Theory, Culture & Society
http://tcs.sagepub.com/

From a View to a Kill : Drones and Late Modern War

Derek Gregory

Theory Culture Society 2011 28: 188
DOI: 10.1177/0263276411423027

The online version of this article can be found at:
http://tcs.sagepub.com/content/28/7-8/188

Published by:
SAGE
http://www.sagepublications.com

On behalf of:
The TCS Centre, Nottingham Trent University

Additional services and information for *Theory, Culture & Society* can be found at:

Email Alerts: http://tcs.sagepub.com/cgi/alerts

Subscriptions: http://tcs.sagepub.com/subscriptions

Reprints: http://www.sagepub.com/journalsReprints.nav

Permissions: http://www.sagepub.com/journalsPermissions.nav

Citations: http://tcs.sagepub.com/content/28/7-8/188.refs.html

>> Version of Record - Jan 12, 2012

What is This?

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

From a View to a Kill
Drones and Late Modern War

Derek Gregory

Abstract
The proponents of late modern war like to argue that it has become surgical, sensitive and scrupulous, and remotely operated Unmanned Aerial Vehicles or 'drones' have become diagnostic instruments in contemporary debates over the conjunction of virtual and 'virtuous' war. Advocates for the use of Predators and Reapers in counterinsurgency and counterterrorism campaigns have emphasized their crucial role in providing intelligence, reconnaissance and surveillance, in strengthening the legal armature of targeting, and in conducting precision-strikes. Critics claim that their use reduces late modern war to a video game in which killing becomes casual. Most discussion has focused on the covert campaign waged by CIA-operated drones in Pakistan, but it is also vitally important to interrogate the role of United States Air Force-operated drones in Afghanistan. In doing so, it becomes possible to see that the problem there may not be remoteness and detachment but, rather, the sense of proximity to ground troops inculcated by the video feeds from the aerial platforms.

Key words
armed conflict ■ killing ■ military ■ scopic regimes ■ virtuality ■ war

Virtuous War

ADVANCED MILITARIES like to boast that their conduct of war has become surgical, sensitive and scrupulous (Gregory, 2010a). The development of a precision-strike capability, the cultural turn towards a counterinsurgency that places the local population at the centre of its operations, and the refinement of the legal armature that regulates armed conflict have all contributed to the celebration of what Der Derian (2009) calls 'virtuous war'. At its heart, he argues,

■ *Theory, Culture & Society* 2011 (SAGE, Los Angeles, London, New Delhi, and Singapore), Vol. 28(7-8): 188–215
DOI: 10.1177/0263276411423027

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

> is the technical ability and ethical imperative to threaten and, if necessary, actualize violence from a distance – *with no or minimal casualties*. Using networked information and virtual technologies to bring 'there' here in near-real time and with near-verisimilitude, virtuous war exercises a comparative as well as strategic advantage for the digitally advanced. Along with time (as in the sense of tempo) as the fourth dimension, virtuality has become the 'fifth dimension' of US global hegemony. (2009: xxi)

And at the heart of the ascent of war from the virtual to the virtuous are the drone wars being waged by the USA in the global borderlands.[1]

Two qualifications are immediately necessary. First, remotely piloted aircraft have been used since the First World War, assault drones were deployed in the closing stages of the Second World War, and the first major combat use of Unmanned Aerial Vehicles (UAVs) was during the Vietnam War, so there is a considerable history behind today's remote operations in the borderlands. There it intersects with the exercise of a profoundly colonial modality of air power. The British invented aerial counterinsurgency on the North West Frontier with Afghanistan and in Iraq (Mesopotamia) in the 1920s (Omissi, 1990; Satia, 2008, 2009), and for all the technical advances there are numerous dispiriting parallels between then and now. Perhaps the most telling is the repeated insistence that air attacks are counterproductive. Two commentators closely identified with the new US counterinsurgency doctrine insist that 'expanding or even continuing the drone war [in Pakistan] would be a mistake'. They explain:

> While violent extremists may be unpopular, for a frightened population they seem less ominous than a faceless enemy that wages war from afar and often kills more civilians than militants. . . . [E]very one of these dead noncombatants represents an alienated family, a new desire for revenge, and more recruits for a militant movement that has grown exponentially even as drone strikes have increased. (Kilcullen and Exum, 2009)

Colonel F.S. Keen said much the same of the bombing of Pashtun villages on the North West Frontier in 1923: 'By driving the inhabitants of the bombarded area from their homes in a state of exasperation, dispersing them among neighbouring clans and tribes with hatred in their hearts at what they consider "unfair" methods of warfare', he wrote, these attacks 'bring about the exact political results which it is so important in our own interests to avoid, viz., the permanent embitterment and alienation of the frontier tribes' (Keen, 1923: 400; see also Roe, 2008).

As my parallel suggests – and this is the second qualification – the modern debate has focused on the covert war waged by CIA-operated drones in the Federally Administered Tribal Areas of Pakistan. The campaign was initiated by President George W. Bush in 2004, and by the end of 2008 there had been 46 strikes directed at killing so-called 'High Value Targets'. The attacks were ramped up by Obama, and by the end of 2010

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

there had been another 170 strikes.[2] These operations raise complex and troubling legal questions, not least because the United States is not at war with Pakistan. On one side are those who defend the strikes as limited and legitimate acts of self-defense against attacks from the Taliban who seek sanctuary across the border and also as an effective counterterrorism tactic against al-Qaeda. Indeed, Anderson describes 'perfect war', the very summit of 'virtuous war', as 'target selection perfected to the point of assassination', a doctrine for which drones have become the weapon of choice ('the only game in town', according to the Director of the CIA) (see, for example, Anderson, 2009; Paust, 2009). On the other side are critics who insist that such targeting, however 'precise', amounts to extra-judicial killing, and that if civilian agencies like the CIA conduct military operations then their agents become unlawful combatants. Their objections also fasten on the spatiality of the war zone: they draw special attention to the imprecise legal delineation of the 'global battlespace' invoked by the United States and to the lack of accountability for civilian casualties (see, for example, O'Connell, 2009; Rogers, 2010; Solis, 2010). But for the most part all these arguments assume that the use of UAVs by the United States Air Force (USAF) and its military allies in Afghanistan – including Britain and Canada – is unproblematic, and in doing so they reinforce the claim that these new technologies enable advanced militaries to conduct 'virtuous war'. This article seeks to interrogate those assumptions, but I have to note that it is not easy to disentangle one campaign from the other. Some commentators have suggested that the USAF is involved to varying degrees in the CIA strikes, but in any case the Air Force uses the Pentagon's Joint Integrated Prioritized Target List to conduct its own strikes on leaders of the Taliban and others who may have only a proximate relation to the war in Afghanistan, and makes no secret of the fact that a prime function of its Predators and Reapers is to 'put warheads on foreheads' (Mulrine, 2008) (Figure 1).[3]

I cannot adjudicate these questions here, and my own focus is on the 'scopic regime' through which drone operations take place. Metz (1982: 61) proposed the term to distinguish the cinematic from the theatrical way of staging and seeing the world, but it has since been uncoupled from any specific forms, displays and technologies to denote a mode of visual apprehension that is culturally constructed and prescriptive, socially structured and shared (see also Jay, 1988; Somaini, 2005–6). Like its companion term 'visuality', meaning culturally or techno-culturally mediated ways of seeing, the concept is intended as a critical supplement to the idea of vision as a purely biological capacity (I say 'supplement' because the embodiment of vision remains of more than incidental importance). Scopic regimes are historically variable, and different regimes can coexist within a single cultural and social formation, but the closest attention has been paid to the ligatures between visuality and modernity. Apart from a handful of studies, however, of which Virilio's *War and Cinema* (1989) is probably the best known, little systematic attention has been given to the ways in

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

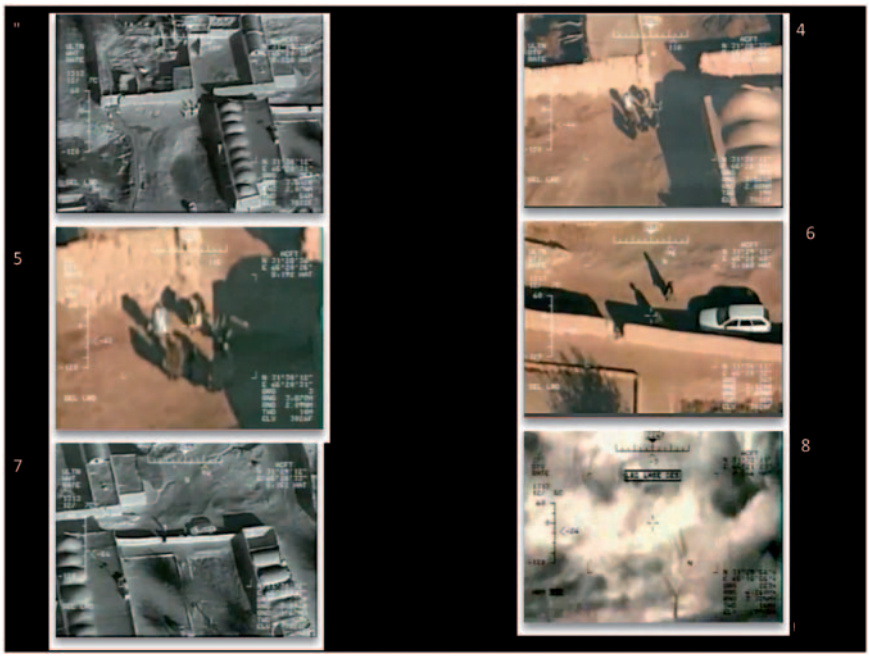

Figure 1 Predator firing Hellfire missile, Afghanistan 2009 (You Tube)
Source: http://www.youtube.com/watch?v=3aqv J2OqAC0

which the conduct of modern wars is mediated by scopic regimes. Here too the air wars in Afghanistan and Pakistan may converge; so too do the lines of defence and attack. Those who defend the drone wars insist that the near real-time video-feeds from the aircraft allow an unprecedented degree of precision and a carefully calibrated response that can minimize civilian casualties. Those who criticize these operations are concerned that killing at such a distance becomes too casual and that late modern war has been reduced to a video game. This too has a history, of course, and Chow (2006: 35) argues that:

> War can no longer be fought without the skills of playing video games. In the aerial bombings of Iraq the world was divided into an above and a below in accordance with the privilege of access to the virtual world. Up above in the sky, war was a matter of maneuvers across the video screen by US soldiers who had been accustomed as teenagers to playing video games at home; down below, war remained tied to the body, to manual labor, to the random disasters falling from the heavens.

To many observers the subsequent deployment of armed drones by the US Air Force has made that optical detachment even more complete. Although these UAVs are launched from airbases in Afghanistan and Iraq,

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

most of their missions are controlled via Ku-band satellite link by operators in a Ground Control Station at Creech Air Force Base in Nevada (Figure 2).[4] When Kaplan (2006: 81) visited the base, he was told: 'Inside that trailer is Iraq, inside the other, Afghanistan.' The effortless sense of time-space compression is exceeded only by its casual imperialism. 'Inside those trailers', Kaplan explained, 'you leave North America, which falls under Northern Command, and enter the Middle East, the domain of Central Command [CENTCOM]. So much for the tyranny of geography.' But critics insist that this replaces one tyranny of geography with another. The death *of* distance enables death *from* a distance, and these remotely piloted missions not only project power without vulnerability – as the Air Force frequently asserts – but also seemingly without compunction (Royakkers and Van Est, 2010; Webb et al., 2010). Distance lends re-enchantment, you might say. Some see this as appallingly mundane – disparaging the pilots as 'cubicle warriors' or 'commuter fighters' – but others, I think more perceptively, sense a terrifying Olympian power released through the UAV's Hellfire missiles. 'Sometimes I felt like a God hurling thunderbolts from afar', one pilot admits (Martin, 2010: 3), and Engelhardt (2009) spells out the metaphor's implications: 'Those about whom we make life-or-death decisions, as they scurry below or carry on as best they can, have – like any beings faced with the gods – no recourse or appeal.'

As the Predators and Reapers flown by the USAF have become more closely integrated into counterinsurgency, however, this picture has become more complicated. In what follows I focus on their hunter-killer role,

Figure 2 Ground Control Station, Creech AFB, Nevada
Source: USAF Photograph/Tech. Sgt Kevin J. Gruenwald

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

the combination of intelligence, surveillance and reconnaissance (ISR) and weapons platform, and then show how the new visibilities of the battlespace and of military action that they make possible affect the targeting cycle. My central argument is that these visibilities are necessarily conditional – spaces of constructed visibility are also always spaces of constructed invisibility – because they are not technical but rather techno-*cultural* accomplishments. Contrary to critics who claim that these operations reduce war to a video game in which the killing space appears remote and distant, I suggest that these new visibilities produce a special kind of intimacy that consistently privileges the view of the hunter-killer, and whose implications are far more deadly.

The Kill-chain and Counterinsurgency

The US Air Force estimates that counterinsurgency requires three to four times as much ISR as major combat operations because it involves a fluid target set that requires the much longer dwell times that only UAVs can sustain. Ground operators can be changed at the end of a shift while the aircraft remains on station and the video stream is uninterrupted. In such circumstances ISR needs to be not only persistent but also pervasive: at the limit 'gathering intelligence on fast, fleeting, hidden and unpredictable adversaries requires knowledge of everyone, everywhere, all the time' (Biltgen and Tomes, 2010). This requires a techno-cultural apparatus that can secure a militarized regime of *hypervisibility*, which Gordon (2008: 16) describes as 'a kind of obscenity of accuracy that abolishes the distinctions between "permission and prohibition, presence and absence".' The accuracy of the intelligence derived from the high-level, high-resolution imagery from the drones may be open to debate, but its production has unquestionably dissolved those distinctions. The multi-spectral targeting system in the Predator provides real-time full-motion video (FMV) at 30 frames per second; its field of view is restricted, however, and observers complain that zooming in is like looking through a soda straw. This is supposed to change with the introduction of the Gorgon Stare, which, although providing lower resolution images (five cameras each shooting two 16-megapixel frames per second), will stream 12 motion video feeds from a single Reaper in 2011 rising to 65 by 2012.[5] The intention is to quilt the image streams in-flight into a tiled mosaic and feed them to networked users through a dedicated ground station in theatre that will control the sensors and coordinate operations with the flight crew in Nevada (who will still rely on the Reaper's sensor ball to fly the aircraft).[6] The move to wide area surveillance will be reinforced by the introduction of the ARGUS-IS system, which will reintroduce high-resolution images via a multi-gigapixel sensor with a refresh rate of 15 frames per second. These developments (Figure 3) are intended to allow individuals and movements to be tracked through multiple networks to establish a 'pattern of life' consistent with an emerging paradigm of 'activity-based intelligence' that is focal for

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

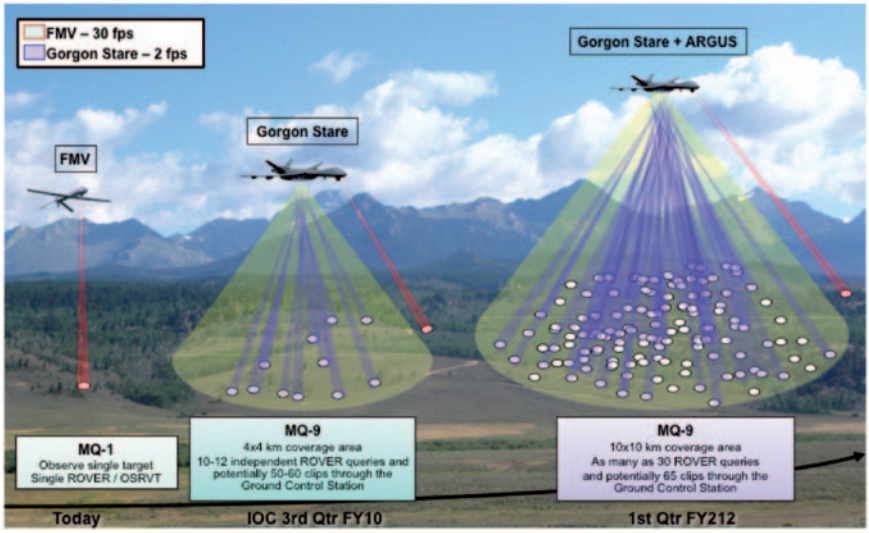

Figure 3 Wide-area airborne surveillance (USAF)

counterinsurgency operations (Biltgen and Tomes, 2010; Matthews, 2010; Nakashima and Whitlock, 2011; White, 2010).

Even if these innovations are successful, however, the production of a macro-field of micro-vision solves one problem by creating another, and the Air Force has become keenly aware of the danger of 'swimming in sensors and drowning in data'.[7] A standard video camera collects over 100,000 image frames per hour, and the USAF has already archived 400,000 hours of video from its remote platforms; the rate of accession is rapidly accelerating as ISR coverage increases. To manage this image surge, the analytical field has been expanded. UAV operators in the United States are embedded in an extended network that includes not only troops and Joint Terminal Attack Controllers using Remotely Operated Video Enhanced Receivers (ROVER laptops) on the ground in Afghanistan, but also senior commanders, mission controllers and military lawyers at CENTCOM's Combined Air and Space Operations Center (CAOC) at Al Udeid Air Base in Qatar (Figure 4), and data analysts and image technicians at its Distributed Common Ground System (DCGS) at Langley Air Force Base in Virginia.[8] This is a dramatic change from the pioneer airmen celebrated by Billy Mitchell in the 1920s – 'In the first place they are alone. No man stands at their shoulder to support them' – and, for that matter, the experience of most other combat pilots today, because UAV operators are never alone (Cantwell 2009: 75). Currently 185 personnel are required to support one Predator or Reaper Combat Air Patrol: 59 are forward deployed in Afghanistan for Launch and Recovery, 43 are based at Creech (including pilots, sensors and mission coordinators), and 83 are involved in processing, exploitation and dissemination (34 analysing FMV and 18 signals

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

Figure 4 Combined Air Operations Center
Source: USAF Photograph/Tech. Sgt Demetrius Lester

intelligence).[9] When the staff at the CAOC are added to the list, a remarkable number of people are able to be in direct or indirect contact by voice, video or internet relay chat (mIRC) as each mission progresses.

This network performs a number of vital tasks. First, archived images are scanned to filter out 'uneventful footage' and distinguish 'normal activity from abnormal activity'. Ideally this forensic monitoring – which is a sort of militarized rhythmanalysis, even a weaponized time-geography[10] – would be based on cultural knowledge, but the image bank is so vast that experiments are under way with automated software systems for 'truthing' and annotating video imagery, and new TV technologies are being explored to tag and retrieve images (Barnes, 2010; Biltgen and Tomes, 2010; Jean, 2011; Lake, 2010; Shanker and Richtel, 2011).[11] Second, commanders, advisers and analysts scan live video streams in order to push time-critical information to UAV crews and ground forces responding to emergent events. These developments reinforce the rush to the intimate that characterizes counterinsurgency operations, but in this case the emphasis is as much on 'the rush' as 'the intimate' (Gregory, 2008). The hierarchies of the network are flat and fluid, its spaces complex and compound, and the missions are executed onscreen through video feeds and chat rooms (displays show as many as 30 different chats at a time) that bring a series of personnel with different skills in different locations into the same zone. Time and space are telescoped so that, as one officer put it, 'We're mostly online with each other as we go' (Tirpak, 2009; see also Drew, 2010a).

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

The network is about more than ISR, however, because it is also a weapon system. UAVs also fulfil the hunter-killer role conveyed by their hideous names.[12] The Predator carries two Hellfire missiles, and the Reaper can carry 14 Hellfire missiles or two 500 lb JDAM bombs and four Hellfire missiles. For all its emphasis on 'culture-centric' warfare, we need to remember that contemporary counterinsurgency is still warfare and is by no means confined to the non-kinetic. A report on joint military operations in Kandahar Province in 2008 praised the 'deadly persistence' of Predators and Reapers and hailed lethal UAV strikes as 'the culminating point' of counterinsurgency (Turner et al., 2009). In fact, on General David Petraeus's watch, ten years into the Afghanistan campaign, the air war has intensified.[13] The information liquidity facilitated by the extended network has not made Cullather's (2003) 'bombing at the speed of thought' a reality, but it has dramatically compressed what the Air Force calls the 'kill-chain' (Herbert, 2003). It is true that since General Dan ('Bomber') McNeil relinquished command in 2008, kinetic operations including close air support have been conditioned by Rules of Engagement that have sought to minimize collateral damage and, in consequence, soldiers complain that 'decisions move through the risk mitigation process like molasses' (Vaccaro, 2009) and that requests for permission to strike pass through 'echelons of staffs sitting above me, like owls in trees' (West, 2011: 89). But many of those procedures are short-circuited when close air support is called for 'troops in contact' and, even in normal circumstances, the time from finding to engaging emergent targets is now 30–45 minutes; the Air Force aims to reduce this to less than two minutes, and Cheater (2007: 12) envisages it being 'compressed to seconds by 2025' (Figure 5).

The kill-chain can be thought of as a dispersed and distributed *apparatus*, a congeries of actors, objects, practices, discourses and affects, that entrains the people who are made part of it and constitutes them as particular kinds of subjects.[14] During the Second World War, the Cold War and even beyond, the kill-chain was linear and sequential, directed mainly at fixed and pre-determined targets, and the time from identification to execution could extend over days or even weeks. Few of those involved could see the process in its entirety, which explains the commingling of what Harris (2006: 102) calls 'the mundane and the monstrously violent'. The apparatus through which the target was produced and passed through the links in the chain rendered the business of destruction unexceptional: 'extreme forms of violence and normal bureaucratic practices' were made 'co-extensive' (2006: 114). The late modern kill-chain is increasingly directed at mobile and emergent targets, and what Kaplow (2010: 96) calls the 'choreography of combat' requires rapid processing of intelligence if 'smart weapons' are not to look 'very stupid indeed'. The time-space compression that this entails has brought all those in the network much closer to the killing space (Grant, 2008; Uecker, 2005). Conventional bomber pilots 'don't see their targets', explains Singer (2010), but in contrast to Bauman's (2001: 15) jibe about modern 'pilots-turned-computer-operators', remote from their targets and

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

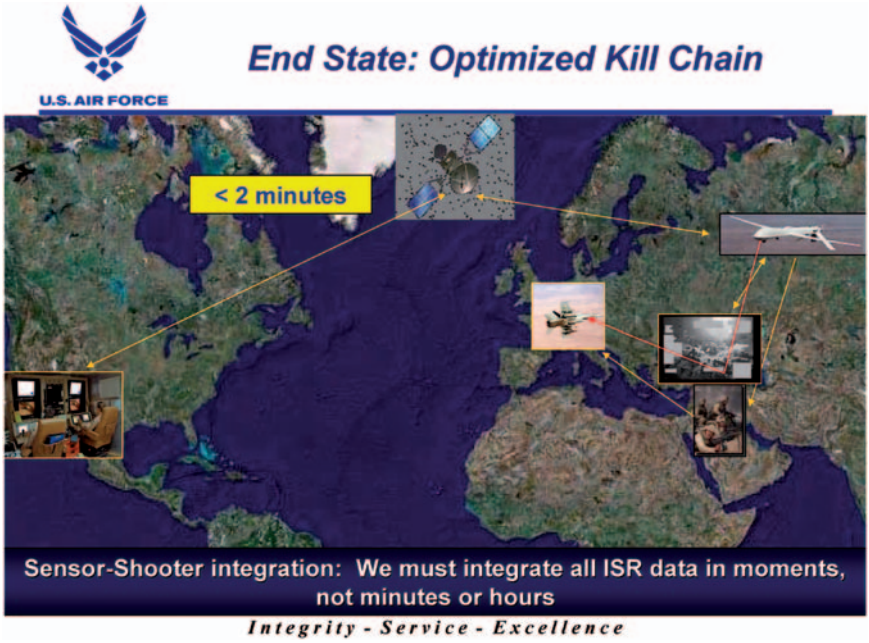

Figure 5 'Optimized kill-chain' (USAF)

'scurrying over those they hit too fast to witness the devastation they cause and the blood they spill', he insists that all of those watching a UAV mission in real time 'see the target up close, [they] see what happens to it during the explosion and the aftermath. You're further away physically but you see more.' In fact a constant refrain of those working from Nevada is that they are not further away at all but only 'eighteen inches from the battlefield': the distance between the eye and the screen. This sensation is partly the product of the deliberate inculcation of a 'warrior culture' among UAV pilots, but it is also partly a product of interpellation, of being drawn into and captured by the visual field itself.[15]

Video Game War?

For this reason, characterizations of the drone missions as moments in a 'video game war' that inculcates a 'Playstation mentality to killing' may well be wide of the mark (Alston, 2010: 5; Fellowship of Reconciliation, 2010). Critics often point to Grossman's (1995) study of 'learning to kill', which identified distance as a powerful means of overcoming the resistance to killing. He argued that in the Second World War 'pilots and bombardiers were protected by distance' from seeing the effects of their bombs (1995: 78): 'From a distance I can deny your humanity, and from a distance I cannot hear you scream' (1995: 102; see also Gregory, 2011).

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

Although Grossman was writing before UAVs were armed and so could not directly address the drone wars, he did point to first-person shooter video games as particularly powerful agents of conditioning through which players become 'hardwired' for killing, and his anatomy of killing listed not only physical distance but also emotional distance, including social, cultural, moral and, crucially, 'mechanical' distance: the screen that separates the gamer from the game (1995: 188–9).[16] It seems a small step to infer that long-distance killing from a UAV would radicalize those affective protections. Yet video games do *not* stage violence as passive spectacle; they are profoundly immersive, drawing players in to their virtual worlds, which is in part why the US military uses them in its pre-deployment training.[17] The video streams from the UAVs seem to produce the same reality-effect. 'You see a lot of detail,' the commander of the Air Force's first dedicated UAV wing notes, so 'we feel it, maybe not to the same degree [as] if we were actually there, but it affects us.' 'When you let a missile go,' he explains, 'you know that's real life – there's no reset button' (Logan, 2009; Zucchino, 2010). One Predator pilot insists that the horror of watching two young boys on a bicycle ride into the frame seconds before his missile struck its designated target 'lost none of its impact' from being viewed on a screen: 'Death observed was still *death*' (Martin, 2010: 212). Anecdotes cannot settle the matter, of course, but reports of drone crews suffering from post-traumatic stress induced by constant exposure to high-resolution images of real-time killing and the after-action inventory of body parts should be taken extremely seriously (Lindlaw, 2008).[18]

There are also salient differences between video games and video feeds. First, immersion in video games is discontinuous – levels are re-started, situations re-set, games paused – and while there are different intensities of involvement during a UAV mission and shifts change in the course of a patrol, immersion in the live video feeds is intrinsically continuous.[19] 'The Nintendo mentality is a detached mentality', a former chief of staff argued, whereas 'this stuff is real' (Cantwell, 2009: 70). Second, video games staged in simulacra of Afghanistan show stylized landscapes prowled solely by 'insurgents' or 'terrorists' whose cartoonish appearance makes them instantly recognizable; the neo-Orientalism of these renditions is a matter of dismal record (see Höglund, 2008). But the video feeds from UAVs reveal a much more complicated, inhabited landscape in which distinctions between civilians and combatants are intensely problematic. The existence of so many eyes in that crowded sky – commanders, controllers, analysts and, significantly, military lawyers – is a (pre)caution that the presence of civilians is a constant possibility. The risk of 'collateral damage' has become a vital consideration throughout the kill-chain, driven by both the protocols of international law and also the prospect of public scrutiny. This marks a third crucial difference from video games because, as Grossman (1995: 314–16) acknowledges, killing in combat is regulated by rules and legal sanctions, and defenders of the drone missions routinely draw attention to the laws of armed conflict, the Uniform Code of Military Justice and

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

the Rules of Engagement that govern them.[20] One informed commentator argues that the longer dwell times and enhanced video streams from the drones have considerably enlarged the role of judge advocates who, since the late 1980s, have provided expert counsel to commanders about the 'prosecution' of targets (Beard, 2009: 422).[21] The staff judge advocate at the CAOC claims that 'it's airborne ISR that gives us the ability to actually apply [laws of armed conflict] principles (with almost mathematical precision) that were originally just concepts' (Brown, cited in Dunlap, 2010: 141).[22] For deliberate targeting, where targets are typically developed over 36–40 hours, legal advisers review target folders containing imagery and other intelligence, collateral damage estimates and the weaponeering solutions proposed to mitigate those effects, and monitor the continued development of the target. For dynamic targeting the procedure is compressed – a matter of minutes – because the targets are time-sensitive, but a judge advocate is still required to validate the target. In both cases legal advisers are stationed on the combat operations floor of the CAOC to scrutinize image streams, live communications and collateral damage estimates, and to inform the commander of the legal parameters of any attack. The final decision rests with the commander, but the staff judge advocate boasts that his colleagues 'explicitly guarantee extra benefits to civilians' (Shanker, 2008).[23]

Transparency, Intimacy and the Battlespace

Yet this is too glib by far. Beard (2009) makes it clear that these precautions – like the laws from which they derive – are not intended to prevent all civilians from being killed during military operations. The principle of discrimination between civilians and combatants is always qualified by the principle of proportionality. This means that sometimes civilian deaths are accidental – the system is far from perfect – but in others they are *in*cidental to what is deemed to be concrete and direct military advantage, in which case they have been anticipated in collateral damage estimates and endorsed by judge advocates (Beard, 2009: 43; cf. Owens, 2003). As this implies, the legal armature that secures the process of validation and endorsement is not above the fray but is embedded within it, and to refer to the 'prosecution' of the target is to concede that judge advocates are not impartial tribunes, still less defence attorneys. Their incorporation into the kill-chain evidently does not diminish the privilege accorded to the military in the determination of military advantage; as Orford (2010: 339) emphasizes, the relevant body of international law 'immerses its addressees in a world of military calculations' and ensures that proportionality will always be weighed on the military's own scales. Nevertheless, the media makes much of the legal nexus – rendering targeting as a pseudo-judicial process (cf. Gordon, 2004; Weizman, 2010) – and the *Wall Street Journal* and its writers are not alone in maintaining that the heightened visual-judicial scrutiny makes 'for a more moral campaign': 'Never before in the history of air

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

warfare have we been able to distinguish as well between combatants and civilians as we can with drones' (Editorial, 2010; Phillips, 2010).

And yet when Beard (2009: 410 and *passim*) writes repeatedly of the unprecedented level of 'transparency' made possible by the new visual technologies he is referring to the new visibility of military actions – to their exposure to public view – and to the possibility of sanctions if the laws of armed conflict are breached: *not to the visibility of the battlespace*. This matters because contemporary counterinsurgency is often described as 'war amongst the people', where it is formidably, *constitutively* difficult to distinguish between combatants and civilians. As the Pentagon's own Defense Science Board admitted: 'Enemy leaders look like everyone else; enemy combatants look like everyone else; enemy vehicles look like civilian vehicles; enemy installations look like civilian installations; enemy equipment and materials look like civilian equipment and materials . . .' (Defense Science Board Summer Study, 2004: 154). This central, existential problem would remain *even if the battlespace could be made fully transparent*. It may be mitigated by the persistent presence of UAVs and their enhanced ISR capability, and in some measure by the 'pattern of life' analysis this makes possible, but it cannot be erased.[24]

In fact, the 'intimacy' of time-space compression produced by the new visual technologies is highly selective. When a journalist compared the chat-rooms of the kill-chain to Facebook and marvelled at 'how easily the distance could melt away', he was describing the intimacy produced through military-social networking (Drew, 2010a). When officers at Creech argued that 'the amount of time spent surveilling an area' from a UAV creates 'a greater sense of intimacy' than is possible from conventional aircraft, they were describing not their familiarity with the 'human terrain' of Afghanistan but their identification of – and crucially *with* – American troops in the battlespace. 'There's no detachment,' their commander explained. 'Those employing the system are very involved at a personal level in combat. You hear the AK-47 going off, the intensity of the voice on the radio calling for help. You're looking at him, 18 inches away from him, trying everything in your capability to get that person out of trouble' (McCloskey, 2009). Similarly, when a Predator pilot claimed that 'I *knew* people down there', it was not local people he claimed to 'know': 'Each day through my cameras I snooped around and came to recognize the faces and figures of our soldiers and marines' (Martin, 2010: 121). One joint team reported that 'the personal and almost daily interaction' between ground forces and UAV operators, and 'the strong personal relationships with the pilots and sensor operators' successfully 'compressed kill-chains and produced intelligence of greater value' (Turner et al., 2009: 9). The sense of identification and involvement that is induced by these new forms of time-space compression takes on special significance in the light of Grossman's (1995: 90, 149–50) claim that a 'sense of accountability' to comrades-in-arms is a powerful means of overcoming resistance to killing, because it suggests that the greater incidence of civilian casualties when

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

close air support is provided to 'troops in contact' may result not only from time-critical targeting and its correspondingly 'fewer checks to determine if there is a civilian presence' (Human Rights Watch, 2008: 30) – which is widely acknowledged – but also from the persistent presence of the UAV and its video feeds immersing its remote operators in, and to some substantial degree rendering them responsible for the evolving situation on the ground.[25] This predicament, in which proximity not distance becomes the problem, cannot be resolved by tinkering with the Rules of Engagement; high-resolution imagery is not a uniquely technical capacity but part of a techno-*cultural* system that renders 'our' space familiar even in 'their' space – which remains obdurately Other.

An example will illustrate what I mean.[26] In the early morning of 21 February 2010 a team from US Special Forces was moving in to search the village of Khud in Oruzgan province in central Afghanistan, which had been identified as a Taliban stronghold. Before first light an AC-130 gunship spotted three vehicles with what its crew called 'unlawful personnel' in the back, moving down a dirt road five miles away. The Joint Terminal Attack Controller (JTAC) with the Special Forces detachment confirmed from intercepted but unidentified radio communications that they were 'setting themselves up for an attack', and later, on the same basis, that they were probably looking at a Taliban force with 'a high-level Taliban commander'. A Predator was called in to track the vehicles; its crew had intermittent mIRC contact with the gunship until it ran low on fuel and had to cede 'the chain of custody', but because the JTAC had no laptop the Predator crew only had (sometimes garbled or broken) radio contact with the Special Forces detachment and could only transmit video to their command posts. Following standard operating procedure, the image analysts in the Distributed Common Ground System were linked only to the Predator crew and had no direct contact with the troops on the ground. The noise in the network was compounded because video feeds were of variable quality, and the Predator crew had to rely on infra-red sensors in the half-light until they could switch to 'Day TV'; even then the weather intermittently muddied the image stream. Still, the Predator crew did not hesitate to identify 'tactical movement' and individuals holding 'cylindrical objects' that they believed (in fact 'hoped') were rifles. When the sensor operator commented that it was 'weird how they all have cold spots on their chests' the pilot explained that 'it's what they've been doing here lately, wrapping their [expletive] up in their man dresses so you can't [positively identify] it'. In the absence of a positive identification, the JTAC warned them of the Rules of Engagement, but the sensor operator insisted that the truck 'would make a beautiful target'. When an image analyst identified 'at least one child' the pilot objected that he was 'so quick to call [expletive] kids but not to call a [expletive] rifle', and the sensor operator agreed: 'I really doubt that children call . . . I really [expletive] hate that.' They were told to wait for the ground commander to assess 'proportionality, distinction' – there is no direct record of any clearance from the CAOC – the crew

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

continued to report 'definite suspicious movement, definite tactical movement' and spoke of 'lookouts', 'human shields' and 'a grouping of forces'. When they saw the occupants of the vehicles get out to pray they were convinced they were looking at Taliban: 'seriously, that's what they do'. The mission intelligence coordinator at Creech agreed: 'They're gonna do something nefarious.'

By now fuel limitations had forced the gunship to withdraw and cede the 'chain of custody' to the Predator, but because the UAV had only one missile left, two Kiowa attack helicopters were called in. The Predator crew hoped that 'they'll let us have one vehicle since we tracked them for so long' – otherwise the pilot reckoned they would 'just watch and be on squirter patrol'. By now the CAOC had now designated the situation as 'Troops in Contact' (TIC) and the crew was increasingly impatient: 'Can't wait till this actually happens, with all this co-ordination and [expletive].' They were clearly exasperated when they were told that a Reaper was being brought in above them to attack the target: 'You gotta be kiddin' me! . . . [Expletive] that, man. . . . Just claim we're here first.' The Predator pilot told the JTAC that the image analysts had identified 21 'military-aged males' and 'two possible children'; when asked if these were teenagers or toddlers they were described as 'potential adolescents . . . early teens', and the JTAC agreed that '12–13 years old with a weapon is just as dangerous'. As soon as the Reaper arrived on station it was reassigned to another TIC, which prompted the sensor operator to dream of having 'a whole fleet of [Predators] up here' which would be 'awesome'. The rest of the conversation is classified until the sensor operator remarks: 'That would be bad ass. But we're not killers, we are ISR.' The pilot told the sensor operator that 'as long as you keep somebody that we can shoot in the field of view I'm happy'. At 0915, when the convoy was 12 miles from Khod and no longer heading towards the village, the helicopters were cleared to engage, the sensor operator shouting 'Remember: Kill-chain!' (followed by laughter), and then, as the smoke started to clear, there was an eerie silence: 'Nobody is talking to me,' said the pilot. The sensor operator zoomed in to see 'a guy who looks like he's wearing jewelry and stuff like a girl, but he ain't . . .' Eight minutes later women and children were identified, but too late. 'That lady is carrying a kid', says the pilot, and the sensor operator agreed: 'Right there in the crosshairs.' They consoled themselves that they could not have known: 'No way to tell from here.'

Subsequent reports identified at least 23 people dead and more than a dozen wounded, including three children: all civilians, 'shopkeepers going for supplies, students returning to school, people seeking medical treatment and families with children off to visit relatives' (Cloud, 2011a). Most of them were Hazaras, who have traditionally opposed the Pashtun-dominated Taliban. No video footage has been released to the public, but officers who later viewed the feed said that it was 'clear from the tape that civilians were about to be rocketed' (Cullison and Rosenberg, 2010). It seems equally clear that the Predator crew's identification with the Special Forces

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

team – the intimacy of the time-space compression from Nevada to Oruzgan – had converted civilians into combatants: in his desire to support the ground forces, an Air Force investigation concluded, the Predator pilot 'had a strong desire to find weapons' which 'colored, both consciously and unconsciously, his reporting' (Drew, 2010b). Thus objects become rifles, praying a Taliban signifier, civilians 'military-aged males', and children 'adolescents'. If seeing is believing, it is also techno-culturally mediated. An Army inquiry condemned the Predator crew's 'unprofessional and inaccurate reporting', and while this certainly seems to have been the case, placing the onus only on individuals obscures the structural effect of a military apparatus and political technology that viscerally immerses physically remote operators in combat and reinforces their sense of communion with troops on the ground. In an editorial the *Los Angeles Times* drew attention to 'the eagerness of the drone's crew to find and attack the enemy and their palpable disdain for those in the chain of command whose job it is to proceed carefully' (Editorial, 2011). Within such a space of constructed visibility, it was virtually impossible for the victims of the attack to be seen as civilians until it was too late, a terrible instance of what Chow (2006: 42) calls 'the inability to handle the otherness of the other beyond the orbit that is the bomber's own path'. The scopic regime ensured that the battlespace would be viewed through a one-way mirror, its 'transparency' tragically illusory.

Transparency, Publicity and the Battlespace

And yet Beard's (2009) point about the visibility of military actions is well taken, because there is another sense in which counterinsurgency is 'war amongst the people': the presence of the media means that the fight is conducted 'in every living room in the world as well as on the streets and fields of a conflict zone' (Smith, 2006: 17). This too is limited, partial and conditional, of course: there are few narratives as detailed as the one I have summarized, even in redacted form, and the video feeds released for public view – WikiLeaks apart[27] – are carefully selected. Summaries of some military inquiries into incidents where civilians have been killed are made public, as in the Khod case, but faced with the pervasive problem of distinguishing combatants from civilians it is scarcely surprising that several discursive tactics should also have been devised to mitigate the media impact of civilian casualties. None of them is confined to the Air Force's deployment of UAVs in Afghanistan, but their role has been reinforced by the controversy surrounding the programme of extra-judicial executions carried out by CIA-operated drones across the border in Pakistan.

The first is to dispute the civilian status of the casualties. This is a timeworn tactic that can be traced back at least to the Second World War, but it has been given a new lease on life (and death) in contemporary wars against non-state actors. Referring explicitly to the

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

use of UAVs to carry out targeted killings in Afghanistan and Pakistan, Etzioni (2010: 69) has proposed a distinction between 'innocent civilians' and those 'abusive civilians' who 'refuse to separate themselves from the local population'; in doing so they forfeit their right to protection, he argues, and the responsibility for the deaths of the 'truly innocent' is theirs alone.[28] If it is difficult to distinguish combatants from civilians in counterinsurgency, it is apparently simple to parse the civilian population. What Etzioni and others like him seek to do is to identify a grey zone between participation and non-participation in hostilities in order to exploit it: thus one former judge advocate argues that these 'grey areas should be interpreted liberally', which is to say 'in favor of finding direct participation' (Schmitt, 2004: 509, 2010: 738; cf. Gregory, 2006).

Second, while the new air war is not quite the 'war without witnesses' of the American invasion of Afghanistan in 2001, the space in which these continuing operations have been brought into public view remains strikingly limited. Media coverage in North America and Europe has focused on the spaces of the extended network, particularly Creech and the CAOC, while the space of the target has been radically underexposed. The USAF issues terse daily airpower summaries in which Predators and Reapers are said to provide 'armed overwatch for friendly forces' and 'release precision-guided munitions' that destroy 'enemy positions', 'targets' and 'vehicles'. This is an artful reassertion of the conventional object-ontology that is at odds with the event-ontology that informs contemporary counterinsurgency, and it makes ground truth vanish in the ultimate 'God-trick' whose vengeance depends on making its objects visible and its subjects invisible (cf. Gregory, 2010b). This effect is compounded by the absence in Afghanistan of the vigorous local press coverage of drone strikes across the border in Pakistan, which means that, ironically, we know much more about the impact of the CIA's 'secret war' (and correspondingly less about its kill-chain).

Third, civilian casualties are excused in biopolitical terms. This takes multiple forms, but one example will illustrate the principle (or lack of it). Lt General William Caldwell's prescription for what he calls 'curing Afghanistan' requires that combat operations no longer be described 'in the language of war'; instead Afghanistan should be treated as 'an ailing patient – in many ways analogous to a weakened person under attack by an aggressive infection'. The increase in offensive operations then becomes 'a late but powerful and much-needed dose of antibiotics' designed 'to allow the country's indigenous immune system to be restored'. Caldwell concedes that, 'similar to a powerful antibiotic' there are 'side-effects' that 'can cause discomfort and pain', including disruption of daily life and 'sometimes civilian casualties'. But commanders make every effort to minimize them, because the 'air dominance' guaranteed by 'manned and unmanned aerial platforms' permits the restrained application of combat power 'with surgical precision' (Caldwell and Hagerott, 2010).

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

Bio-medical metaphors like these work to render military violence intrinsically therapeutic; counterinsurgency becomes chemotherapy, killing insurgent cells and sometimes even innocent bodies to save the body politic, and hunter-killer missions activated through the networked kill-chain become perfectly consistent with, in fact the very apotheosis of, what Dillon and Reid (2009) call 'the liberal way of war'.[29]

Cultural Divides

There is a long history of assuming that air war is, by its very nature, virtuous: that attacks from the air can either deter war in the first place or bring it to a speedy end without the protracted carnage of ground warfare in the second. This progressivist ideology, with its emphasis on economy and efficiency – 'beneficial bombing' as Clodfelter (2010) calls it – survived the horrors of the Second World War more or less intact, and Swift (2010) has proposed (though in markedly less celebratory terms) that 'today's Predator drones in Afghanistan and Pakistan are the direct descendants of the Heinkels and Lancaster bombers of the Second World War'. I am not sure that he is right. There are continuities between the two, at once ideological and operational, and many advocates of air power before and after the Second World War imagined something like today's drone operations with uncanny foresight. Celebrating victory over Japan in 1945, for example, General Henry 'Hap' Arnold famously noted that: 'We have just won a war with a lot of heroes flying around in planes.' But, he continued, 'the next war may be fought by airplanes with no men in them at all'. There are other continuities, but there are also significant differences, and the lines of descent are complex.

For its part, invoking the Revolution in Military Affairs and its successor projects, the USAF claims that it has moved from 'industrial age' to 'information age' warfare. Since the Second World War, the number of weapons (aircraft/bombs) involved in attacking a target has substantially decreased while the number of sensors involved has substantially increased. Armed UAVs have played a vital role in this transformation, yet if the USAF sees this as crossing 'a cultural divide of precision and information' (Figure 6), critics worry that a different Rubicon has been crossed. Far from the precision-strike capacity of 'virtuous war', Britain's Air Chief Marshall Sir Brian Burridge has described the hunter-killer missions as 'virtue-less war' involving neither heroism nor courage (Mayer, 2009). What he has in mind is a central tenet of many ethical claims about armed combat: that it is only permissible to kill if you run the risk of being killed yourself. In contrast, remote UAV operations allow what the USAF calls 'the projection of power without vulnerability'.[30] This is only true in a particular sense, of course: pilots and operators at Creech Air Force Base are plainly out of harm's way, but the forward-deployed operators and ground crews are not. Still, Burridge's point goes to the very heart of

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

Figure 6 'A cultural divide of precision and information' (USAF)

late modern war. Indeed, Gros (2010: 268) doubts that it is proper to call it war at all:

> New conflicts, in their hyper-technical version, marginalize or even completely evacuate that minimal equality in the face of death that constituted the identity of what, among the violence and the massacres, the clashes and the raiding, used to be distinguished as 'war'.

If there is something predatory about these new states of violence, however, that 'equality in the face of death' – and with it the raw intimacy of the killing space – has been effaced by more technologies than the Predator or Reaper: think of Cruise missiles that can be launched from ships hundreds of miles from their targets. What is distinctive about the hunter-killer platforms is the dispersion and distribution of both the 'faceless enemies that wage war from afar' (Kilcullen and Exum, 2009) and the faces of their human targets across a network that produces a peculiarly new form of intimacy, at once collective and one-sided. For, as I have shown, the time-space compression of the kill-chain ensures that, whatever cultural divide has been crossed in 'precision and information', another has been signally reinforced: the techno-cultural distinction between 'their' space and 'our' space, between the eye and the target. The two planes of

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

conventional air war – the 'view from above' and the 'view from below' – are fused in the network operations that I have described: as a Mission Coordinator at Creech put it, 'You're watching what they see, eighteen inches from the battlefield' (Guernica, 2010). But in this new military optic, both points of view are always 'ours'.

Acknowledgements

I am grateful to Ben Anderson and three anonymous referees for their comments on a first draft of this article, and to the Social Sciences and Humanities Research Council for financial support.

Notes

1. A 'drone' is the popular term for the aircraft I discuss here, but the United States Air Force prefers Remotely Piloted Aircraft (RPA) or Unmanned Aerial Vehicle (UAV); when these aircraft are part of an integrated network – as here – this is referred to as an Unmanned Aerial System (UAS). To describe them as 'unmanned' is misleading, however, because while a UAV does not carry a pilot, the system is operated and supported by several hundred personnel.

2. Bill Roggio maintains a tally of drone strikes in Pakistan at http://www.longwarjournal.org/pakistan-strikes.php. Counting the strikes is relatively straightforward, but estimating casualties is much more contentious.

3. There are many different UAVs operated in Afghanistan by both ground and air forces; my discussion is confined to US Air Force operations, and I focus on the MQ-1 (Predator) and the MQ-9 (Reaper), which, unlike smaller UAVs, are usually armed. The first Predators were developed by General Atomics for the Pentagon and the CIA between 1994 and 1996, and were deployed to Bosnia in 1995 and Kosovo in 1996. MQ-1A Predators were armed with Hellfire missiles in early 2001 and rushed to Afghanistan after 9/11. The MQ-9 Reaper came into service in Afghanistan in September 2007; it can fly higher (50,000/25,000 ft) and faster (230/84 mph) than the Predator, has a much greater range (3682/454 miles) and carries a much heavier weapon load. The US Army also operates (usually much smaller) UAVs launched and controlled in-theatre whose primary role is to provide video feeds to attack helicopters and ground forces.

4. The 7000 mile distance imposes a 1.8 second delay in control inputs that makes it impossible for remote operators to perform take-offs and landings, which are the responsibility of forward deployed Launch and Recovery crews that use a line-of-sight data link.

5. There is a trade-off: Reapers equipped with Gorgon Stare will fly unarmed and on shorter missions as a result of the increased power demands and drag on the aircraft imposed by the new sensor pods. This will presumably redouble the significance of UAVs hunting in flocks or swarms and being in close contact with other assets, since targets identified by the Gorgon Stare will have to be attacked from other platforms.

6. Preliminary tests of Gorgon Stare in October 2010 suggested that the system was 'not operationally effective' (Cloud and Dilanian, 2011; Nakashima, 2011). The real-time resolution level was too coarse to track 'dismounts' (people); image stitching was so poor that the ability to 'track targets across the image seams'

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

was compromised; and software errors made geo-location 'inaccurate and inconsistent'. These problems were aggravated by a low rate of image transmission to the ground station that confounded the prosecution of dynamic targets. The USAF dismissed the report as preliminary, however, and the system was deployed to Afghanistan just in time for the Taliban's spring offensive in April 2011.

7. The phrase was first used in July 2009 by Lt Gen. David Deptula when he was the Air Force's deputy chief of staff for ISR, and it has since become a leitmotif in discussions of ISR.

8. The USAF has five DCGS stations, three in the US and two in Germany and Korea, linked in a system known as Sentinel.

9. A Combat Air Patrol (CAP) involves a 24-hour presence in a target box or combat zone, and usually requires three or four aircraft: one on station, one or two en route and one on the ground. The USAF has increased the number of daily CAPS flown by Predators and Reapers from just six in 2004 through 12 in 2006 and 34 in 2008 to 53 by 2010, and plans to increase this to 65 by FY 2013 (Black, 2011). As the number of CAPs increases, and the image stream multiplies even more rapidly, the Air Force will face a serious problem in 'manning its unmanned platforms' unless a significant number of routine operations can be automated (Schanz, 2011).

10. The details are classified, but the US military is known to use GeoTime, a program that fuses and visualizes geo-spatial, temporal and intelligence data from multiple sources ('combining the where, the when and the who') as a three-dimensional array that replicates the standard time-geography diagrams developed by Swedish geographer Torsten Hägerstrand in the 1960s and 1970s. The program includes 'dedicated pattern-finding tools' that allow users 'to navigate the data in real time for rapid visual discovery of patterns of behavior' (see http://www.geotime.com).

11. On video analytics and its algorithms, see Crandall (2010: 72–3) (though he seems to minimize the technical and operational difficulties involved).

12. They are also described as MALE (Mid-Altitude Long-Endurance) drones, and since the US military is evidently fixated by its acronyms it would not be difficult to read this as a techno-cultural version of the voyeurism of the Orientalist gaze in which 'the Orient' reclines unsuspecting beneath their persistent, penetrating stare. Thus, for example, Martin (2010: 81) describes his role as 'a voyeur in the sky' and notes that 'the poor bastards never once considered looking up, way up, from which height Predator crews observed their every move'. Hypervisibility then becomes a climactic voyeurism. Such a reading also draws attention to the 'techno-masculinization' that advances the abstract disembodiment of late modern war (see Masters, 2005).

13. The total number of Close Air Support sorties flown by all types of aircraft increased from 6495 in 2004 through 20,359 in 2008 to 33,679 in 2010.

14. The term derives from Foucault, but Deleuze's (1992: 160) gloss is particularly apposite: dispositifs or apparatuses comprise 'curves of visibility and curves of enunciation', in other words, 'they are machines which make one see and speak'.

15. That this is a process requires emphasis. One UAV pilot confessed that when he made his first 'kill', he was 'concentrating entirely on the shot and its technical

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

aspects'; the man in his sights was 'only a high-tech image on a computer screen'. But subsequent missions gradually produced a sense not only of involvement but also of (conditional) responsibility and even, on occasion, remorse (Martin, 2010: 43–4, 52–5, 212).

16. Cf. O'Connell (2009: 9–10), who claims that the central factors in Grossman's study also 'characterize drone operations', which in her eyes look 'very much like a video game'. In fairness, I should note that some of the sources on which she relies for her account of the conduct of those (CIA) operations have been overtaken by events.

17. The military also uses them for recruitment, which is much more problematic, and on its website the Air Force does stage the hunter-killer missions as video-game entertainment (see 'Fly the MQ-9 Reaper' at http://www.airforce.com/games-and-extras). More generally, however, late modern war prizes skills like rapid hand-eye coordination, multi-tasking and visual acuity that are honed by playing video games – to that extent, Chow (2006: 35) is right – but this does not automatically reduce war to a video game.

18. Others may be more blasé; the vice chairman of the Joint Chiefs of Staff described jaded analysts watching archived hours of what he (and apparently they) call 'Death TV' (Lake, 2010).

19. I owe this suggestion to Ben Anderson.

20. Military lawyers prefer the term 'laws of armed conflict' (LOAC) to the more usual 'international humanitarian law'.

21. Beard served as Associate Deputy General Counsel (International Affairs), Office of the Secretary of Defense, 1990–2004.

22. The 'mathematical precision' presumably refers to collateral damage modelling rather than the legal principles and concepts, since elsewhere the same officer concedes that proportionality is 'not a mathematical formula or anything like that' and that the laws of armed conflict contain some 'very wiggly concept[s]' (Transcript, Department of Defense Bloggers Roundtable with Col. Gary Brown, 27 May 2009).

23. I have condensed this idealized account from *Targeting* (USAF, 2006) and *Air Force Operations and the Law* (Judge Advocate General's School, Maxwell Air Force Base, 2009: ch. 16). See also Shanker (2008); Mulrine (2008); Kurle (2010); Bitzes (2011). For a rare description of how the legal process works in practice, see Hyland (2010).

24. One example: a Predator operated by the CIA killed Baitullah Mehsud, the leader of the Pakistan Taliban (TTP), on 5 August 2009; but it took 16 strikes over the preceding 14 months before he was assassinated, in the course of which 200–320 other people were killed (Mayer, 2009). Visual imagery is clearly insufficient, and Adair (2010) insists that 'optimal engagement of UAVs demands a nuanced understanding of the environment gained only through interaction with the population on the ground – UAV use is not a panacea for face-to-face interaction.' Although there are continuing experiments in detecting voice signatures and chemical signatures (emitted by IED factories) from airborne platforms, these are clearly supplements to not substitutes for detailed 'human intelligence'.

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

25. There is only one recorded instance of US troops being killed by 'friendly fire' from a UAV to date. On 6 April 2011 Marines under fire in southern Afghanistan mistook 'hot spots' on a video feed from a Predator for Taliban fighters moving toward them and called in a missile strike; in fact they were US troops moving in to reinforce the Marines, and two of them died from their wounds (Cloud, 2011b). A Pentagon spokesperson explained that 'the video feeds sometimes provide blurry or unclear images of conditions on the ground, making it hard for screeners responsible for searching the video for possible targets to always understand what they are seeing' (MacAskill, 2011).

26. This account is derived from the official transcript of radio transmissions, chat log and intercom conversations obtained by the *Los Angeles Times* under a Freedom of Information request. The transcript is redacted, and does not include communications with the CAOC, or any video footage (see Cloud, 2011a).

27. I have in mind the video footage showing the crew of an Apache helicopter gunning down civilians in Baghdad in July 2007 (see http://www.collateralmurder.com).

28. This is an astonishing essay and I don't have space to do it justice, but there is one claim that bears directly on the present discussion. Etzioni claims that criticisms are 'written by people who yearn for a nice clean war, one in which only bad people will be killed using "surgical" strikes that inflict no collateral damage' (2010: 71) This is an extraordinary inversion, since it is proponents of UAVs that consistently connect them to a surgical-strike capacity.

29. Mitchell (2011: 53) notes that the origins of 'immunity' lie in politico-legal not bio-medical discourse; but he suggests treating counterterrorism as 'a public health crisis rather than a war' and calls for a 'strengthening of the immune system' – seemingly unaware of the biopolitical integuments of late modern war.

30. The UAVs themselves are highly vulnerable; in Afghanistan (and elsewhere) they fly in uncontested airspace, but in other war zones in their present form their operational life would be much shorter.

References

Adair, J. (2010) 'Personalizing an Impersonal Weapon: Integrating Armed UAVs and Ground Forces', PowerPoint presentation, US Army and Marine Corps Counterinsurgency Center, COIN Symposium, 13 May.

Alston, P. (2010) *Report of the Special Rapporteur on Extrajudicial, Summary or Arbitrary Executions; Addendum: Study on Targeted Killings*. Geneva: United Nations.

Anderson, K. (2009) 'Targeted Killing in US Counterterrorism Strategy and Law', Working Paper of the Series on Counterterrorism and American Statutory Law No. 9, May. Washington, DC: Brookings, URL (consulted September 2011): http://www.brookings.edu/papers/2009/0511_counterterrorism_anderson.aspx.

Barnes, J. (2010) 'US Military Turns to TV for Surveillance Technology', *Los Angeles Times*, 7 June.

Bauman, Z. (2001) 'Wars of the Globalization Era', *European Journal of Social Theory* 4: 11–28.

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

Beard, J. (2009) 'Law and War in the Virtual Era', *American Journal of International Law* 103: 409–45.

Biltgen, P. and R. Tomes (2010) 'Rebalancing ISR', *Geospatial Intelligence Forum* 8(6): 14–16.

Bitzes, J. (2011) 'Role of an Air Operations Center (AOC) Legal Adviser in Targeting', Conference on Drones, Remote Targeting and the Promise of Law, New America Foundation, Washington DC, 24 February.

Black, B. (2011) 'Air Force UAS Global Operations', Future of Unmanned Aircraft Symposium, International Institute for Strategic Studies, Washington DC, April.

Caldwell, W. and M. Hagerott (2010) 'Curing Afghanistan', *Foreign Policy* 7 April, URL (consulted September 2011): http://www.foreignpolicy.com/articles/2010/04/07/curing.afghanistan.

Cantwell, H. (2009) 'Operators of Air Force Unmanned Systems', *Air and Space Power Journal* 33(2): 67–77.

Cheater, J. (2007) *Accelerating the Kill Chain via Future Unmanned Aircraft*. Center for Strategy and Technology, Air War College, April. URL (consulted September 2011): http://www.au.af.mil/au/awc/awcgate/cst/bh.cheater.pdf.

Chow, R. (2006) 'The Age of the World Target: Atomic Bombs, Alterity, Area Studies', pp. 25–43 in *The Age of the World Target: Self-referentiality in War, Theory and Comparative Work*. Durham, NC: Duke University Press.

Clodfelter, M. (2010) *Beneficial Bombing: The Progressive Foundations of American Air Power, 1917–1945*. Lincoln: University of Nebraska Press.

Cloud, D. (2011a) 'Combat by Camera: Anatomy of an Afghan War Tragedy', *Los Angeles Times*, 10 April.

Cloud, D. (2011b) 'Two US Troops Killed by "Friendly Fire" in Afghanistan', *Los Angeles Times*, 11 April.

Cloud, D. and K. Dilanian (2011) 'Proposed Drone Spy System Fails Testing, According to Draft Report', *Los Angeles Times*, 25 January.

Crandall, J. (2010) 'The Geospatialization of Calculative Operations: Tracking, Sensing and Megacities', *Theory, Culture & Society* 27: 68–90.

Cullather, N. (2003) 'Bombing at the Speed of Thought: Intelligence in the Coming Age of Cyberwar', *Intelligence and National Security* 18: 141–54.

Cullison, A. and M. Rosenberg (2010) 'Afghan Deaths Spur US Reprimands', *Wall Street Journal*, 31 May.

Defense Science Board Summer Study (2004) *Transition to and from Hostilities*. Washington, DC: Department of Defense.

Deleuze, G. (1992) 'What Is a *Dispositif*?', in *Michel Foucault Philosopher: Essays*, trans. T. Armstrong. New York: Routledge.

Der Derian, J. (2009) *Virtuous War: Mapping the Military-industrial-media-entertainment Network*, 2nd edn. New York: Routledge.

Dillon, M. and J. Reid (2009) *The Liberal Way of War: Killing to Make Life Live*. London: Routledge.

Drew, C. (2010a) 'Military Taps into Social Networking Skills', *New York Times*, 7 June.

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

Drew, C. (2010b) 'Study Cites Crew in Attack on Afghans', *New York Times*, 10 September.

Dunlap, C. (2010) 'Come the Revolution: A Legal Perspective on Air Operations in Iraq Since 2003', pp. 139–54 in R. Pedrozo (ed.) *The War in Iraq: A Legal Analysis*. Newport, RI: Naval War College.

Editorial (2010) 'The Drone Wars', *Wall Street Journal*, 9 January.

Editorial (2011) 'Behind US Condolence Payments for Afghan Civilians', *Los Angeles Times*, 12 April.

Engelhardt, T. (2009) 'War of the Worlds', *TomDispatch*, 8 October.

Etzioni, E. (2010) 'Unmanned Aircraft Systems: The Moral and Legal Case', *Joint Forces Quarterly* 57: 66–71.

Fellowship of Reconciliation (2010) *Convenient Killing: Armed Drones and the 'Playstation' Mentality*. Oxford: Fellowship of Reconciliation.

Gordon, A. (2008) *Ghostly Matters: Haunting and the Sociological Imagination*. Minneapolis: University of Minnesota Press.

Gordon, N. (2004) 'Rationalizing Extra-judicial Executions: The Israeli Press and the Legitimisation of Abuse', *International Journal of Human Rights* 8: 305–24.

Grant, R. (2008) 'The All-seeing Air Force', *Air Force Magazine*, September.

Gregory, D. (2006) '"In Another Time-zone the Bombs Fall Safely"': Targets, Civilians and Late Modern War', *Arab World Geographer* 9(2): 88–111.

Gregory, D. (2008) '"The Rush to the Intimate": Counterinsurgency and the Cultural Turn in Late Modern War', *Radical Philosophy* 150: 8–23.

Gregory, D. (2010a) 'War and Peace', *Transactions of the Institute of British Geographers* 35: 154–86.

Gregory, D. (2010b) 'Seeing Red: Baghdad and the Event-ful City', *Political Geography* 29: 266–79.

Gregory, D. (2011) 'Doors into Nowhere: Dead Cities and the Natural History of Destruction', pp. 249–83 in M. Heffernan, P. Meusburger and E. Wunder (eds) *Cultural Memories*. Heidelberg: Springer.

Gros, F. (2010) *States of Violence: An Essay on the End of War*, trans. K. Fijalkowski and M. Richardson. London: Seagull.

Grossman, D. (1995) *On Killing: The Psychological Cost of Learning to Kill in War and Society*. New York: Back Bay Books.

Guernica, K. (2010) 'On the Frontlines – From 8,000 Miles Away', *FOXnews.com*, 8 April.

Harris, C. (2006) 'The Omniscient Eye: Satellite Imagery, "Battlespace Awareness" and the Structures of the Imperial Gaze', *Surveillance & Society* 4(1/2): 101–22.

Herbert, A. (2003) 'Compressing the Kill Chain', *Air Force Magazine* 86(3): 50–54.

Höglund, J. (2008) 'Electronic Empire: Orientalism Revisited in the Military Shooter', *Game Studies* 8(1), URL (consulted September 2011): http://gamestudies.org/0801/articles/hoeglund.

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

Human Rights Watch (2008) *Troops in Contact: Airstrikes and Civilian Deaths in Afghanistan*. Washington, DC: Human Rights Watch.

Hyland, T. (2010) 'The Law of Instant Death', *The Age*, 21 February.

Jay, M. (1988) 'Scopic Regimes of Modernity', pp. 3–23 in H. Foster (ed.) *Vision and Visuality*. Seattle: Bay Press.

Jean, G.V. (2011) 'Broadcast Television Tools to Help Intelligence Analysts Wade through Data', *National Defense* 95(688): 32–3.

Judge Advocate General's School, Maxwell Air Force Base (2009) *Air Force Operations and the Law: A Guide for Air, Space and Cyber Forces*, 2nd edn), URL (consulted September 2011): http://www.afjag.af.mil/shared/media/document/AFD-100510-059.pdf.

Kaplan, R. (2006) 'Hunting the Taliban in Las Vegas', *Atlantic Monthly*, September: 81–4.

Kaplow, D. (2010) *Death by Moderation: The US Military's Quest for Usable Weapons*. Cambridge: Cambridge University Press.

Keen, F.S. (1923) 'To What Extent Would the Use of the Latest Scientific and Mechanical Methods of Warfare Affect Operations on the North-West Frontier of India?', *Journal of the United Service Institution of India* 55.

Kilcullen, D. and A. Exum (2009) 'Death from Above, Outrage Down Below', *New York Times*, 16 May.

Kurle, D. (2010) 'Lawyers Provide Operational Advice to CAOC Commanders', US Air Forces Central Public Affairs, 9 March, URL (consulted September 2011): http://www.afcent.af.mil/news/story.asp?id=123193371.

Lake, E. (2010) 'Drone Footage Overwhelms Analysts', *Washington Times*, 9 November.

Lindlaw, S. (2008) 'UAV Operators Suffer War Stress', *Associated Press*, 8 August.

Logan, L. (2009) 'Drones: America's New Air Force', *CBS News 60 Minutes*, 14 August.

MacAskill, E. (2011) 'Two US Soldiers Killed in Friendly-fire Drone Attack in Afghanistan', *The Guardian*, 12 April.

Martin, M.J. with C. Sasser (2010) *Predator: The Remote Control Air War over Iraq and Afghanistan*. Minneapolis, MN: Zenith Press.

Masters, C. (2005) 'Bodies of Technology: Cyborg Soldiers and Militarised Masculinities', *International Feminist Journal of Politics* 7: 112–32.

Matthews, W. (2010) 'One Sensor to do the Work of Many', *Defense News*, 1 March.

Mayer, J. (2009) 'The Predator War', *New Yorker* 26 October.

McCloskey, M. (2009) 'Two Worlds of a Drone Pilot', *Stars & Stripes*, 27 October.

Metz, C. (1982) *The Imaginary Signifier: Psychoanalysis and the Signifier*. Bloomington: Indiana University Press.

Mitchell, W.J.T. (2011) *Cloning Terror: The War of Images, 9/11 to the Present*. Chicago: University of Chicago Press.

Mulrine, A. (2008) 'Warheads on Foreheads', *Air Force Magazine* 91(10): 44–47.

Nakashima, E. (2011) 'Air Force's New Surveillance System for Aerial Drones not Working as Hoped', *Washington Post*, 24 January.

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

Nakashima, E. and C. Whitlock (2011) 'With Air Force's New Drones, "We Can See Everything"', *Washington Post*, 2 January.

O'Connell, M.E. (2009) 'Unlawful Killing with Combat Drones: A Case Study of Pakistan, 2004–2009', Notre Dame Law School, Indiana, Legal Studies Research Paper 09-43.

Omissi, D. (1990) *Air Power and Colonial Control: The Royal Air Force 1919–1939*. Manchester: Manchester University Press.

Orford, A. (2010) 'The Passions of Protection: Sovereign Authority and Humanitarian War', pp. 335–56 in D. Fassin and M. Pandolfi (eds) *Contemporary States of Emergency: The Politics of Military and Humanitarian Interventions*. New York: Zone Books.

Owens, P. (2003) 'Accidents Don't Just Happen: The Liberal Politics of High-technology "Humanitarian" War', *Millennium: Journal of International Studies* 32: 595–616.

Paust, J.J. (2009) 'Self-defense Targeting of Non-state Actors and Permissibility of U.S. Drones in Pakistan', Public Law and Legal Theory series, University of Houston, 2009-A-36.

Phillips, M. (2010) 'Civilians in Cross-hairs Slow Troops', *Wall Street Journal*, 21 February.

Roe, A. (2008) 'Friends in High Places: Air Power on the North-West Frontier of India', *Air Power Review* 11(2): 30–42.

Rogers, C. (2010), *Civilian Harm and Conflict in Northwest Pakistan*. Washington, DC: Campaign for Innocent Victims in Conflict.

Royakkers, L. and R. van Est (2010) 'The Cubicle Warrior: The Marionette of Digitized Warfare', *Ethics Info Tech* 12: 289–96.

Satia, P. (2008) *Spies in Arabia: The Great War and the Cultural Foundations of Britain's Covert Empire in the Middle East*. Oxford: Oxford University Press.

Satia, P. (2009) 'From Colonial Air Attacks to Drones in Pakistan', *New Perspectives Quarterly* 26(3): 34–7.

Schanz, M. (2011) 'The Reaper Harvest', *Air Force Magazine* 94(4): 36–9.

Schmitt, M. (2004) '"Direct Participation in Hostilities" and Twenty-first-century Armed Conflict', pp. 502–29 in H. Fischer, U. Froissart, W. Heintschel von Heinegg and C. Raap (eds) *Krisensicherung und Humanitärer Schutz – Crisis Management and Humanitarian Protection*. Berlin: BWV.

Schmitt, M. (2010) 'Deconstructing Direct Participation in Hostilities: The Constitutive Elements', *New York University Journal of International Law and Politics* 42: 697–739.

Shanker, T. (2008) 'Civilian Risks Curbing Strikes in Afghan War', *New York Times*, 23 July.

Shanker, T. and M. Richtel (2011) 'In New Military, Data Overload Can Be Deadly', *New York Times*, 16 January.

Singer, P. (2010) 'The Soldiers Call It War Porn', *Spiegel Online*, 12 March.

Smith, R. (2006) *The Utility of Force: The Art of War in the Modern World*. London: Penguin.

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012

Solis, G. (2010) 'CIA Drone Attacks Produce America's Own Unlawful Combatants', *Washington Post*, 12 March.

Somaini, A. (2005–6) 'On the Scopic Regime', *Leitmotiv* 5: 25–38.

Swift, D. (2010) 'Bomb Proof', *Financial Times*, 4 September.

Tirpak, J. (2009) 'Beyond Reachback', *Air Force Magazine*, March.

Turner, L.S., J.T. Adair and L. Hamel (2009) 'Optimizing Deadly Persistence in Kandahar: Armed UAV Integration in the Joint Tactical Fight', Colloquium *[US Army and Marine Corps Counterinsurgency Center]* 29: 1–19.

Uecker, T. (2005) *Full-motion Video: The New Dimension of Imagery*, Research Report, Air Command and Staff College, Maxwell Air Force Base.

United States Air Force (2006) *Targeting*, USAF Doctrine Document 2-19 (8 June).

Vaccaro, J. (2009) 'The Next Surge: Counterbureaucracy', *New York Times*, 8 December.

Virilio, P. (1989) *War and Cinema: The Logistics of Perception*, trans. P. Camiller. London: Verso. (First published in French in 1984.).

Webb, D., L. Wirbel and B. Sulzman (2010) 'From Space No One Can Watch You Die', *Peace Review* 22: 31–9.

Weizman, E. (2010) 'Thanato-tactics', pp. 543–73 in A. Ophir, M. Givoni and S. Hanafi (eds) *The Power of Inclusive Exclusion*. New York: Zone Books.

West, B. (2011) *The Wrong War: Grit, Strategy and the Way Out of Afghanistan*. New York: Random House.

White, R. (2010) 'Gorgon Stare Broadens UAV Surveillance', *Aviation Week*, 3 November.

Zucchino, D. (2010) 'Drone Pilots Have a Front-row Seat on War from Half a World Away', *Los Angeles Times*, 21 February.

Derek Gregory is Peter Wall Distinguished Professor at the University of British Columbia in Vancouver. He is completing a new book, *The Everywhere War*, on the conduct of war in the shadows of 9/11, and his current research is a cultural and political history of bombing, focusing on the Second World War, the air wars over Indochina and today's 'drone wars'. [email: derek.gregory@geog.ubc.ca]

Downloaded from tcs.sagepub.com at The University of British Columbia Library on May 21, 2012