

Drones as Techno-legal Assemblages

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Abstract

The US drone strike programme has prompted debate between pro- and anti-drone lawyers over interpretations of self-defence and the laws of war. The debate frequently neglects the effects of drone technology on interpreting these laws. This article argues that drone strikes are best understood as techno-legal assemblages that combine technoscience and law to make killing lawful. The argument proceeds in three parts. Part one analyses the formal legal debate concerning drone strikes. The seeds of the debate are in the US's response to terrorism in the 1980s, when it developed legal strategies to overcome the obstacles of territorial sovereignty and the ban on assassination. The contemporary debate on the law of self-defence divides into supporters and critics of the US's legal position. However, the debate neglects what critical drone scholars have argued is an essential link between drone technology and legal ambiguity. Part two analyses the technoscientific practices of drone strikes and how they interpret and implement the laws of war. Armed drones are part of a widespread surveillance system that converts people into information, which the US uses to target individuals. The thresholds that distinguish between military and civilian objects, and that delineate the spaces, temporal order, and legal subjects of conflict, are all interpreted through the lens of the surveillance system. These techno-legal practices become a legal justification for drone killing that goes beyond positive law. Part three argues that drone strikes are techno-legal assemblages that are part of a general collective of assemblages of control. The enmeshing of law and technology in drone strikes reflects the expansion of the law to cover more subjects and more areas. Drone strikes, then, are not a radical break from the law, but a techno-legal continuation of patterns of colonial warfare.

Keywords: Drones; armed conflict; international humanitarian law; law and technology.

Introduction

The US has been using armed drones to kill its enemies since 2002.¹ In this time, it has killed at least 8,858 people, including at least 910 civilians and 283 children.² Further, drone strikes have spread from combat zones in Afghanistan and Iraq to areas in Pakistan, Yemen and Somalia.³ Drones are also a surveillance technology, producing massive amounts of data. US government officials appeal to this advanced technology to describe the 'precision' of drone strikes.⁴ Yet, it remains unclear just how drone surveillance technology renders drone strikes precise. The dream of the ARGUS-IS surveillance system—touted to produce 6000 terabytes of video data from a single drone, covering an area of 25 miles squared, with the ability to track 40,000 targets—was not delivered in the form proposed.⁵ The Project Maven controversy indicates that the US in 2018 was still trying to find a way to utilise the drone images it does produce.⁶ Rather, it uses mostly mobile phone data to feed what it calls the 'disposition matrix'.⁷ This is a kill list made up of the targets from various US security agencies.⁸ Targets in the matrix

¹ Shaw, *Predator Empire*, 118.

² Bureau of Investigative Journalism, "Drone Warfare."

³ Bureau of Investigative Journalism, "Drone Warfare."

⁴ Koh, quoted in Paust, "Self-Defense," 276, n 103.

⁵ BAE Systems, ARGUS-IS; Michel, *Eyes in the Sky*, 43–50.

⁶ Atherton, "Project Maven Initiative."

⁷ Shaw, "The Dronification of State Violence," 211, 226–227.

⁸ Shaw, "The Dronification of State Violence," 211, 226–227.



consist of a file that contains information about the individual.⁹ The most important targets, as determined by computer analysis, are brought before a committee headed by the president, which determines who to kill.¹⁰

The formal legal debate concerned with whether drone strikes are legal, illegal, effective, ineffective or undermine the laws of war altogether tends to overlook the technological aspects of drones and what they mean for the law. Critical drone scholars address this issue, arguing that drone technology affects the law in various ways. This paper extends the work of critical drone scholars to argue that drones are techno-legal assemblages. The US uses the production and manipulation of surveillance data to interpret and implement the international laws of war. The law itself is expanded and limited by the technical capabilities of the drone system. This assemblage of technology and law is located within a broader context of assemblages of control, continuing the project of colonial warfare. Within this context, law is technological, a tool to help the US pursue its killing regime.

Part one of this paper details the formal legal drone debate. The focus on positive law means that pro- and anti-drone scholars chase each other in circles, while the technoscientific aspects of drone strikes disappear from view. Yet, as critical drone scholars argue, drone technoscience has a role to play in the legal ambiguity of drone strikes. Part two examines the ways that drone technology implements the laws of war. Part three argues that drones are techno-legal assemblages located within the necropolitical context of colonial war.

The Drone Debate

This section details how the technoscientific aspects of drone strikes can disappear from view in the formal legal debate concerning drones. Pro- and anti-drone lawyers are concerned with whether drone strikes are legal, illegal, effective, ineffective or undermine the laws of war altogether. Within this perspective, the US harnesses the legal ambiguity to justify what might otherwise appear to be extrajudicial executions. However, the legal debate obscures what critical drone scholars see as an essential link between drone technology and legal ambiguity.

International lawyers and law scholars have noted that debates over the lawfulness of drone strikes are rife with uncertainty. Christof Heyns, then Special Rapporteur on extrajudicial, summary or arbitrary executions, has stated that ‘there is, however, a notable lack of consensus on how to apply the rules of international law that regulate the use of force to drones’.¹¹ Michael Schmitt remarked in 2010 that ‘discourse over these and related issues has evidenced serious misunderstanding’, quipping that this misunderstanding amounts to a ‘fog of law’.¹² In 2014, after the release of reports on the legality of drones by Amnesty International, Human Rights Watch, the Special Rapporteur on the promotion and protection of human rights and fundamental freedoms, and the Special Rapporteur on extrajudicial, summary or arbitrary executions, Schmitt observed there was still no consensus on the issues of self-defence, the geographical boundaries of armed conflicts, what constitutes direct participation in hostilities, and the duties to capture and investigate.¹³

The formal legal debate can be broadly divided into supporters and critics of the US. Markus Gunneflo traces the history of the US’s pro-drone attitude to its response to terrorism in the 1980s. This particular history demonstrates how the US merged public policy objectives with legal interpretation to achieve its goals and foreshadowed the legal flashpoints that would occupy drone scholarship decades later. US officials were particularly concerned with the law of territorial sovereignty and the ban on assassination. National Security Decision Directive 138, signed by President Reagan after the Beirut bombings of 1983, directed the CIA to develop ‘lawful measures to ... unilaterally and/or in concert with other countries neutralize or counter terrorist organizations and terrorist leaders’, which would require finding ways around both laws.¹⁴ The public policy justifications were stated to be that ‘the practice of terrorism by any person or group in any cause [is] a threat to our national security’, and that ‘[t]errorism is a common problem for all democratic nations’.¹⁵ Secretary of State George Shultz saw territorial borders as a problem, stating to the House Foreign Affairs Committee that ‘the extensive travel of terrorists outside their own countries and regions to commit acts of terror abroad’ is ‘a source of growing concern’.¹⁶ The concern, for Shultz, was that ‘terrorists will strike from areas where no governmental authority exists, or they will base themselves behind what they expect will be the

⁹ Shaw, “The Dronification of State Violence,” 211, 226–227.

¹⁰ Shaw, “The Dronification of State Violence,” 227.

¹¹ Heyns, Report of the Special Rapporteur, [13].

¹² Schmitt, “Drone Attacks,” 313.

¹³ Schmitt, “Narrowing the International Law Divide.”

¹⁴ National Security Council, *Combatting Terrorism*, 4; Gunneflo, *Targeted Killing*, 111.

¹⁵ National Security Council, *Combatting Terrorism*, 1–2.

¹⁶ Shultz, “Terrorism,” 29.

sanctuary of an international border'.¹⁷ Shultz was worried that a 'web of restrictions' would prevent the US from taking action.¹⁸

The Department of State's then legal advisor, Abraham Sofaer, also argued that 'unwarranted restrictions are being imposed on counter-terrorist actions under both international law and US domestic law'.¹⁹ He called the law of territorial sovereignty a 'legal constraint to taking actions against terrorists'.²⁰ The ban on assassination meant that when targeting terrorists the US had to resort to the claim of self-defence, but killing in self-defence requires a higher evidentiary threshold than it would generally be possible to establish.²¹ To solve this problem, Sofaer turned to the laws of war. He noted that while the ban on assassination prohibits 'illegal' killing, it does not prevent 'legal' killing, such as that which is allowed under the laws of war, which have a lower evidentiary threshold for establishing who can be a legitimate target.²² Sofaer appealed to the laws of war to justify the US's raid on Libya in 1986, stating that Colonel Qadhafi was a 'proper military target' even though there was no armed conflict.²³

Gunneflo also notes the influential work of W. Hays Parks, then chief of the International Law Branch of the International Affairs Division of the Judge Advocate General of the Army.²⁴ Parks, in a memo on assassination, claimed that a general exception to the ban on assassination was 'lawful acts carried out by military forces in time of war'.²⁵ This included 'peacetime counterterrorist operations'.²⁶ Parks insisted that terrorist threats are analogous to threats by conventional military forces, and the same laws of war apply.²⁷ This includes the law permitting the US to target terrorists wherever they are, and the laws obliging the US to discriminate between civilians and terrorists and to minimise civilian casualties.²⁸ These laws, he claims, apply even though there is no armed conflict.²⁹

The legal debate since the work of Shultz, Sofaer and Parks has revolved around the law of self-defence and whether drone strikes occur in the context of an armed conflict. This part focuses on the former. The law of self-defence concerns Article 51 of the UN Charter, which states that a state may defend itself 'if an armed attack occurs' until the UN Security Council intervenes.³⁰ Critics of the US argue that the text 'means what it says',³¹ that the International Court of Justice (ICJ) has reiterated that there must be an attack with 'a significant amount of force' before the US can invoke the law of self-defence.³² This means that any so-called 'preemptive self-defence' is unjustified in international law.³³ However, US supporters point to state practice and the exigencies of fighting terrorism to argue that self-defence is lawful where the 'window of opportunity' to defend itself is closing—such as when the state has intelligence on the location of a terrorist leader and is unlikely to have another opportunity to respond 'before future attacks occur'.³⁴ Mary O'Connell has criticised this position, writing, 'it has been a common practice by international lawyers in the US to try to find loopholes in Article 51'.³⁵ Michael Schmitt responds that the traditional approach 'has struggled to survive in the face of potential attacks that can be mounted secretly and, in an era of weapons of mass destruction, catastrophically'.³⁶

Another point of contention in the law of self-defence is whether the attack must be state-sponsored. O'Connell argues that Article 51 only applies to the use of force 'in the territory of a state legally responsible for a significant armed attack'.³⁷ She

¹⁷ Shultz, "Terrorism and the Modern World," 16.

¹⁸ Shultz, "Terrorism and the Modern World," 15.

¹⁹ Sofaer, "Waldemar A. Solf Lecture," 90.

²⁰ Sofaer, "Waldemar A. Solf Lecture," 106.

²¹ Gunneflo, Targeted Killing, 141–142.

²² Gunneflo, Targeted Killing, 144; Sofaer, "Waldemar A. Solf Lecture," 119.

²³ Sofaer, "Waldemar A. Solf Lecture," 120.

²⁴ Gunneflo, Targeted Killing, 145.

²⁵ Parks, "Memorandum of Law," 5.

²⁶ Gunneflo, Targeted Killing, 149.

²⁷ Gunneflo, Targeted Killing, 151; Blum, "Targeted Killing," 155.

²⁸ Gunneflo, Targeted Killing, 152–153.

²⁹ Gunneflo, Targeted Killing, 152–153; Blum, "Targeted Killing," 155.

³⁰ *Charter of the United Nations* art 51.

³¹ O'Connell, "Unlawful Killing with Combat Drones," 277.

³² O'Connell, "Unlawful Killing with Combat Drones," 277.

³³ Shah, "War on Terrorism," 115–116.

³⁴ Schmitt, "Narrowing the International Law Divide," 9; Jenks, "Law from Above," 658–660.

³⁵ O'Connell, "Remarks," 590.

³⁶ Schmitt, "Narrowing the International Law Divide," 9.

³⁷ O'Connell, "Remarks," 590.

states that the ICJ has reiterated this point in at least five decisions.³⁸ This would mean that no state can use the law of self-defence to defend itself against non-state actors who launch attacks from within another state. However, Special Rapporteur Emmerson noted that ‘no consensus exists regarding extension of the right to self-defense against attacks by non-State actors’,³⁹ while Schmitt observes that, post-2001, the ICJ is ‘seemingly ignoring State practice’.⁴⁰

Despite the evident legal uncertainty surrounding drones, some international lawyers have still proclaimed with utmost certainty the legal peril of drone strikes. In 2003, Asma Jahangir, then Special Rapporteur on extrajudicial, summary or arbitrary executions, called drone strikes a ‘truly disturbing development’, and stated that a drone strike in Yemen was a ‘clear case of extrajudicial killing’—though the Special Rapporteur did not offer a justification for this opinion.⁴¹ Special Rapporteur Philip Alston has asserted that ‘outside the context of armed conflict, the use of drones for targeted killing is almost never likely to be legal’.⁴² Alston wrote in 2010 that the US was appropriating an ‘ever-expanding entitlement for itself to target individuals across the globe’.⁴³

Within this context of confusion and disagreement about how international law applies to drone strikes, the US offers justifications that transform possible extrajudicial killing into ambiguously lawful killing. This was the case with a strike in Yemen on 3 November 2002.⁴⁴ The Yemeni government permitted the US to carry out a drone strike against a suspected senior figure of al-Qaeda. The strike killed all six passengers of the targeted vehicle. The UN Special Rapporteur on extrajudicial, summary or arbitrary executions called this ‘a clear case of extrajudicial killing’ because the US had resorted to military force outside an armed conflict.⁴⁵ The US’s justification was that ‘its actions were appropriate under the international law of armed conflict’.⁴⁶ Senator Bob Graham, chairman of the Senate Intelligence Committee, is quoted as saying, ‘having defined this as an act against a military adversary and applying the standards of international law, this was within the legal rights of a nation at war’.⁴⁷ This fits the strategy the US had developed of blurring the distinction between war and peace. By applying the law of war principles of targeting outside armed conflict, it provides a legal justification, resulting in a killing that is ambiguously lawful.

The US also uses the law to justify breaching territorial sovereignty. It uses drone strikes in Afghanistan, Yemen, Somalia and Pakistan, sometimes against the same purported enemy.⁴⁸ It offers various legal justifications, including state consent, the ‘unable or unwilling’ doctrine, and the existence of a non-international armed conflict.⁴⁹ Each justification has been criticised,⁵⁰ but the policy reasons for using the law in this way conform to those given by Shultz and Sofaer. The US is fighting an asymmetric conflict, where the irregular groups it is targeting do not confine themselves within territorial borders, moving particularly across the Afghanistan–Pakistan border.⁵¹ To target this enemy, the US follows them there.⁵²

The focus of the formal legal debate means that pro- and anti-drone scholars chase each other in circles. The US uses the confusion to its own advantage. But there is another layer to the US’s legal strategy that goes beyond the interpretation of positive law. The formalist debates above pay little attention to the working of technoscience and how it manifests in ambiguous legalities.

The critical drone scholarship stands in sharp contrast to the formalist legal debate by analysing the ways that drone technology affects the law. Ian Shaw and Majed Akhter have analysed how the bureaucracy and automation of drone strikes work to absolve the US of responsibility under international law.⁵³ They detail the techno-political process of drone strikes, which involves the kill chain that the US calls the ‘disposition matrix’.⁵⁴ This is a kill list made up of the targets from various US

³⁸ O’Connell, “Remarks,” 590.

³⁹ Schmitt, “Narrowing the International Law Divide,” 8.

⁴⁰ Schmitt, “Narrowing the International Law Divide,” 8.

⁴¹ Jahangir, *Civil and Political Rights*, [37], [39].

⁴² Schmitt, “Drone Attacks,” 312.

⁴³ Lewis, “Drones and Distinction,” 1164.

⁴⁴ Jahangir, *Civil and Political Rights*, [37]–[39]; O’Connell, “Unlawful Killing with Combat Drones,” 265; Williams, “CIA,” 874.

⁴⁵ Jahangir, *Civil and Political Rights*, [39]; O’Connell, “Unlawful Killing with Combat Drones,” 266, n 15.

⁴⁶ Dennis, “Human Rights in 2002,” 367, n 17.

⁴⁷ McManus, “A U.S. License to Kill.”

⁴⁸ Gregory, “The Everywhere War,” 238; Lewis, “Drones and Distinction,” 1153, 1163; Heinsch, “Modern Drone Warfare,” 79.

⁴⁹ Lewis, “Drones and Distinction,” 1164; US Department of Justice, *Lawfulness*, 3.

⁵⁰ McNab, “Unmanned Drones,” 669–673.

⁵¹ Lewis, “Drones and Distinction,” 1149; Gregory, “The Everywhere War,” 240.

⁵² Gregory, “The Everywhere War,” 240.

⁵³ Shaw, “Unbearable Humanness,” 1502–1505; Shaw, “The Dronification of State Violence,” 218, 222.

⁵⁴ Shaw, “The Dronification of State Violence,” 211, 226–227.

security agencies.⁵⁵ Targets in the matrix are made up of a file that contains information about the subject.⁵⁶ The most important targets, as determined by computer analysis, are brought before a committee headed by the president, which determines who to kill.⁵⁷ However, the process is shrouded in secrecy. Drone strikes are largely conducted by the CIA, which avoids scrutiny, and the techno-bureaucratic system disperses responsibility among many actors, making it difficult to hold anyone accountable. Further, the US invokes the emergency of the war on terror to frame the killing as a sovereign decision not subject to legal oversight.⁵⁸

Andreas Behnke calls this exercise of sovereignty upon those outside the territorial borders of the state ‘meta sovereignty’.⁵⁹ The decision to conduct strikes on the territory of other sovereign states turns those states into an external state of exception.⁶⁰ Derek Gregory’s analysis of the Afghanistan–Pakistan border reinforces this notion, since the conduct of strikes across these borders effectively blurs the territorial boundary between those sovereign states, turning it into what Gregory calls a ‘borderland’, a liminal space where the law is ambiguous.⁶¹ These scholars emphasise the fact that drone strikes occur outside US territory, where international law should govern them, but, rather, drone strikes subvert international law.⁶² Frédéric Mégret examines how the strategy of calling the fight against terrorism a ‘war’ invokes an almost ideal state of exception, thereby justifying any flouting of the law on the basis of the sovereign decision.⁶³

Another theme that emerges from the critical drone literature emphasises how law and drone strikes are entangled. Anna Leander argues that drone strikes and legal expertise are co-constitutive.⁶⁴ Drone strikes, for Leander, alter legal boundaries by bringing together civilian, commercial, and military programmes and lawyers, which reproduces the blurring of the boundaries between war and peace.⁶⁵ Further, since drones are a complex technology operated by a dispersed set of actors, incorporating disparate elements such as physical technology, code, and regulated processes and procedures, drones can displace legal responsibility for decisions, with some even arguing that drone systems could themselves make better legal decisions than humans.⁶⁶ Joseph Pugliese argues that the technoscientific process of producing so-called legal targets using the drone system amounts to putting an objective, scientific gloss on what is, given the vagaries of the data manipulation involved, a kind of ‘divination’.⁶⁷ Critical accounts of the entanglement of law and drone strikes show that drone wars are one way that the US engages in ‘lawfare’, or the conduct of war through law rather than in the absence of law.⁶⁸

Critical drone scholarship offers an alternative view to the formal legal debate. It pays close attention to the ways that drone technology is implicated in legal interpretations and vice versa. The next section extends these reflections on the law-generative character of drone technology by considering specific ways that the technoscience of drones implements international law.

Drones as Legal Tools

The formalist debates pay little attention to the working of technoscience and how it manifests in ambiguous legalities. ‘Technoscience’ refers to the merging of technology and science in practices and fields such as computer science, genetics and artificial intelligence.⁶⁹ Several scholars have analysed the data-driven approach to drone strikes.⁷⁰ This approach relies on gathering huge amounts of data, mostly from mobile phones, in databases that are then mined by random forest algorithms to produce patterns.⁷¹ These patterns are used to predict terrorist behaviours, which results in individuals being placed on the terrorist kill lists that feed into the disposition matrix.⁷² The difficulty that random forest algorithms are intended to resolve is

⁵⁵ Shaw, “The Dronification of State Violence,” 211, 226–227.

⁵⁶ Shaw, “The Dronification of State Violence,” 211, 226–227.

⁵⁷ Shaw, “The Dronification of State Violence,” 227.

⁵⁸ Shaw, “The Dronification of State Violence,” 219–222, 227. See also *al-Aulaqi v Obama*, 727 F. Supp. 2d 1, 8 (D.D.C. 2010); US Department of Justice, Lawfulness, 1–2.

⁵⁹ Behnke, “Drone Warfare,” 38.

⁶⁰ Behnke, “Drone Warfare,” 39.

⁶¹ Gregory, “The Everywhere War,” 239–242.

⁶² Behnke, “Drone Warfare,” 50–53; Gregory, “The Everywhere War,” 241.

⁶³ Mégret, “Legal Semantics,” 365.

⁶⁴ Leander, “Technological Agency.”

⁶⁵ Leander, “Technological Agency,” 819–821.

⁶⁶ Leander, “Technological Agency,” 822–824.

⁶⁷ Pugliese, *Biopolitics*, 184.

⁶⁸ Jones, “Lawfare,” 233.

⁶⁹ Weber, “Keep Adding,” 117.

⁷⁰ Weber, “Keep Adding”; Pugliese, *Biopolitics*, 166–202; Amoores, *Cloud Ethics*, 108–129.

⁷¹ Amoores, *Cloud Ethics*, 124–127.

⁷² Weber, “Keep Adding,” 110–112.

that there are not enough examples of confirmed terrorist activity to constitute an accurate predictive pattern.⁷³ The algorithm works by generating decision trees (the ‘forest’) from random sets of data, and then voting on the most likely predictive patterns.⁷⁴ This process captures a vast number of individuals that the government admits have no formal connection to any terrorist group.⁷⁵ As Louise Amoore notes, this is not an aberrant result, but how the algorithm is supposed to work.⁷⁶ The process of tinkering with data to produce targets using vague search criteria, thus, results in an ambiguous (non-)distinction between target and non-target.

Nonetheless, the US government appeals to its ‘advanced technologies’ that allow it to conduct ‘precise’ targeting.⁷⁷ Unfortunately, the so-called ‘robust’ procedures and practices for producing legal targets remain opaque due to the secrecy of the surveillance programme.⁷⁸ This opacity also works to produce legal ambiguity, since the US can use and appeal to its techno-legal drone apparatus to justify its killing regime.

The ambiguity of the (non-)distinction of drone surveillance drives much of the techno-legal processes of drone strikes. While the laws of war distinguish between different places, such as between civilian and military spaces,⁷⁹ the conception of space under drone surveillance is all-encompassing. Drone surveillance does not distinguish between different kinds of places, but merely gives a pattern analysis of who was where, when. This is evidenced by the way the US, on the one hand, purports to distinguish civilian from military spaces on a map of Iraq using green and red, but on the other hand, the map is almost entirely covered with various shades of brown.⁸⁰ The internal logic of drone surveillance requires this conception of space: if the military wishes to distinguish combatants from civilians, and the combatants are irregular and woven throughout the battlespace and among civilians, then it will need to monitor the entire space to identify emerging targets.

For example, the US has targeted ‘suspicious compounds in areas controlled by militants’.⁸¹ Scholars have criticised the practice because international humanitarian law requires the US to refrain from targeting civilian objects.⁸² However, drone surveillance collapses the distinction between civilian and military spaces by treating all spaces as suspicious, as potential hiding places for terrorist threats. What matters on this conception is not the kind of place that it is, but what role it plays in the network produced by data analysis. The quantitative weight of metadata turns a compound into a ‘suspicious’ compound, a hideout, or a base.⁸³ These places become points on the map that, if fired at, will disrupt the terrorist network.

Drone surveillance also follows the logic of perpetual war. Before drones, slower methods of intelligence gathering meant that targets in conflicts tended to be static, such as military bases and other infrastructure.⁸⁴ However, drones track emerging targets.⁸⁵ This refers to the ability, for example, not only to pick out a convoy moving towards a hot zone,⁸⁶ but also to track the mundane activities that produce the metadata that feeds the disposition matrix.⁸⁷ The process is capable of surveilling the entire local population to quickly respond to emerging targets.

This process is at the centre of the perpetual nature of drone war. Rather than war against an already-established enemy whose crippling would bring about an end, drone war is constant surveillance of an area so that a never fully delineated enemy is continually suppressed. The emerging nature of targets means that surveillance and targeting may continue *ad infinitum*. This does not mean that drone wars will, in fact, never end. Rather, the internal logic, following the structure of targeting, surveillance and laws, means that drone wars are less about achieving a definite goal that would signal the end of war, than about constant surveillance and suppression that has no end goal other than its own continuation.

⁷³ Ball, quoted in Grothoff, “The NSA’s SKYNET Program.”

⁷⁴ Amoore, *Cloud Ethics*, 125.

⁷⁵ Weber, “Keep Adding,” 110.

⁷⁶ Amoore, *Cloud Ethics*, 126.

⁷⁷ Koh, quoted in Paust, “Self-Defense,” 276, n 103.

⁷⁸ Koh, quoted in Paust, “Self-Defense,” 276, n 103; Sterio, “The Covert Use of Drones.”

⁷⁹ Heller, “Killing Machine,” 96.

⁸⁰ Gregory, “The Everywhere War,” 239.

⁸¹ Dawn, quoted in Heller, “Killing Machine,” 99.

⁸² Heller, “Killing Machine,” 99.

⁸³ Weber, “Keep Adding,” 112.

⁸⁴ Kindervater, “The Emergence of Lethal Surveillance.”

⁸⁵ McSorley, “Predatory War, Drones and Torture,” 80.

⁸⁶ Allinson, “The Necropolitics of Drones,” 120 ff.

⁸⁷ McSorley, “Predatory War, Drones and Torture,” 80–81.

This perpetual nature of drone wars shrouds otherwise illegal conduct in legality. This was the case with the much-discussed drone strike reported in 2011 by the *Los Angeles Times*.⁸⁸ This occurred during an on-the-ground special forces operation, with a Predator drone and two helicopters in the area to protect the special forces unit.⁸⁹ The strike involved a breach of the laws of war when drone operators fired on targets too soon, resulting in investigations by both the Army and Air Force.⁹⁰ The legal ambiguity of drone wars as perpetual helped to produce the incident. Drone pilots were following a convoy of three cars in Afghanistan. At 01:07, an image analyst finds that there are two children in one of the cars. At 04:11, the pilot confirms with a helicopter crew that there are 21 ‘MAMs’ (military aged males) in the convoy, and ‘about three rifles so far’. At 04:13, the helicopter crews are given the order to fire when ready, with the understanding that the drone will fire on any survivors. The helicopter fires at 04:16. At 04:22, while observing the survivors, the drone sensor operator notes that he cannot see any weapons and that several survivors are wearing burqas and jewellery. At 04:40, the mission intelligence coordinator confirms that there are women and children in one vehicle. At 04:42, the sensor operator says, ‘I personally wouldn’t be comfortable shooting at these people’.⁹¹ In this scenario, the military fired too soon and out of order. They fired after children were identified, and before they could identify who else was in the convoy. The laws of war would require that after finding children, the pilots must not shoot, and before they do shoot, they must ensure these are not civilians.⁹² By firing before they could identify the people on the ground, they got things backwards, firing at the wrong time, thus, breaching the law. However, the legality of perpetual war takes shape around this incident. Perpetual war means that the US spies even on a convoy of civilians moving across a desert just in case a target should emerge. If a target does emerge, then no matter how far it is from any conflict, no matter how isolated from a network of combatants or terrorists, no matter what the person is doing and whether they are a threat at that moment, the US will strike in accordance with the laws of a perpetual war, which apply at all times. The blurred boundary between war and peace, thus, shapes not only the spatial dimensions of drone strikes, but also the temporal dimensions.

Drone technology also captures and transforms different subjects. Drone strikes are largely conducted by the CIA, which is a civilian organisation and so is not protected under the laws of war, instead counting as unlawful combatants.⁹³ However, the US insists, nonetheless, that the CIA follows the laws of war.⁹⁴ Another ambiguity is the role of drone technology itself. The surveillance algorithms ‘process, screen, and select the data’ that will count as a suspect pattern of life, controlling the information from the moment of its input into the system to the moment it is presented to analysts, screeners and operators as suspect.⁹⁵ The technology then acts, in part, as a decision-making agent, creating another ambiguity in the laws of war, since the laws of war do not allow agency to machine decisions.⁹⁶ Drones also target subjects that international law considers unlawful targets. According to journalist Dexter Filkins, the US targets people for ‘consorting with known militants’.⁹⁷ The relevant law here is that which determines who the US may target in an armed conflict.⁹⁸ People who merely interact with militants play no role in the conflict, so firing on them breaches the law.⁹⁹ The US, instead of treating them as civilians, treats them as combatants. Drone surveillance contributes to this attitude in the way that it builds a picture of the social network of purported terrorist groups. The analysis is based not on the substance of things a person does or what they are able to do, but on the quantitative weight of the person’s involvement in the network: how many people in the network have they contacted, which areas do they access, and with what frequency. The legal question of who is effectively contributing to the military efforts is interpreted in practice as which nodes in the network have the greatest quantitative weight. Thus, this process blurs the legal boundaries that determine who is a legitimate target: the target is now determined according to data and algorithmic analysis.

The formal legal debate fails to recognise the intertwining of technoscience and law that is happening in drone strikes. The US goes far beyond mere textual interpretation to justify its drone killing programme. It interprets legal thresholds technoscientifically and implements the law using drone technology. Drones are more than mere objects to which positive law applies, but are techno-legal assemblages. A more general historical and critical account of drones as assemblages can offer a more complete understanding of the legality of drone strikes.

⁸⁸ Cloud, “Afghan War Tragedy”; Chamayou, *A Theory of the Drone*, 1–10.

⁸⁹ Cloud, “Afghan War Tragedy.”

⁹⁰ Cloud, “Afghan War Tragedy.”

⁹¹ Chamayou, *A Theory of the Drone*, 9.

⁹² Heller, “Killing Machine,” 99.

⁹³ Lewis, “Drones and Distinction,” 1157 ff.

⁹⁴ Lewis, “Drones and Distinction,” 1158.

⁹⁵ Pugliese, *Biopolitics*, 179.

⁹⁶ Holmqvist, “Undoing War,” 542, 544–545.

⁹⁷ Filkins, “The Journalist and the Spies.”

⁹⁸ Heller, “Killing Machine,” 92.

⁹⁹ Heller, “Killing Machine,” 92.

Drones as Techno-Legal Assemblages

This section gives an account of drones as techno-legal assemblages. It argues that the drone assemblage implements remote techniques of social control, and these techniques reflect the broader history of colonial warfare. The technological character of law allows the US to use it for the efficient ordering of the space of drone wars. Drone wars map onto colonial cartographies and position the subjects of killing as legitimate targets without legal protection. Thus, drone strikes are not a radical break from the past but are grounded in the history of colonial war and necropolitics.

An assemblage is ‘a multiplicity which is made up of many heterogeneous terms and which establishes liaisons, relations between them’.¹⁰⁰ These terms include both material aspects, such as the technological practices of the drone, and formal aspects of language, such as legal terms. Deleuze states that assemblages consist of an interaction between content and form, where ‘form’ refers to expressions or utterances, and ‘content’ refers to what the expression is combined with, or the material aspects of the assemblage.¹⁰¹

Drone scholars have generally conceived of the drone as a surveillance assemblage.¹⁰² These scholars draw on the work of Kevin Haggerty and Richard Ericson, who emphasise the way modern surveillance works by ‘abstracting human bodies from their territorial settings and separating them into a series of discrete flows’ to be ‘reassembled into distinct “data doubles”’.¹⁰³ The drone as a surveillance assemblage fits into what scholars have identified as the ‘racialised surveillant assemblage’, an assemblage that identifies bodies as ‘terrorists’ using racialised logics.¹⁰⁴ Joseph Pugliese notes that surveillance data is coded with bioinformational categories such as skin colour, ethnicity, gender, height and weight.¹⁰⁵ These are coded by the Department of Defense’s screening systems, inserting predetermined categories into the data.¹⁰⁶ The Department combines its coded information with uncoded (or not-yet-coded) metadata collected by the National Security Agency, to form a ‘categorical hybridization across different disciplines’.¹⁰⁷ This hybrid of ‘soft biometric’ information and hard metadata merges the biological into the algorithmic and results in a form of ‘bioinformational stereotyping’.¹⁰⁸ While Pugliese’s work focuses on articulating what can count as a victim of military violence, his delineation of categorical hybridisation in the drone assemblage is useful for this paper’s focus on the enmeshing of law and technology, since it connects technical processes to legal thresholds.

Under the influence of the drone assemblage, drone wars become what Jolle Demmers and Lauren Gould call ‘liquid war’.¹⁰⁹ Liquid wars occur across vast and discontinuous stretches of space, concerning a theatre of war that is moving and moveable, and involve a disparate set of entities.¹¹⁰ In this context, the mechanisms of biopolitical control of whole populations become less effective than modular and remote forms of control.¹¹¹ These are the forms of control that Deleuze describes as making up societies of control.¹¹² For Deleuze, these are methods that are more concerned with information than with individuals.¹¹³ Rather than locating individuals within a mass, these methods treat individuals as ‘dividuals’, breaking them down into information that can be used in a piecemeal fashion to achieve changing purposes.¹¹⁴

Paul Kahn has argued that drone war ‘no longer looks like war’.¹¹⁵ Kahn’s conception of what war looks like involves sovereign states engaging in combat with their regular armed forces using methods that involve mutual risk.¹¹⁶ Since drone wars are not waged against other territorially bound sovereign states, or against a group resembling armed forces, and without mutual risk,

¹⁰⁰ Deleuze, *Dialogues*, 69.

¹⁰¹ Deleuze, *Dialogues*, 70; Buchanan, “Assemblage Theory and Its Discontents,” 390.

¹⁰² Wall, “Surveillance and Violence from Afar,” 240; Crampton, “Assemblage of the Vertical,” 137–138; Wilcox, “Embodying Algorithmic War,” 13–14; Fish, “Drone Power,” 13, 18.

¹⁰³ Haggerty, “The Surveillant Assemblage,” 606.

¹⁰⁴ de Goede, “Terrorist Financing,” 97–100; Ditrych, “Contemporary Terrorism *Dispositif*,” 225–226; Sharma, “The Racialized Surveillant Assemblage,” 75–79.

¹⁰⁵ Pugliese, *Biopolitics*, 171.

¹⁰⁶ Pugliese, *Biopolitics*, 171.

¹⁰⁷ Pugliese, *Biopolitics*, 171.

¹⁰⁸ Pugliese, *Biopolitics*, 172.

¹⁰⁹ Demmers, “Liquid Warfare,” 366.

¹¹⁰ Demmers, “Liquid Warfare,” 366–367, 373–374.

¹¹¹ Demmers, “Liquid Warfare,” 366, 373.

¹¹² Deleuze, “Postscript,” 4.

¹¹³ Deleuze, “Postscript,” 5.

¹¹⁴ Deleuze, “Postscript,” 5; Crampton, “Assemblage of the Vertical,” 142.

¹¹⁵ Kahn, “Imagining Warfare,” 200.

¹¹⁶ Kahn, “Imagining Warfare,” 200.

Kahn places drone wars in a zone of exception that is neither regulated by normal law nor ordered by the laws of war.¹¹⁷ However, drone wars as asymmetrical conflicts against non-sovereign groups are not a ‘new form of violence’.¹¹⁸ Rather, as Samuel Moyn observes, they are a successor to colonial warfare.¹¹⁹ Taking a broader perspective heeds the call of Deleuze, for whom ‘the machines don’t explain anything, you have to analyze the collective apparatuses of which the machines are just one component’.¹²⁰ What separates drone wars from prior conflicts is not, Moyn argues, the technology itself, or who uses it against whom, but rather the place of the law.¹²¹ Before 1977, he notes, the laws of war did not apply to insurgents, while today they are ‘highly legalized’.¹²² Drones are part of a larger trajectory in which the laws of war apply to more subjects, in more spaces, rather than fewer.

Ioannis Kalpouzos notes that lawyers are involved ‘in decision making at different levels and stages of the targeting process’.¹²³ Military lawyers based at the Combined Air and Space Operations Center are part of a plethora of individuals who watch the drone and provide advice.¹²⁴ These lawyers are called on to dispense immediate advice: ‘target prosecutions must be completed in a matter of minutes.’¹²⁵ They also provide policies and ‘provide training products so aircrews and (joint terminal attack controllers) are prepared to operate rapidly’.¹²⁶ The place of lawyers in the drone assemblage highlights what David Kennedy calls the ‘war-generative functions of law’: the military ‘turns to law to discipline the troops, to justify, excuse, and privilege battlefield violence, to build the institutional and logistical framework from which to launch the spear’.¹²⁷ In 2011, a single drone required up to 185 personnel to operate¹²⁸ across different bases and continents—an operation that resembles the complexity of an aircraft carrier, ‘requiring a complex and entrenched culture of standard practices and shared experiences, of rules and discipline’.¹²⁹ Drone operations are so specialised that they are producing new forms of legal expertise.¹³⁰

This insertion of the law into the kill chain encloses what might otherwise be extrajudicial killing in a cloak of lawfulness. Giorgio Agamben notes that the law includes ‘what is simultaneously pushed outside’,¹³¹ and others acknowledge this expanding character of the law to cover more subjects and things that are outside itself.¹³² The vision of legal experts doing on-demand technical work to grease the wheels of the kill chain also echoes Carl Schmitt’s image of the state as a technical machine.¹³³ The state, on this conception, is analogous to a sophisticated machine in which all parts work according to order. This was required of the state, for Schmitt, to guard against the state of nature.¹³⁴ To succeed, the state needs to be an efficient instrument that can exercise the utmost control, which requires it to be neutral of all norms and technically perfect.¹³⁵ The drone assemblage, tangled with legalities, reflects this picture of the law as pervasive, technical, efficient and neutral. However, for Schmitt, the technical machine only encompassed the state and ordered its interior, not its exterior.¹³⁶ Law’s expanding trajectory indicates that its technical pervasiveness goes beyond what Schmitt imagined.

The pervasive, expanding, technical character of the law reveals law as technology. Technology, too, has been viewed by some as all-pervasive, even reaching mythical status.¹³⁷ For Martin Heidegger, the essence of technology is a way of understanding the world as something to be calculated, ordered and manipulated.¹³⁸ This technological worldview sees everything as ‘ready-to-hand’,¹³⁹ everything as some tool for using to achieve some purpose. All things, in this view, become merely some resource

¹¹⁷ Kahn, “Imagining Warfare,” 222.

¹¹⁸ Kahn, “Imagining Warfare,” 226.

¹¹⁹ Moyn, “Drones and Imagination,” 229.

¹²⁰ Deleuze, *Negotiations*, 175.

¹²¹ Moyn, “Drones and Imagination,” 231.

¹²² Moyn, “Drones and Imagination,” 231.

¹²³ Kalpouzos, “Armed Drone,” 122.

¹²⁴ Gregory, “View to a Kill,” 194.

¹²⁵ Kurle, “Operational Advice to COAC.”

¹²⁶ Kurle, “Operational Advice to COAC.”

¹²⁷ Kennedy, *Of War and Law*, 32. See also Jones, *The War Lawyers*.

¹²⁸ Gregory, “View to a Kill,” 194.

¹²⁹ Kennedy, *Of War and Law*, 33.

¹³⁰ Leander, “Technological Agency,” 829–830.

¹³¹ Agamben, *Homo Sacer*, 31.

¹³² Deleuze, *A Thousand Plateaus*, 360; Fitzpatrick, *Modernism*, 146–148.

¹³³ Schmitt, *Leviathan*, 41–52.

¹³⁴ Schmitt, *Leviathan*, 47.

¹³⁵ Schmitt, *Leviathan*, 47.

¹³⁶ Schmitt, *Leviathan*, 48.

¹³⁷ Latour, *Pandora’s Hope*, 200; Kochan, “Latour’s Heidegger,” 585.

¹³⁸ Heidegger, “The Question Concerning Technology.”

¹³⁹ Heidegger, *Being and Time*, 72.

that can be replaced and exchanged.¹⁴⁰ The paradigm example, for Heidegger, is modern industrialised technology, which draws all resources into supply chains to further the aims of economic efficiency.¹⁴¹ Law, too, is ‘ready-to-hand’, a set of rules to achieve whatever purpose most efficiently.¹⁴² But law itself is also technological, as a worldview that sees everything as a resource to be ordered to further the aim of technical efficiency. Heidegger calls this pervasive technological worldview ‘enframing’.¹⁴³ Thinking of law as technology emphasises the pervasiveness of law, that it results in a closed hermeneutic that purports, like technology, to be able to order everything, to govern everything, and this pervasiveness is also at work through the drone. We can see the expansion of the laws of war to technically govern the subjects of drone strikes in the development of targeted killing.

However, this one form of control forms part of a greater collective of control assemblages. Kalpouzos¹⁴⁴ identifies it as part of what Marianna Valverde and Michael Mopas call ‘targeted governance’—‘linked to the idea of efficient, apolitical, knowledge-driven, “evidence-based” policy’.¹⁴⁵ This links targeted killing to ideas of law and control. Law as efficient and calculative is woven into the kill chain to make assessments of proportionality and distinction on demand. Control as targeted echoes the mechanisms of the society of control, converting individuals into the individuals of signatures and patterns of life. This form of legalised killing developed in the 1990s before the armed drone existed, indicating it is part of a broader trajectory of law, though the drone became the cypher for the law of war’s new justification of lethal forms of control.¹⁴⁶

The development of targeted killing follows the trajectory of colonial warfare that flows through the drone. Kahn and other scholars are preoccupied with anxiety over the ‘vanishing battlefield’,¹⁴⁷ the transformation of war that ‘no longer looks like war’,¹⁴⁸ the creation of a space of exception where neither peacetime law nor the laws of war apply. This preoccupation is influenced by a ‘territorialist epistemology’.¹⁴⁹ This perspective privileges the Westphalian concept of sovereignty and the imagined idea that international law is built to facilitate interactions between sovereign states of equal standing.¹⁵⁰ It fails to recognise the ‘differentiated sovereignty’ that developed in international law to suppress and manage the non-European world.¹⁵¹ The use of drones in war maps onto ‘imperial cartographies’, revealing this form of legitimised violence as a continuation of the imperial logic of international law.¹⁵² Campbell Munro notes that drone strikes in Pakistan, Yemen and Somalia do not occur across the entire territory of these states, but are localised to areas on the ‘imperial periphery’, regions of historically contested sovereign borders that are administered as less than sovereign.¹⁵³ According to Munro, the legitimisation of violence in drone wars continues at least three lines of imperial legal reasoning.¹⁵⁴ One sees the Eurocentric laws of war as applying only between sovereign states, which the colonial other was not: ‘[t]o characterize any conduct whatever towards a barbarous people as a violation of the laws of nations, only shows that he who so speaks has never considered the subject.’¹⁵⁵ This logic continues in the concept of targeted killing, which allows the subject of drone strikes to be a legitimate target, but does not offer them legal protection. Another line of imperial legal reasoning sees the reinscription of ‘differentiated and layered sovereignties’ insofar as the areas targeted coincide with the imperial periphery.¹⁵⁶ The third line of reasoning sees mechanised war equated with legitimate war, as embodied in the technoscientific practices of the drone.¹⁵⁷

The three extensions of imperial legal reasoning mentioned above characterise a necropolitical space of legal ambiguity. Achille Mbembe writes that in the colony, ‘“peace” is more likely to take on the face of a “war without end”’.¹⁵⁸ This is due, he insists, to ‘the creation of a European juridical order’ in which states are equal and cannot rule outside their own borders.¹⁵⁹ This turns

¹⁴⁰ Heidegger, “The Question Concerning Technology,” 322–323.

¹⁴¹ Heidegger, “The Question Concerning Technology,” 322–323; Blitz, “Understanding Heidegger on Technology,” 71.

¹⁴² Minkinen, “Right Things,” 69–70.

¹⁴³ Heidegger, “The Question Concerning Technology,” 324.

¹⁴⁴ Kalpouzos, “Armed Drone,” 123.

¹⁴⁵ Valverde, “Insecurity and Targeted Governance,” 245.

¹⁴⁶ Gunneflo, Targeted Killing, 163.

¹⁴⁷ Mégret, “War and the Vanishing Battlefield.”

¹⁴⁸ Kahn, “Imagining Warfare,” 200.

¹⁴⁹ Mahmud, “Colonial Cartographies,” 5.

¹⁵⁰ Mahmud, “Colonial Cartographies,” 10.

¹⁵¹ Anghie, “Finding the Peripheries,” 7; Mahmud, “Colonial Cartographies,” 12.

¹⁵² Munro, “Mapping the Vertical Battlespace,” 242.

¹⁵³ Munro, “Mapping the Vertical Battlespace,” 246–255.

¹⁵⁴ Munro, “Mapping the Vertical Battlespace,” 240.

¹⁵⁵ Mill, quoted in Mahmud, “Colonial Cartographies,” 12.

¹⁵⁶ Munro, “Mapping the Vertical Battlespace,” 240.

¹⁵⁷ Munro, “Mapping the Vertical Battlespace,” 240.

¹⁵⁸ Mbembe, “Necropolitics,” 23.

¹⁵⁹ Mbembe, “Necropolitics,” 23.

the colony, outside European state borders, into a zone of indistinction, where states need not follow any law of equality, including the laws of war.¹⁶⁰ Laws do make their way into the colony, but are premised on the idea that the colony is not sovereign, so the laws are imposed by its European occupier, and on the idea that the people are not fully legal subjects, so they may belong to others as slaves but have no rights themselves.¹⁶¹ Thus, the colony is an ambiguously lawful place where a colonising power combines laws and unlawfulness to dominate the racially distinguished ‘others’. This necropolitical logic is at work in drone wars, in the way that targets are racially distinguished, legally killable but not legally protected, and managed under a regime of differentiated sovereignty. The entire collective of apparatuses of which the drone is a part makes drone wars spaces of legal ambiguity. Thus, the US continues to follow the necropolitical logic of colonial expansion to justify its killing.

The laws of war, considered from the standpoint of enframing, order and are ordered by the imperial logic of international law. Within this picture, the drone is a cypher for the laws of war as part of a collective of assemblages of control. Far from representing a break from old forms of warfare with their imagined European chivalrous legality, drones continue the project of colonial warfare by legitimising violence using the law. The extension of legality to the subjects of drone strikes is another mechanism in the technical machine that is the law of progress, order, efficiency and neutrality. The ambiguous (non-) distinction between targets, the legal ambiguity of differentiated sovereignty and targeted killing, and the blurring of the boundary between peace and war are individual aspects of collective assemblages of control that are part of a continuum of the law, not a radical break from it. This picture of the inescapability of the law echoes so many dystopian visions, including Deleuze’s and Guattari’s vision of a universal computer that tracks every movement and may decide at any moment not to allow someone access to parts of the city.¹⁶² They issued a warning about the societies of control, insisting that their mechanisms amount to the ‘coils of a serpent’.¹⁶³ The drone assemblage is one of them.

Conclusion

This paper has argued that drones are techno-legal assemblages. The formal legal debate concerning drones neglects the effects of drone technology on the laws of war. The US uses drone technology to interpret and implement the laws of war, expanding the spatio-temporal scope of drone wars. These wars are liquid wars, characterised by remote techniques of control that focus on breaking individuals down into information. Yet, far from representing a new form of warfare, the drone assemblage follows the pattern of colonial warfare. The techno-legal drone assemblage extends the reach of the law over the colonial other, allowing the US to justify its killing regime.

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¹⁶⁰ Mbembe, “Necropolitics,” 23–24.

¹⁶¹ Mbembe, “Necropolitics,” 21–24.

¹⁶² Deleuze, “Postscript,” 7.

¹⁶³ Deleuze, “Postscript,” 7.

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