

Targeting Legality: The Armed Drone as a Socio-technical and Socio-Legal System

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"[The] United States has taken lethal, targeted action ... with remotely piloted aircraft commonly referred to as drones ... To begin with, our actions are effective ... Dozens of highly skilled ... commanders, trainers, bomb makers and operatives have been taken off the battlefield. Plots have been disrupted. ... Simply put, these strikes have saved lives. Moreover, America's actions are legal ... We are at war with ... organization[s] that right now would kill as many Americans as they could if we did not stop them first. So this is a just war – a war waged proportionally, in last resort, and in self-defense."⁴

"[A very great] ... danger threatens [us today] ... [namely that] the approaching tide of technological revolution ... could so captivate, bewitch, dazzle, and beguile [us] ... that calculative thinking may someday come to be accepted and practiced as the only way of thinking."⁵

I. Introduction

This article is the product of an ongoing collaboration between two sociologists and a researcher working for an organisation which campaigns against the unnecessary harms caused by the use of certain weapons systems, "Article 36".⁶ We came together as a result of a shared interest in exploring 'actually existing' practice around the use of armed drones, more specifically the situated practices of

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⁴ Barack Obama, 'Remarks by the President at the National Defense University' *The White House*, (23 May 2013) <<https://www.whitehouse.gov/the-press-office/2013/05/23/remarks-president-national-defense-university>> accessed 27 November 2017.

⁵ Hubert Dreyfus, 'Heidegger on Gaining a Free Relation to Technology' in Kristin Shrader-Frechette and Laura Westra (eds.), *Technology and Values*. (Rowman & Littlefield Publishers 1997).

⁶ In its own words, "Article 36 is a UK-based not-for-profit organisation working to prevent the unintended, unnecessary or unacceptable harm caused by certain weapons. Article 36 undertakes research, policy and advocacy and promotes civil society partnerships to respond to harm caused by existing weapons and to build a stronger framework to prevent harm as weapons are used or developed in the future. The name refers to Article 36 of the 1977 Additional Protocol I of the Geneva Conventions that requires states to review new weapons, means and methods of warfare", Article 36, <<http://www.article36.org/about>> accessed 27 April 2018.

legal reasoning engaged in by military personnel to justify drone strikes in theatre – an ‘ethnomethodological’ orientation predicated on studying practical methods of action and reasoning in combat settings.⁷ Together we are seeking to determine how military personnel work together as part of drone operations to frame and organise their actions in practice with respect to a range of legal and quasi-legal frameworks. These include local rules of engagement as well as the military codes and regulations that govern the conduct of combat missions;⁸ the protocols and agreements which set out the respective roles of different kinds of units and services, e.g. air force vis-à-vis the army and so on, about their respective roles and their limits during joint operations;⁹ and overarching frameworks including the mosaic of national legal systems that drone operations regularly traverse (and many would suggest regularly violate) alongside International Humanitarian Law (IHL) and International Human Rights Law (IHRL).¹⁰ By analysing how armed drone strikes are actually conducted with a focus on targeting practices and legal reasoning within them, the goal is to open up their practical and practiced grounds.

A study of this kind links to contemporary research on armed drones in several ways. Problems with the legality of drone strikes, especially outside officially designated armed conflicts, are widely recognised and have been voiced for some time.¹¹ Yet the practice continues, indeed is spreading and becoming ever more stabilised as we discuss below, and calls to uphold legal standards have so far been inadequate to prevent or halt unnecessary harm. What is more, despite refusing to release the legal advice on which their position is based due to national security considerations, drone-using states continue to claim their expanding operations are legal whatever opinions to the contrary may suggest. Our view, one we work through in what follows, is that we need to return to the phenomenon – the social, technical and legal organisation of drone operations themselves – and study it in its own terms

⁷ Ethnomethodology is a field of sociological inquiry focused on members of society’s methods – or ethno-methods – of practical action and reasoning in ordinary as well as specialised settings. We shall say more about ethnomethodology and our study below. For a useful introduction to ethnomethodology’s distinctive place within the social sciences, see Michael Lynch ‘The Origins of Ethnomethodology’, in Stephen P. Turner and others (eds.) *Philosophy of Anthropology and Sociology: Handbook of the Philosophy of Science, Volume 8*, (Elsevier 2007).

⁸ And see here the illuminating discussion in Jon R. Lindsay, ‘Target Practice: Counterterrorism and the Amplification of Data Friction’ (2017) 42(6) *Science, Technology, & Human Values* 1061.

⁹ As discussed in, e.g., Andrew Cockburn, *Kill Chain: Drones and the Rise of High-Tech Assassins* (Verso 2015).

¹⁰ While not explicitly focused on the armed drone, see Lena Jayyusi, ‘Discursive Cartographies, Moral Practices: International Law and the Gaza War’, in Baudouin Dupret, Michael Lynch, Tim Berard (eds.), *Law at Work: Studies in Legal Ethnomethods* (Oxford: Oxford University Press 2015); Craig A. Jones ‘Lawfare and the Juridification of Late Modern War’, (2016) 40(2) *Progress in Human Geography* 221; Maja Zehfuss, *War and the Politics of Ethics* (Oxford University Press 2018).

¹¹ For an overview of the legal arguments, see, e.g., Alston, Philip, *Report of the Special Rapporteur on Extrajudicial, Summary or Arbitrary Executions, Addendum, Study on Targeted Killings*, UN Doc. A/HRC/14/24/Add.6, at 3, 54, 85-86. (UN General Assembly 2010); Megan Braun and Daniel R. Brunstetter, ‘State of the Union: A Decade of Armed Drones’, (2013) 19(2) *The Brown Journal of World Affairs* 81; Christof Heyns and others, ‘The International Law Framework Regulating the Use of Armed Drones’, (2016) 65(4) *International & Comparative Law Quarterly* 791.

if we are to understand what has produced and what sustains this state of affairs but also what we might do to challenge it. If, as we shall argue, particular ways of interpreting legal frameworks and obligations are built into and put to work in conjunction with the socio-technical arrangements of the drone and the calculative reasoning it embodies, that means we have to treat the socio-legal as interwoven with the socio-technical rather than externally regulating it. Once we clarify what we are dealing with when we engage with the use of armed drones, i.e. a socio-technical assembly that makes it possible to produce 'legal' airstrikes in ways that are tailored to the individuated circumstances of particular missions while diffusing accountability across its distributed operational architectures, we suggest the challenge the drone poses is revealed to be primarily political not legal in character. While we draw widely on existing literature in arguing this, we also refocus that literature in doing so. Our view that an interrogation of the socio-technical and socio-legal system of the armed drone should be the starting point for any analytical engagement with its use commends itself in two key respects. First, it provides a clear basis for collaboration across a range of approaches, collaborations necessary to adequately make sense of the ramifying complexities of contemporary drone operations. Second, it helps support demands for restrictions on those operations at the political level by making the socio-technical and socio-legal machineries of drone warfare visible and accountable. In order to make this case, we begin our discussion with an examination of the armed drone's growing use.

II. The Use of Armed Drones

17 years after the first attempted use of an armed drone¹² in an airstrike by the US on 7th October 2001¹³ and 16 since their first 'successful' use by the US in a 'targeted killing' on 4th February 2002,¹⁴ armed drones have become an increasingly central feature of the contemporary landscape of global politics and conflict. With these two events marking the moments when drone technology made the jump from intelligence, surveillance and reconnaissance (ISR) platform to fully-fledged weapons

¹² Despite the slipperiness of the terminologies used in this field, particularly references to 'unmanned' aerial systems, it is important to note that the armed drone is not a species of Lethal Autonomous Weapon System or LAWS, and should not be confused with one. Drones are piloted, just remotely so; they do not and cannot fly themselves. Indeed, as we will show, more people are involved in flying armed drones than are involved in flying conventional military aircraft. In that sense, they are highly socialised or 'peopled' technologies not 'independent' technological agents. That they afford scrutiny by more pairs of eyes among wider groups than conventional aerial warfare – from intelligence operatives through legal advisors and senior military strategists right up to Presidents – is precisely one of their attractions given the complex contemporary military-political involvements in which the US and its allies are engaged. This is not to say LAWS would not be illuminated by a sociotechnical and socio-legal analysis, just that the nature of the practices which underpin their development, deployment and use would take us into different territory to that within which the armed drone is situated.

¹³ Chris Woods, 'The Story of America's Very First Drone Strike' *The Atlantic* (30 May 2015).

¹⁴ John Sifton, 'A Brief History of Drones' *The Nation* (7 February 2012).

system,¹⁵ there are many ways in which the dramatic growth in drone warfare that has taken place since can be measured.

A pioneer of armed drones and a central protagonist (or antagonist) in the controversies which surround them, the US has led the way in their use – and is our primary focus in what follows for this very reason. Despite being shrouded in secrecy, the scale, distribution and modulating intensity of the US's drone wars around the world from 2001 onwards has gradually become clear through the work of journalists, monitoring groups and the communities targeted in them. According to the Bureau of Investigative Journalism,¹⁶ which tracks the use of armed drones in Pakistan, Afghanistan, Yemen and Somalia, as of April 2018 there have been 4,788 minimum confirmed strikes since 2004, leading to between 7,497 and 10,858 deaths, with between 738 and 1,569 civilians killed of whom 242 to 337 were children.¹⁷ Those rates have not been static. From 2005 to 2014, the number of drones in active service rose from 5% to over 40% of all US military aircraft.¹⁸ The increasing demand for armed drones this indexes was fuelled by the increasing demand for drone strikes. From a relatively low figure under the Bush administrations of around 50, there were dramatic increases under the Obama administrations and a further acceleration in the initial stages of the Trump administration. Recent estimates suggest that while President Obama approved a drone strike every 5.4 days, President Trump has been approving one every 1.25 days.¹⁹ In 2006, Predator and Reaper drones flew 55,000 hours in combat service but by 2016 the US's drone fleet saw 350,000 hours of active combat duty, reflecting their increasingly widespread use in both covert and more conventional operations against the Islamic State in Iraq, Syria and Libya.²⁰ As Anna Jackman has noted, by 2015 armed drones were releasing “more weapons than manned aircraft in Afghanistan” and this is becoming the norm in other conflicts too.²¹ The overall picture is, therefore, clear: more missions flown, more airstrikes launched, more casualties among combatants and non-combatants alike.

¹⁵ For more on the genealogy of the armed drone see Derek Gregory, 'From a View to a Kill: Drones and Late Modern War', (2011) 28(7-8) *Theory, Culture & Society* 188; Jeremy Packer and Joshua Reeves, 'Romancing the Drone: Military Desire and Anthropophobia from SAGE to Swarm', (2013) 38(3) *Canadian Journal of Communication* 309; Cockburn (n. 9); Madeleine Clare Elish, 'Remote Split: A History of US Drone Operations and the Distributed Labor of War' (2017) 42(6) *Science, Technology, & Human Values* 1100.

¹⁶ The Bureau of Investigative Journalism, 'Drone Wars' <<https://www.thebureauinvestigates.com/projects/drone-war>> accessed 28 April 2018.

¹⁷ See also Lucy Suchman, Karolina Follis and Jutta Weber, 'Tracking and Targeting: Sociotechnologies of (In)security' (2017) 42(6) *Science, Technology and Human Values* 983.

¹⁸ Thomas Grose, 'Are Unmanned Drones the Future of Global Transport?' *Newsweek* (18 July 2014).

¹⁹ Alex Moorehead, Rahma Hussein and Waleed Alhariri, *Out of the Shadows: Recommendations to Advance Transparency in the Use of Lethal Force* (Columbia Law School Human Rights Clinic and Sana'a Centre for Strategic Studies 2017), 23.

²⁰ W. J. Hennigan, 'The U.S Is Now Routinely Launching 'Danger-Close' Drone Strikes So Risky They Require Syrian Militia Approval' *LA Times* (15 August 2017).

²¹ Anna Jackman, 'The Personnel Behind The US Drone Programme and National Bird' (2017) *Open Democracy* <<https://www.opendemocracy.net/anna-jackman/personnel-behind-us-drone-programme-and-national-bird>> accessed 28 April 2018.

While the world's primary user, armed drone use is not, however, restricted to the US. By 2012, Britain, China, France, Germany, India, Iran, Israel, Italy, Russia and Turkey were all in possession of armed drones²² and the number of state and non-state actors with armed drones has increased substantially since. The New America Foundation, which tracks the use, possession, development and import/export of drones around the world, suggests twenty-eight states currently have armed drone systems, eleven countries have used armed drones, and eight first used them in the past three years.²³ As drones have proliferated so have conflict sites, with drone strikes rumoured but not confirmed in countries like Mali and the Philippines.²⁴ Claims about the effectiveness of drones have undoubtedly contributed to their spread. However, figures inside as well as outside the military and defence establishments argue their use extends and exacerbates conflict rather than resolving it.²⁵ Far from having a stabilising effect, the 'turn to the drone' in military affairs across the world has coincided with a period where the situations in Afghanistan, Iraq, Libya, Syria and Yemen, to name just a few among the 'hottest' current theatres of war, have been far from stable. We have every reason, therefore, to take the critics' charges seriously: that drones make the problems they were designed to address worse not better, perpetuating armed conflict, drawing increasing numbers of the uninvolved into those conflicts and exposing them to the risk of violent death and injury as a result – in the absence of negotiated political settlements, itself a potent means of ensuring cycles of violence continue to spiral on and thus a source of harm and suffering in its own right.²⁶

When it comes to specifying the nature of the problems they pose, however, armed drones present a rather particular set of challenges. Chief among them is working out what we are actually referring to when we talk of the armed drone.²⁷ Drawing on recent social, political and legal research, in what follows we seek to make an analytical contribution to the debate on that question, arguing armed drones constitute a specific kind of socio-technical and socio-legal system, i.e. a means for bringing together diverse components, forms of expertise and infrastructures for particular military, legal and political ends at particular moments in time. Armed drones are not separable from the systems they are embedded in nor from the activities they allow, and we believe efforts to restrict their use will only gain ground by taking the networked socio-technical and socio-legal character of the armed drone into account. Following this line of argument through, we argue the use of armed drones not only opens up space for specific kinds of activities by state actors but demands specific kinds of analytical and political response in return.

²² The Guardian, 'Drones by Country: Who Has All the UAVs?' *The Guardian* (3 August 2012).

²³ New America Foundation, 'World of Drones' (2018) <<https://www.newamerica.org/in-depth/world-of-drones/>> accessed 28 April 2018.

²⁴ Task Force on US Drone Policy, *Recommendations and Report of the Task Force on Drone Policy* (2nd edn, Stimson 2015).

²⁵ See Clare Algar, 'How Can Secret Drone Campaigns Really Make Us Safer?' *CNN* (12 March 2014); Cockburn (n. 9); Task Force on US Drone Policy (n. 24).

²⁶ Cockburn (n. 9); Task Force on US Drone Policy (n. 24); Zehfuss (n. 10).

²⁷ In this connection see also Elish (n. 15).

III. Armed Drones as Socio-technical and Socio-Legal Systems

It is easy to get side-tracked in discussions of armed drones, losing the thread of important issues in the sea of technical details that arise whenever they are discussed. The technical details are important, and we will tease out aspects of them below, but they should not be given undue weight or be regarded as decisive. As Grégoire Chamayou puts it in *Drone Theory*:

*“Go look at the weapons, study their specific characteristics. Become a technician, in a way. But only in a way, for the aim here is an understanding that is not so much technical as political.”*²⁸

This caveat is important because if we separate off the technical from the social, political, legal, moral and ethical at the outset, armed drones lose coherence as an issue and become just one more expression of steady technological progress in the field of weapons systems. From this starting point, it becomes hard to state exactly what the specific problems with armed drones might be. However, as the Task Force on US Drone Policy put it: “while ... [armed drones], *as such*, present few new moral or legal issues, the availability of [these] lethal ... technologies has enabled US policies that likely would not have been adopted in the[ir] absence.”²⁹

Put most simply, the reason why armed drones have proven so attractive, why they have spread so quickly and why they have generated the problems they have is that they make it possible for military commanders and their political leaders to do things they could not or would not otherwise have done or have done in the same way had armed drones not been available.³⁰ In terms of what armed drones make possible, the Task Force on US Drone Policy offers neat summaries of their five core ‘affordances’:³¹ their “persistence ... and ability to loiter over a specific area for

²⁸ Grégoire Chamayou, *Drone Theory* (Penguin 2015), 15.

²⁹ Task Force on US Drone Policy (n. 24), 21, emphasis added.

³⁰ Nicolas Gianni, *How Can Actor-network Theory Assist in Rethinking Approaches to Banning or Restricting Lethal Autonomous Weapon Systems?* (Unpublished Masters Dissertation: University of Leiden 2017); see also Daniel Greene, ‘Drone Vision’ (2015) 13(2) *Surveillance & Society* 233; Jackman (n. 21).

³¹ We are drawing here on the substantial body of work that has built on J.J. Gibson’s theory of ecological perception and the concept of an ‘affordance’ introduced as part of it – see J.J. Gibson, *The Ecological Approach to Visual Perception* (Houghton Mifflin 1979), esp. chapter 8. In Ingold’s terms, affordances are “properties ... of any particular object, that [happen to] commend it to the project of a user” (Tim Ingold, *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill* (Routledge 2000, 194). Different users will find technologies ‘afford’ them different possibilities for action depending on their projects and the circumstances in which they pursue them. Technologies do not determine their own uses, then; rather what they afford us hinges on our practical involvements and the conditions in which we take them up. Drone warfare and targeted killings, for example, may be thought to be ‘made for each other’ but we need to situate their relationship within a highly historically-specific context of action – namely, the post-Cold War, post 9-11 world of national and international politics and military interventionism. As we shall go on to argue, what drones are ‘in themselves’ is for us secondary to how they are put to work, what that work actually involves, and what its users thus themselves ‘make of’ the armed drone.

extended periods of time, allowing them to capture and collect more information and ... users to observe, evaluate and act quickly”; their “precision ... [with] sensor technology ... [promising] more accurate targeting as well as ... surveillance”; their “operational reach ... offering longer flying times ... [and thus the ability] to project force from afar in environments that may otherwise be inaccessible or too dangerous”; their use in “force protection ... allow[ing] the user to have a military presence in areas that otherwise would be impossible politically, capacity/resource prohibitive, too dangerous to risk being shot down, or topographically inhospitable”; and, finally, their “stealth ... [with most drones] relatively small, quiet and capable of being flown at high enough altitudes to avoid detection by the individuals being surveilled or targeted.”³² In a geo-political context in which, according to the retired general Stanley McChrystal, US political leaders and military commanders had been seeking effective means to show that “we can fly where we want, we can shoot where we want, because we can”,³³ the armed drone’s affordances have made it situationally useful indeed.

Sociologists working in the field of science and technology have for decades stressed that technologies should be treated as social and technical in character, i.e., that they constitute socio-technical systems,³⁴ and in the case of armed drones that emphasis is particularly important. Why becomes clear when we start to examine the working architecture of drone operations, starting with their human staff. As the US Air Force puts it: “The basic crew ... is a rated pilot to control the aircraft and command the mission, and an enlisted aircrew member to operate sensors and weapons as well as a mission coordinator, when required.”³⁵ At this point, the set-up seems familiar, much like that of any conventional two-person aircraft, pilot and co-pilot working with an overseeing controller. However, drone operations also involve intelligence analysts feeding in information to guide the pilot and sensor operator in their actions. Drone operations are thus revealed to routinely involve not three but a minimum of four primary actors. Yet there is more. Again, in the words of the US Air Force: “The primary concept of operations, remote split operations, employs a launch-and-recovery ground control element for take-off and landing operations at the forward operating location, while the crew based in the continental United States executes command and control of the remainder of the mission *via* beyond-line-of-sight links.”³⁶ The networks of connections and their distribution thus continues to expand, covering units for launch and recovery at forward operating locations as well as, by implication, those personnel responsible for maintaining satellite link-ups so control can be passed between units at different points in a flight. Nor are drone

³² Task Force on US Drone Policy (n. 24).

³³ Adam Clark Estes, ‘Even Stanley McChrystal Realizes How Much the World Hates Our Drones’, *Atlantic Wire* (7 Jan 2013)

³⁴ See for example in this context William Walters, ‘Drone Strikes, Dingpolitik and Beyond: Furthering the Debate on Materiality & Security’ (2014) 45(2) *Security Dialogue* 101; Ezio DiNucci and Filippo Santoni, *Drones and Responsibility: Legal and Philosophical and Socio-technical perspectives on Remotely Controlled Weapons* (Routledge 2016); Elish (n. 15); Suchman, Follis and Weber (n. 17).

³⁵ United States Air Force, ‘MQ-1B Predator’ (Air Combat Command Public Affairs Office 2015), 1.

³⁶ *Id.*, 2, and see also the detailed discussion in Elish (n. 15).

missions self-directed: they are requested or called in, usually by field commanders. Both the drone crews and the field commanders are in turn supported by a host of secondary support personnel ranging from legal advisors to technicians of various kinds. Real-time video analysis for US drone operations, for instance, is handled *via* the US's Distributed Common Ground System, or DCGS, a massive communication, information and signals intelligence processing apparatus with centres across the US.³⁷ Thousands of DCGS analysts are recruited and employed by the DCGS in order to examine real-time video feeds and imagery from drones as they come in. As these considerations are factored in, it becomes clear that we are dealing with a sprawling enterprise of formidable technical sophistication enabling military personnel to work together in real-time cross-continently and cross-nationally.

When we take its operational architectures into account, all in all a 24-hour US drone patrol requires an estimated 180-200 people undertaking interconnected tasks as part of a transcontinental and indeed international division of military labour.³⁸ The work of the drone is thus grounded in geographically distributed collaborations across what Jackman calls “a range of human and machinic nodes”.³⁹ Fielding-Smith and Black add detail to and extend the initial sketch offered above of the three principal operational ‘nodes’ involved: those for launch and recovery, involving aircraft, pilots, sensor operators, maintenance crews and a ground station; mission control, involving a different set of pilots, sensor operators, maintenance crews, mission coordinators and ‘leadership’ personnel; and processing exploitation and dissemination, involving full motion video crews, signals intelligence operators, additional maintenance crews, a weapons tactics team and further leadership personnel.⁴⁰ These in turn connect outwards to, among other things, mechanisms of political and legal oversight as well as sites of knowledge production through military research and development. As Greene puts it, an entire assembly “comes together just-so at the point of the [armed] drone.”⁴¹

The armed drone as a socio-technical system is not, therefore, just composed of weapons, vehicles, munitions, sensors and cameras, it is also composed of intelligence gathering and communication systems in myriad forms, decision making arrangements of one kind or another as well as the large numbers of individuals with different roles, training, expertise and conditions of employment inside and outside government who are engaged in drone programmes both directly and indirectly. It is these shifting, heterogeneous assemblies we engage with when we engage with the use of armed drones. Significantly, the law is deeply implicated in these assemblies too with military lawyers, known as (Staff) Judge Advocates, involved in every stage

³⁷ Cockburn (n. 9); Elish (n. 15).

³⁸ See, for example Derek Gregory, ‘Drone Geographies’ (2014) 183 *Radical Philosophy* 7; Abigail Fielding-Smith and Crofton Black, ‘“When You Mess Up, People Die”: Civilians Who Are Drone Pilots’ Extra Eyes’ *The Guardian* (30 July 2015); Greene (n. 30); Elish (n. 15); Jackman (n. 21); Amnesty International, *Deadly Assistance: The Role of European States in Us Drone Strikes* (Amnesty International Ltd 2018).

³⁹ Jackman (n. 21).

⁴⁰ Fielding-Smith and Black (n. 38).

⁴¹ Greene (n. 30).

of the process of undertaking strikes.⁴² Contemporary target ‘clearance’ practices around drone strikes represent a major shift in the role of the law in situations of armed conflict. In particular, the case by case, moment by moment involvement of military lawyers and legal support personnel in conducting specific drone strikes represents a tightening of the operational links between law and warfighting.⁴³ The destructive harm caused by armed drones in contemporary conflicts and through targeted killing programmes is closely bound up with the legal frameworks invoked by these embedded legal advisors to sanction their use *in situ*. Law, warfighting and indeed politics are not separate, here, but co-constitutive, channelling the use of force and its outcomes in particular directions.⁴⁴

Military legal scholars writing about this are remarkably candid. As DiMeglio for one puts it, the role of the Staff Judge Advocate as an “operational law attorney” is to “enhance the legitimacy of military operations in environments where evolving rules and a fluid situation require them not only to understand the underlying law and policy, but also to be innovative and nuanced in their legal analysis”.⁴⁵ In the words of a previous Commander of US Special Forces in Afghanistan, “Honestly I don’t take a shit without one [a legal assessment], especially in this business”,⁴⁶ an unusually frank statement of the contemporary entanglement of legal and military considerations. The law in this context is not a defined external constraint but a flexible relay internal to the system itself, enabling that which it is claimed to regulate and control.⁴⁷ If legal advice is as critical to the firing of a weapon as a trigger on a gun or a launch key for a missile, it is as much a part of the weapons system as the trigger or launch key. Under these conditions, legality becomes a by-product of the network; like the drone strike itself it is a collaborative accomplishment of military action.⁴⁸ In order to think seriously about the armed drone, then, we have to look beyond its technological expression alone, the machine with missiles in the air, to consider the social, political and legal practices which both animate and are given coherence by it as well. How we might do so while resisting any narrowing of our analytical and political field of vision provides the focus of the next section.

⁴² See, for example Pratap Chatterjee, ‘How Lawyers Sign Off on Drone Attacks’. *The Guardian* (15 June 2011); Greene (n. 30).

⁴³ Susanne Krasmann, ‘Targeted Killing and Its Law: On a Mutually Constitutive Relationship’ (2012) 25(3) *Leiden Journal of International Law* 665; Elish (n. 15)

⁴⁴ See also David Whyte, ‘Lethal Regulation: State-Corporate Crime and the United Kingdom Government’s New Mercenaries’ (2003) 30(4) *Journal of Law and Society* 575; Eyal Weizman, ‘Legislative Attack’ (2010) 27(6) *Theory Culture & Society* 11; Elish (n. 15); Zehfuss (n. 10).

⁴⁵ Richard DiMeglio, ‘Training Army Judge Advocates to Advise Commanders as Operational law Attorneys’ (2013) 54(3) *Boston College Law Review* 1185, 1189.

⁴⁶ Cited in Derek Gregory, ‘Angry Eyes (2)’, 2015 *Geographical Imaginations: War, Space and Security*, October 17 <<https://geographicaliminations.com/2015/10/07/angry-eyes-2/>> accessed 28 April 2018.

⁴⁷ Whyte (n. 44); Weizman (n. 44); Elish (n. 15); Zehfuss (n. 10).

⁴⁸ A relationship increasingly conceptualised using the term ‘lawfare’ to denote the degree to which law and warfare have merged. For further discussion see, e.g., Jones (n. 10); Joop Voetelink, ‘Reframing Lawfare’, in Paul A.L. Ducheine and Frans P.B. Osinga (eds.) *Netherlands Annual Review of Military Studies 2017* (T.M.C. Asser Press 2017).

IV. Countering the Logic of the Armed Drone: Linking the Analytical to the Political

This article opened with two epigraphs; one quoting US President Barack Obama in a speech justifying the use of armed drones in 2013 and another quoting the philosopher Martin Heidegger speaking some 50 years previously. The juxtaposition of those two epigraphs brings out some of the core issues we believe can help focus discussions about the use of armed drones. Obama points to the “just-so” individual rationality of any given use of an armed drone: individual strikes save lives; they disrupt plots; they make it possible to respond to threats in a calculatedly legal and proportionate way. Cumulatively, however, the results are deeply problematic. More people are killed; politics is ignored in favour of chimeric military solutions; conflicts fester; nothing is resolved. All the time the socio-technical system of the armed drone grows and spreads, is put to work more and more.

What President Obama’s words reveal, to turn to Heidegger’s warning, is a military and political establishment so in thrall to its own technological revolution that the socially and historically contingent modes of calculative thinking encouraged by the availability of the drone have come to be accepted and practiced as the only way of thinking. Drone vision, despite the promise of full motion video and total situation awareness, has turned out to be a form of tunnel vision, leading in the direction of more armed drones and further conflict – history repeating itself on a tightly closed remotely piloted loop.

Contrasted with, for example, the hierarchically-organised, centralising and collectivising socio-technical system of the nuclear weapon, the research which has charted it and the campaigns which have sought to counter it,⁴⁹ the individuating, diffuse, just-in-time, legally saturated and thoroughly associative work of the armed drone calls for analytical and political responses of a new kind, ones matched to *its* particular character. We believe a focus on the armed drone as a socio-technical and socio-legal system in the sense outlined above opens up a range of possibilities in this regard and, in the rest of this section of the article, we want to sketch different lines those responses can take and indicate one of the ways in which the analytical can be linked to the political through them.

Given the complex, massively distributed and proliferating “human machine configurations”⁵⁰ drone operations rest upon, no single study can ever hope to have the final word or claim complete comprehensiveness with respect to them. As each individual drone strike has its own unique characteristics, there will always be more to be said. Instead, and precisely because drone strikes are themselves collaborative and associative, we believe research into them has to be seen as a site for collaboration and association, too. The analysis we have presented is, in many

⁴⁹ For further discussion around nuclear weapons, see Matthew Bolton and Elizabeth Minor, ‘The Discursive Turn Arrives in Turtle Bay: The International Campaign to Abolish Nuclear Weapons’ Operationalization of Critical IR Theories’, (2016) 7(3) *Global Policy* 385.

⁵⁰ Elish (n. 15), 1101.

respects, indicative. Organisations whose work has informed our position, like Airwars, Amnesty International, the Bureau of Investigative Journalism, Reprieve and the Stimson Centre, among others, have been and will remain pivotal to understanding the organisation of drone operations internationally. Their open-source, open-access ethos allows for investigations that delve deeper into the structures they collectively contribute to documenting in the course of their ongoing work. We have drawn extensively on that work and, indeed, would not have been in a position to talk about a series of issues without it. Research done outside academic institutions is thus critical and constitutes a key resource for others to build upon. Most importantly, as those who undertake such research have practically demonstrated, sharing knowledge and ensuring it is widely distributed across open public networks is an extremely effective way of countering the closed and secretive logic of the armed drone at the analytical level – a form of epistemic and evidential politics it can be easy to overlook.⁵¹

What the sharing of resources outside and against “the universe of classified information”⁵² and the apparatus of “official secrets”⁵³ makes possible is a range of contributions from across disciplines and research traditions, reflected in the diversity of studies referenced in this article. Those contributions we have cited situate themselves, in the main, at the meeting point between science and technology and socio-legal studies. Nonetheless, while pitched on socio-technical and socio-legal terrain, it encompasses a group which includes anthropologists, geographers, historians, journalists, lawyers, literary scholars, philosophers, political scientists, social and political theorists and sociologists, among others, all of whom have converged on the problem of the armed drone from a range of different angles. There is, therefore, a tremendous variety of approaches on display. That said, amidst that variety, we would point to three methodological tendencies within this emerging interdisciplinary and dialogical field which together lend it coherence.

The first is broadly philosophical or theoretical. The figure of the armed drone here works as a point from which to question and challenge the ideas of ‘legality’, ‘proportionality’, ‘right’, ‘morality’ and so on, that are routinely deployed to justify its use. The socio-technical is less a focus in its own right in work of this kind and more a point of departure for a critical and deconstructive response to the moral, legal and political arguments which the armed drone’s socio-technical elaboration embodies and channels.⁵⁴ Work in this vein is complemented by a second kind of response, one which seeks to trace the socio-technical system of the armed drone outwards and backwards from the stabilised machineries of contemporary drone operations to the wider social, political, legal and economic arrangements from which they emerge and

⁵¹ Michael Mair and others, ‘The Violence You Were/n’t Meant to See’, in Ross McGarry and Sandra Walklate (eds.), *The Palgrave Handbook on Criminology and War* (Palgrave Macmillan 2016).

⁵² Peter Galison, ‘Removing Knowledge’ (2004) 31(1) *Critical Inquiry* 229; Peter Galison, ‘Secrecy in Three Acts’ (2010) 77(3) *Social Research* 941; see also Braun and Brunstetter (n. 8).

⁵³ Maximilian C. Forte, *Force Multipliers: The Instrumentalities of Imperialism* (Alert Press 2015), esp. chapter 7.

⁵⁴ See, e.g., Chamayou (n. 28); Zehfuss (n. 10).

derive support but which they also condense and give a material focal point to. This can involve explorations of the diffuse sites, practices and bodies of expertise the armed drone is bound up with, as well as genealogical investigations examining the various developments and events which have made drone operations possible today – often, indeed, both at once.⁵⁵ Work of this kind expands our understanding of the scope of the networks of connections that are constitutive features of the use of armed drones and helps us link up aspects of the worlds around us to the figure of the drone in new ways.

These are, in turn, complemented by a third kind of response. Where the first steps back and the second moves outwards to more expansive and historically-situated conceptions of the socio-technical and socio-legal systems involved, the third moves inwards, seeking to get closer to the activities which animate the armed drone and how it is actually put to use. Our own research is of this kind. Part of its value, we would suggest, is that it highlights why a focus on the socio-technical in socio-legal research is important but also why maintaining that focus moves us away from a narrow concern for legal issues alone, something we shall elaborate on further below.

Our approach is ethnomethodological, as noted above, and that means it builds on the foundational work of Harold Garfinkel⁵⁶ and Harvey Sacks⁵⁷ to study the *in situ* or endogenous forms of practical action, interaction and reasoning that are constitutive features of drone operations. Ethnomethodologists, following Garfinkel and Sacks, have examined legal practices and legal reasoning in the past⁵⁸ and we draw on that work in our research. However, our project proceeds more directly from ethnomethodological studies of friendly fire incidents and civilian deaths as a result of misidentifications during air combat missions, studies which offer innovative ways of analytically getting to grips with military practices and battlefield legal reasoning in their socio-technical details.⁵⁹

Using audio, video and transcript data, in our research we painstakingly reconstruct engagements action by action, communicative exchange by communicative exchange, as they unfold in real time. A highly focused form of

⁵⁵ See, e.g., Cockburn (n. 9); Elish (n. 15); Greene (n. 30); Gregory (n. 15); Gregory (n. 38); Jones (n. 10); Packer and Reeves (n. 15).

⁵⁶ Harold Garfinkel, *Studies in Ethnomethodology* (Prentice Hall 1967); Harold Garfinkel, *Ethnomethodology's Program: Working out Durkheim's Aphorism* (Rowman & Littlefield Publishers 2002).

⁵⁷ Harvey Sacks, *Lectures on Conversation* (Blackwell 1992).

⁵⁸ See, e.g., Baudouin Dupret, Michael Lynch, Tim Berard (eds.), *Law at Work: Studies in Legal Ethnomethods* (Oxford University Press 2015).

⁵⁹ Lena Jayyusi, 'The Power of Technology and the Technologies of Power', (2011) <<http://english.dohainstitute.org/release/6b034830-433c-4ba2-9ed5-66ccf9ede776>> accessed 28 April 2018; Michael Mair and others, 'War-Making and Sense-Making: Some Technical Reflections on an Instance of 'Friendly Fire'', (2012) 63(1) *The British Journal of Sociology* 75; Maurice Nevile, 'Seeing on the Move: Mobile Collaboration on the Battlefield', in Pentti Haddington, Lorenza Mondada and Maurice Nevile (eds.) *Interaction and Mobility: Language and the Body in Motion* (De Gruyter 2013); Michael Mair and others (n. 51); Chris Elsey, Michael Mair and Martina Kolanoski, 'Violence as Work: Ethnomethodological Insights into Military Combat Operations', (2018) 8(3) *Psychology of Violence* 316.

investigation, it provides insights into drone operations that cannot be arrived at in any other way. One focus of our project is a transcript released by the L.A. Times detailing interactions between US military personnel in the run up to a coordinated drone-led attack which resulted in the deaths of 27 Afghan civilians in the province of Uruzgan in 2010.⁶⁰ Precisely because this lone transcript remains one of the few sources of unrestricted data to open a window on drone operations, it has already been examined a number of times and in various ways.⁶¹ Our treatment is, however, distinctive. A detailed ethnomethodological reworking and analysis of the transcript provides an empirical anchor for a wider examination of the technologically-mediated work of military personnel actively engaged in identifying ‘threats’ and the part situated legal reasoning plays in their targeting decisions. Although much discussed, the interactional organisation of that work in the Uruzgan incident and the role legal reasoning played within it has not yet been subject to line by line analytical scrutiny. While our research remains in its early stages, we want to make some initial observations about what work on the transcript reveals. Our focus will be the following excerpt from it:⁶²

01	01:03	K97SO	The screener is reviewing, they think something is up with
02			that dude as well. I'll take a quick look at the SUV guys,
03			sorry
04	01:03	JAG25	SLASHER03 JAG25
05	01:03	K97SO	What do these dudes got, yeah I think that dude had a rifle
06	01:03	K97P	I do too
07	01:03	JAG25	SLASHER03 JAG25
08	01:03	JAG25	SLASHER03 JAG25
09	01:03	SL03	JAGUAR25 go for SLASHER
10	01:03	JAG25	Roger, given the distance and the lack of weapons PID we
11			are having a hard time (garble, garble) and also the same
12			with fires, (garble) to bring them in so we can engage but
13			we really need that PID to (garble, garble, garble) start
14			dropping
15	01:04	K97SO	Yeah they called a possible weapon on the MAM mounted
16			in the back of the truck
17	01:04	K97MC	The MAM that mounted the bed of the truck had possible
18			weapon

⁶⁰ See David S. Cloud ‘Anatomy of an Afghan War Tragedy’, *Los Angeles Times* (10 April 2010); Data Desk, ‘Transcripts of U.S. Drone Attack’, *Los Angeles Times* (10 April 2010).

⁶¹ See, e.g., Chamayou (n. 28); Cockburn (n. 9); Gregory (n. 46).

⁶² Data Desk (n. 60), 13-14.

19	01:04	K97P	All players, all players from KIRK97, from our DGS the
20			MAM that just mounted the back of the Hilux had a
21			possible weapon, read back possible rifle
22	01:04	JAG25	Again the other two on the east side of the river are also
23			static with all folks loading
24	01:04	JAG25	Kirk we notice that, but you know how it is with ROEs, so
25			we have to be careful with those, ROE's

This short, complicated excerpt, taking up less than half a page within a 76 page document and covering less than two full minutes of communicative interactions in an operation which lasted over 5 hours,⁶³ exemplifies many of the challenges we confront when we begin to look at the practice of drone warfare in detail but also the lessons we can draw when we start to do so. We cannot offer a full analysis here but we can outline some of the structural considerations we believe relevantly arise from analytical engagements with it.

The excerpt captures exchanges between the three-person drone crew of KIRK97 flight, the Pilot (K97-P), Sensor Operator (K97-SO) and Mission Coordinator (K97-MC). As this was a US military operation involving air and ground forces those exchanges also included a Ground Controller, JAGUAR25/JAG25, whose role it was to coordinate action between them. Finally, we have SLASHER03, the pilot of an AC-130 Gunship, one element within the heavy air support units also involved in the incident. The role of KIRK97 flight in this case, with its powerful cameras and sensors, was to act as the command's 'eyes' on the situation on the ground and so as the spotter for the heavy support units rather than as a strike force in its own right, though it was equipped with munitions of its own if needed. Translating the acronym and argot laden language they employ, in this excerpt they are discussing 'PID', positive identification, 'MAMs', military aged males, 'DGS', Distributed (Common) Ground System, 'ROEs', Rules of Engagement, and 'dropping', i.e. attacking or firing upon enemies or 'MAMs'.

Once we have this knowledge in hand, it becomes possible to make better sense of what this excerpt captures. Having already spotted the convoy of Afghan civilian vehicles (SUVs, Hiluxes) and suspecting it to be a Taliban force, in it we see the crew of KIRK97 flight conferring with the Ground Controller, other air units and intelligence operatives working in the D(C)GS, i.e. 'screeners',⁶⁴ to verify those

⁶³ The second column in our slightly modified version of the original transcript indicates the time that has elapsed since the start of the mission in hours and minutes.

⁶⁴ It is important to note that scores of other individuals were involved too, including a Staff Judge Advocate, but their input is 'off-transcript' because the transcript only captures the exchanges the drone crew were directly party to – just a small sub-set of the relevant interactions and something that reveals the analytic dangers of taking too 'operator-centric' a view of drone warfare. When it comes to identifying 'where the action is', we need to resist the temptation to treat drone crews and their immediate interlocutors as the be-all and end-all of drone operations. They are just one set of (human and non-human) protagonists within a much bigger

suspicions based on the real-time video feed from the drone which is being shared among them all. Hours before the convoy was engaged, they are trying here to get evidence good enough to 'confirm' the individuals they are monitoring are targetable, that they are 'military aged males', and that they possess weapons and so can be legitimately attacked under their rules-of-engagement in line with IHL as operationally interpreted by US forces. While the screeners and the Ground Controller argue the criteria for initiating an engagement have not yet been satisfied, the conditions under which they will be in a few hours' time – a positive call by the screeners on the presence of weapons on what basis and with what degree of certainty – are now largely in place.

It is very difficult to portray this as an unsanctioned or rogue operation. No one here was deliberately and knowingly setting out to act illegally, it is not akin to the 'Marine A' case.⁶⁵ It is much more troubling than that. Instead what we see is the protagonists working together in real-time through the chain of command to gradually construct a legal rationale for and hence defence of the attack in advance. As the excerpt shows, they are continually referring back to and attentively checking the potential legality of their projectable lines of action and prospectively modifying them as a result. Crucially, this locally-built legal rationale for justifying action holds whatever the outcome. In another possible world, the individuals targeted could, of course, have turned out to be combatants. But in this world they did not; they were a mixed group of men, women and children, the majority of whom were either killed outright or permanently and cruelly maimed in the attack.⁶⁶

Operating in dialogue with the first two modes of research, what even a preliminary examination of something like the Uruzgan incident along these interactional lines brings to light, we would argue, is a set of practices bound up with the armed drone which are indifferent to the status of those targeted by it. That the legal rationale and hence justification for the attack holds irrespectively of whether an attack is actually justified – i.e. whether those targeted are in fact combatants or not – is the issue we want to bring to the fore. We might put things this way: that the people who have been categorised as 'enemies' may subsequently turn out to have been wrongly so categorised carries no implications. Where we think such work feeds into political responses is that a public acknowledgment of this as an evidenced feature of drone operations would shift the terms of the drone debate. One aspect of the US's strategy, as Obama's speech makes clear, has been to claim legality on behalf of its drone operations. But if legality is a designed in by-product and the law-as-interpreted an enabling condition of those operations, that defence starts to look rather empty: drone strikes are legal because they are locally and contingently configured by those involved to deliver legality as an outcome, as much

ensemble, as is clear from the constant invocation of unseen others, e.g. the screeners (and in the background, those directing them), in this excerpt and indeed throughout the transcript.

⁶⁵ For an overview and transcripts from the incident which led to Marine A's court martial in 2011, see Steven Morris, 'Royal Marines Court Martial: Video Transcripts' *The Guardian* (25 October 2015).

⁶⁶ *National Bird* (Dir. Sonia Kennebeck, Ten Forward Films 2016).

as ‘successful’ kills – something the Uruzgan incident demonstrates all too perspicuously.

It is also important to acknowledge this, we suggest, because it shows why challenges to the legality or otherwise of drone operations could ultimately prove insufficient as a response to them.⁶⁷ While they certainly achieve a great deal, especially for victims, legal challenges must pragmatically accept the individuating logic of drone operations. As every operation poses different issues resulting in circumstantially-inflected legal decisions, an interrogation of what was done in any specific case must take up the specifics of the incident at hand. This means, however, that the generalised ways in which the socio-technical system of the armed drone works to block demands for accountability evade sustained scrutiny. The diffusion of accountability across distributed operations is not something the law on its own is particularly well-equipped to address.⁶⁸ The Uruzgan operation was deemed legal, yet few, even within the US military itself, argue it was acceptable. Documenting the routine ways in which such outcomes are produced *via* the machinery of drone warfare is thus no small matter and represents one way in which we can link the analytical to the political to useful effect.

V. Conclusion

The call that has been articulated by civil society, international organisations, and some states for greater transparency around drone strikes, recently reiterated by Reprieve⁶⁹ and Moorehead, Hussein, and Alhariri,⁷⁰ represents one step towards addressing the issues posed by armed drones. Drone strikes should be subjected to thorough examination from various angles and states need to release comprehensive information about the actual workings of the socio-technical systems of the armed drone for that to be possible. By insisting states release information including audio, video, imagery, digital communications, available intelligence and the legal advice presented in theatre, drone programmes will be drawn ‘out of the shadows’⁷¹ and brought to greater public account,⁷² addressing concerns around the secrecy and erosion of democratic oversight that have gone hand-in-hand with – and indeed are best seen as internal to – the development of these programmes in any and all of the

⁶⁷ As the success of the International Campaign to Abolish Nuclear Weapons (ICAN) in 2017 with its partners in states and international organisations shows – most notably through the achievement of the Treaty on the Prohibition of Nuclear Weapons and the award of the Nobel Peace Prize – it can be politically unproductive to get embroiled in legal argumentation around the use or potential use of particular weapons systems, whilst a refocusing of debate on to humanitarian harms can produce movement towards the tightening of international standards. See, e.g., Bolton and Minor (n. 49).

⁶⁸ Elish (n. 15), 1117-1121.

⁶⁹ Reprieve, *Opaque Transparency: The Obama Administration and Its Opaque Transparency on Civilians Killed in Drone Strikes* (2016) <<https://www.reprieve.org.uk/wp-content/uploads/2016/06/Obama-Drones-transparency-FINAL.pdf>> accessed 28 April 2018.

⁷⁰ Moorehead, Hussein and Alhariri (n. 19).

⁷¹ *Id.*

⁷² Greene (n. 30).

ways outlined above.⁷³ Greater knowledge of the assembly of practices, equipment and infrastructures associated with drone warfare, including battlefield law, would in turn help establish a better understanding of what restrictions on armed drone use might be most effective where, and how best to achieve them.

Beyond transparency, however, it is also important to ensure greater information does not merely serve to further stabilise these problematic practices in the international public sphere. Socio-legal researchers working on this issue should thus be encouraged to think about how their work can support challenges at the political level by connecting their work with the work of others to subvert the logic of the armed drone. As we hope to have established in the course of this article, the use of armed drones demands the sort of public and political accounting drone programmes are set up to evade and studies which lay out the interlinked socio-technical and socio-legal logics implicated in those uses can help make that demand increasingly difficult to resist and those evasions increasingly difficult to maintain. It is by opening up the closed world of the armed drone in ways that make it public and afford possibilities for its critical examination, therefore, that research can make one of its most direct contributions to the contemporary politics of the drone. While legal challenges are a necessary element within such efforts, they are not themselves sufficient. Instead a preferably international political process is needed to address the unnecessary harms caused by the use of armed drones. Our view is that research of the kind that has provided the focus of this article can add to the pressure on drone-equipped states to enter such a process by making it clear what the use of armed drones involves and what it leads to in practice.

⁷³ Krasmann (n. 43); Task Force on US Drone Policy (n. 24).