing turn to robots and computers with varying degrees of autonomy.³ As Alfred McCoy writes of the Central Intelligence Agency’s acquisition of drones and their current operational status, “the CIA has moved beyond passive intelligence collection to build a *permanent robotic paramilitary capacity* (emphasis added).”⁴

Overriding Rationale: Drones, because they can operate for extended periods, in multirole mode (see **Missions** immediately below), and in environments that are “dirty and dangerous,” reduce the costs and risks of military action, especially to the lives and limbs, of the users. All other rationales essentially are derived from the combination of these two factors.

² Micah Zenko, “10 Things You Didn’t Know About Drones,” *Obama’s Secret Wars: An FP Special Report*, ex *Foreign Policy*, available at: www.foreignpolicy.com/articles/2012/02/27/10_things_you_didnt_know_about_drones?print=yes&hi_decomments=yes&page=full (accessed 1 March 2012 (hereafter cited as Zenko, “10 Things You Didn’t Know About Drones.”

³ Michael C. Horowitz, “Coming next in military tech,” <http://bos.sagepub.com/content/70/1/54.full> accessed 21 January 2014, and Robert Sparrow, “Lethal autonomous robots must be stopped in their tracks,” *The Conversation*, <http://http://theconversation.com/lethal-autonomous-robots-must-be-stopped-in-their-tracks-14843> accessed 8 June 2013.

⁴ Alfred McCoy, “Beyond Bayonets and Battleships: Space Warfare and the Future of US Global Power,” <http://truth-out.org/news/item/12623-beyond-bayonets-and-battleships-space-warfare-and-the-future-of-us-global-power> accessed 9 November 2013 (hereafter cited as McCoy, “Beyond Bayonets and Battleships.”

Missions: Most military drones are involved in intelligence, surveillance, and reconnaissance (ISR) and not conventional offensive operations. This state of affairs is not expected to last, or at least be significantly qualified in the light of reports that ‘multirole drones’ - which can both provide intelligence and strike - are already deployed and more are under development.⁵ See also the drones referred to below in **Spectrum**. One of the sources referred to in that section - Alfred McCoy’s “Beyond Bayonets and Battleships: Space Warfare and the Future of US Global Power,” is regarded as so important for the discussions relating to this paper that it has been included as Appendix I.

Reliability: Drones have a high crash rate, usually as a result of bad weather, loss or disruption of communications, and human error.⁶

Time-on-Patrol: Depending on type, this can be measured in many hours more than the comparable manned aircraft that has traditionally carried out the role, or even days. The improvement promised can be estimated from the test data released in 2010 concerning the British developmental drone, Zephyr, which managed a flight of 82 hours.⁷ In the long term, there are plans for nuclear-fueled drones that could remain on station for months, and drones that, once programmed and tasked, are autonomous.⁸

Proliferation: Quite apart from the U.S. Government agencies that are known to have them - CIA, NASA, Department of Homeland Security, Customs and

⁵ Zenko, “10 Things You Didn’t Know About Drones.”

⁶ Zenko, “10 Things You Didn’t Know About Drones.”

⁷ Chris Cole and Jim Wright, “What are Drones?” <http://dronewars.net/aboutdrone/> ex *Peace News*, January 2010, accessed 21 February 2014.

⁸ See: Kevin Zeese and Margaret Flowers, “Anti-Drone Movement Grows: Ethics, Legality and Effectiveness of Drone Killings Doubted,” Truthout, 24 April 2013, <http://truth-out.org/news/item/15959-anti-drone-movement-grows-ethics-legality-and-effectiveness-of-drone-killings-doubted> accessed 27 February 2014; Nick Fielding, “U.S. draws up plans for nuclear drones,” *theguardian*, 3 April 2012, <http://www.theguardian.com/world/2012/apr/02/us-plans-nuclear-drones/print> accessed 27 February 2014; and Human Rights Watch, *Losing Humanity: The Case against Killer Robots*, November 2012, SBN: 1-56432-964-X, http://www.hrw.org/sites/default/files/reports/arms1112_ForUpload.pdf accessed 27 February 2014.

Border Protection - by early 2012, the military inventory in the United States was placed at 7,500. Over 80 countries possess some form of drones, predominantly for surveillance purposes, and an estimated 10-15 of these are developing or acquiring weaponised versions, including Azerbaijan, China, India, Iran, Israel (a pioneer in the technology), Pakistan, Russia, and the UK, and the Federal Aviation Administration estimates that, by 2030, US airspace alone will have to deal with the operations of 30,000 civil and commercial drones as well. [Current, non-military numbers do not the small, flying, camera-equipped toy, the Parrot AR drone, costing \$USD350, the estimated sales of which are 500,000 over the last four years, according to the aviation press].⁹

Economic Factors: Drones are cheap, at least if unit cost is the criterion, and the comparison is with a manned aircraft which could engage in similar operations: \$USD15M for the *Global Hawk* as against \$USD55M for a new F-16. They are, however, more manpower intensive: whereas the support crew for the F-16 is approximately 100, some 168-180 are required to operate maintain, and analyse the output of the *Predator* and *Reaper* drones.¹⁰

At the nano end of the size spectrum the operating costs are around \$USD25 per hour as against manned helicopters and aircraft which range from \$USD600 - \$USD20,000 per hour.¹¹

Neoliberal Benediction: In the age of a U.S. straitened economy, drones appeal to accountants and economists of a certain cast of mind as an

⁹ Zenko, "10 Things You Didn't Know About Drones;" and Radio Free Europe / Radio Liberty, "Drones - Who Makes Them and Who Has Them?" http://www.rferl.org/content/drones_who_makes_them_and_who_has_them/24469168.html 31 January 2013, accessed 21 February 2014; and Fred Mazelis, "Plans to vastly expand drones in US," World Socialist Website, 28 March 2013, <http://www.wsws.org/en/articles/2013/03/28/dronem28.html> accessed 7 March 2013; Medea Benjamin, "The Dangerous Seduction of Drones," *Nation of Change*, 14 February 2014, <http://www.nationofchange.org/dangerous-seduction-drones-1392391578> accessed 7 March 2014, and Corcoran, "Drone Wars: The definition dogfight").

¹⁰ Zenko, "10 Things You Didn't Know About Drones."

¹¹ Christopher Harress, "Here's What The Future Of Insect And Nano Drones Looks Like [VIDEO]," <http://www.lbtimes.com/heres-what-future-insect-nano-drones-looks-video-1532592> (accessed 7 February 2014).

imperative weapons platform: it replaces the pilot (who requires significant training, upkeep, and ultimately, a pension) with robotics and operators who do not need all of the qualifications required of a pilot. In the age, too, of the F-22 *Raptor* - at \$USD350M per aircraft - or the F-35 *Lightning II* Joint Strike Fighter - at \$USD115M per aircraft (a programme that will cost nearly twice what it took for the U.S to put a man on the Moon),¹² the transition to robotics in general, and drones in particular, represents an opportunity of extraordinary potential for all involved in the U.S. defence production and acquisition process. Overall drone warfare is an extension of and consistent with the prevailing logic of the automated trading platforms, robotic trading programs, and online day trading systems of the neoliberal market system, and the virtually instantaneous transfer of billions of monies through the neural synapses of the global financial system on the command of a key stroke.

Size Spectrum: The images of drones which make it into television news and documentaries reveal them to be comparable to the type of small aircraft found in private aviation or dual-seat trainers in the armed forces, but this seriously misrepresents the range of the species: under order for delivery in late 2014 is the U.S. Army's *Maverick*, is designed to look like a hawk or an eagle, and is the same size.

¹² Nick Turse and Tom Englehardt, *Terminator Planet: The First History of Drone Warfare 2001 - 2050* (Dispatch Books, 2012), pp. 9 and 123 (hereafter cited as Turse and Englehardt, *Terminator Planet*).



A soldier handles the Maverick drone, ready for a test flight. Picture:
Prioria Robotics Source: Supplied¹³

In Afghanistan, however, British forces had already deployed a much smaller platform, the Norwegian-manufactured, soldier-launched *Black Hornet*, intelligence drone - just 10 centimetres (4 inches) long and weighing in at 16 grams (0.6 ounce). See below.¹⁴

¹³ Staff Writers, "U.S. Army buys small, hawk-shaped Maverick drone to wing its way into secret spots," news.com.au, 29 November 2013, http://www.news.com.au/technology/us-army-buys-small-hawkshaped-maverick-drone-to-wing-its-way-into-secret-spots/story-e6f1frnr-1226771152950?utm_source=outbrain&utm_medium=cpc&utm_campaign=technology accessed 25 February 2014.

¹⁴ Spencer Ackerman, "Palm-Sized Nano-Copter Is the Afghanistan War's Latest Spy Drone," <http://www.wired.com/dangerroom/2013/02/black-hornet-nano/> accessed 7 February 2014.



And then, at various stages of research and development, for example by the University of Pennsylvania's GRASP Laboratory, are smaller, insect-sized drones ("nano quadrotors"), some with the capacity to sense each other's proximity and fly in swarms.¹⁵ Some are so small that they can sit comfortably on the top segment of a finger (see following).¹⁶

¹⁵ Liz Klimas, "Nano-Drone Swarm Shows Off Slightly Creepy Formation Skills," <http://www.theblaze.com/stories/2012/02/01/nano-drone-swarm-shows-off-slightly-creepy-formation-skills/> accessed 7 February 2014.

¹⁶ An image from NetworkWorld.com, as in RT, "US military surveillance future: Drones now come in swarms?" <http://rt.com/news/us-drones-swarms-274/> 20 June 2012 (accessed 21 February 2014).



Indicative examples of development at the other end of the size spectrum includes a U.S. weapons-carrying drone weighing 22 tons, which is to be capable of not only flying at Mach 7 but landing on an aircraft carrier;¹⁷ the CIA's jet-powered, surveillance / strike *Avenger* (formerly the Predator-C), with a wing span of 66 feet, which can operate at 50,000 feet at 500 mph, and with a range of 1,800 miles;¹⁸ and the U.S. Navy's *Triton*, an intelligence, surveillance and reconnaissance (ISR) drone with the same wing span as a Boeing 757 (130 feet), which can support missions at a radius of 2,000 nautical miles, at altitudes of up to 50,000 feet. See below¹⁹

¹⁷ Turse and Englehardt, *Terminator Planet*, p. 51.

¹⁸ Allen McDuffee, "New Jet-Powered Drone Can Kill 1,800 Miles From Home Base," *Wired*, 21 February 2014, <http://www.wired.com/dangerroom/2014/02/avenger/> accessed 25 February 2014.

¹⁹ Allen McDuffee, "Navy's 757-Sized Drone Will Provide Big-Time Surveillance," *Wired*, 7 January 2014, <http://www.wired.com/dangerroom/2014/01/triton/> accessed 25 February 2014.



[Northrop Grumman's MQ-4C Triton unmanned aircraft system. Photo: Alan Radecki/Northrop Grumman]

Finally, there is the *Falcon* Hypersonic Cruise Vehicle, an unmanned aircraft that will fly at an altitude of 20 miles and be capable of destroying targets almost anywhere on the Earth's surface within an hour of being given its orders (see below). Both of these are to be situated within what is described as a "triple canopy" of advanced surveillance and armed drones" designed to control both the surface of the globe and the space above it.²⁰

The image at the top of the following page is an artist's conception, circa 2008, of the U.S. *Falcon* Hypersonic Cruise Vehicle, an unmanned aircraft that will fly at an altitude of twenty miles and destroy targets almost anywhere in the world within an hour. (Image: Defense Advanced Research).²¹

²⁰ McCoy, "Beyond Bayonets and Battleships."

²¹ Ibid



Drone Strikes are Consistent with US Strategies (Historically, Geographically, Strategically): In the period since the attacks of 9/11 the United States has attempted to fight its Global War on Terror - essentially against an unconventional enemy, located in no particular state, and geographically dispersed with conventional forces but, increasingly, has relied on drone strikes to strike against what it terms “high-value targets.” The overall strategy is not new; indeed, its architecture is historically unremarkable: interventions and invasions have been the norm ever since the United States was founded in the 18th Century. By way of just one example of conservative provenance, a study by the Congressional Research Service, covering the period 1798-2010, notes that: “This report lists hundreds of instances in which the United States has used its armed forces abroad in situations of military conflict or potential conflict or for other than normal peacetime purposes.”²²

²² Richard Grimmett, *Instances of Use of United States Armed Forces Abroad, 1798-2010* (Congressional Research Service, March 10, 2011).

More specific, regional studies reveal that U.S. intervention and invasion in the Middle East is constant.²³ Such operations are supported by an almost global array of facilities and bases - China and Russia being the main and obvious exceptions. The actual number fluctuates according to the method used for counting them and the exigencies of the Pentagon, but there appears to be a consensus that it is somewhere between 760 and 1,000 (and this excludes espionage bases, bases located in war zones, and bases in places too sensitive to name - such as those in Israel and Jordan).²⁴

The mode of intervention and invasion is now well established: "Special Ops" within which covert, or clandestine operations are preferred, at least for the period that the secrecy of offensive operations consistent with war can be maintained. To this end, in 1980, the U.S. established the Joint Special Operations Command (JSOC), an organisation with such autonomy that it can initiate certain types operations without political approval, even of the President. By 2013, this "force of choice" against "emerging threats" numbered around 66,000 personnel and was operating in 134 countries. Between 2009 and 2011 they carried out almost 2,000 raids; indeed, in the context of the killing of Osama Bin Laden in Abbottabad by Seal Team 6, it is worth noting that: it had previously entered Pakistan on 10-12 occasions; it was but one of 12 raids that day, and one of almost 2,000 raids which had been mounted between 2009 and 2011.²⁵

²³ ICH, "U.S. Intervention in The Middle East," Information Clearing House, <http://www.informationclearinghouse.info/article6308.htm> (accessed 30 November 2011).

²⁴ Ken Hanly, "Op-Ed: How many bases does U>S have globally and what is their cost?" *Digital Journal*, 16 December 2012, <http://www.digitaljournal.com/article/339184> accessed 20 February 2014; and Chalmers Johnson, "America's Unwelcome Advances," *Mother Jones*, 21 August 2008, <http://www.motherjones.com/politics/2008/08/americas-unwelcome-advances> accessed 20 February 2014.

²⁵ See: Andrew Gavin Marshall, "Empire Under Obama: America's 'Secret Wars' in over 100 Countries Around the World," <http://www.informationclearinghouse.info/article36648.htm> 25 October 2013 accessed 21 February 2014; "Tomgram: Nick Turse, Uncovering the Military's Secret Military," at [TomDispatch.com](http://www.tomdispatch.com/post/175426/tomgram:_nick_turse,_uncovering_the_military's_secret_military), http://www.tomdispatch.com/post/175426/tomgram:_nick_turse,_uncovering_the_military's_secret_military 3 August 2011, accessed 21 February 2014, and Nick Turse, "The Special Ops Surge: America's Secret War in 134 Countries," <http://www.truth-out.org/news/item/21261-the-special-ops-surge-americas-secret-war-in-134-countries> 16 January 2014, accessed 21 February 2014.

Drones are integral to the whole spectrum of special operations. As a weapons platforms that deliver bombs or missiles of one type or another, drones are but an extension of the U.S. fascination with aerial bombardment, inspired by technological advantage, and the ensuing fantasy of killing the enemy of the day's leadership in order to prevail.²⁶ In the first Administration of President Obama, the estimates are that in excess of 2,760 drone strikes were conducted against Afghanistan (1,160), Iraq (116), Libya (1,460), Somalia (16) and Yemen (12).²⁷ The number and location of the bases from which they fly is classified but marching drone capabilities with mission profiles, as well as investigative reporting indicates that by late 2011, there were at least 60 bases which could launch and / or control drone operations world-wide.²⁸

The missions given to drones by decision-makers remote from the battlefield - in, say, Creech Air Force Base, Clark County, Nevada, or the Seychelles, continue a tradition made notorious by the failed bombing campaign during the Vietnam War known as *Rolling Thunder*, in which targets were chosen by officials sitting in plushly-carpeted, air conditioned offices in Washington, D.C. Where *Rolling Thunder* targeted selected strategic assets in North Vietnam, drone strikes are directed primarily against leadership personnel deemed to be of strategic importance to the enemies of the United States. The transformation from bombing the transportation system, industrial base, and air defences of North Vietnam to assassination-by-*Predator* is hardly substantial because only the weapon of choice has changed: recall that the latter, in Vietnam (and in Central America in the 1980s), was effected by U.S.-

²⁶ For a brief account of covert drone operations in Pakistan, Yemen, and Somalia, see: The Bureau of Investigative Journalism, "Covert Drone War," <http://www.thebureauinvestigates.com/category/projects/drones/> accessed 21 February 2014.

²⁷ Nicolas J.S. Davies, "Bomber in Chief: 20,000 Airstrikes in the President's First Term Cause Death and Destruction From Iraq to Somalia," <http://www.informationclearinghouse.info/article33677.htm> 21 January 2013, accessed 21 February 2014.

²⁸ Nick Turse, *Alternet*, "America's Secret Empire of Drone Bases," <http://www.globalpolicy.org/component/content/article/153-expansion-a-intervention/50867-america-secret-empire-of-drone-bases.html> 16 October, accessed 21 February 2014.

sponsored hit squads, most infamously under the aegis of the *Phoenix Program*.²⁹

Interim Assessment and Argument Proper

In the light of the evidence to date, the drone future is actually the drone present; the beyond-2014 future will be an intensification of trends to date but not necessarily according to some sort of linear extrapolation. Other already existing trends in the Third Industrial Revolution will undoubtedly interact synergistically to create conditions of warfare that are as yet only vaguely, if at all, perceived. For now, though, it is difficult to entertain the proposition that the apparent strategic, tactical, economic, and social advantages of weaponised drones to those international actors that possess them in abundance will be significantly discounted by evidence and arguments that they are subversive of the very democratic politics that their protagonists claim they will protect. This is not to say that drones, *qua* drones, are useless and should never be considered for any role; rather it is to say that if we have a regard to the wider political-strategic mind-set, or distemper, which celebrates them, then their status is questionable: in a phrase, it inverts the superiority that law and politics should have over technology. In becoming the new weapon of choice, in so many operations, in so many theatres, and having a mind to the fact that, for the last 60 years, the operations and theatres of the U.S. (which had their own weapons of choice at the time) have been historically and legally repudiated, there is a need to state the obvious: regardless of the advantages which might accrue to drone usage in the service of legitimate national defence, they are the product of a militaristic culture joined in technophilia – in the search for the ultimate weapon in war – cheap, effective, and bloodless (where this term applies only to the user). In this context it should be recalled that the United States once hailed atomic / nuclear weapons as a form of military manpower replacement and gave to the

²⁹ Doug Noble, *Counterpunch*, “Assassination Nation: From the Phoenix Program to Predator Drones,” <http://truth-out.org/news/item/10697-assassination-nation-from-the-phoenix-program-to-predator-drones> accessed 20 February 2014, hereafter cited as Noble, “Assassination Nation;” and Michel Chossudovsky, “Terrorism with a ‘Human Face’: The History of America’s Death Squads,” <http://www.informationclearinghouse.info/article33541.htm> accessed 20 February 2014.

English language the phrase “more bangs per buck” as an expression of strategic-economic efficiency.

Leaving to one side the question as to whether the search for such a weapon is politically psychopathological, the decisions to continue using and developing drones within the confines of Pannetta’s “only game in town,” and the reasonable expectation that the Global War on Terror will not retain its exclusivity for their use, the argument which follows is that drone war to date, and the prospects for its continuance, indicate the subversion of even the politics of war which should be present in a self-critical, self-respecting democracy. In support of this, evidence from debates and discourses usually marginalized by technophilic enthusiasm and spurious appeals to the defensive privilege of the United States, strategic necessity, and claims that derived from what are held to be the exceptional nature of the times and threats, will be produced. This will include an excursion into a deeper and wider understanding of the confusions, contradictions, and myths that surround drones.

A still more comprehensive understanding of drones will then follow; this will canvass their effect on lived space and time, and the legal status of their use. Overall, the intention is to ask this question: how might we understand the collective strategic state of mind that is seemingly obsessed with drone warfare?

DRONES 2.0

Confusions, Contradictions and Myths

[1] Leon Pannetta’s endorsement of drone warfare as “the only game in town” in the war against the *Al Qaeda* leadership is undone by the record of those killed in CIA drone strikes in Pakistan: of the total number of those killed – measured in the thousands – only 2% were militant leaders; in addition some 25% of those killed have been classified as “unknown militants” – a term which implies that the CIA had no specific knowledge of who they had killed. Put another way, 98% of those killed were either “low-level militants,”

“unknown militants” – both dubious or deliberately misleading classifications - or civilians.³⁰ Drone-strike accuracy and discrimination in these terms is indistinguishable from World War II era “dumb bombs.”

The former counter-terror advisor to General David Petraeus, David Kilcullen (writing with Andrew McDonald Exum), confirmed the counter-productive nature of these strikes in an op. ed. piece in the *New York Times* as early as May 2009 when he admitted that 50 civilians were killed for every militant killed.³¹ Virtually the same advice was proffered to President Obama in 2011 by former Admiral and Director of National Intelligence, Dennis Blair;³² in 2012, by a study undertaken by the Stanford Law School and New York University’s School of Law,³³ and at the start of his second Administration by, Michael Boyle, a former member of his counter-terrorism advisers.³⁴

Many of these take place under the rubric of so-called “signature strikes” which were, and are still conducted against people who display “patterns” of behavior associated with Al Qaeda and the Taliban: the nature of this patterned behavior is an official secret but two aspects of it are clear: the precise identities of the targets are unknown to the CIA – their designation being determined by circumstantial evidence, and the provenance of the tactic goes back at least to the Vietnam War and can be found in Colin Powell’s

³⁰ Robert Greenwald, *Alternet*, “5 Myths Used to Justify Drone Assassinations,” 14 August 2013, <http://readersupportednews.org/opinion2/266-32/18896-5-myths-used-to-justify-drone-assassinations> accessed 25 February 2014, in conjunction with Peter Bergen and Jennifer Rowland, “9 Myths about drones and Guantanamo,” *CNN International Edition*, 24 May 2013, <http://edition.cnn.com/2013/05/22/opinion/bergen-nine-myths-drones-gitmo/> accessed 25 February 2014.

³¹ David Kilcullen and Andrew McDonald Exum, “Death From Above, Outrage From Below,” *The New York Times*, 17 May 2009, http://www.nytimes.com/2009/05/17/opinion/17exum.html?_r=1&pagewanted=print accessed 25 February 2014.

³² Noah Shachtman, “Former Intel. Chief: Call off the Drone War (and Maybe the Whole War on Terror),” *Wired*, 28 July 2011, <http://www.wired.com/dangerroom/2011/07/call-off-the-drone-war/> accessed 25 February 2014.

³³ CNN Wire Staff, “Drone strikes kill, maim and traumatize too many civilians, U.S. Study says,” 26 September 2012, <http://edition.cnn.com/2012/09/25/world/asia/pakistan-us-drone-strikes/> accessed 25 February 2014.

³⁴ See Nick Hopkins, “US drone attacks ‘counter-productive,’ former Obama security adviser claims,” *theguardian*, 7 January 2013, <http://www.theguardian.com/world/2013/jul/02/us-drone-strikes-afghan-civilians>, accessed 25 February 2014.

memoir, *My American Journey*. And unapologetically at that: he writes of that particular version, “Brutal? Maybe so.”³⁵

The inference of cognitive dissonance in Powell is actually a forerunner to Obama’s enthusiasm for them: notwithstanding the evidence-based advice he received throughout his first term in office (noted in the preceding paragraph) in 2013 alone it was not only sustained, but heralded in terms that he must have known were lies. In a major statement in May 2013, before an extraordinarily well-informed audience, he claimed: “by narrowly targeting our action against those who want to kill us and not the people they hide among, we are choosing the course of action least likely to result in the loss of innocent life.”³⁶ This, and his subsequent approvals, were in apparent total ignorance, or rejection of the trend in advice that was available to him, and an attentive public, from January of that year through to October from policy-makers and specialists in drone warfare who had either served his first Administration, or were still involved with the second. They included, retired General Stanley McChrystal,³⁷ a report by the National Defense University’s Joint and Coalition Operational Analysis;³⁸ former Director of Central

³⁵ See Mattathias Schwartz, “Like a Mosquito,” a review of Jeremy Scahill’s *Dirty Wars: The World is a Battlefield* (Serpent’s Tail, 2013), *London Review of Books*, 4 July 2013, pp. 13-16. Schwartz, in a footnote on p. 16, in a reference to an analysis of the international legality of signature strikes by Melbourne University Professor of International Law, Kevin Heller, notes that Heller had found an account in Powell’s autobiography of the practice of shooting at military-age males from helicopters if they wore certain clothing and looked “remotely suspicious.”

³⁶ The White House, Office of the Press Secretary, “Remarks by the President at the National Defense University,” 23 May 2013, <http://www.whitehouse.gov/the-press-office/2013/05/23/remarks-president-national-defense-university> accessed 27 February 2014.

³⁷ David Alexander, “Retired general cautions against overuse of ‘hated’ drones,” Reuters Business and Financial News, 7 January 2013, <http://www.reuters.com/article/2013/01/07/us-usa-afghanistan-mcchrystal-idUSBRE90608O20130107> accessed 27 February 2014.

³⁸ Joint and Coalition Operational Analysis (JCOA), “Drone Strikes: Civilian Casualty Considerations,” Executive Summary, 18 June 2013, http://cna.org/sites/default/files/research/Drone_Strikes.pdf accessed 27 February 2014.

Intelligence, and Obama's first Secretary of Defense, Robert Gates,³⁹ and the Chief of the air service's Air Combat Command, General Mike Hostage.⁴⁰

[2] Rather than making the United States safer, drone strikes of the type detailed above actually create enemies both within and without the country they occur in – in this case Pakistan - and they destabilise it, making an already tense region even more threatening.

[3] Economically, drones do not provide the economic saving that they are popularly held to: in a series of five articles in *Time* (27, 28, and 29 February 2012, and 1 and 2 March 2012), Winslow Wheeler of the Project on Government Oversight (POGO) that the actual cost for the MQ-9 *Reaper*, measured in 2012 dollars, was not the touted \$USD5M but \$USD120.8 M because it requires essential ancillary services and equipment beyond those required by manned aircraft which could fulfil comparable roles.⁴¹

[4] Drones, for all their sophisticated hardware such as laser guidance, are not accurate. In 2013 Spencer Ackerman reported a study undertaken by Dr Larry Lewis, a principal research scientist at the Center for Naval Analyses, a research group with close ties to the US military, studied air strikes in Afghanistan from mid-2010 to mid-2011, using classified military data on the strikes and the civilian casualties they caused. His conclusion was that “the missile strikes conducted by remotely piloted aircraft, commonly known as drones, were 10 times more deadly to Afghan civilians than those performed

³⁹ Greg Jaffe, “Former defense secretary Gates warns against lure of drone warfare,” *The Washington Post*, 23 October 2013, http://www.washingtonpost.com/national/former-defense-secretary-gates-warns-against-lure-of-drone-warfare/2013/10/23/c5bdc734-3c2d-11e3-a94f-b58017bfee6c_story.html accessed 27 February 2014.

⁴⁰ John Reed, “Predator Drones ‘Useless’ in Most Wars, Top Air Force General Says,” *Foreign Policy*, *The Complex*, 19 September 2013, http://complex.foreignpolicy.com/posts/2013/09/19/predator_drones_useless_in_most_wars_top_air_force_general_says accessed 27 February 2014.

⁴¹ The source for the data above is taken from the first two of Winslow Wheeler's five articles. Since these articles lead to each other, only the first will be cited: “1. Revisiting the Reaper Revolution,” 27 February 2012, <http://nation.time.com/2012/02/27/1-the-reaper-revolution-revisited/print/> accessed 25 February 2014.

by fighter jets.”⁴² There is no need, therefore, to elaborate on the fantasy of “bloodless war.”

[5] If drone warfare is “the only game in town” in the war against the *Al Qaeda* leadership, the proposition that emerges is this: where war – declared, undeclared and hostilities consistent with, but regarded as short of war - is concerned, we live in the time of the New Dispensation. If strikes by *Predators* and *Reapers*, not strategy and policy connected to negotiation, accommodation, compromise, and change, then politics has been abandoned in favour of lethal technology, and the comprehensive failure of efforts to weaken *Al Qaeda*’s appeal, reduce its extremist appeal, and enhance the capabilities of local forces, is explicit. The omelette, it would seem, is beyond cooking but the urge to crack eggs continues unabated.

For many, as noted earlier, the challenges to the efficacy of drone strikes such as the five noted above are generic and thus found, in one form or another, in all wars, not least those designated “asymmetric conflict” in which the strategic advantage of one side allows for aerial bombardment to comprise a major mode of offensive operations. Critique, even powerful critique, is thereby not only evaded but the evasion is given strength by making the point that (in this case) drones save lives of those that would be lost if the operations were conducted by manned aircraft, and, in any case, the critics seldom have anything alternative to offer. This, of course, misses the central question as to whether the operations, and the wars in which they are conducted, are essential for national, or international security in the first place. More significantly, in the terms of this paper, they miss the disfigurement of time and place that drones wreak, and they wilfully absolve drone strikes of their predominantly illegal character.⁴³

⁴² Spencer Ackerman, “US drone strikes more deadly to Afghan civilians than manned aircraft – adviser,” *theguardian*, 2 July 2013, <http://www.theguardian.com/world/2013/jul/02/us-drone-strikes-afghan-civilians>, accessed 25 February 2014.

⁴³ The authors acknowledge that both ISR drones (those with an intelligence, surveillance, and reconnaissance function) and attack drones have attracted a considerable body of literature within the *jus in bello* tradition, but they have left it one side in this paper on the grounds of both manageability and

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At first glance the spatial-temporal implications of drones might seem a counter-intuitive factor for critique. Military strategists, among many, have long yearned for total information awareness of the battlefield, in real time, and with a weapons capability to strike decisively, without risk to personnel, if the information indicates this to be strategically necessary.⁴⁴ Any weapons platform, or conjunction of weapons platforms that can achieve this – and drones can – are, *ipso facto*, to be welcomed, developed, and deployed. Conveniently assumed in this schedule of advantages is the unproblematic nature of, first, the geographic coverage which drones provide; second, the information which it transmits as events are seen by video relays to unfold – what, for example, does the drone transmit back to its operator? And finally, the right of the drones to be where they are, at the time they are, and to attack when ordered as though, somehow, their current use by the United States is, if not to be welcomed, than at least accepted as one of the many accommodations to power politics that the state system is required to make regardless of its implications for international law.

Regarding the first, given the capabilities of drones, their operational usage to date, and reports of those in various stages of research and development, the geographical transformation is aptly captured in the subtitle of Jeremy Scahill's forensic analysis of the covert wars of the US following 9/11: "the world is a battlefield."⁴⁵ This conclusion is drawn from the predicate logic that of the Global War on Terror – aptly defined as a campaign "against an abstract noun and unknown enemy:" its enemies are distributed universally

the belief that the case which the paper seeks to make is sufficiently served by what it does include. Besides, to cover the claims and counter-claims relating to the ethics of drone warfare under *jus ad bellum* and *jus ad bello* would probably not suffice given that drones are deployed in the twilight category which Michael Walzer terms *jus ad vim* – the just use of force short of war.

⁴⁴ It is acknowledged that, following the attacks of 9/11, the U.S. Information Awareness Office operated a programme designated Total Information Awareness (TIA) as part of the infrastructure in the Global War on Terror. The term is used here in lower case to indicate the equivalent concept – which is basically an attempt to collect relevant data that would facilitate efforts at predictive analysis of, and timely and collaborative action against the terrorist enemies of the United States.

⁴⁵ Jeremy Scahill, *Dirty Wars: The World is a Battlefield* (New York: Nation Books, 2013).

if not equally. By extension, if the means exist to monitor these enemies - real, perceived, or imagined – and the additional means exist to strike if they are considered a “clear and present danger,” then national security makes action imperative. Large tracts of the world’s surface according to this formulation, even those organised as states that are notionally allied to the U.S., are composed of threats, adversaries and enemies. Their antagonisms are such that an end to hostilities is difficult, if not impossible to contemplate in strategically foreseeable time – defined as 10 - 20 years from the present - as indicated in 2013 Senate hearings by Michael Sheehan, Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict.⁴⁶ This war, therefore, is permanent because any declared war against a tactic and a temperament is designed to be exactly that; it institutionalises both, a suspicion and a disposition, which in turn are reciprocated. It is, in philosophical context, the world of war that Thomas Hobbes wrote of:

For War, consisteth not in Battell onely, or the act of fighting; but in a tract of time, wherein the Will to contend by Battell is sufficiently known: and therefore the notion of Time, is to be considered in the nature of Warre

In this, the United States, then, is committing strategic nonsense: strategic sense acknowledges the finitude of resources and requires, therefore, that national strategy, which will perforce include the defence of the national territory and the promotion of other national interests, conform to the limitations imposed, and these are many: political, social, psychological, economic, geostrategic, legal. It is well-founded truism that “Everywhere” cannot be defended; indeed, to defend everywhere is ultimately to defend “Nowhere.” Invariably, overstretch rules. The closest the United States has come to recognise this is in its decision to project force by drone warfare: Notionally defending “Everywhere” is confused with offended “Everywhere.”

⁴⁶ Glenn Greenwald, “Washington Gets Explicit: It’s ‘War on Terror’ is Permanent,” Information Clearing House, 17 May 2013, <http://www.informationclearinghouse.info/article34985.htm> accessed 27 February 2014.

Decision-making time is a companion casualty, although it is conceded that this is not for the first time in recent history. Once the intercontinental transit times of ballistic missiles became measured in (approximately 37) minutes, and those of theatre nuclear missiles in periods significantly less (12 minutes), any suggestion that a range of reactions could be discussed in any meaningful way was nonsense. The contribution of drones to this situation is that they present an image of a target that is described as “high-value,” and elusive but through a technology window, immediately available for execution. At the back of decision-makers’ minds is the oft-repeated account found in George Tenet’s memoir, *At the Center of the Storm*: he recounts how, on the maiden flight of the *Predator* drone in September 2000, it transmitted an image of “a tall man in flowing white robes” in a compound just outside Jalalabad, Afghanistan. He then writes: “While the resolution was not sufficient to make out the man’s face, I don’t know of any analyst who didn’t subsequently conclude that we were looking at (Osama bin Laden).” And then ruefully recalls that, “As technologically dazzling as that was, it was frustrating in almost equal measure. Yes, we might have been looking at (bin Laden), but we were not in a position to do anything about it.”⁴⁷

Now that, courtesy of attack and dual-capable drones, something can be done about it, but that merely opens up another range of problems. Two have already been identified and referred to in these pages - namely the ability to successfully attack a person or object that has been designated as a target but not to know who, or what it is with the required precision that would warrant its destruction in the first place, and the killing of non-combatants whose misfortune it is to be in lethal proximity to the designated target. The third relates to what the attack itself is predicted on - thus the question what it is that remote operators and decision-makers see when they unleash lethal force upon a target?

⁴⁷ George Tenet, *At the Center of the Storm: The CIA During America’s Time of Crisis* (New York: Harper Perennial, 2008), as cited in Robert Windrem, “How the Predator went from eye in the sky to war on terror’s weapon of choice,” NBC News, 5 June 2013, http://investigations.nbcnews.com/_news/2013/06/05/18780716-how-the-predator-went-from-eye-in-the-sky-to-war-on-terrors-weapon-of-choice accessed 28 February 2014.

Tenet's account is very relevant: the image of a "a tall man in flowing white robes" did not reveal, beyond reasonable doubt, that he was Osama bin Laden; nevertheless, had the means been available to kill him, and more than likely destroy the compound, the implication in Tenet's account is that the opportunity was too good to pass up and the attack would have been carried out. From the record of drone strikes in the ensuing years confirms it is clear that the real-time strike capability has not proceeded apace with the capability to recognise beyond reasonable doubt (and it would be fatuous to think that there would be reductions in associated non-combatant deaths). This is one of the least acknowledged facets of the accounts of drone warfare; indeed, for the most part, most accounts accept that what is seen on screen by the operators is an image of the real enemy. A representative example is the treatment afforded U.S. Air Force Colonel Matt Martin's, *Predator: The Remote Control Air War over Iraq and Afghanistan: A Pilot's Story*.⁴⁸ The Amazon site for it contains the following appreciation:

Matt J. Martin is considered a "top gun" in the world of unmanned aerial vehicles (UAVs). The Nintendo generation has taken to the battlefields of Iraq and Afghanistan where remotely controlled aircraft are killing America's enemies and saving American lives.⁴⁹

In his book, Martin recounts, operating a drone is "almost like playing the computer game *Civilization*," or experiencing the action in "a sci-fi novel." After a mission which required him to navigate his drone to a technical college being occupied by insurgents in Iraq, he recalls being "electrified" and "adrenalized," because "we had shot the technical college full of holes, destroying large

⁴⁸ Charles W. Sasser and Matt J. Martin, *Predator: The Remote Control Air War over Iraq and Afghanistan: A Pilot's Story* (Zenith Press, 2010).

⁴⁹ http://www.amazon.com/Predator-Remote-Control-Afghanistan-Pilots-Story/dp/0760338965/ref=sr_1_1?s=books&ie=UTF8&qid=1393546080&sr=1-1&keywords=Matt+Martin accessed 28 February 2014.

portions of it and **killing only God knew how many people.**“ Only after time to reflect did he “realize the horror.”⁵⁰

In a review of *Predator*, Christian Cary writes:

The eerie acuity of vision afforded by the Predator’s multiple high-powered video cameras enables him to watch as the objects of his interest light up cigarettes, go to the bathroom, or engage in amorous adventures with animals on the other side of the world, never suspecting that they are under observation as they do.⁵¹

There is nothing here of the command confusion and “tunnel vision” which are integral and regular conditions of drone operations (especially at night). In a recent article, relying on first-hand accounts by US Air Force A-10 *Lightning* pilots speaking in their own names, Andrew Cockburn details a microcosm of some of the principal problems which arise with the reliance by remote operators and commanders on video feeds and drones. Early in the piece there is an account of a mission being carried out by the A-10s in which they were tasked to provide “close air support” to troops allegedly under fire by a large enemy force in Paktia Province, Afghanistan, in May 2012. After being sent to three grid references and finding no action, they were redirected to a fourth which the pilots again reported was devoid of anything hostile, or resembling military activity – just a farm building, people and animals. Nevertheless, they were ordered by a remote commander, who was relying on the very same A-10-generated video / infra red feed, to attack the building and the people despite the reported observations by the flight commander, who also the benefit naked eye sight, that it was guilty of nothing but displaying “normal patterns of life.”

When the A-10s refused to attack, a frustrated remote commander then ordered a B-1 bomber that had volunteered its services to do so even though it

⁵⁰ Glenn Greenwald, “Bravery And Drone Pilots,” *Salon*, 12 July 2012, <http://www.informationclearinghouse.info/article31828.htm> accessed 7 March 2014.

⁵¹ As cited in Ralph Nader, “A World of Lawlessness and Chaos: As the Drone Flies,” Information Clearing House, 28 September 2011, <http://www.informationclearinghouse.info/article29243.htm> accessed 28 February 2014.

was, in terms of available information, in a vastly inferior position - flying way above the situation, having to rely on video displays of lower resolution than the A-10s, and ground instructions to make its attack. It did so, however, and obliterated the parents and five of seven children of an innocent family.⁵²

The article also details other occasions when the reliance on video / infra red alone would have produced the same consequences because these “often supply a false clarity to preconceived notions.” One pilot described the significance of misidentification in these terms: “on the screen, the only way to tell a child from an adult is when they are standing next to each other. Otherwise everyone looks the same.”⁵³ But this is not the end of the problems: video feeds have been shown to proliferate command and control contradictions. According to another senior and experienced officer, when, during *Operation Anaconda* in 2002, a *Predator* drone streamed its infra-red pictures, which went to U.S. military installations around the globe, it unleashed “a flood of contradictory orders from a hodgepodge of far-flung officers, all of whom believed that had total ‘situational awareness’ of the battle” because it was taken for granted that video streams were superior to human observation.⁵⁴ What the pilots have become acutely aware of is the reduction which video and infra red impose on its users:

If you want to know what the world looks like from a drone feed, walk around for a day with one eye closed and the other looking through a soda straw. It gives you a pretty narrow view of the world.⁵⁵

You can *find* people with the targeting pod, but when it’s zoomed in, I’m looking at a single house, not at anything else. I can see people standing around a house. Are they hiding? What are they hiding from?

⁵² Andrew Cockburn, “Tunnel Vision: Will the Air Force kill its most effective weapon,” *Harper’s Magazine*, February 2014, pp. 45-46 (hereafter cited as Cockburn, “Tunnel Vision.”)

⁵³ Ibid.

⁵⁴ Ibid, p. 49.

⁵⁵ Ibid.

You can put all that together. If you're looking through the soda straw, you don't know everything else that's going on around them.⁵⁶

And a weapons designer cautioned:

People just don't realize that high-definition video isn't good enough to show the subtle stuff you've got to see to keep from hitting your own guys or killing civilians.⁵⁷

Recent research, furthermore, is bring to light more evidence that challenges the legality (and ethicality) of remote killing. In the first study of its kind, undertaken by the US Department of Defense, drone operators have been found to get stress disorders such as depression, anxiety, and post-traumatic stress at the same rate as pilots of manned aircraft. The causes for this – which are at the level of personal collapse - are yet to be fully determined but are thought by independent specialists to be a combination of: the need to witness combat violence on live video feeds, working in isolation or under inflexible shift hours, juggling the simultaneous demands of home life with combat operations, and dealing with intense stress because of crew shortages.⁵⁸ A understandable consequence of this is that an unspecified number of drone operators are falling asleep while on duty, but the experimental response is less than understandable because of the Milgram-esque overtones it resonates with: “noninvasive brain stimulation” – running light doses of electric current through specific regions of the brain in order to alertness.⁵⁹

⁵⁶ Ibid, p. 50.

⁵⁷ Ibid, p. 49.

⁵⁸ James Dao, “Drone Pilots Are Found to Get Stress Disorders Much as Those in Combat Do,” The New York Times, 22 February 2013, <http://www.nytimes.com/2013/02/23/us/drone-pilots-found-to-get-stress-disorders-much-as-those-in-combat-do.html> accessed 7 March 2014, and “Drone pilots on the edge of collapse,” RT, 19 December 2011, <http://rt.com/usa/drone-pilots-us-stress-193/> accessed 7 March 2014.

⁵⁹ James Vincent, “Pentagon Experiments With Electric Shocks To Keep Drone Pilots Awake,” GlobalResearchreport.com, undated as at 7 March 2014 but noted, “13 days ago,” <http://globalresearchreport.com/2014/02/22/pentagon-experiments-with-electric-shocks-to-keep-drone-pilots-awake/#sthash.zZBVM7TQ.dpbs> accessed 7 March 2014.

What is described above is a form of dangerous technology-induced hubristic remoteness. The territory of the adversary, threat, or enemy is a vista covering the surface of the earth with the obvious exceptions of China and Russia. It is, as was once said of the deserts in Iraq during *Operation Desert Storm*, a “target-rich environment.” In the spirit of technology-as-force multiplier and outsourced thinking machines, and video and infra red sensors as threat detectors, human doubt and the need to reflect are unwelcome because they reproach the battlefield’s time-urgency and are, besides, unscientific. The pilot of a manned aircraft is seen as a stubborn resistor attempting to delay or block the consummation of a research, development, deployment and command process costing billions by insisting that the kill order not be outsourced to what Michael Shapiro refers to as “informational and visioning prostheses” incapable of ethical thinking (despite the attempts to provide them with algorithms to do so).⁶⁰

Little thought is given to the fact that time-urgency is actually the human product of learned impatience in a world of manufactured speed. Decision-making time is therefore compressed but not through the exigencies of the situation. Compression here, and the abandonment of the need for second thoughts is the result of disconnection. Objects designated as targets are to be struck immediately because they can be and because “a decision-making chain that frequently runs all the way up to the Commander-in-Chief,” advised by specialists of various types who are, like him, “epistemically, physically, and perceptually remote,” has appropriated “security-oriented anthropology” to justify its signature targeting. This is no environment for the only observer-participant with access to the “big picture” - a recalcitrant pilot of essentially “proletarian” status, and historically on the cusp of system redundancy.⁶¹

This condition exists alongside, and in truth complements that other loss of contact with reality and overweening sense of national competence, capabilities, and power which is the asserted “right” of the United States to

⁶⁰ Michael Shapiro, *War Crimes, Atrocity, and Justice* (forthcoming, Polity. 2014). The writers are indebted to Michael Shapiro making available the Introduction, “What Does a Weapon See?” The references to this work are all from that chapter. Hereafter this source cited as Shapiro, “What Does a Weapon See?”

⁶¹ *Ibid.*, and Cockburn, “Tunnel Vision,” pp. 45-50.

operate drones in the way it has, and is, when there is little support outside of the Obama Administrations' legal counsels that it is little more than a broadly disseminated, but disingenuous fiction. This conclusion applies to both the right claimed under domestic U.S. law, and international law. This is to say, that, regardless of the putative efficacy of drone strikes, their current justification for infringing national sovereignty and attacking targets abroad by successive Administrations in the United States fails in both spheres.

In the first instance, the ordering of drone killings against American citizens, in foreign lands, who have not been afforded due process – is essentially an act of premeditated murder. It is a crime in all fifty states, and under federal criminal law. More over, it is a serious breach of the Fifth Amendment of the U.S. Constitution although, since 2012, the Obama Administration in general, and Attorney-General Eric Holder in particular, have asserted that “due process” in no way implies “judicial process” (customarily a trial by jury, in public). Where such murder takes place without warning, secretly, and for political reasons, the crime in question is more accurately defined as assassination – a legal dictionary definition rejected by the Obama Administration, no doubt informed by, and accepting of two Executive Orders banning it: President Gerald Ford's Executive Order 11905 of 1976, and President Reagan's Executive Order 12333, which makes the proscription even clearer. Semantics and Jesuitical evasions notwithstanding, the Obama Administration admits that four such killings have been taken place in the last nearly three years.⁶² Ito this should be added the obvious proposition; namely, that if the killing of an American citizen takes place in a foreign country, then there is a *prima facie* case for other crimes also being committed by the United States.

Most drone killings, however, are of foreign nationals: to reprise the situation, most of the casualties are civilian non-combatants who are killed by weapons launched from platforms which invariably violate the territorial integrity and sovereignty of another state, and in conditions short of war. They are in the first instance, therefore, in breach of Article 51 of the United Nations

⁶² Peter Van Buren, “Drone Killing the Fifth Amendment,” *Huff Post Politics*, 17 February 2014, http://www.huffingtonpost.com/peter-van-buren/drone-killing-fifth-amendment_b_4802439.html accessed 3 March 2014.

Charter (itself incorporated into US law by Senate ratification in 1945), which hold that military action is authorised only when responding to an “armed attack.” Beyond the Charter, their use has been found to violate a wide range of international law, including several provisions of international humanitarian law, and the learned analyses and opinions making this case now comprise an almost overwhelming corpus of critique. This is the case whether a “composite perspective” is adopted – that is, an approach to the drone debate that concerns itself with the most comprehensive range of issues utility, foreign and security policy questions, accountability, ethics, scope for controls, as well as legality – or where the focus tend to be exclusively legal, or where organisations of quite different orientations to each other report their findings.

Thus, a more than representative compendium of the convergence of findings is to found in the following nine works:

[1] A Discussion Paper published by the Centre for Strategic Studies at Victoria University of Wellington, in New Zealand (the “composite perspective”).⁶³

[2] & [3] Reports by United Nations special rapporteurs, to the Human Rights Council and subsequently the General Assembly, respectively, on extrajudicial, summary and arbitrary executions.⁶⁴

[4] A joint report by the International Human Rights and Conflict Resolution Clinic of the Stanford Law School and the Global Justice Clinic of the New York University School of Law on death, injury and trauma to civilian victims of drone attacks in Pakistan.⁶⁵

⁶³ Roderic Alley, *The Drone Debate: Sudden Bullet or Slow Boomerang?* Discussion Paper No. 14/13 (Wellington: Centre for Strategic Studies, Victoria University of Wellington) 2013, <http://www.victoria.ac.nz/hppi/centres/strategic-studies/documents/DP1413OnlineVersion.pdf> accessed 4 March 2014.

⁶⁴ United Nations, General assembly, Human Rights Council, *Report of the Special Rapporteur on extrajudicial, summary or arbitrary executions, Philip Alston*, 28 May 2010, <http://www2.ohchr.org/english/bodies/hrcouncil/docs/14session/A.HRC.14.24.Add6.pdf> accessed 4 March 2014, and United Nations, General Assembly, Human Rights Council, *Report of the Special Rapporteur on extrajudicial, summary or arbitrary executions, Christof Heyns*, 13 September 2013, http://www.ohchr.org/Documents/HRBodies/HRCouncil/RegularSession/Session23/A-HRC-23-47_en.pdf accessed 4 March 2014.

⁶⁵ International Human Rights and Conflict Resolution Clinic, Stanford Law School, and the Global Justice Clinic, New York University School of Law, *Living Under Drones: Death, Injury, and Trauma to*

[5] An analysis fusing strategic utility with international law also focused on Pakistan, by the Brussels-based International Crisis Group.⁶⁶

[6 & 7] Two reports published in conjunction by Amnesty International and Human Rights Watch that conclude that, in both Pakistan and Yemen, international law has been broken and grounds exist for the breaches to be classed as war crimes.⁶⁷

[8] An intensive analysis of drone murders in Yemen by the human rights organisation, Alkarama, which concludes unequivocally that extrajudicial executions and targeted killings are illegal.⁶⁸

[9] A recent investigation by Human Rights Watch confirms the findings in the foregoing relating to Yemen, where attacks continue to fail to comply with rules promulgated in May 2013 by President Obama.⁶⁹

The findings in these documents are not, however, the limit of the legal issues which drone strikes bring to the fore. Specifically, they make more urgent the need to develop concepts, conventions, and laws that will define political and legal responsibility for the atrocities and war crimes in the context of the byzantine complexities posed by executive government, the marginalisation of legislatures, and autonomy in the military command and control system that have increasingly bedevilled the application of law over the last century. By way of a comparison: in the Errol Morris documentary on the

Civilians From US Drone Practices in Pakistan, September 2012, <http://livingunderdrones.org/> accessed 4 March 2014.

⁶⁶ International Crisis Group, *Drones: Myths and Reality in Pakistan*, Asia Report No 247, 21 May 2013, <http://www.crisisgroup.org/~media/Files/asia/south-asia/pakistan/247-drones-myths-and-reality-in-pakistan.pdf> accessed 4 March 2014.

⁶⁷ Amnesty International, “*Will I Be Next?*” *US Drone Strikes in Pakistan* (London: Amnesty International, 2013), <http://www.amnestyusa.org/research/reports/will-i-be-next-us-drone-strikes-in-pakistan> accessed 4 March 2014, and Human rights Watch, “*Between A Drone And Al Qaeda: The Civilian Cost of US Targeted Killings in Yemen*,” 2013, <http://www.hrw.org/reports/2013/10/22/between-drone-and-al-qaeda> accessed 4 March 2014.

⁶⁸ Alkarama Foundation, *License To Kill: Why the American drone War on Yemen Violates International Law* (2013), http://en.alkarama.org/index.php?option=com_content&view=article&id=1157:yemen-license-to-kill-report&catid=66&Itemid=215 accessed 4 March 2014.

⁶⁹ Greg Miller, “Report: Deadly drone strike in Yemen failed to comply with Obama’s rules to protect civilians,” *The Washington Post*, 20 February 2014, http://www.washingtonpost.com/world/national-security/report-deadly-drone-strike-in-yemen-failed-to-comply-with-obamas-rules-to-protect-civilians/2014/02/19/46bc68f2-997d-11e3-b931-0204122c514b_story.html accessed 4 March 2014.

career of former Defense Secretary, Robert S. McNamara, when the subject is asked to reflect on his role as a senior operations analyst and the decision to fire-bomb Japanese cities in World War II, his response is, “I was part of a mechanism that in a sense recommended it.”⁷⁰ Notwithstanding McNamara’s evasion – he refuses, on this and on his far more significant (and duplicitous) decision-making role in the Vietnam War – to use terms such as guilt and / or responsibility – because these are to be, or can be referred to an implicitly non-anthropomorphic entity which is all-enveloping. “In a sense” he is right; he was a component, albeit one of many important components, of a war-making organism and thus was not wholly guilty, even if in all honesty he was surely partly responsible. On camera, he admits to agreeing with General Curtis LeMay, the US bomber commander, that they could both have been prosecuted for war crimes had the Allies lost the war.⁷¹

The implication here is that such a vast array of political leaders, policy-makers, decision-makers, and military commanders is involved in the conduct of war, many of them operating under secret orders, or by taking advantage of ambiguities and silences in the law, that the ultimate question of guilt and accountability are diffused, and thereby attenuated. As Cockburn’s previously cited essay, “Tunnel Vision,” makes clear of current operations, the influences brought to bear on pilots refusing to bomb what they classify as a non-hostile target set come from far and wide, many of them neither well informed nor explicitly identifiable in the chain of command. For all of that, the legal logic requires that all should be charged to the extent they were complicit; the political logic, the rationale that dominated, is that this would necessarily indict the whole system and that is unthinkable.

The comparison with present circumstances is best illustrated by expressions that occasionally seep out of Washington, DC, and the attitudes that these embody. Gone is any reflection upon even the possibilities that international law is relevant, and the Global War On Terror might be the rubric under which war crimes have been routinized. Writing in 2004, David Kilcullen then on secondment to the United States Department of Defense for writing

⁷⁰ Shapiro, “What Does a Weapon See?”

⁷¹ Ibid.

the counter-terrorism strategy for the *Quadrennial Defense Review* that appeared in 2006, advocated the following in an article published in the *Journal of Strategic Studies*: “A global Phoenix program . . . would provide a useful start point” for “a new strategic approach to the Global war on Terrorism.”⁷² Given that Kilcullen’s academic background in counter-insurgency would have informed him that this CIA-orchestrated, secret, large-scale, counter-insurgency program to decapitate the VCI (Viet Cong Infrastructure) became notorious for: assassination; indiscriminate killing of innocent civilians and mere suspects; outright murder; score-settling; corruption; counter-productivity, and genocidal tendencies – to the extent that it became known as “an instrument of mass political murder . . . sort of Vietnamese Murder Inc.”⁷³ – his proposal is astonishing in the light of its strategic bankruptcy. But he, and they, seem subsequently to clearly have impressed the strategic elite in Washington, DC, and been viewed as viable policy options.⁷⁴

In the same vein, a counter-terrorism contemporary of Kilcullen’s, prominent commentator and former chief of the Osama bin Laden unit at the CIA’s Counterterrorist Center, Michael F. Schueur, spoke of the need for an all means necessary (and available) strategy, the redundancy of existing constraints and inhibitions, and the need for the unfettered use of “drones, Special Forces, covert action, and what’s left of rendition.” He lamented the loss of will to use “annihilating military force:”

⁷² As cited in Noble, “Assassination Nation,” note 32.

⁷³ Douglas Valentine, *The Phoenix Program* (William Morrow, 1990), p. 313.

⁷⁴ A consolidated resumé shows that in 2005-2006 he was appointed Chief Strategist in the State Department’s Office of the Coordinator for Counterterrorism and worked in-country in Pakistan, Afghanistan, Iraq, the Horn of Africa, and Southeast Asia. He also assisted in the design and implementation of both the *Regional Strategic Initiative* and the United States Army’s Filed Manual 3-24, *Counterinsurgency* (in which he authored an Appendix entitled, “A Guide to Action”), published in 2006. In the following two years he was on the personal staff of General Petraeus in Iraq as the Senior Counterinsurgency Advisor responsible for planning and executing related operations; in the same general period he also served on the staff of Secretary of State, Condoleezza Rice, as Special Advisor for Counterinsurgency, and as a member one the experts reviewing US strategy relating to Afghanistan and Pakistan. In 2009-2010 he was the Counterinsurgency Advisor to NATO and ISAF (the International Security Assistance Force) in Afghanistan.

First, *straight to the scrap heap for much of international law* and many of its pedantic advocates. We now live under an international law architecture that was made for the stability of the Cold War, one that is *too restrictive and effeminate* for the age of barbarity and instability in which we now reside. The need for lethality is increasing with each passing month, and *restrictions on the use of that lethality need to be shucked* (emphasis added).⁷⁵

The significance of these proposals is not that, as might be inferred from their tone, US strategy needed them but, rather, the fact that the reports and other analyses cited in this paper reveal a history of the Global War on Terror which is replete with their implementation and deadly consequences in Afghanistan, Libya, Pakistan, Somalia, Yemen, and North Africa.

Conclusion: The Political Psychopathology of Drones

The proposal that drone warfare is evidence of political psychopathology will inevitably attract dissent if not outright denunciation for several imaginable reasons, not the least being that the phenomena at hand relate to acts committed over an extended period by a significant number of people thought to be more than intellectually capable. Frequency of commission has determined that they are unexceptional and, in any case, convention holds that mental disorder applies to individuals rather than collectivities, especially collectivities at the highest levels of government and the armed forces of the most powerful nation in history. The problem with this convention is that it is undone by reasonable inferences taken from the evidence. And the evidence relates to a weapon that, when reviewed historically, creates a world of increasing lawlessness and political chaos within an ecology of perpetual war. The first, obvious and general proposition, therefore, is that the sustained series of decisions referenced in the preceding pages and taken by successive Administrations with respect to drone warfare, have effectively normalised this condition and are politically psychopathic because they

⁷⁵ Michael F. Scheuer, Response in Patrick B. Pexton, "Are Drone Strikes The Only Game In Town?" National Security Experts Blog, 11 January 2010, <http://security.nationaljournal.com/2010/01/are-drone-strikes-the-only-gam.php?rss=1> accessed 5 March 2014.

emphasise three observable characteristics of psychopathy that, appropriately, are commonly utilised in criminal justice settings:

Boldness: Low fear including stress-tolerance, toleration of unfamiliarity and danger, and high self-confidence and social assertiveness.

Disinhibition: Poor impulse control including problems with planning and foresight, lacking affect and urge control, demand for immediate gratification, and poor behavioral restraints.

Meanness: Lacking empathy and close attachments with others, disdain of close attachments, use of cruelty to gain empowerment, exploitative tendencies, defiance of authority, and destructive excitement seeking.⁷⁶

These conditions, moreover, are maintained regardless of evidence, analysis, and advice that indicate the alleged advantages of drone warfare are chimerical, even delusional.

Wilful ignorance of recent, relevant history is also to the fore and reflects the collective succumbing to the temptation posed by technological superiority. Too easily forgotten it seems are these facts from strategic history:

[1] The United States military, even according to many of its staunchest supporters, is prone to “technological faith-healing” – the pursuit of “technological advance for its own sake” without acknowledging either actual combat experience” or “real world constraints” on the battlefield.

[2] Technology has seldom been decisive in determining the outcome of a war.

[3] Technology is not a synonym for combat effectiveness.

[4] Technological advantage is seldom long-lasting and counter-measures tend to proceed faster, over the long term,

⁷⁶J. L. Skeem, D.L.L. Polaschek, C.J. Patrick, S.O. Lilienfeld, (2011). "Psychopathic Personality: Bridging the Gap Between Scientific Evidence and Public Policy," *Psychological Science in the Public Interest* 12 (3): 95–162; and Christopher, Patrick, Don Fowles, Robert Krueger, "Triarchic conceptualization of psychopathy: Developmental origins of disinhibition, boldness, and meanness," *Development and Psychopathology* (Cambridge: Cambridge University Press) 21 (3): 913–938.

than the technologies that protect the originally superior technology;

[5] The United States military has a record of being either soundly defeated, or being unable to defeat, a technologically inferior adversary – Vietnam and Afghanistan, respectively.⁷⁷

Also forgotten are the inherent dangers of technological hubris that go beyond the local theatre of war to threaten international peace and security. Three of particular significance come to mind in the present context of restive actors on the periphery of an assertive Russia and western allies lead by the United States bent on sermonising to it in tones reminiscent of the Cold War. Should we not recall that nearly 54 years ago, the impunity with which the CIA had exploited its technological advantage over Soviet air defences by U-2 intelligence gathering flights came to an abrupt end? Francis Gary Powers was shot down deep into Soviet airspace on 1 May 1960 and was subsequently tried and imprisoned. It created not only a crisis in the relations between the United States and the Soviet Union, but wrecked the upcoming four-power summit in Paris, and set back the cause of détente for several years.⁷⁸

Under the water, the period of technological superiority lasted much longer but was, if anything, fraught with more potential danger. Throughout most of the Cold War, the United States Navy sent specially equipped submarines into the heart of Soviet waters to tap the crucial underwater communications cables of the Soviet Navy or retrieve pieces of weapons that had been tested and fallen to ocean floor. At times these submerged submarines operated with the same level of impunity that the U-2 enjoyed – they were, for example, entering Vladivostok harbour, and in other cases, came as close as 30-40 yards from a Soviet Navy pier. But as with the U-2

⁷⁷ Jeffrey Record, *Beyond Military Reform: American Defense Dilemmas* (Washington: Pergamon-Brassey's, 1988), pp. 117-131. The example of Afghanistan is not in this 1988 work, but has been added by the authors on the grounds that it is consistent with the claims in the original and empirically verifiable.

⁷⁸ See: Francis Gary Powers with Curt Gentry, *Operation Overflight: The U-2 Spy Pilot Tells His Story For The First Time* (London: Hodder and Stoughton, 1970), and Michael R. Beschloss, *Mayday: Eisenhower, Krushchev and the U-2 Affair* (New York: Harper & Row, 1986).

overflights, the development of Soviet countermeasures eroded this edge over time, eventually to the point where US submarines were attacked (without apparent success) and Moscow found US entreaties for arms control to be little more than exercises in hypocrisy.⁷⁹

At the level of nuclear strategy, in 1970, the United States deployed the Minuteman III land-based intercontinental ballistic missile with multiple independently targetable re-entry vehicles (MIRVs) - warheads - thereby rapidly increasing the US's deployable nuclear arsenal, rendering the bases of nuclear deterrence null and void, because of the possibility that it would have enough bombs to destroy virtually all, or most, of the Soviet Union's nuclear weapons in a first strike and negate any retaliation. The Soviet Union's response was to engage in a MIRV programme – effectively an arms race within an arms race with its own complexities – that in turn created ongoing barriers to arms control between the super powers

The unified system comprising remotely-controlled aircraft, real-time visual surveillance, and a networked sensor-shooter system is, therefore, but the latest in a series of technologically induced reflexes. Although the use of drones for bombing might be new, bombing itself has been a constant fixation of US strategy since aircraft of sufficient capabilities made it possible during World War II. Over the intervening period the appeal of “shock and awe” has become irresistible through the “increasing isolation of the military actor from his target,” and the transference of the risk of combat almost exclusively to the target. In a phrase, the political restraints against the use of deadly violence have become minimal at best. It matters not that the strategic bombing surveys conducted after each war, especially including the Global War on Terror, give no support to its adherents.⁸⁰ If there is a lesson available from this campaign it is the contrary to that which is being asserted: military force in general, and bombing in particular, are ineffective as instruments of counter-terrorism notwithstanding the transient self-affirmation they might bestow.

⁷⁹ Sherry Sontag and Christopher Drew with Annette Lawrence Drew, *Blind Man's Bluff: The Untold Story of American Submarine Espionage* (New York: Public Affairs, 1998).

⁸⁰ Derek Gregory, “The American Way of Bombing,” *openDemocracy*, 27 October 2011, <http://www.opendemocracy.net/derek-gregory/american-way-of-bombing> accessed 6 March 2014.

And this is just the beginning. It would be extremely foolish to think that countries that can acquire drones will subject themselves to a self-denying ordinance. The evidence to date suggests otherwise. In a replay of Cold War arms control manoeuvres once other major powers had acquired nuclear weapons, President Obama is now an advocate of global guidelines for drones. What this means is entirely unclear: are they, for instance, to establish something as egregious as standards for targeted killings and strikes?⁸¹ The danger is that the current political psychopathology of drones will extend well into the future; worse, it will conform to the zeal for them which a recently returned Royal Australian Air Force drone commander exhibited after a tour of duty “flying” Israeli *Heron* drones from Kandahar:

The capability? It's like crack cocaine, a drug, for our guys involved – just can't get enough of it.⁸²

⁸¹ Tabassum Zakaria, “As drone monopoly frays, Obama seeks global rules,” Reuters, Business and Financial News, 17 March 2013, <http://www.reuters.com/article/2013/03/17/us-usa-security-drones-idUSBRE92G02720130317> accessed 6 March 2014. His successors, if not him, will also face the need to provide legislation for domestic drones which, if current trends continue will very soon be counted in the *millions*.

⁸² Marc Corcoran, “The kill chain: Australia’s drone war,” ABC News, 27 June 2012, <http://www.abc.net.au/news/2012-06-08/australias-drone-war-in-afghanistan/4058058> accessed 6 March 2014.

APPENDIX 1

Beyond Bayonets and Battleships: Space Warfare and the Future of US Global Power

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By Alfred McCoy, Tom Dispatch | News Analysis



Artist's conception, circa 2008, of the U.S. Falcon Hypersonic Cruise Vehicle, an unmanned aircraft that will fly at an altitude of twenty miles and destroy targets almost anywhere in the world within an hour. (Image:: Defense Advanced Research)

It's 2025 and an American "triple canopy" of advanced surveillance and armed drones fills the heavens from the lower- to the exo-atmosphere. A wonder of the modern age, it can deliver its weaponry anywhere on the planet with staggering speed, knock out an enemy's satellite communications system, or follow individuals biometrically for great distances. Along with the country's advanced cyberwar capacity, it's also the most sophisticated militarized information system ever created and an insurance policy for U.S. global dominion deep into the twenty-first century. It's the future as the Pentagon imagines it; it's under development; and Americans know nothing about it. They are still operating in another age. "Our Navy is smaller now than at any time since 1917," **complained** Republican candidate Mitt Romney during the last presidential debate.

With words of withering mockery, President Obama shot back: "Well, Governor, we also have fewer horses and bayonets, because the nature of our military's changed... the question is not a game of Battleship, where we're counting ships. It's what are our capabilities."

Obama later offered just a hint of what those capabilities might be: "What I did was work with our joint chiefs of staff to think about, what are we going to need in the future to make sure that we are safe?... We need to be thinking about cyber security. We need to be talking about space."



At the dawn of space warfare, the first X-37B Orbital Test Vehicle waits for launch in the encapsulation cell of the Evolved Expendable Launch vehicle at Titusville, Florida, April 5, 2010. (Image: U.S. Air Force)

Amid all the post-debate media chatter, however, not a single commentator seemed to have a clue when it came to the profound strategic changes encoded

in the president's sparse words. Yet for the past four years, working in silence and secrecy, the Obama administration has presided over a technological revolution in defense planning, moving the nation far beyond bayonets and battleships to cyberwarfare and the full-scale weaponization of space. In the face of waning economic influence, this bold new breakthrough in what's called "information warfare" may prove significantly responsible should U.S. global dominion somehow continue far into the twenty-first century.

While the technological changes involved are nothing less than revolutionary, they have deep historical roots in a distinctive style of American global power. It's been evident from the moment this nation first stepped onto the world stage with its conquest of the Philippines in 1898. Over the span of a century, plunged into three Asian crucibles of counterinsurgency -- in the Philippines, Vietnam, and Afghanistan -- the U.S. military has repeatedly been pushed to the breaking point. It has repeatedly responded by fusing the nation's most advanced technologies into new information infrastructures of unprecedented power.

That military first created a manual information regime for Philippine pacification, then a computerized apparatus to fight communist guerrillas in Vietnam. Finally, during its decade-plus in Afghanistan (and its years in Iraq), the Pentagon has begun to fuse biometrics, cyberwarfare, and a potential future triple canopy aerospace shield into a robotic information regime that could produce a platform of unprecedented power for the exercise of global dominion -- or for future military disaster.

America's First Information Revolution

This distinctive U.S. system of imperial information gathering (and the surveillance and war-making practices that go with it) traces its origins to some brilliant American innovations in the management of textual, statistical, and visual data. Their sum was nothing less than a new information infrastructure with an unprecedented capacity for mass surveillance.



System F6, a cluster of wirelessly interconnected modules that will form an orbital U.S. satellite system impervious to enemy missile attack, shown in this artist's representation over North America, circa 2009. (Image: Defense Advanced Research)

During two extraordinary decades, American inventions like Thomas Alva Edison's quadruplex telegraph (1874), Philo Remington's commercial typewriter (1874), Melvil Dewey's library decimal system (1876), and Herman Hollerith's patented punch card (1889) created synergies that led to the militarized application of America's first information revolution. To pacify a determined guerrilla resistance that persisted in the Philippines for a decade after 1898, the U.S. colonial regime -- unlike European empires with their cultural studies of "Oriental civilizations" -- used these advanced information technologies to amass detailed empirical data on Philippine society. In this way, they forged an Argus-eyed security apparatus that played a major role in crushing the Filipino nationalist movement. The resulting colonial policing and surveillance system would also leave a lasting institutional imprint on the emerging American state.

When the U.S. entered World War I in 1917, the "father of U.S. military intelligence" Colonel Ralph Van Deman drew upon security methods he had developed years before in the Philippines to found the Army's Military Intelligence Division. He recruited a staff that quickly grew from one (himself)

to 1,700, deployed some 300,000 citizen-operatives to compile more than a million pages of surveillance reports on American citizens, and laid the foundations for a permanent domestic surveillance apparatus.

A version of this system rose to unparalleled success during World War II when Washington established the Office of Strategic Services (OSS) as the nation's first worldwide espionage agency. Among its nine branches, Research & Analysis recruited a staff of nearly 2,000 academics who amassed 300,000 photographs, a million maps, and three million file cards, which they deployed in an information system via "indexing, cross-indexing, and counter-indexing" to answer countless tactical questions.

Yet by early 1944, the OSS found itself, in the words of historian Robin Winks, "drowning under the flow of information." Many of the materials it had so carefully collected were left to molder in storage, unread and unprocessed. Despite its ambitious global reach, this first U.S. information regime, absent technological change, might well have collapsed under its own weight, slowing the flow of foreign intelligence that would prove so crucial for America's exercise of global dominion after World War II.

Computerizing Vietnam

Under the pressures of a never-ending war in Vietnam, those running the U.S. information infrastructure turned to computerized data management, launching a second American information regime. Powered by the most advanced IBM mainframe computers, the U.S. military compiled monthly tabulations of security in all of South Vietnam's 12,000 villages and filed the three million enemy documents its soldiers captured annually on giant reels of bar-coded film. At the same time, the CIA collated and computerized diverse data on the communist civilian infrastructure as part of its infamous Phoenix Program. This, in turn, became the basis for its systematic tortures and 41,000 "extra-judicial executions" (which, based on disinformation from petty local grudges and communist counterintelligence, killed many but failed to capture more than a handful of top communist cadres).

Most ambitiously, the U.S. Air Force spent \$800 million a year to lace southern Laos with a network of 20,000 acoustic, seismic, thermal, and ammonia-sensitive sensors to pinpoint Hanoi's truck convoys coming down the Ho Chi Minh Trail under a heavy jungle canopy. The information these provided was then gathered on computerized systems for the targeting of incessant bombing runs. After 100,000 North Vietnamese troops passed right through this electronic grid undetected with trucks, tanks, and heavy artillery to launch the Nguyen Hue Offensive in 1972, the U.S. Pacific Air Force pronounced this bold attempt to build an "electronic battlefield" an unqualified failure.

In this pressure cooker of what became history's largest air war, the Air Force also accelerated the transformation of a new information system that would rise to significance three decades later: the Firebee target drone. By war's end, it had morphed into an increasingly agile unmanned aircraft that would make 3,500 top-secret surveillance sorties over China, North Vietnam, and Laos. By 1972, the SC/TV drone, with a camera in its nose, was capable of flying 2,400 miles while navigating via a low-resolution television image.

On balance, all this computerized data helped foster the illusion that American "pacification" programs in the countryside were winning over the inhabitants

of Vietnam's villages, and the delusion that the air war was successfully destroying North Vietnam's supply effort. Despite a dismal succession of short-term failures that helped deliver a soul-searing blow to American power, all this computerized data-gathering proved a seminal experiment, even if its advances would not become evident for another 30 years until the U.S. began creating a third -- robotic -- information regime.

The Global War on Terror

As it found itself at the edge of defeat in the attempted pacification of two complex societies, Afghanistan and Iraq, Washington responded in part by adapting new technologies of electronic surveillance, biometric identification, and drone warfare -- all of which are now melding into what may become an information regime far more powerful and destructive than anything that has come before.

After six years of a failing counterinsurgency effort in Iraq, the Pentagon discovered the power of biometric identification and electronic surveillance to pacify the country's sprawling cities. It then **built** a biometric database with more than a million Iraqi fingerprints and iris scans that U.S. patrols on the streets of Baghdad could access instantaneously by satellite link to a computer center in West Virginia.

When President Obama took office and launched his "**surge**," escalating the U.S. war effort in Afghanistan, that country became a new frontier for testing and perfecting such biometric databases, as well as for full-scale drone war in both that country and the Pakistani tribal borderlands, the latest wrinkle in a technowar already loosed by the Bush administration. This meant accelerating technological developments in drone warfare that had largely been suspended for two decades after the Vietnam War.

Launched as an experimental, unarmed surveillance aircraft in 1994, the Predator drone was first deployed in 2000 for combat surveillance under the CIA's "Operation Afghan Eyes." By 2011, the advanced MQ-9 Reaper drone, with "persistent hunter killer" capabilities, was **heavily armed** with missiles and bombs as well as sensors that could read disturbed dirt at 5,000 feet and track footprints back to enemy installations. Indicating the torrid pace of drone development, between 2004 and 2010 total flying time for all unmanned vehicles **rose** from just 71 hours to 250,000 hours.

By 2009, the Air Force and the CIA were already **deploying** a drone armada of at least 195 Predators and 28 Reapers inside Afghanistan, Iraq, and Pakistan -- and it's only grown since. These collected and transmitted 16,000 hours of video daily, and from 2006-2012 fired hundreds of Hellfire missiles that killed **an estimated 2,600** supposed insurgents inside Pakistan's tribal areas. Though the second-generation Reaper drones might seem stunningly sophisticated, one defense analyst has **called them** "very much Model T Fords." Beyond the battlefield, there are now some 7,000 drones in the U.S. armada of unmanned aircraft, **including** 800 larger missile-firing drones. By funding its own fleet of 35 drones and borrowing others from the Air Force, the CIA has moved beyond passive intelligence collection to build a permanent robotic paramilitary capacity.

In the same years, another form of information warfare came, quite literally, online. Over two administrations, there has been continuity in the development of a cyberwarfare capability at home and abroad. Starting in 2002, President George W. Bush **illegally authorized** the National Security

Agency to scan countless millions of electronic messages with its top-secret “Pinwale” database. Similarly, the FBI started an Investigative Data Warehouse that, by 2009, held a billion individual records.

Under Presidents Bush and Obama, defensive digital surveillance has grown into an offensive “cyberwarfare” capacity, which has already been deployed against Iran in history’s first significant cyberwar. In 2009, the Pentagon formed **U.S. Cyber Command** (CYBERCOM), with headquarters at Ft. Meade, Maryland, and a cyberwarfare center at Lackland Air Base in Texas, **staffed** by 7,000 Air Force employees. Two years later, it **declared** cyberspace an “operational domain” like air, land, or sea, and began putting its energy into developing a cadre of cyber-warriors capable of launching offensive operations, such as a **variety of attacks** on the computerized centrifuges in Iran’s nuclear facilities and **Middle Eastern banks** handling Iranian money.

A Robotic Information Regime

As with the Philippine Insurrection and the Vietnam War, the occupations of Iraq and Afghanistan have served as the catalyst for a new information regime, fusing aerospace, cyberspace, biometrics, and robotics into an apparatus of potentially unprecedented power. In 2012, after years of ground warfare in both countries and the continuous **expansion** of the Pentagon budget, the Obama administration announced a leaner future defense strategy. It included a 14% cut in future infantry strength to be compensated for by an increased emphasis on investments in the dominions of outer space and cyberspace, particularly in what the administration calls “critical space-based capabilities.” By 2020, this new defense architecture should theoretically be able to integrate space, cyberspace, and terrestrial combat through robotics for -- so the claims go -- the delivery of seamless information for lethal action. Significantly, both space and cyberspace are new, unregulated domains of military conflict, largely beyond international law. And Washington hopes to use both, without limitation, as Archimedean levers to exercise new forms of global dominion far into the twenty-first century, just as the British Empire once ruled from the seas and the Cold War American imperium exercised its global reach via airpower.

As Washington seeks to surveil the globe from space, the world might well ask: Just how high is national sovereignty? Absent any international agreement about the vertical extent of sovereign airspace (since a conference on international air law, convened in Paris in 1910, failed), some puckish Pentagon lawyer might reply: only as high as you can enforce it. And Washington has **filled this legal void** with a secret executive matrix -- operated by the CIA and the clandestine Special Operations Command -- that assigns names arbitrarily, without any judicial oversight, to a classified “kill list” that means silent, sudden death from the sky for terror suspects across the Muslim world.

Although U.S. plans for space warfare remain highly classified, it is possible to assemble the pieces of this aerospace puzzle by trolling the Pentagon’s websites, and finding many of the key components in technical descriptions at the Defense Advanced Research Projects Agency (DARPA). As early as 2020, the Pentagon hopes to patrol the entire globe ceaselessly, relentlessly via a triple canopy space shield reaching from stratosphere to exosphere, driven by drones armed with agile missiles, linked by a resilient modular satellite

system, monitored through a telescopic panopticon, and operated by robotic controls.

At the lowest tier of this emerging U.S. aerospace shield, within striking distance of Earth in the lower stratosphere, the Pentagon is building an armada of 99 Global Hawk drones equipped with high-resolution cameras capable of surveilling all terrain within a 100-mile radius, electronic sensors to intercept communications, efficient engines for continuous 24-hour flights, and eventually **Triple Terminator missiles** to destroy targets below. By late 2011, the Air Force and the CIA had already **ringed** the Eurasian land mass with a network of 60 bases for drones armed with Hellfire missiles and GBU-30 bombs, allowing air strikes against targets just about anywhere in Europe, Africa, or Asia.

The sophistication of the technology at this level was **exposed** in December 2011 when one of the CIA's RQ-170 Sentinels came down in Iran. Revealed was a bat-winged drone equipped with radar-evading stealth capacity, active electronically scanned array radar, and **advanced optics** "that allow operators to positively identify terror suspects from tens of thousands of feet in the air."

If things go according to plan, in this same lower tier at altitudes up to 12 miles unmanned aircraft such as **the "Vulture,"** with solar panels covering its massive 400-foot wingspan, will be patrolling the globe ceaselessly for up to five years at a time with sensors for "unblinking" surveillance, and possibly missiles for lethal strikes. Establishing the viability of this new technology, NASA's solar-powered aircraft Pathfinder, with a 100-foot wingspan, **reached** an altitude of 71,500 feet altitude in 1997, and its fourth-generation successor the "Helios" flew at 97,000 feet with a 247-foot wingspan in 2001, two miles higher than any previous aircraft.

For the next tier above the Earth, in the upper stratosphere, DARPA and the Air Force are **collaborating** in the development of the Falcon Hypersonic Cruise Vehicle. Flying at an altitude of 20 miles, it is expected to "deliver 12,000 pounds of payload at a distance of 9,000 nautical miles from the continental United States in less than two hours." Although the first test launches in April 2010 and August 2011 crashed midflight, they did **reach** an amazing 13,000 miles per hour, 22 times the speed of sound, and **sent back** "unique data" that should help resolve remaining aerodynamic problems. At the outer level of this triple-tier aerospace canopy, the age of space warfare dawned in April 2010 when the Pentagon quietly **launched** the X-37B space drone, an unmanned craft just 29 feet long, into an orbit 250 miles above the Earth. By the time its second prototype **landed** at Vandenberg Air Force Base in June 2012 after a 15-month flight, this classified mission **represented** a successful test of "robotically controlled reusable spacecraft" and established the viability of unmanned space drones in the exosphere.

At this apex of the triple canopy, 200 miles above Earth where the space drones will soon roam, orbital satellites are the prime targets, a vulnerability that became obvious in 2007 when China used a ground-to-air missile to **shoot down** one of its own satellites. In response, the Pentagon is now **developing** the F-6 satellite system that will "decompose a large monolithic spacecraft into a group of wirelessly linked elements, or nodes [that increases] resistance to... a bad part breaking or an adversary attacking." And keep in mind that the X-37B has a capacious cargo bay to carry missiles or future laser weaponry to knock out enemy satellites -- in other words, the potential capability to cripple the

communications of a future military rival like China, which will have its own global satellite system operational by 2020.

Ultimately, the impact of this third information regime will be shaped by the ability of the U.S. military to integrate its array of global aerospace weaponry into a robotic command structure that would be capable of coordinating operations across all combat domains: space, cyberspace, sky, sea, and land. To manage the surging torrent of information within this delicately balanced triple canopy, the system would, in the end, have to become self-maintaining through “robotic manipulator technologies,” such as the Pentagon’s **FREND system** that someday could potentially deliver fuel, provide repairs, or reposition satellites.

For a new global optic, DARPA is **building** the wide-angle Space Surveillance Telescope (SST), which could be sited at bases ringing the globe for a quantum leap in “space surveillance.” The system would allow future space warriors to see the whole sky wrapped around the entire planet while seated before a single screen, making it possible to track every object in Earth orbit.

Operation of this complex worldwide apparatus will require, as one DARPA official **explained** in 2007, “an integrated collection of space surveillance systems -- an architecture -- that is leak-proof.” Thus, by 2010, the National Geospatial-Intelligence Agency **had** 16,000 employees, a \$5 billion budget, and a massive \$2 billion headquarters at Fort Belvoir, Virginia, with 8,500 staffers wrapped in electronic security -- all aimed at **coordinating** the flood of surveillance data pouring in from Predators, Reapers, U-2 spy planes, Global Hawks, X-37B space drones, Google Earth, Space Surveillance Telescopes, and orbiting satellites. By 2020 or thereafter -- such a complex techno-system is unlikely to respect schedules -- this triple canopy should be able to atomize a single “terrorist” with a missile strike after tracking his eyeball, facial image, or heat signature for hundreds of miles through field and favela, or blind an entire army by knocking out all ground communications, avionics, and naval navigation.

Technological Dominion or Techno-Disaster?

Peering into the future, a still uncertain balance of forces offers two competing scenarios for the continuation of U.S. global power. If all or much goes according to plan, sometime in the third decade of this century the Pentagon will complete a comprehensive global surveillance system for Earth, sky, and space using robotics to coordinate a veritable flood of data from biometric street-level monitoring, cyber-data mining, a worldwide network of Space Surveillance Telescopes, and triple canopy aeronautic patrols. Through agile data management of exceptional power, this system might allow the United States a veto of global lethality, an equalizer for any further loss of economic strength.

However, as in Vietnam, history offers some pessimistic parallels when it comes to the U.S. preserving its global hegemony by militarized technology alone. Even if this robotic information regime could somehow check China’s growing military power, the U.S. might still have the same chance of controlling wider geopolitical forces with aerospace technology as the Third Reich had of winning World War II with its “super weapons” -- V-2 rockets that rained death on London and Messerschmitt Me-262 jets that blasted allied bombers from Europe’s skies. Complicating the future further, the illusion of information omniscience might incline Washington to more military

misadventures akin to Vietnam or Iraq, creating the possibility of yet more expensive, draining conflicts, from Iran to the South China Sea.

If the future of America's world power is shaped by actual events rather than long-term economic trends, then its fate might well be determined by which comes first in this century-long cycle: military debacle from the illusion of technological mastery, or a new technological regime powerful enough to perpetuate U.S. global dominion.

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