



THE TERRITORY OF THE SCREEN

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I Saw a Man

Owen Sheers's remarkable novel, *I Saw a Man*, describes the circles of grief that spiral from a US drone strike in Pakistan's Federally Administered Tribal Areas (FATA). A Predator, controlled from Creech Air Force Base in Nevada by Daniel, a US Air Force pilot, had been flying over eastern Afghanistan for more than an hour when the crew was tasked to cross the border into Pakistan and execute the targeted killing of Hafiz Mehsud, a high-ranking member of the Pakistan Taliban. The mission was under the direction of the CIA from its headquarters in Langley, Virginia. Intelligence from a local informant and signals intercepts suggested that Mehsud had arranged a rendezvous in the mountains northwest of Miranshah, and within minutes of receiving the mission brief the other—dispersed—actors in the kill-chain were in radio communication or online with the Predator crew. The aircraft's sensors tracked two vehicles to a compound high in one of the eastern valleys, and soon afterwards a minivan and a pickup truck joined them. The occupants spilled out, several of them carrying weapons. The screeners watching the video feeds in Florida decided they were all men. "Sweet target," breathed Maria, the sensor operator sitting next to Daniel. Suddenly he noticed movement in the minivan. "Was that a woman in there?" he asked. "No way to tell," one of the screeners told him. "I saw a man," said the mission intelligence coordinator from Langley, cutting off the discussion.

Seconds later Daniel was cleared to engage the target. Two Hellfire missiles roared from their racks beneath the aircraft. As he watched his screen:

A lighter patch appeared in the van's door again. Four, three, two. It was a headscarf. One.

The visuals flashed white, blanking in the glare.
"Impact," Maria said beside him.

Daniel watched as definition slowly returned to the screens.
Maria zoomed in close. The vehicles were burning.

Among those killed were the passengers in the second “convoy”—a loaded term—who turned out to be foreign journalists, together with their local driver and interpreter; the headscarf Daniel had glimpsed belonged to Caroline, the British wife of the novel’s central protagonist, Michael. “I saw a man,” the mission intelligence coordinator had said—yet he wasn’t there. *She* was.¹

The details of the strike—even some of the phrases used—faithfully mimic other civilian casualty incidents in Afghanistan and Pakistan, and the novel successfully raises a series of far from fictive questions about the multiple implications of “distance” in such remote operations. Michael is an author with a reputation for effacing himself from his narratives: “Isn’t that what you’re always saying?” he is asked. “You need distance to see anything clearly?” When he tries to assuage his grief by losing himself in his fencing lessons his instructor insists “DISTANCE! DISTANCE MICHAEL! It’s your best defence.” And in parallel those involved in the kill-chain are effaced from the official narrative:

“A U.S. drone strike.” That was all the press release said. No mention of Creech, screeners, Intel coordinator, an operator, a pilot. It was as if the Predator had been genuinely unmanned. As if there had been no hand behind its flight, no eye behind its cameras.

But Daniel could not escape his involvement so easily. Although he is haunted by his role in targeted killing, he recalibrates the distance—and the difference—between Nevada and the Afghanistan-Pakistan borderlands. Each morning, as he sets off from his home outside Las Vegas to drive to Creech, he reflects on the similarity between the mountains over which he would soon be flying his Predator and the Charleston range shimmering in his windshield. Despite their closeness, Daniel had never ventured into them and didn’t really know them.

They were his daily view but not yet his landscape, a feature of his geography but not yet his territory. Unlike those other

¹ Owen Sheers, *I Saw a Man* (London and New York: Picador and Doubleday, 2015). The title is taken from a version of William Hughes Mearns’s poem *Antigonish* (1899): “Yesterday, upon the stair/I saw a man who wasn’t there/He wasn’t there again today/I wish, I wish he’d go away.” The significance of my last two sentences—and the emphasis—is that the presence of women (and children) is typically taken by the US military as an index of “civilian-ness”; the assumption is problematic in all sorts of ways, but the presence of civilians on a target is not necessarily sufficient to avert a strike. I should also explain that in the course of the novel it becomes clear that there was another man “who wasn’t there”—though in that case the location was Hampstead not Waziristan.

mountains, 8,000 miles away. Those mountains Daniel knew intimately. He'd never climbed in them, either, but he was still familiar with the villages silted into their folds, the shadows their peaks threw at evening and the habits of the shepherds marshalling their flocks along their lower slopes. Recently he'd even been able to anticipate, given the right weather conditions, at what time the clouds would come misting down the higher peaks into the ravines of the valleys. Over the last few months he'd begun to feel an ownership over them. Were they not as much his workplace as that of those shepherds? For the troops operating in the area they were simply elevation, exhaustion, fear. They were hostile territory. But for Daniel they were his hunting ground, and as such it was his job not just to know them but to learn them, too. To love them, even, so that from the darkness of his control station in Creech, he might be able to move through their altitudes as naturally as the eagles who'd ridden their thermals for centuries.

It's a brilliant paragraph that captures the ways in which optical mastery is transmuted into "ownership," knowledge pinned to power, and the imagery of the eagle parallels the Predator hunting its prey.² Flying over Afghanistan's rugged terrain Daniel's view was different from that of American troops on the ground, for whom the mountains meant only "elevation, exhaustion, fear." He was freed from all that, soaring high above them, precisely because his territory appeared elsewhere. Loitering above that isolated compound in Waziristan, Sheers writes, Daniel "scanned the territory of his screen." This is one of the most perceptive images in *I Saw a Man*, and it is this that I want to explore.

Screening Death

The United States conducts multiple targeted killing programs using Predators and Reapers. The CIA-directed program was initiated in Yemen on 3

² Cf. Grégoire Chamayou, *Théorie du drone* (Paris: La fabrique, 2013), who describes targeted killing as "militarized man-hunting." This text provides much more than the next chapters in Chamayou's previous work, *Les chasses à l'homme* (in English, *Manhunts*), because it addresses the emergence of a radically new modality of later modern war that is focused on the identification, pursuit and elimination of *individuals* in which combat yields to pursuit and the battlefield is replaced by the hunting ground.

November 2002 and extended to Pakistan on 18 June 2004.³ Both were deemed to be outside “areas of active hostilities,” which is why remote platforms were the preferred means of execution since those distant targets would ordinarily be beyond the overt reach of ground troops, but most of the missions were flown by USAF crews and—consistent with the heightened individuation of later modern war⁴—the US military conducted its own targeted killing programs in the “hot zones” of Afghanistan and Iraq using aircraft and Special Forces.

As Sheers’s *aperçu* shows, killing somebody with a Hellfire missile controlled from thousands of miles away depends upon a screen—or more accurately a series of screens—on which the image of a human body will eventually be touched by the cross-hairs of a targeting pod. But this is not a purely optical war; bodies are present on both sides of the screen(s). Remote operations are only “unmanned” in the narrow sense of being carried out from aircraft with no crew on board: hence the Air Force’s proud claim to “project power without vulnerability.” Hundreds of people are involved in conducting each flight, and many more work behind the scenes to produce the intelligence on which each strike depends. They are entangled in a constellation of machines and circuits, algorithms and standard operating procedures, so that—like many other modalities of later modern war—remote operations are the hypostatization of more-than-human military violence.⁵ But all these people are also placed in particular subject-positions through their enrollment in the kill-chain, which is always more than a technical division of labour. Similarly, their targets appear on the screens as silent and spectral traces, and all sorts of technical and lexical devices are used that render them less-than-human: “jackpots,” “squirters,” even “bugsplat.”⁶ “You stopped seeing people on the screen as people,” confessed one former sensor operator. “On the screen they

³ For details, see Derek Gregory, “Dirty Dancing: Drones and Death in the Borderlands,” in Lisa Parks and Caren Kaplan (eds.), *Life in the Age of Drone Warfare* (Durham: Duke University Press, 2017), in press.

⁴ On the individuation of war, see Paul Kahn, “Imagining Warfare,” *European Journal of International Law* 24, no. 1 (2013): 199–216; Samuel Issacharoff and Richard Pildes, “Drones and the Dilemma of Modern Warfare,” in Peter Bergen and Daniel Rothenberg (eds.), *Drone Wars: Transforming Conflict, Law and Policy* (Cambridge: Cambridge University Press, 2015), 388–420.

⁵ Lauren Wilcox, “Embodying Algorithmic Violence: Gender, Race and the Posthuman in Drone Warfare,” *Security Dialogue* 48, no. 1 (2017): 11–28.

⁶ “Bugsplat” was originally a technical term derived from a computer simulation of the “kill-zone” radiating from the point of impact of ordnance: Chris Woods, *Sudden Justice: America’s Secret Drone Wars* (New York: Oxford University Press, 2015), 150. Cf. Jennifer Robinson, “‘Bugsplat’: The Ugly US Drone War in Pakistan,” *Al-Jazeera*, 29 November 2011. <http://www.aljazeera.com/indepth/opinion/2011/11/201111278839153400.html>.

were dots. Ants.”⁷ The casual de-humanization is also effected through a seemingly more anodyne scientific vocabulary. Here is Joseph Pugliese:

The military term “pattern of life” is inscribed with two intertwined systems of scientific conceptuality: algorithmic and biological. The human subject detected by drone’s surveillance cameras is, in the first scientific schema, transmuted algorithmically into a patterned sequence of numerals: the digital code of ones and zeros. Converted into digital data coded as a “pattern of life,” the targeted human subject is reduced to an anonymous simulacrum that flickers across the screen and that can effectively be liquidated into a “pattern of death” with the swivel of a joystick. Viewed through the scientific gaze of clinical biology, “pattern of life” connects the drone’s scanning technologies to the discourse of an instrumentalist science, its constitutive gaze of objectifying detachment and its production of exterminatory violence. Patterns of life are what are discovered and analysed in the Petri dish of the laboratory.... Analogically, the human subjects targeted as suspect yet anonymous “patterns of life” by the drones become equivalent to forms of pathogenic life. The operators of the drones’ exterminatory attacks must, in effect, be seen to conduct a type of scientific ethnic cleansing of pathogenic “life forms.”⁸

⁷ Vegas Tenold, “The Untold Casualties of the Drone War,” *Rolling Stone*, 18 February 2016, <http://www.rollingstone.com/politics/news/the-untold-casualties-of-the-drone-war-20160218>; the speaker was Michael Haas, who served with the 15th Reconnaissance/3rd Special Operations Squadrons at Creech between 2006 and 2011. Haas and other sensor operators insist that these casual reductions also diminish the humanity of those watching the screens: “What kind of people say shit like that?”

⁸ Joseph Pugliese, “Prosthetics of Law and the Anomic Violence of Drones,” *Griffith Law Review* 20, no. 4 (2011): 931–961, 943. The use of biomedical metaphors to treat later modern war as therapeutic has become a commonplace: see Colleen Bell, “Hybrid Warfare and its Metaphors,” *Humanity* 3 (2012): 225–247; Bell, “War and the Allegory of Medical Intervention,” *International Political Sociology* 6 (2012): 325–328; and, in relation to remote operations in particular, Elke Schwarz, “Prescription Drones: On the Techno-biopolitical Regimes of Contemporary ‘Ethical Killing’,” *Security Dialogue* 47, no. 1 (2016): 59–75. Schwarz is surely right to insist that these biomedical narratives are about more than separating the pathological from the “normal”: they also instantiate a claim that “combines expertise with authority” (70).

But those whose lives and deaths flicker into view are all flesh and blood human beings whose fate is decided by actors watching them from the other side of the world.⁹

Seen thus, “the territory of the screen” is more than metaphor. Territory is not only a political-legal inscription that delimits a bounded enclosure in three-dimensional space; it is also, as Stuart Elden suggests, a (bio)political technology whose calibrations enable states to assert, enact and enforce a claim over bodies-in-space.¹⁰ In many cases states have mobilized multiple political technologies to harden their own borders while also claiming the right to track and in extremis to target bodies-in-spaces outside them. This is precisely what activates US drone strikes in the borderlands, where intelligence agencies produce and reproduce the FATA as a data field that is systematically mined to expose seams of information and selectively sown with explosives to be rematerialized as a killing field. The screens on which and through which the strikes are animated are mediations in an extended sequence in which bodies moving into, through and out from the FATA are tracked and turned into targets in a process that Ian Hacking once described more generally as “making people up”: except that in this scenario the targets are not so much “people” as digital traces.¹¹ The scattered actions and interactions of individuals are registered by remote sensors, removed from the fleshiness of human bodies and reassembled as what Grégoire Chamayou calls “schematic bodies.”¹² They are given code names (“Objective x”) and index numbers, they are tracked on screens and their *danse macabre* is plotted on time-space grids and followed by drones. But as soon as the Hellfire missiles are released the transformations that have produced the target over the preceding weeks and months cascade back

⁹ Cf. the installation of a giant photograph of a child orphaned by a drone strike installed in a field in Khyber Pakhtunkhwa in 2014; the artists intended to target those who do the targeting by reminding them that people are “Not A Bug Splat”: <https://notabugsplat.com>.

¹⁰ Stuart Elden, “Land, Terrain, Territory,” *Progress in Human Geography* 34, no. 6 (2010): 799–807, though he makes more of the spaces and less of the bodies—which is why I emphasize the *biopolitical*.

¹¹ In his classic lecture, “Kinds of People: Moving Targets” (British Academy, 2006), Hacking described how “a new scientific classification may bring into being a new kind of person”—in this case, the target—and how “a classification may interact with the people classified.” A signature strike based on a supposedly pathological “pattern of life” is surely the deadliest version of this “interaction.”

¹² Grégoire Chamayou, “Patterns of Life: A Very Short History of Schematic Bodies,” *The Funambulist Papers* 57 (2014), <http://thefunambulist.net/2014/12/04/the-funambulist-papers-57-schematic-bodies-notes-on-a-patterns-genealogy-by-gregoire-chamayou/>.

into the human body: in an instant virtuality becomes corporeality and traces turn into remains.¹³

The technicity of the targeted killing program is consolidated in innumerable ways, but like the division of labour in the kill-chain it is always more than merely “technical” and as such has extremely important political effects. Here I focus on three elements of its political technology—kill lists, signals intercepts and visual feeds—and diagram their joint transformation of the FATA into a space of execution.

“Kill Lists”

Kill lists identify and prioritize named individuals authorized for targeted killing. Lists are not inert tabulations; they are inherently “lively” (even where their purpose is to kill) because they have the capacity to do things, in this case to produce the effects that they name. In the new security regime ushered in after 9/11 the function of the kill lists—like the other “security lists” that proliferated in the shadow of the Twin Towers—was to facilitate, license and script new modes of targeting.¹⁴ In doing so they underwent a series of technical transformations that served their new, central purpose: pre-emption. The Bush administration agreed a “High-Value Target List” so that the CIA could kill or capture suspected terrorists who were linked to al Qaeda and associated groups without having to seek further approval, and it was on this basis that the CIA directed the first drone strikes in the FATA.¹⁵ The US military developed its own Joint Prioritized Effects List (JPEL), as the basis for its targeted killing in Afghanistan. These multiple, often overlapping lists were coordinated and vetted by videoconference, but the Obama administration moved quickly to consolidate the process and to involve the president in

¹³ See Lisa Parks, “Drones, Vertical Mediation, and the Targeted Class,” *Feminist Studies* 42, no. 1 (2016): 227–235; my reference to a *danse macabre* derives from a critique of the skeletal diagrams of time-geography that are involved in condensing activity-based intelligence into patterns of life and the tracks of individual targets.

¹⁴ Marieke de Goede and Gavin Sullivan, “The Politics of Security Lists,” *Environment and Planning D: Society & Space* 34 (2016): 67–88.

¹⁵ James Risen and David Johnson, “Threats and Responses: Bush has Widened Authority of CIA to Kill Terrorists,” *New York Times*, 15 December 2002, <http://www.nytimes.com/2002/12/15/world/threats-responses-hunt-for-al-qaeda-bush-has-widened-authority-cia-kill.html>; Joshua Bobich, “‘Who Authorized This?!’: An Assessment of the Process for Approving U.S. Covert Action,” *William Mitchell Law Review* 33, no. 3 (2007): 1111–1142, 1127–1135.

authorizing all personality strikes outside an “area of active hostilities.”¹⁶ The hub for the program became the Pakistan-Afghanistan Department at the CIA’s Counterterrorism Center at Langley. When Obama took office in 2009 he summarily terminated the CIA’s program of extraordinary rendition and closed its black sites, but provided no alternative arrangements for the detention of enemy combatants captured outside a war zone, leaving the agency with a “disposition problem”: what to do with suspected terrorists? Nominally “kill or capture” operations were now heavily tilted towards “kill.”¹⁷ The response was to devise a “disposition matrix” that arrayed the biographies, locations and known associates of named targets with the assets available either to “find, fix and finish” them or (less likely) to capture and transfer them to other jurisdictions.¹⁸

The kill list embedded in the matrix turned out to be infinitely extendable, more like a revolving door than a rolodex, so much so that at one point Pakistan’s exasperated Chief of Army Staff General Kayani demanded that the Chairman of the Joint Chiefs of Staff Admiral Mullen explain how, after hundreds of drone strikes, “the United States [could] possibly still be working

¹⁶ Obama approved all nominated strikes outside Afghanistan and Pakistan; most of those in Afghanistan were conducted under the authority of the Pentagon using the JPCL, while the Director of the CIA had the authority to approve strikes in Pakistan unless there were special, usually political considerations.

¹⁷ Daniel Klaidman, *Kill or Capture: The War on Terror and the Soul of the Obama Presidency* (New York: Houghton, Mifflin, Harcourt, 2012). “Capture” in Pakistan has not always been infeasible. One study found that 66 per cent of all detainees at Guantanamo had been captured in Pakistan by its security forces or their partners; a follow-up study of those still incarcerated ten years later found that 60 per cent had been captured in Pakistan. Mark Denbeaux et al., “Report on Guantanamo Detainees: Profile of 517 Detainees Through Analysis of Department of Defense Data,” Seton Hall University School of Law (2005), <http://scholarship.shu.edu/cgi/viewcontent.cgi?article=1399&context=shlr>; Spencer Ackerman, “Only Three of 116 Guantánamo Detainees were Captured by US Forces,” *Guardian*, 25 August 2015, <https://www.theguardian.com/us-news/2015/aug/25/guantanamo-detainees-captured-pakistan-afghanistan>. The analysis also raises questions about the accuracy of US intelligence and the evidentiary basis for their detention in the first place: many were subsequently released without charge, a provision clearly not possible once “killing” is substituted for “capture.”

¹⁸ Jo Becker and Scott Shane, “Secret ‘Kill List’ Proves a Test of Obama’s Principles and Will,” *New York Times*, 29 May 2012, <http://www.nytimes.com/2012/05/29/world/obamas-leadership-in-war-on-al-qaeda.html>; Greg Miller, “Plan for Hunting Terrorists Signals U.S. Intends to Keep Adding Names to Kill Lists,” *Washington Post*, 23 October 2012, <https://wpo.st/Hamc2>; Ian Cobain, “Obama’s Secret Kill List—The Disposition Matrix,” *Guardian*, 14 July 2013, <https://www.theguardian.com/world/2013/jul/14/obama-secret-kill-list-disposition-matrix>.

its way through a ‘top 20’ list?’¹⁹ The answer lies not only in the remarkable capacity of al Qaeda and the Taliban to regenerate, because the endless expansion of the list is written into the constitution of the database and the algorithms from which it emerges. The database accumulates information from multiple agencies, and for targets in the FATA the primary sources are ground intelligence from local informants, signals intelligence from the National Security Agency (NSA), and surveillance imagery from the United States Air Force that provide the collective warrant for each strike. Algorithms are then used to search the database to produce correlations, coincidences and connections that serve to identify suspects, confirm their guilt and anticipate their future actions. Jutta Weber explains that the process follows “a logic of eliminating every possible danger”:

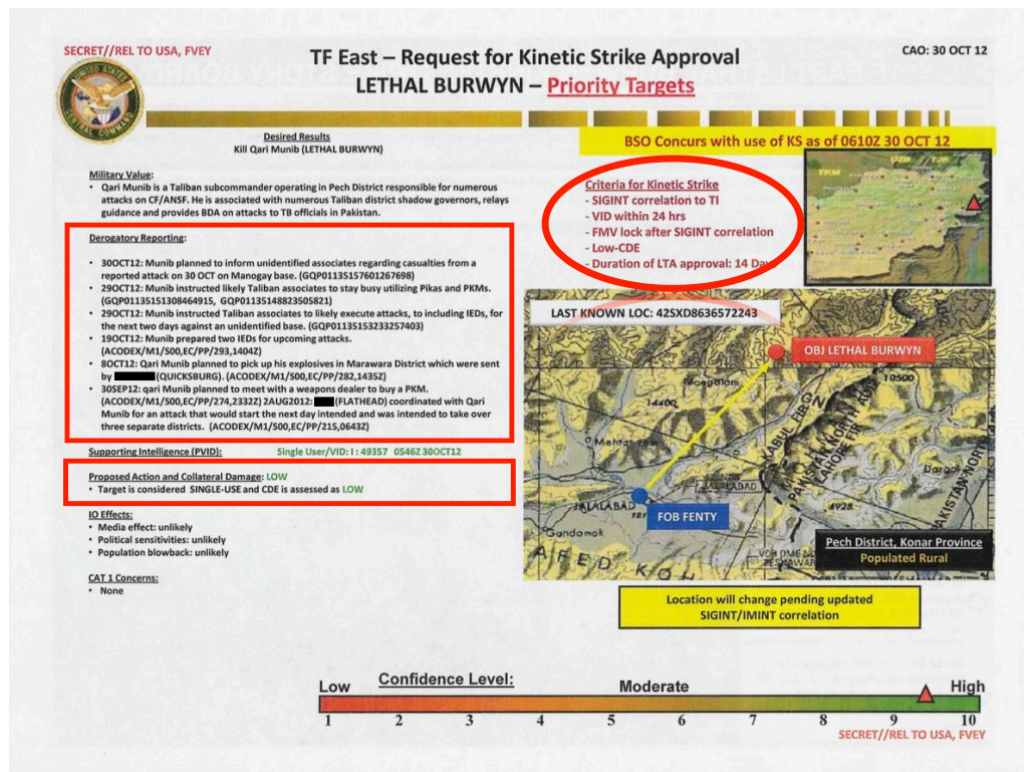
[T]he database is the perfect tool for pre-emptive security measures because it has no need of the logic of cause and effect. It widens the search space and provides endless patterns of possibilistic networks.²⁰

Although she suggests that the growth of big data and the transition from hierarchical to relational and now post-relational databases has marginalized earlier narrative forms, those reappear as soon as suspects have been conjured from the database. The case for including—killing—each individual on the list is exported from its digital target folder to a summary Powerpoint slide called a “baseball card” that converts into a “storyboard” after each mission (Figures 1a and 2b show examples from Afghanistan; those for covert operations in Pakistan remain outside the public domain). Every file is vetted by the CIA’s lawyers and its General Counsel, and by deputies at the National Security Council, and during Obama’s tenure all “complex cases” were approved by the president at a special Tuesday meeting. Herein lies the real magic of the system. “To make the increasingly powerful non-human agency of algorithms and database systems invisible,” Weber writes, “the symbolic power of the sovereign is emphasised: on ‘Terror Tuesdays’ it (appears that it) is only the sovereign who decides about life and death.” But this is an optical illusion. As

¹⁹ Miller, “Plan”; for details of the kabuki dance between Islamabad and Washington see Gregory, “Dirty Dancing.”

²⁰ Jutta Weber, “Keep Adding: On Kill Lists, Drone Warfare and the Politics of Databases,” *Environment and Planning D: Society & Space* 34 (2016): 107–125, 120. The logic is inherently probabilistic, and Joseph Pugliese identifies what he calls “drone casino mimesis”—the proximity of Creech to Las Vegas is appropriately coincidental not causal—because the process mimics “the algorithmic structure of gaming with its foundational dependence on ‘good approximation’ ratios and probability computation”: “Drone casino mimesis: telewarfare and civil militarization,” *Journal of Sociology* 52, no. 3 (2016): 501–521, 510.

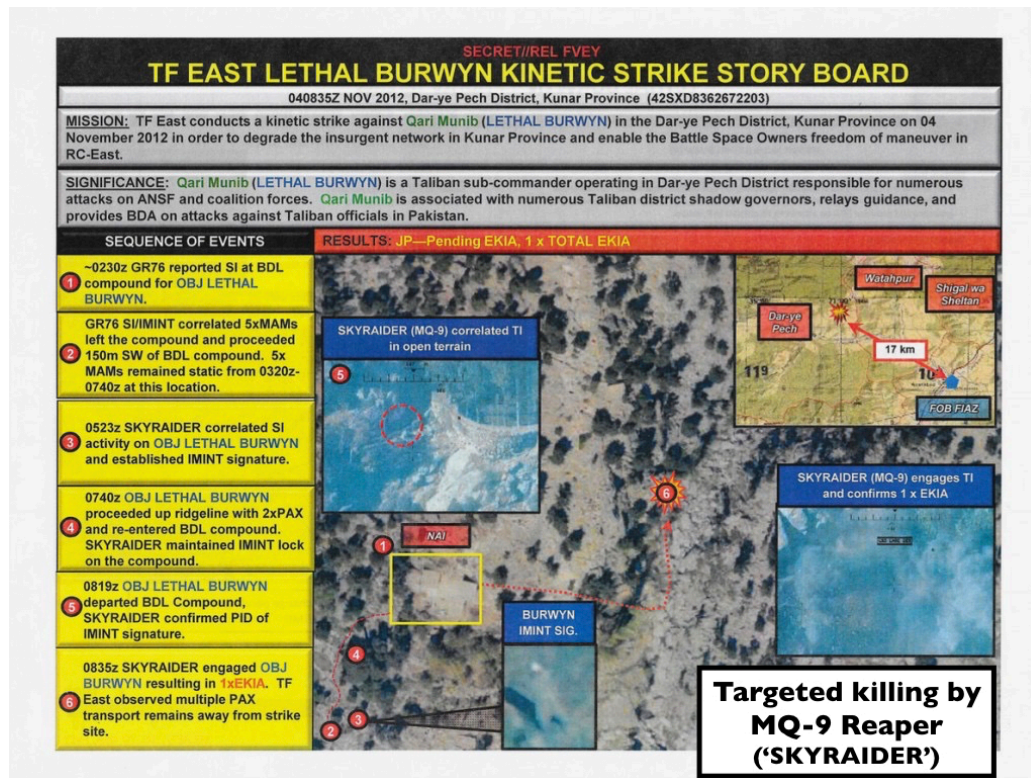
Louise Amore argues more generally, “the sovereign strike is always something more, something in excess of a single flash of decision” and emerges instead from a constellation of prior practices and projected calculations.²¹



²¹ Weber, “Keep Adding,” 120; Louise Amore, *The Politics of Possibility: Risk and Security Beyond Probability* (Durham: Duke University Press, 2013), 2. Amore explains:

Though sovereign decisions of many kinds ... may appear as sudden flashes, their apparent immediacy conceals a complex of calculation, consulting, analysis, algorithmic modelling and risk management that is the condition of possibility of contemporary security. Thus, when the philosopher Giorgio Agamben proposes that the state of exception be understood as empty, “kenomatic” or an “anomic space,” what is elided is precisely the lively, unpredictable and complex life that thrives within that space.

I think that is exactly right, but what is also elided is the operative presence of legal formularies and the function of the quasi-juridical within what Dan McQuillan calls more generally “algorithmic states of exception.” See Dan McQuillan, “Algorithmic States of Exception,” *European Journal of Cultural Studies* 18, no. 45 (2015): 564–576.



Figures 1a and 1b

More is at stake in the production of the kill list than bureaucracy, the anonymity it confers and the dispersion of responsibility it allows.²² These are important issues but the technicity that lies behind the list makes a surreptitious yet powerful claim about the Reason that animates it. The strikes that are the list's telos and terminus are held out to be "precise" not only because science and engineering have supposedly made them so through advances in surveillance and weapons systems but also because target nomination is *itself* constructed as a techno-scientific achievement. The process is presented as technical and protected as secret, kept outside the law until its products are inserted into a quasi-judicial tribunal as objective evidence that cannot be contested but must be acted upon (because pre-emptive). I describe this as a "quasi-judicial" because lawyers are involved but those nominated have no knowledge of the process, no legal representation and no possibility of appeal.²³

²² Cf. Ian Shaw and Majed Akhter, "The Dronification of State Violence," *Critical Asian Studies* 46 (2014): 211–234.

²³ For a rare example of somebody seeking to contest their nomination, see the case of Malik Jalal, a tribal leader from North Waziristan: Derek Gregory, "Death Sentences" at <https://geographicalimagination.com/2016/04/12/death-sentences>; Lizzie Dearden, "The Man

There is sorcery here too: Claudia Aradau argues that all of this “has more in common with the ‘pseudo-rationality’ of astrology than the method of clues”—let alone due process.

Big data reasoning combines a veneer of rationality—algorithmic logic and probabilistic calculations—with the irrationality of telling the future from data “signatures.” Everything has a “data signature” and everything can be derived from data in a never-ending loop of adding variables and correspondences. Big data is rendered as an inescapable system not only from which there is no place to hide, but where it is impossible to think the error of knowledge. Error does not undermine the production of knowledge, but is integrated in the production of knowledge.²⁴

Technicity buries such critical questions within the presumptive neutrality of its method and its “registers of expertise.”²⁵

Pre-emptive strikes in the FATA are a version of “just-in-time” killing. In most cases their authorization is valid for 60 days, and any target that is not killed within that period must be reviewed and renewed. This provides an operational reason for the “elongated” concept of imminence used as legal cover. There is no equivalent to the raw immediacy of “troops in contact” on the other side of the border—though even there the concept has often been stretched and civilians have been killed as a result²⁶—but the half-life of the authorization tacitly encourages those directing a strike to act “as soon as they see an opportunity—even if there’s a high chance of civilians being killed, too—because in their mind they might never get the chance to strike that target again.”²⁷

Who Says He’s on America’s Kill List and Can’t Get Off It,” *Independent*, 17 April 2016, <http://www.independent.co.uk/news/world/asia/malik-jalal-the-man-who-says-hes-on-americas-kill-list-and-cant-get-off-it-a6987431.html>.

²⁴ Claudia Aradau, “The Signature of Security: Big Data, Anticipation, Surveillance,” *Radical Philosophy* 191 (2015): 21–28.

²⁵ de Goede and Sullivan, “Politics of Security Lists,” 82.

²⁶ Derek Gregory, “Angry Eyes” (forthcoming).

²⁷ Jeremy Scahill and Glenn Greenwald, “The NSA’s Secret Role in the US Assassination Program,” *The Intercept*, 9 February 2014, <https://theintercept.com/2014/02/10/the-nsas-secret-role/>. They described their informant as a “drone operator” for Joint Special Operations Command; his experience was primarily of strikes in Yemen and Somalia but his commentary included Pakistan.

Signals Intercepts

That possibility is increased by the extraordinary difficulty of finding the target. Signals intercepts are important in all targeted killing but particularly in areas like the FATA where the United States has no boots on the ground and few field agents in place. Its quarry seeks refuge not only in the physical fastness of the borderlands—remote locations where Special Operations officers characterize them as “a low-contrast foe easily camouflaged among civilian clutter” (*sic*)—but also in an “electronic sanctuary” where communications about operations, logistics and finance “can be hidden among the innumerable civilian signals that constitute daily cell phone and Internet traffic.”²⁸ The objective of signals intelligence is to use the one to betray the other: to divine the physical location of an individual target in North or South Waziristan from his digital traces. This requires a topological twist in which the logics of military violence and intelligence are transposed:

Warfare has shifted from the scaling of military operations to the selective targeting of individual enemies. Intelligence has shifted from the selective targeting of known threats to wholesale data mining for the purposes of finding hidden threats.²⁹

This is how the NSA, which is part of the Department of Defense and responsible for the global collection and processing of signals intelligence, has become such a vital junction between the CIA and the US military. The United States is the physical backbone of the Internet, and this pole position enables the NSA to conduct upstream intercepts of foreign communications as they flow through fibre-optic cables at domestic switching stations. The NSA extends its global reach still further through collaborations with other intelligence agencies, the most important of which are its Tier I partners—the other members of the “Five Eyes” (Australia, Canada, New Zealand and the United Kingdom)³⁰—and also through downstream intercepts collected from

²⁸ Michael T. Flynn, Rich Juergens, and Thomas Cantrell, “Employing ISR: SOF [Special Operations Forces] Best Practices,” *Joint Forces Quarterly* 50, no. 3 (2008): 56–61, 57; Flynn was Director of Intelligence at US Central Command and was briefly President Donald Trump’s National Security Advisor.

²⁹ Peter Scheer, “Connecting the Dots Between Drone Killings and Newly Exposed Government Surveillance,” *Huffington Post*, 8 August 2013, http://www.huffingtonpost.com/peter-scheer/drones-surveillance_b_3408487.html.

³⁰ “The Five Eyes” had its origins in the Atlantic Charter of 1941 and was enshrined in a formal agreement in the early 1950s; there is presumably little need to emphasize the whiteness of their eyes. The work of the United Kingdom’s GCHQ is particularly important in supplementing the NSA because it has an extensive chain of intercept stations in Asia. The NSA also works with

the servers of the major Internet service providers. These intercepts yield both Digital Network Intelligence (DNI)—web-based data that includes e-mails, social media and browsing histories—and Dialed Number Recognition (DNR) metadata for cell phones, which includes lists of numbers dialed and the duration of calls. By mid-2012 the NSA was processing more than 20 billion “communication events” each day. This is data-mining on the global scale but it is geographically differentiated and Pakistan has been a major locus of activity. During a three-day period in March 2013 DNI intercepts from Pakistan accounted for 13.9 per cent of the NSA’s global DNI intercepts (second only to Iran, which accounted for 14.5 per cent) and 11.1 per cent of its global DNR intercepts (second only to Afghanistan, which accounted for 17.6 per cent). Taken together, Pakistan was the target of the most intense interception during that period (12.3 per cent of all global DNI and DNR intercepts).³¹

Predators and Reapers loitering over the FATA have been the grim beneficiaries of these intercepts, but they have also been involved in harvesting signals intelligence through sensors and virtual base-tower transceivers fitted to the aircraft. Most of the detail remains classified, and much of what has been released is seven or eight years old, but the Snowden cache documented SHENANIGANS, which uses a pod on the aircraft that “vacuums up massive amounts of data from any wireless routers, computers, smart phones or other electronic devices that are within range,” and GILGAMESH, which can force a SIM card or cellphone to lock on to the device multiple times as the drone cruises around a Restricted Operating Zone and triangulate its location to within ten metres.³² There must be other programs in operation by now, many of them more advanced and more intrusive, and to capitalize on these capabilities the NSA has developed its own version of remote split operations. While most of its work takes place in the United States, the NSA has also forward-deployed

Tier II partners which are contracted for specific projects and paid for their services; these have sometimes included third parties in Pakistan like telecommunications providers.

³¹ DNR was only extended to downstream intercepts from 2013. My information about the NSA and signals intelligence is primarily derived from the cache of NSA documents released by Edward Snowden: see Glenn Greenwald, *No Place to Hide: Edward Snowden, the NSA and the US Surveillance State* (New York: Random House, 2014). This paragraph also draws on Glenn Greenwald and Ewan MacAskill, “Boundless Informant: The NSA’s Secret Tool to Track Global Surveillance Data,” *Guardian*, 11 June 2013, <https://www.theguardian.com/world/2013/jun/08/nsa-boundless-informant-global-datamining>; Glenn Greenwald, “XKeyscore: NSA Tool Collects ‘Nearly Everything’ a User Does on the Internet,” *Guardian*, 31 July 2013, <https://www.theguardian.com/world/2013/jul/31/nsa-top-secret-program-online-data>; Scahill and Greenwald, “NSA’s Secret Role.”

³² Scahill and Greenwald, “NSA’s Secret Role.”

collectors in tactical support teams that work in close concert with the CIA and the US military to identify and track targets in real time.³³

Tactical intelligence is less about the nomination of targets than their geo-location: the execution of the kill list. The details of specific operations in the FATA remain classified but some information has been released. We know about the use of e-mail intercepts to establish a likely vector of safe-houses in North Waziristan used by Hassan Ghul, and in particular a message from his wife that identified a compound near Mir Ali; several days later on 1 October 2012 the al-Qaeda “facilitator” was targeted and killed by US drones riding his motorbike nearby. We know too about the use of cell phone intercepts to track Mullah Mansour as his taxi crossed the border from Iran into Baluchistan; hours later on 21 May 2016 the Taliban leader was targeted and killed by US drones.³⁴ In both cases the information was presumably released because the strikes were successful, but we also know that nominated targets switch cellphones or SIM cards with friends or acquaintances and since it is the material object rather than the physical person that is tracked it is possible, even



³³ Dana Priest, “NSA Growth Fueled by Need to Target Terrorists,” *Washington Post*, 21 July 2013, <https://wpo.st/Somc2>. The image on this page was tweeted by @HussamSanabani on 14 February 2017, from Ben Sullivan, “Did a Drone Carrying NSA Tech Crash in Yemen?” *Vice.com*, *Motherboard*, 17 February 2017, https://motherboard.vice.com/en_us/article/did-a-drone-carrying-nsa-tech-crash-in-yemen.

³⁴ Greg Miller, Julie Tate, and Barton Gellman, “Documents Reveal NSA’s Extensive Involvement in Targeted Killing Program,” *Washington Post*, 16 October 2013, <https://wpo.st/tomec2>; Entous and Donati, “How the US Tracked.”

likely for civilians to be killed instead.³⁵ The US knows it too, which raises grave questions about the degree to which in such cases it is prepared—as international humanitarian law says it must—to take every feasible precaution to spare civilian life.³⁶

The likelihood of civilian casualties increases when metadata are used to identify suspicious patterns of life and to link contacts in a network of presumed complicity (“guilt by association”).³⁷ This has become standard operating procedure:

The most basic analytic tools map the date, time, and location of cellphones to look for patterns or significant moments of overlap. Other tools compute speed and trajectory for large numbers of mobile devices, overlaying the electronic data on transportation maps to compute the likely travel time and determine which devices might have intersected.³⁸

This is time-geography weaponized, rhythmanalysis made lethal. The proud boast of the ubiquitous Michel Hayden—a US Air Force general who also served as director of the NSA and later director of the CIA—that “We kill

³⁵ For a particularly powerful analysis of exactly that mistake in Afghanistan, see Kate Clark, “The Takhar Attack,” Afghan Analysts Network, Thematic Report 05 (2011), http://afghanistan-analysts.net/uploads/20110511KClark_Takhar-attack_final.pdf.

³⁶ Additional Protocol I to the Geneva Conventions (1977) states: “In case of doubt whether a person is a civilian, that person shall be considered to be a civilian.” But the United States has not ratified the Protocol, and the Pentagon’s own *Law of War Manual* explicitly refuses to regard this as a legal obligation: “Under customary international law, no legal presumption of civilian status exists for persons or objects, nor is there any rule inhibiting commanders or other military personnel from acting based on the information available to him or her in doubtful cases.” See Christopher Rogers, “How Should International Law Deal With Doubt in the Era of Drones and Big Data?,” www.justsecurity.org, 22 February 2016, <https://www.justsecurity.org/29436/ihl-deal-doubt-era-drones-big-data/>; see also Ryan Goodman and Derek Jinks, “Military Targeting Based on Cellphone Location,” www.justsecurity.org, 18 February 2014, <https://www.justsecurity.org/7200/military-targeting-based-cellphone-location/>. This consideration also affects how the US counts casualties: Larry Lewis, *Drone Strikes in Pakistan: Reasons to Assess Civilian Casualties* (CNA Analysis and Solutions, April 2014), <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA599423&Location=U2&doc=GetTRDoc.pdf>.

³⁷ Cora Currier, Glenn Greenwald and Andrew Fishman, “US Government Designated Prominent Al Jazeera Journalist as ‘Member of al Qaeda’,” 8 May 2015, <https://theintercept.com/2015/05/08/u-s-government-designated-prominent-al-jazeera-journalist-al-qaeda-member-put-watch-list>.

³⁸ Barton Gellman and Ashkan Soltani, “NSA Tracking Cellphone Locations Worldwide, Snowden Documents Reveal,” *Washington Post*, 4 December 2013, <https://wpo.st/esmc2>.

people based on metadata” may have been hyperbole.³⁹ Yet signals intelligence in all its guises has transformed the FATA into a deadly version of what Rob Kitchin and Martin Dodge call “code/space.” In the contemporary world, they argue, “software and the spatiality of everyday life have become co-dependent and co-produced” to such a degree that code/space becomes “any space that is dependent on software-driven technologies to function as intended.” For targeted killing in the FATA, all this is shunted into reverse: intentionality becomes the preserve of those doing the hunting while the intentionality of their quarry is inferred via the algorithms that drive data-mining. And in the FATA code/space functions as a *threat* to everyday life; it materially affects not only those who are targeted but all those who live under the constant threat of being inadvertently killed by lethal surveillance.⁴⁰ Kitchin and Dodge also suggest that code/spaces are now “stretched out across extended network architectures, making them simultaneously local and global, grounded in certain locations but accessible from anywhere across the network, and linked together into chains that stretch across space and time to connect start and end nodes into complex webs of interactions and transactions.”⁴¹ In the FATA those chains are kill-chains; signals intelligence, at once global and local, has become instrumental in what the NSA calls “cueing and compressing numerous kill-chains.”⁴²

Video Feeds

If those kill-chains often depend on what Dan McQuillan calls “algorithmic seeing,” they are always ultimately triggered by the full-motion video feeds

³⁹ David Cole, “We Kill People Based on Metadata,” *New York Review of Books*, 10 May 2014, <http://www.nybooks.com/daily/2014/05/10/we-kill-people-based-metadata/>.

⁴⁰ From the Stimson Center’s *Recommendations and Report of the Task Force on US Drone Policy*, 2nd ed. (April 2015), 36, https://www.stimson.org/sites/default/files/file_attachments/recommendations_and_report_of_the_task_force_on_us_drone_policy_second_edition.pdf.

Death can come from the sky at any moment, and the instability and incoherence of existing legal categories means that there is no way for an individual to be certain whether he is considered targetable by the United States. (Would attending a meeting or community gathering also attended by an al-Qaida member make him targetable? Would renting a building or selling a vehicle to a member of an “associated” force render him targetable? What counts as an “associated force?” Would accepting financial or medical aid from a terrorist group make him a target? Would extending hospitality to a relative who is affiliated with a terrorist group lead the United States to consider him a target?).

⁴¹ Rob Kitchin and Martin Dodge, *Code/Space: Software and Everyday Life* (Cambridge: MIT Press, 2011), 17.

⁴² Scahill and Greenwald, “NSA’s Secret Role.”

provided by Predators and Reapers.⁴³ Each aircraft has a nose camera used by the pilot to control its flight, but it is also equipped with a multi-spectral targeting pod that is controlled by the sensor operator. This pod is the key to each strike; it has undergone several iterations and upgrades (“blocks”), but in general it comprises an infrared (monochrome) video camera and a colour/monochrome daylight video camera, together with a laser target designator and illuminator. It is this system that enables the aircraft to be so effective against what the Air Force calls “high-value, fleeting and time-sensitive targets.” Combined with their long dwell times, the video feeds returned to the United States in near real-time via a Ku-band satellite link to Ramstein Air Base in Germany and a fiber-optic cable under the Atlantic enable Predators and Reapers to track (or “find and fix”) highly mobile targets. The minimum frame rate to capture movement is 1 Hz (one frame per second); video has a frame rate of 6 – 120 Hz, and full-motion video (FMV) is defined by the Pentagon as motion imagery captured at 24 – 30 Hz or greater.⁴⁴ The sensors have several fixed modes of magnification (there is no continuous zoom), and the standard resolution for all of them is 480×640 pixels. Some Reapers have been equipped with high-definition sensors that capture motion at 720×1280 or better, and these provide a more robust positive identification of the target (PID).⁴⁵ No figures are available for the FATA, but for targeted killing in East Africa high-definition FMV was used in most successful “fixes” (geo-location and PID of the target) and was involved in most unsuccessful ones.⁴⁶

⁴³ Cf. Nina Franz, “Targeted Killing and Pattern of Life Analysis: Weaponised Media,” *Media, Culture and Society* 39, no. 1 (2017): 111–121. She emphasizes that “the aerial view that transformed warfare” is no longer confined to optical media “but seeks out the patterns and schemas that arise from human populations, or rather their double—the data masses” (112).

⁴⁴ Patrick Biltgen and Stephen Ryan, *Activity-Based Intelligence: Principles and Applications* (Norwood, MA: Artech House, 2016), 164–165.

⁴⁵ Lance Menthe, Myron Hura, and Carl Rhodes, *The Effectiveness of Remotely Piloted Aircraft in a Permissive Hunter-Killer Scenario* (RAND Project Air Force, 2014), 17–18. The most recent iteration (2016) includes four high definition cameras covering five spectral bands. But the field of view provided by the sensors is extremely narrow (“like looking through a soda straw”), which is why in so many cases several drones are involved in a single targeted killing. There have been experiments with Wide-Angle Motion Imagery (WAMI), including the “Gorgon Stare” and ARGUS, but it is far from clear that these ever advanced beyond the experimental stage and, given their timing, it is highly unlikely that they were involved in the high-water of targeted killing in the FATA.

⁴⁶ ISR Support to Small-Footprint CT Operations—Somalia/Yemen (February 2013), slide 43, <https://theintercept.com/document/2015/10/15/small-footprint-operations-2-13>. The criteria for “success” have not been disclosed, and so it is unclear whether this was limited to the execution of the target (a “jackpot”) or extended to the avoidance of civilian casualties.

High definition or not, the full-motion video feeds have allowed remote crews to claim time and time again that they are not thousands of miles from their targets but just eighteen inches: the distance from eye to screen. The sense of optical proximity is palpable and pervasive in their accounts. Targets are tracked for weeks, even months:

We see them playing with their dogs or doing their laundry.
We know their patterns like our neighbors' patterns. We even
go to their funerals.⁴⁷

This is at best a simplification, since the long loiter times of each aircraft necessitate frequent shift changes on the ground; each new crew must (re)familiarize themselves with the target (and there is no guarantee that it will be the same one). The same officer insists that through this close-in surveillance it all “somehow becomes personal.” Journalist Mark Bowden echoes his sentiments. “Drone pilots become familiar with their victims,” he writes, watching them “in the ordinary rhythms of their lives—with their wives and friends, with their children.” What he calls “the dazzling clarity of the drone’s optics” means that “war by remote control turns out to be intimate....”⁴⁸

But these characterizations are doubly problematic. The drone’s optics may well be dazzling but they are far from crystal-clear. They certainly do not approach the resolution shown in films like *Good Kill* (2014) or *Eye in the Sky* (2015). The quality of the images is highly variable in time and space, depending on atmospheric conditions, bandwidth compression, and the sensor that is used.⁴⁹ Infrared in particular makes it notoriously difficult to discern details, and one commentator claims that

The silent stream of images generated by warm bodies against
a cold background that was filtered through security encryption
and satellite relays before ultimate translation into viewable
pictures was indistinct at best.... [T]he images gave only a
“soda-straw” view of events, with a visual acuity of 20/200. As

⁴⁷ Nicola Abé, “Dreams in Infrared: The Woes of an American Drone Operator,” *Der Spiegel Online*, 14 December 2012, <http://www.spiegel.de/international/world/pain-continues-after-war-for-american-drone-pilot-a-872726.html>. This observation and those that follow refer specifically to remote operations in Afghanistan and Iraq but surely apply to other theatres and other USAF-conducted operations too.

⁴⁸ Mark Bowden, “The Killing Machines: How To Think About Drones,” *The Atlantic*, 14 September 2013, <https://www.theatlantic.com/magazine/archive/2013/09/the-killing-machines-how-to-think-about-drones/309434/>.

⁴⁹ Reception can vary too, depending on the technical capabilities that are often unevenly distributed across the kill-chain.

it so happens, this is the legal definition of blindness for drivers in the United States.⁵⁰

Even more important than these technical limitations, “intimacy” is a conceit; what is being described is violently invasive and thoroughly conditional. Most obviously, the crews and those who direct their missions can see without being seen, and Chamayou has argued that “the fact that the killer and his victim” are not inscribed in “reciprocal perceptual fields” facilitates the “administration of violence” because it ruptures what psychologist Stanley Milgram called “the experienced unity of the act.”⁵¹ The technology may be “mesmerizing,” reporter Mark Benjamin concedes, but “it also makes the process of killing another human being eerily *impersonal*.”⁵² This happens because the video feeds display what Harun Farocki calls “operative images” that “do not represent an object but are part of an operation.”⁵³ The “impersonality” of the operation is not a function of the technology alone: what matters is its incorporation into a process—a standard operating procedure—and a chain of command that is techno-scientific and quasi-judicial. It takes crews from six to twelve months to absorb the technical mediations that sustain remote split operations, so that “you put yourself more and more in the position that this is more and more real life and that you are actually there,” one sensor operator told Omer Fast: but over the same period, he continued, “you become emotionally distant.”⁵⁴ And here, in a different interview, is the same officer who earlier spoke of it becoming more “personal”:

I would couch it not in terms of an emotional connection but a ... seriousness. I have watched this individual, and regardless of how many children he has, no matter how close his wife is ... I am tasked to strike this individual. The seriousness of it is that I am going to do this and it will affect his family.⁵⁵

“Emotional distance” and “seriousness” return us to the presumptive objectivity of the scientific gaze, but the form of irruptive intimacy—a hypermasculinized

⁵⁰ Andrew Cockburn, *Kill-Chain: The Rise of the High-Tech Assassins* (London: Verso, 2015), 125–126.

⁵¹ Chamayou, *Théorie du drone*, 167; Stanley Milgram, *Obedience to Authority: An Experimental View* (New York: Harper & Row, 1974).

⁵² Mark Benjamin, “Killing ‘Bubba’ From the Skies,” *Salon*, 15 February 2008, http://www.salon.com/2008/02/15/air_war/; my emphasis.

⁵³ Harun Farocki, “Phantom Images,” *Public* 29 (2004): 12–24; my emphasis.

⁵⁴ Omar Fast, *5,000 Feet is the Best* (Berlin: Sternberg Press, 2012), 100.

⁵⁵ David Wood, “Drone Strikes: A Candid, Chilling Conversation with Top US Drone Pilot,” *Huffington Post*, 15 May 2013, http://www.huffingtonpost.com/2013/05/15/drone-strikes_n_3280023.html.

“voyeuristic intimacy”⁵⁶—that this licenses also militates against any identity with those whose lives are under surveillance. What it can do—and what feeds the conceit of intimacy—is turn the objects of the military gaze into marionettes and mannequins. For the videos are silent movies, and while Nasser Hussain emphasizes that “the drone hovers overhead in silence” those watching from afar—even if they claim to “know” their targets and their families—fill in the gaps with their own running commentaries and interpretations. And there is no way for them to know how accurate their ventriloquism is.⁵⁷ Often it is distorted by a casual Orientalism—in which those under surveillance remain irredeemably Other, their patterns of life forming “a living tableau of queerness,” as Edward Said once put it—and by a predisposition to reduce commonplace actions to imminent threats in what has already been construed as a hostile landscape. The same is true of visual identifications; even if the video stream were crystal-clear it could not turn the FATA into a transparent space in which the identities and roles of the figures on the screen become self-evident. Visuality is always a techno-cultural process, which means that “terrorists,” “militants” and “civilians” are not somehow “found” in the image stream but are instead *produced* through the inferences drawn by those watching their external signs and the conversations that shape the conclusions they draw. The political technology that constitutes the territory of the screen thus not only invites but also requires those using it to transcribe their codes and conventions onto what then becomes a killable body enclosed by the terrible violence of the state.⁵⁸

I Saw a Man (Who Wasn’t There)

Shortly after 9/11 Michael Dillon identified what he saw as “a fundamental change in the corporeal imagination of martial presence”:

Throughout the modern period military bodies have been disciplinary bodies. Now they aspire to be digital ones. Domination remains the desire that animates them—shock and awe in the battlespace, hegemony in geospace—but since the desire is increasingly mediated through radically different

⁵⁶ Matthew Power, “Confessions of a Drone Warrior,” *GQ*, 22 October 2013, <http://www.gq.com/story/drone-uav-pilot-assassination>.

⁵⁷ Nasser Hussain, “The Sound of Terror: Phenomenology of a Drone Strike,” *Boston Review*, 16 October 2013, <http://bostonreview.net/world/hussain-drone-phenomenology>.

⁵⁸ Christiane Wilke, “The Optics of War: Bombing, Performances and Fantasies of Distinction in International law”; Allen Feldman, “On the Actuarial Gaze: From 9/11 to Abu Ghraib,” *Cultural Studies* 19 (2005): 203–225.

digital practices, the corporeality it engenders is undergoing transformation as well. A novel politico-cultural economy of martial desire is enabled here ... in which materiality has become code....

As military embodiment pursues the intelligence incarnate offered by the information and molecular revolutions, power over life becomes allied with power over death in a complex convergence of sovereign geopolitics with global biopolitics gone digital.⁵⁹

You can perhaps see something of this at work in the datastreams that feed the kill lists, the signals squeezed out of the noise of innumerable intercepts, and the digital technologies that animate the video feeds. Even so, I think it vital to underscore how these biopolitical technologies *de*-corporealize their targets, turning them into “men that weren’t there.” The corporeal is transformed into the calculative, and through a process of somatic abstraction the fleshiness and bloodiness of the targets—those “killable bodies”—become smears on a screen. In a sobering essay Joseph Pugliese has argued that in the very moment of execution those transformations are not simply, suddenly reversed but *displaced* into a *generic* flesh. And there is a clear implication that those displacements are *pre*-figured in the original *de*-corporealization of the target.⁶⁰ This makes it even more important not to follow Daniel—and all the other Daniels—and lose ourselves in the territory of the screen; still less to confine our analysis to what lies behind it. For we also need to focus on what lies in front of it, and to realize that its materialities—and the interpellations it sets in motion—are always entangled with another territory that seeks the power of life and death over fleshy human bodies in densely biophysical spaces.⁶¹

⁵⁹ Michael Dillon, “Intelligence Incarnate: Martial Corporeality in the Digital Age,” *Body & Society* 9, no. 4 (2003): 123–147, 144–145.

⁶⁰ Joseph Pugliese, “Death by Metadata: The Bioinformationalisation of Life and the Transliteration of Algorithms to Flesh,” in Holly Randell- Moon and Ryan Tippet (eds.), *Security, Race, Biopower: Essays on Technology and Corporeality* (London: Palgrave, 2016), 3–20.

⁶¹ I elaborate these claims in “Meatspace?” see <https://geographicaliminations.com/2017/02/08/meatspace/>.