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Law's Ends: On Algorithmic Warfare and Humanitarian Violence

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The laws of war have always answered two questions: When may one wage war? What is permissible in war?

And international law was always given two completely different answers to these questions, depending on who the enemy is.²

How international law might relate to new technologies and regulate their practices had been a pressing question long before the use of armed drones challenged conventional conceptions of warfare. In traditional accounts of armed conflict, the confrontation between enemies takes place on a terrestrial battlefield where the prospect of casualties is common to all parties. Technological developments produce asymmetry between parties, whether through new forms of ammunition, aerial bombardment by plane at the turn of the twentieth century, or contemporary drone warfare, and the effects of these asymmetries in a postcolonial frame have been widely documented.³ Emerging algorithmic and machine-learning technologies present further challenges, not only to the political dream of their regulation by law but also to the juridical form itself and its humanist presumptions.

Law's temporal horizon, which adjudicates past events while aspiring to regulate the future, presumes a human relationship to time that these technologies bypass through parsing it in intervals that are not cognizable to human perception.⁴ When humans are unable to observe the phenomenon to be judged, human law lacks the optics to apprehend what lies beyond its reach. Writing in 1963, Hannah Arendt

observed the anthropocentric way in which technological developments in space exploration made it unlikely “that man will encounter anything in the world around him that is not man-made and hence is not, in the last analysis, he himself in a different guise.”⁵ By contrast, the prospect of algorithmic warfare suggests a limit to the anthropocentrism of human law, evoking a runaway creation that cannot be contained by the order that produced it.

Against this backdrop, the title of Gregor Noll’s contribution poses a provocative question: does algorithmic warfare suggest the end of law? Here war by algorithm is also understood materially, manifesting in the development of lethal autonomous weapons systems (LAWS), where machines would be responsible for targeting decisions rather than a human “in the loop.” Noll contends that focusing on machines diverts our attention from the broader frame of digitalized forms of warfare. We should not overemphasize the threat posed by the material form of LAWS, he argues, but instead critically consider the conditions through which LAWS emerged: “the thinking that shapes them,”⁶ including algorithmic forms and the phenomenon of code. Noll answers his structuring question of whether it is possible to subject algorithmic warfare to law in the negative, arguing that artificial intelligence (AI) cannot be brought within law’s normative order.

This chapter begins from Noll’s philosophical claims about the underlying thinking that shapes AI, such as the self-learning algorithms that comprise it, as well as their consequences for closing the space of human judgment presumed by law. Building upon these concerns, I turn to the substance of the law of armed conflict or international humanitarian law, situating it historically to illustrate that even if it *could* grasp the phenomenon, this law would replicate and perpetuate the asymmetries that have accompanied its historical development. The humanitarian dimension of this

body of law is applied biopolitically, securing particular populations to the detriment of others, as seen in practice through the allegedly “distinctive” and “proportionate” use of drones.⁷ Building upon critical accounts of international humanitarian law’s origins and practices, I address the distinct temporality of these emerging weapons systems. The logic that shapes algorithmic forms aims to condense time into intervals beyond the capacity of human response, and the objective of LAWS to supplement human cognition threatens to exceed the laws of their own creators.

As a means of condensing time in response to perceived threats, algorithmic warfare reveals a preemptive rationality. I conclude with a possible alternative: to recast preemption as an ethico-political exercise of human judgment. In their autonomous lethality, LAWS would foreclose human judgment on the battlefield. As with the US military’s “Project Maven,” considered here, resisting this foreclosure calls for a collective political response to interrogate and unsettle the processes that contribute to the emergence of autonomous weapons. At the time of writing, war by algorithm appears as an imagined future, but one whose prospect becomes increasingly likely through incremental technological developments in intelligence gathering and analysis that may not treat autonomy as their objective. Enhancing warfare through algorithms and machine learning in the name of humanitarian ends—such as more precise targeting, leading to more proportionate numbers of casualties—may in fact hasten the amalgamation of a violence that law is unable to contain.

Law’s Ends

Considering “the end of law” as Noll does invites two questions: what do we mean by “end,” and what do we mean by “law”? We might think of law’s end as a kind of closure or termination, when law is incapable of diminishing or regulating forms of

violence. But law's end might also refer to its *telos* or objective. Here law's *telos* may in fact be the production of a world where its enforcement is no longer necessary. In the political dream of perfect compliance, law's subjects could police themselves. Does it then matter whether its subjects are humans or machines, or indistinguishable within a shared cybernetic relation? What would legal subjectivity look like beyond the human? When subjects inaugurate their own laws, are they more likely to comply with them? If autonomy signifies the unity between the law-giving and the law-abiding subject, then at an extreme of this logic, LAWS may no longer appear as a threat but rather as a perfect state of self-regulation, as *auto nomos*.⁸ Questions pile upon questions as we contemplate an imagined future that can only be addressed speculatively, and from the limited horizon of the present.

The first understanding of law's end foregrounds the limits or failure of law, whereas the second suggests its ambitions. The scholarly literature on LAWS reveals a deep anxiety concerning law's capacity to respond to these weapons: they are harbingers of a dystopian future that law must adapt to if it is to remain relevant; more specifically, they must be brought under international humanitarian law; they should be banned or controlled by treaties; accountability mechanisms for LAWS must be established; they are ethically unacceptable; they must always be governed by "meaningful human control." Shared principles emerge across these different accounts. For example, one recent publication argues for adopting preventive security governance frameworks through international law,⁹ another for developing ethical guidelines to ensure the presence of "meaningful human control."¹⁰ Autonomous weapons must not operate as "LAWS unto themselves," but must instead be subsumed under a law not of their own making.¹¹ Such approaches illustrate the paradox that Noll points out: "An autonomous weapons system subjected to the

heteronomos of the law would no longer be an autonomous weapons system at all.”¹²

The ancient Greek *heteros* refers to the other of two, and here a difference is drawn: the *nomos* of autonomous weapons systems is not the *nomos* of law, and in this sense law’s end is its failure to subsume algorithmic warfare under its own categories. Put another way, law offers no *Grundnorm* that governs beyond human cognition, as law and AI “appear to belong to different normative orders,” if AI can indeed be brought under any normative order.¹³ We seem to have arrived at law’s limits.

The second understanding of “law’s end,” as its *telos*, is more open-ended and multiple. To remain with the examples above, where law appears as something of a *deus ex machina* brought in to resolve a dystopian narrative drifting beyond human mastery, its end is to constrain or contain or to regulate violence. A particularly provocative illustration is found in the short film *Slaughterbots*, widely disseminated on social media, which ends with a call for a ban treaty.¹⁴ This commonly shared presumption concerning law’s objective or *telos* undergirds the law of armed conflict, often tellingly referred to as international humanitarian law. The dystopian narrative of LAWS is futural and speculative, but in this imagined future law’s end would be to bring LAWS under its authority or, put another way, within its (humanitarian) jurisdiction.

Noll’s reading of law’s end in this second sense, as objective or *telos*, builds upon the distinction between the incarnate and excarnate. In the monotheistic normative frame supporting the legal order, he contends, the objective of law is to “incarnate” the external, a-corporeal, written command, code or statute—“excarnate” law—through study and compliance. Incarnating law in this way takes place through human consciousness, as has been the case from the emergence of monotheism through secular codified law, including the laws of armed conflict. In this sense, the

end of law as its ambition or objective—incarnation—also reveals its limits: law cannot be extended beyond human consciousness. Law’s two ends described above—as either ambition here or as limit above—seem to meet within this reading, where its imbrication with human consciousness through study and compliance reveals the outer borders of its jurisdiction. We arrive at the end of a law unable to achieve its end-as-*telos*.

The meaning of law at stake in Noll’s account excludes what cannot be subsumed under this structure of incarnation. Law is understood as guiding (human) behavior; for example, in the context of armed conflict, it is “a kind of call . . . to use weapons responsibly.”¹⁵ Responsibility is tied to human cognition (as with state of mind, knowledge, and intent), which is complicated by the shared agency of algorithmic human-machine assemblages. If law is a call, it operates rhetorically as a mode of address, directed to particular subjects who must be capable of responding to it and, in turn, of being held responsible. This mode of address is severed by the logic of code, where excarnate commands are directed outward “and made to act on the world.”¹⁶ Yet even as law’s call is embodied by the human subject, there is no rule for the application of rules: what is required is the even more thoroughly human capacity for judgment, and the response to this call by way of interpretation. The space of human cognition is arguably a space of judgment, where humans may respond to law’s call of proportionality by affixing ratios of civilian to combatant deaths and deeming them proportionate.¹⁷ There is a lingering question of whether the law at stake here—the law of armed conflict, or international humanitarian law—can be properly humanitarian in the first place, protecting the bare human irrespective of politics, history, and membership within a particular population. Noll illustrates how

LAWS cannot be brought under law, but even if they could be, what law is this, and what are its ends?

Emplacing Law

Although law in general can be described as a mode of address requiring human cognition and uptake, it is also a product of culture, linked with particular regions of production and application that have largely settled in relation to modern state forms.¹⁸ Monotheistic normativity locates law in a Western frame, from the Torah to Roman and canon law and through the modern period of legal codification.¹⁹ It does not appear to account for pre-colonial legal orders or other normative cosmologies, as it assumes a Judeo-Christian subjectivity that privileges individual consciousness in relation to the legal command.²⁰ The figure of the sovereign sits behind the Western legal imaginary as a constituent and ordering power much like a monotheistic deity. This model of divine authority, positing the excarnate law that must be enfolded through the subject, also serves as an analogue for secular sovereign authority, the structure underpinning contemporary legal systems around the world through a history of complex encounters between empires—an “interimperial legal politics”²¹—as well as through the export and imposition of European legal ideologies, practices, and institutions across extra-European territories.

Locating monotheistic normativity in this way suggests that law’s call is a product of historical formations that shape how, by whom, and under what material conditions it is received. In international law, the subject responding to law’s call has traditionally been the figure of the state—a composite of discrete and cognizing human subjects, yet with collective attribution of compliance or noncompliance to the state itself.²² Meanwhile the theological analogue of the sovereign is unsettled by

secular legal orders, which may entail more of a “partial, contested or shared sovereignty,”²³ and much international legal theory has addressed the tensions that attend the creation of a legal order derived from unruly and differentially sovereign states.²⁴ Critical scholarship in international law has noted how the dual fictions of sovereign equality and territorial integrity sustain the field’s colonial inheritance in present dynamics among states.²⁵

A contemporary instance of how international law is taken up by states in problematic and potentially neo-imperial ways may be illustrated through the critical lens of “contingent sovereignty,” a diagnosis of “the idea that in certain key circumstances—in particular, when states harbour terrorists or seek to acquire weapons of mass destruction—norms of sovereignty do not apply.”²⁶ Here sovereignty is bound up with effective territorial control, and the international order is presented not as a constellation of sovereign equals, but rather as ranked by the relative capacity of states to handle threats within their own borders. This ideological framing of threat becomes political with the question of *who* determines this capacity, whether an international institution such as the United Nations, a set of strong states, or even an isolated hegemon. The “unable or unwilling” theory advanced by the United States in various policy documents and diplomatic circles is one such instance of “contingent sovereignty” used to justify defensive military interventions.²⁷ For example, a leaked 2011 US Department of Justice white paper addressing the legality of a proposed targeted assassination of a US-Yemeni national asserted that

a lethal operation in a foreign nation would be consistent with international legal principles of sovereignty and neutrality if it were conducted, for example, with the consent of the host nation’s government or *after a*

*determination that the host nation is unable or unwilling to suppress the threat posed by the individual targeted.*²⁸

This passive grammatical construction leaves open the prospect that the US may empower itself to make this determination, possibly in violation of the UN Charter.²⁹

As a claim to military intervention based on self-defense, the “unable or unwilling” theory is precisely the kind of logic that might be used to unleash LAWS upon a territory that is deemed “ungoverned” by a weak sovereign authority.³⁰ Here the pliant contours of the “everywhere war”³¹ seemingly operate out of alignment with the vision of Westphalian sovereignty undergirding the international legal system. As Elden claims, “the complete or partial absence of sovereign power has been rescripted as a global danger, justifying intervention.”³² Absent sovereign equality and territorial integrity, the present political geography of the international legal order shares parallels with the hierarchical thinking of the “standard of civilization” logic used to justify territorial incursions throughout the colonial period.³³ Is the end of (international) law to undo and equalize these imbalances, or is it perhaps too much a product of them to adequately provide redress? Even if LAWS could be brought under law, whose ends would this serve?

If we grant that the structuring dynamics of law’s emergence continue to inform the present, then the history of the body of modern law governing armed conflict is consequential, as it is most often invoked in the scholarly literature as a possible framework for governing LAWS. This specific sub-field of international law emerged during the late colonial period as a means of restricting the violence of armed conflict between European powers.³⁴ What is now referred to as international humanitarian law or the law of armed conflict underwent an initial process of codification through treaties in the mid- to late nineteenth century. During roughly the

same period, many of these powers were also engaged in finding potential treaty-based solutions among themselves for preempting resource disputes outside Europe in what were or would become colonial territories. The period of treaty making that sought to restrict warfare between European powers also overlapped with the use of international legal forms to secure colonial possessions. For example, the General Act of the 1884–1885 Conference of Berlin declares that African territories “belonging to” a signatory shall remain neutral in the event that the signatory is involved in an armed conflict.³⁵ The relevant treaty article advancing a “declaration of neutrality” formed part of a larger objective of parcelling out the African continent to European powers while preserving intra-European harmony and trading relations. Through the emerging law of armed conflict, as well as with international agreements around colonial possession, international law was produced in the interests of containing violence within and between certain entities while permitting its enactment elsewhere.

This imbrication with colonial interests is consequential for the development of international humanitarian law in the late nineteenth and early twentieth centuries. Historical efforts to regulate emerging methods and weapons of armed conflict in the interwar period harbored presumptions about which populations deserved protection, and in this context “civilians” primarily designated populations within intra-European conflicts to the exclusion of colonized non-combatants.³⁶ Aspects of this thinking have continued into the present, where individuals receive differential treatment based upon categories such as population and territory. For example, scholars have noted how contemporary drone warfare has reinscribed colonial logics in the “vertical battlespace” above territory whose sovereignty is deemed conditional.³⁷ Anthropologist Hugh Gusterson contends that drones “can be used only against countries that lack the technological sophistication to shoot down the slow-moving

planes and whose internal affairs, conforming to Western stereotypes of ‘failed states,’ provide a pretext for incursion that is as persuasive to liberal interventionists today as the white man’s burden was to their Victorian ancestors.”³⁸ Just as with the development of aerial bombardment in the early twentieth century, first enacted by an Italian aviator outside Tripoli, the emergence of armed drones around the turn of the millennium illustrates the technological asymmetry that will accompany the development of LAWS as well. Contemporary asymmetries develop in a context where conceptions of territory appear less attached to traditional conceptions of sovereignty, whether through notions of “contingent sovereignty” or the “responsibility to protect.”

The challenge of thinking through LAWS is the challenge of speculative reasoning more broadly, but as a field that responds to the new by way of analogy, law would approach LAWS by considering relations of likeness in bringing them under its jurisdiction.³⁹ The development of LAWS is meant to increase targeting precision and to mitigate the risk to a state’s own population, including its military personnel, which makes it analogous in certain respects to the use of armed drones. Recent scholarship notes how “[u]nmanned or human-replacing weapons systems first took the form of armed drones and other remote-controlled devices,” enabling human absence from the battlefield.⁴⁰ As with armed drones, however, the development of AI-based weapons systems would deepen the asymmetry of modern warfare, as some states and their attendant populations are able to mitigate risk more readily than others through further technological development. Within states, it may be that the risk burden is shifted from the military to civilians, as Grégoire Chamayou points out in relation to armed drones: “The paradox is that hyperprotection of military personnel tends to compromise the traditional social division of danger in which soldiers are at

risk and civilians are protected. By maximizing the protection of military lives and making the inviolability of its ‘safe zone’ the mark of its power, a state that uses drones tends to divert reprisals toward its own population.”⁴¹

At stake in practice is not only whether LAWS can be subsumed under law, a philosophical matter entailing what law requires as a cognitive response, but also the extent to which relevant law *could* be applicable and made to apply as a matter of (geo)politics. Noll’s argument stands with regard to law and the inhuman, yet against the backdrop of this uneven history and corresponding geographies of power, the human subject who incarnates the law appears as a privileged bearer of enforceable protections. If the law at stake is the law of armed conflict, as much scholarly debate around LAWS presumes, then the most important addressees of this law are strong states and their military personnel.⁴² The resulting hierarchical framing would seem to place military over civilians, as Chamayou notes; between civilians, the populations of sovereign states are prioritized over those whose sovereignty is “contingent” or otherwise compromised.

It is inherent to this body of law that it inscribes these distinctions, as the law governing armed conflict notoriously enables a degree of violence even as it attempts to constrain it. As with humanitarianism more broadly, where beneficiaries are classified and managed according to particular governing logics,⁴³ international humanitarian law categorizes its subjects in ways that produce attendant hierarchies of life. The central principle of proportionality explicitly justifies the loss of civilian life as balanced against military necessity. This has led some commentators to observe how the law governing armed conflict in fact produces an “economy of violence” in which (state) violence is managed according to “an economy of calculations and justified as the least possible means.”⁴⁴ The development of LAWS not only reflects

an effort to improve upon fallible human systems, as its proponents claim, but also to minimize risk to certain actors, particularly citizens of powerful states or members of their militaries. As Sven Lindqvist darkly observes, “[t]he laws of war protect enemies of the same race, class, and culture. The laws of war leave the foreign and the alien without protection.”⁴⁵

While scholars of international humanitarian law might contest Lindqvist’s claim that discrimination is inscribed into the laws themselves, their selective and discriminatory enforcement is widely noted. As with the “unable or unwilling” theory advanced by the US, among other highly militarized states such as Canada, Australia, and Turkey, exceptions to the international legal framework have been asserted through the same legal terminology.⁴⁶ Within this logic, the map of the world appears divided between states that are able to exert control over their territories and others that struggle, often for reasons tied to the residues of colonial governance structures and continuing economic exploitation. The experiment of LAWS will likely play out to the benefit of the former upon the territory of the latter, much as some populations are made to suffer the collective punishment of armed drone activity in their territory.⁴⁷

Preemptive Temporality

The technological developments informing the emergence of new weapons systems for armed conflict are not only employed to minimize risk to particular populations, as I described above. They also illustrate a particular relationship to time, one that philosopher and communications theorist Brian Massumi characterizes as an “operative logic” or “tendency” of preemption.⁴⁸ Preemption emerges prominently in the US with the administration of George W. Bush and the so-called “war on terror,”

but Massumi contends that it is not restricted to this historical moment or location. As with Noll's attention to algorithmic forms and code as the background thinking that shapes the turn to LAWS, Massumi is attuned to preemption as a temporal feature of our contemporary landscape. In non-military applications such as high frequency trading, algorithms are employed to hasten response time and "to get to the front of the electronic queue" in submitting, cancelling, and modifying purchasing orders.⁴⁹ In military settings they also enable faster data analysis, but an analysis oriented toward threat assessment, which brings them into a relationship with this preemptive tendency.

Characterized by a concern for threats and security, preemption produces a surplus value of threat tied to an ominous sense of indeterminacy: "Being in the thick of war has been watered down and drawn out into an endless waiting, both sides poised for action."⁵⁰ The experience of temporality is of increasingly condensed intervals, accompanied by a will to preemptively modulate "action potential" and to draw out the risk-mitigating capacity of laying claim to smaller units of time. The political dream at stake is to "own" time in the sense of exerting increasing mastery over ever-smaller units of it. Massumi writes that in "network-centric" contemporary warfare,

the "real time" of war is now the formative infra-instant of suspended perception. What are normally taken to be cognitive functions must telescope into that non-conscious interval. What would otherwise be cognition must zoom into the "blink" between consciously registered perceptions—and in the same moment zoom instantly out into a new form of awareness, a new collective consciousness.⁵¹

Such thinking illustrates the presumptive need to augment human capacity on the battlefield, whether through algorithmic enhancement of human cognition by machine intelligence or through neurotechnology's combination of algorithms with human biological/neural capacities. This raises the question of the role for human judgment in relation to the non-conscious interval, the "blink" between the human capacity to perceive and act. If delegated to the machine, what arises is not comprehension and judgment but rather what Arendt called "brain power," as distinct from the workings of a mind or intellect. "Electronic brains share with all other machines the capacity to do man's work better and faster than man," she noted, yet carrying out their assigned tasks does not constitute the exercise of judgment.⁵² Writing over half a century ago, Arendt warned of the risk of losing sight of humanist considerations in the frenzied technological drive to secure an Archimedean point beyond the human, yet the human seems inescapable, "less likely ever to meet anything but himself and man-made things the more ardently he wishes to eliminate all anthropocentric considerations from his encounter with the non-human world around him."⁵³ It would seem that what is distinct here, in Noll's diagnosis of the thinking that undergirds the prospect of algorithmic warfare, is the prospect of breaking free from the human through the singularity.

While I noted at the outset that LAWS at this stage are speculative and futural, incremental steps have been taken in their development. Both AI and neurotechnological dimensions are apparent in a recent program of the US Defense Department, initially known as the Algorithmic Warfare Cross-Functional Team and informally as "Project Maven," which was launched in April of 2017 with the objective of accelerating the department's integration of big data, AI, and machine learning to produce "actionable intelligence." Maven is the inaugural project of this

“algorithmic warfare” initiative in the US military.⁵⁴ While this program is focused on intelligence rather than weapons systems, characterized by a human-in-the-loop rather than a human-out-of-the-loop form of LAWS, the underlying algorithmic thinking is the same. The use of drones for combat also evolved out of intelligence gathering, and critics of the integration of AI into military operations would have cause for concern about Project Maven paving the way—perhaps unintentionally—for future LAWS.

The Algorithmic Warfare Cross-Functional Team emerged in the Office of the Under Secretary of Defense for Intelligence, and was later brought under a new “Joint Artificial Intelligence Center” in the Defense Department.⁵⁵ The project forms part of the “third offset” or “3OS” strategy to protect US military advantage against rivals such as China and Russia, a strategy developed in 2014 to draw upon new technological capabilities in developing “collaborative human-machine battle networks that synchronize simultaneous operations in space, air, sea, undersea, ground, and cyber domains.”⁵⁶ What Massumi points out as a desire to maximize “action potential” in ever-smaller units of time is evident here: the concern with bringing operations into a simultaneous harmony among different parties to the assemblage helps the military to “own time” more forcefully, and with it, to gain advantage over its military competitors.

The memorandum establishing Project Maven in 2017 emphasizes the need to “move much faster” in employing technological developments, with its aim “to turn the enormous volume of data available to DoD into actionable intelligence and insights *at speed*.”⁵⁷ Deputy Secretary of Defense Robert Work describes relevant activities as 90-day “sprints”: after the project team provides computer vision algorithms “for object detection, classification, and alerts for [full-motion video processing, exploitation and dissemination],” he notes, “[f]urther sprints will

incorporate more advanced computer vision technology.”⁵⁸ Among other things, Project Maven trains AI to recognize potential targets in drone footage by focusing on “computer vision,” or the aspect of machine learning that autonomously extracts objects of interest from moving or still imagery using neural methods that are inspired by biology. Public statements of military personnel involved in the project distance it from autonomous weapons or autonomous surveillance systems, claiming instead that they are attempting to “free up time” so that humans can focus on other tasks: “we don’t want them to have to stare and count anymore.”⁵⁹

The Department of Defense tells the narrative of Project Maven’s emergence as a story of augmentation: of supplementing the labor of an overwhelmed, temporally lagging workforce with specialized entities that will help to speed up data processing. Speaking in July of 2017, the chief of the Algorithmic Warfare Cross-Functional Team claimed that AI would be used to “complement the human operator”;⁶⁰ elsewhere machines are presented as “teammates” paired with humans to “capitalize on the unique capabilities that each brings to bear.” These teammates would work “symbiotically” toward a shared end: namely, “to increase the ability of weapons systems to detect objects.”⁶¹ Figure 5.1, an icon appearing in a presentation by a Project Maven participant, oscillates between the benign and the absurd.⁶²



The seal for Project Maven.  DEPARTMENT OF DEFENSE

Figure 5.1 Image source: Tom Simonite, ‘Pentagon will expand AI project prompting protests at Google’, *Wired*, 29 May 2018 (available at:

<https://www.wired.com/story/googles-contentious-pentagon-project-is-likely-to-expand/>)

Intent aside, this depiction of harmless machines employed “to help” appearing in a Defense Department presentation on Project Maven raises the question of who stands to benefit and who may suffer from this cybernetic experiment. That it unfolds incrementally rather than through the direct development of LAWS—on the grounds of assisting overworked employees and with the objective of creating greater precision, a humanitarian end in line with the laws of armed conflict—does not diminish the pressing need to reflect upon the development of these practices through a machine-independent evaluation.

As of December 2017, Project Maven’s machine augmentation of the slow human intelligence analyst was reportedly being used to support intelligence operations in Africa and the Middle East.⁶³ Such spaces of contemporary armed

conflict are laden with histories of colonial intervention and technological experimentation in warfare; here the smiling robots appear far more sinister. Bringing location and temporality together, the project seeks to process information more quickly than human consciousness in order to avoid delayed responses to changing circumstances on hostile and high-risk territory abroad, where human inhabitants appear as the source of risk to remote populations on whose behalf the intelligence is being gathered. There is a lingering question of what constituency this project serves: in a statement shortly after its founding, the chief of Project Maven stated that the team was exploring “[how] best to engage industry [to] advantage the taxpayer and the warfighter, who wants the best algorithms that exist to augment and complement the work he does.”⁶⁴

Within this vision, the machine augments the human and private enterprise figures as a resource for the military. In 2015 the Defense Department established a Defense Innovation Unit in Silicon Valley, California, “to partner with private industry to rapidly source private industry AI solutions to military problem sets.”⁶⁵ The initiative draws private-sector expertise into military development, as has long been the practice in the US, but with apparently greater urgency. Robert Work’s memorandum establishing Project Maven makes no mention of private-sector assistance apart from an oblique reference to the need to “field technology” for augmenting existing operations. Yet according to military academics, forming partnerships with private-sector actors is regarded as “key to obtaining the technology required to implement the 3OS. Many of the advancements in AI and other emerging technologies are a result of significant investment by private industry for commercial applications.”⁶⁶ By March 2018, the skilled “partner” referenced in various press releases was revealed to be Google.⁶⁷

The disclosure prompted widespread protests among Google employees. Some employees resigned, and thousands of others signed a petition demanding termination of the Project Maven contract.⁶⁸ In response the corporation not only decided against renewing their contract; it also disseminated “principles for AI” that state the company would not develop intelligence for weapons or surveillance. In contrast to the military’s urgent desire to hasten its conquest of ever-smaller units of processing time to preempt threats, the resistance is located in a different form of preemption: namely, preventing their complicity in producing an untenable future. The arc of this temporal horizon appears longer and more generalized, extending beyond the specifics of comparative military advantage gained by “owning” more of the “blink” between perception and response, and looking instead to the risks that algorithmic autonomy might bring.⁶⁹ Extending Massumi’s argument illustrates how the preemptive tendency produces the fear that leads to the prospect of developing LAWS to combat future threats. But another preemptive response is possible: namely, an ethico-political preemption of the threat LAWS pose to the primacy of human judgment.

What this response reveals is both a kind of military vulnerability and the power of (human, political) judgment. The military-private hybrid appears as a dystopian assemblage of for-profit warfare technology development, but it also seems to open a space for contestation through the power of laboring humans. Here resistance is not read as insubordination to be punished, as in the military, but rather as talent to be lost in a privileged sector of the economy. Other contractors have and will engage with what Google abandoned, and the extent of the corporation’s withdrawal from military projects remains unclear.⁷⁰ But the petition’s language of accountability beyond law—of morality and ethics, responsibility, and trust—sets

terms for political resistance. To the internal corporate slogan adopted by the petition signatories—“don’t be evil”—the military would respond that its development of AI technologies is in fact the *lesser evil*.⁷¹ But as we know from critical accounts of international humanitarian law, the logic of the lesser evil is embedded within this law, as it is within the principle of proportionality.⁷² In this sense, the military only builds upon a structure already present within the law itself, with its attendant forms of humanitarian sacrifice.

When it comes to the question of whether to use international law to ban LAWS, the US adopts a delayed approach to legal temporality: it wishes to proceed with “deliberation and patience,” and to highlight how it is important “not to make hasty judgments about the value or likely effects of emerging or future technologies . . . our views of new technologies may change over time as we find new uses and ways to benefit from advances in technology.”⁷³ It is too soon to judge, and yet it is not soon enough to develop the technologies that may later become unmoored from the power to judge and constrain them. Initiatives such as Project Maven are presented as working in the pursuit of humanitarian ends, yet this is what Talal Asad might call a “humanitarianism that uses violence to subdue violence.”⁷⁴ The law that we might seek to subsume LAWS under is complicit as well.

The logic of preemption could be transformed into an ethical call, as a form of political resistance in the present. Legal solutions in the form of regulatory or ban treaties may come too late to integrate well into the already unfolding narrative. Turning the preemptive logic of the military strike on its head, this ethical preemption would seek to undo the hastening of present efforts to adapt algorithmic thinking for military ends. The political urgency is even more pressing as Project Maven continues to unfold, with further contracts awarded to a start-up firm whose founder, a former

virtual-reality headset developer, described the future battlefield as populated by “superhero” soldiers who “have the power of perfect omniscience over their area of operations, where they know where every enemy is, every friend is, every asset is.”⁷⁵ As Noll notes, the plurality of actors involved in this assemblage of military production makes it challenging to parse responsibility—both in a dystopian future where automated weapons make targeting decisions, but also in the present development of AI for military use. The relationships within the military-corporate assemblage will continue to push toward the singularity in incremental steps, whether intentionally or not. The exercise of human judgment through a politics of refusal may push back more forcefully than a law steeped in humanitarian violence.

¹ I thank Gregor Noll for the opportunity to respond to his contribution, and Daniel Steuer for his engagement with the draft text. I am grateful to Hyo Yoon Kang for her careful reading and suggestions.

² Sven Lindqvist, *A History of Bombing* (New York: The New Press, 2000), 2.

³ Lindqvist’s text offers an extended account of these asymmetries; see also Yves Winter, “The Asymmetric War Discourse and Its Moral Economies: A Critique,” *International Legal Theory* 3, no. 3 (2011): 488–514; Campbell Munro, “Mapping the Vertical Battlespace: Toward a Legal Cartography of Aerial Sovereignty,” *London Review of International Law* 2 (2014): 233–61; Mark Neocleous, “Air Power as Police Power,” *Environment and Planning D: Society and Space* 31 (2013): 578–93.

⁴ Brian Massumi describes this as the “blink” of contracted time between consciously registered (human) perceptions in *Ontopower: War, Powers, and the State of Perception* (Durham: Duke University Press, 2015). Donald MacKenzie’s empirical work on high-frequency trading algorithms illustrates how this condensed temporality

manifests materially; see his “How Algorithms Interact: Goffman’s ‘Interaction Order’ in Automated Trading,” *Theory, Culture & Society* 36, no. 2 (2019): 39–59 (I thank Hyo Yoon Kang for this reference).

⁵ Hannah Arendt, “The Conquest of Space and the Stature of Man,” *The New Atlantis: A Journal of Technology & Society* (June 2007 [originally published 1963]): 52.

⁶ Noll, “War by Algorithm,” X.

⁷ The principles of distinction—distinguishing between civilians and combatants—and of proportionality are fundamental to this body of law. Nasser Hussain observed how communities subjected to drone-based surveillance are made to bear risk on behalf of the security of remote populations elsewhere in “The Sound of Terror: Phenomenology of a Drone Strike,” *Boston Review*, October 16, 2013, <http://bostonreview.net/world/hussain-drone-phenomenology>

⁸ Proponents of autonomous weapons systems contend that they have the capacity for “better-than-human performance,” and may perform “more ethically” than humans. See for example Ronald Arkin, “The Case for Ethical Autonomy in Unmanned Systems,” *Journal of Military Ethics* 9 (2010): 332–41.

⁹ Denise Garcia, “Lethal Artificial Intelligence and Change: The Future of International Peace and Security,” *International Studies Review* 20, no. 2 (June 2018): 334–41.

¹⁰ Filippo Santoni di Sio and Jeroen van den Hoven, “Meaningful Human Control over Autonomous Systems: A Philosophical Account,” *Frontiers in Robotics and AI*, 5 (February 2018): 1–14.

¹¹ Gwendelyn Bills, “LAWS unto Themselves: Controlling the Development and Use of Lethal Autonomous Weapons Systems,” *George Washington Law Review* 83, no. 1 (2014): 176–208.

¹² Gregor Noll, “War by Algorithm,” this volume, 2–3.

¹³ Ibid., 17.

¹⁴ This widely viewed film, which was posted online in November 2017, directs its viewers to a website, autonomousweapons.org, asking its readers to demand that their leaders support an international treaty banning autonomous weapons. See “Slaughterbots,” YouTube video, 7:47, posted by “Stop Autonomous Weapons,” November 12, 2017, <https://www.youtube.com/watch?v=9CO6M2HsoIA>.

¹⁵ Noll, “War by Algorithm,” 14.

¹⁶ Ibid.

¹⁷ Eyal Weizman describes the “necro-economy” at work in calculating proportionality in an exercise among IDF military lawyers: “Lacking any other criteria for measurement, death ratio is one of the gruesome ways in which proportionality is calculated and managed in practice.... [Each lawyer in the team of experts on law and military ethics] wrote down a number of civilian deaths they’d accept as legitimate under the principle of proportionality. The numbers were then counted and collated, and an average was calculated. It was 3.14—very approximately the mathematical constant π ”; see *The Least of All Possible Evils: Humanitarian Violence from Arendt to Gaza* (London: Verso, 2011), 13. The exercise was described earlier by Yoram Feldman and Uri Blau in “Consent and Advise” *Haaretz*, January 29, 2009, <https://www.haaretz.com/1.5069101>. (I thank Daniel Steuer for this reference). and Blau. “Consent and Advise.”

¹⁸ Lawrence Rosen elaborates upon ways in which law is located within specific cultural settings in *Law as Culture: An Invitation* (Princeton: Princeton University Press, 2006).

¹⁹ Noll, “War by Algorithm,” 18–19.

²⁰ The export of Western legal ideology through imperialism and colonialism, and particularly through a Roman-law frame, has been widely documented; on the technical aspects of legal transplantation, see Jean-Louis Halpérin, “The Concept of Law: A Western Transplant?” *Theoretical Inquiries in Law* 10, no. 2 (2009): 333–54.

²¹ Lauren Benton, *A Search for Sovereignty: Law and Geography in European Empires, 1400–1900* (Cambridge: Cambridge University Press, 2010), 6.

²² Within international law, the sub-field of international criminal law is somewhat exceptional in its capacity to attribute responsibility to individuals, as Noll addresses in discussing how law rules; see “War by Algorithm,” 14–15. The broader international legal field is concerned with state wrongs rather than individual (or state) crimes.

²³ Benton, *A Search for Sovereignty*, 7. Stuart Elden notes the “overlapping” sovereignty among some European states in the nineteenth century, where “many of the borders were still porous and ill defined”; see *The Birth of Territory* (Chicago: University of Chicago Press, 2013), 324.

²⁴ Antony Anghie, “Rethinking Sovereignty in International Law,” *Annual Review of Law and Social Science* 5, no. 1 (2009): 291–310.

²⁵ Antony Anghie’s observations in this regard have influenced a large body of literature that builds upon his argument concerning the “dynamic of difference” between entities in international legal history; see generally Anghie, *Imperialism, Sovereignty, and the Making of International Law* (Cambridge: Cambridge University Press, 2005).

²⁶ Stuart Elden, “Contingent Sovereignty, Territorial Integrity, and the Sanctity of Borders,” *SAIS Review* 26 (2006): 14.

²⁷ I elaborate upon this argument in “Cartographies of the Present: ‘Contingent Sovereignty’ and Territorial Integrity,” *Netherlands Yearbook of International Law* 47 (2017): 83–105.

²⁸ United States Department of Justice, “Lawfulness of a Lethal Operation Directed Against a U.S. Citizen Who is a Senior Operational Leader of Al-Qa’ida or an Associated Force” (draft November 8, 2011), available at <https://www.law.upenn.edu/live/files/1903-doj-white-paper> (emphasis added). I explore this case study of the assassination of Anwar al-Awlaki in “Immanent Enemies, Imminent Crimes: Targeted Killing as Humanitarian Sacrifice,” in *Criminals and Enemies*, ed. Austin Sarat, Lawrence Douglas, and Martha Umphrey, (Amherst: University of Massachusetts Press, 2019), 130–54.

²⁹ Although the operation in Yemeni territory was carried out with the state’s permission, the then US president Barack Obama made clear that the US would have acted even without Yemen’s agreement. Kendall, “Cartographies of the Present.”

³⁰ Ashley Deeks argues that a “state that has very limited military and police forces and no control over broad swaths of its territory almost certainly is ‘unable’ to suppress a large a sophisticated set of nonstate actors acting in that ungoverned area.” See her “‘Unwilling or Unable’: Toward a Normative Framework for Extraterritorial Self-Defense,” *Virginia Journal of International Law* 52 (2012): 505.

³¹ Derek Gregory, “The Everywhere War,” *The Geographical Journal* 177, no. 3 (2011): 238–50.

³² Stuart Elden, *Terror and Territory: The Spatial Extent of Sovereignty* (Minneapolis: University of Michigan Press, 2009), 69.

³³ See Kendall, “Cartographies of the Present.” Mark Neocleous argues that the “war on terror” has produced the return of “civilization” as a category of international

power; see Mark Neocleous, “The Police of Civilization: The War on Terror as Civilizing Offensive,” *International Political Sociology* 5 (2011): 144–59. Ntina Tzouvala draws upon the late nineteenth century writing of James Lorimer in a reading of the “unwilling or unable” doctrine as a contemporary application of civilizational criteria; see “TWAIL and the ‘Unwilling or Unable’ Doctrine: Continuities and Ruptures,” *AJIL Unbound* 109 (2015): 266–70.

³⁴ For example, a standard textbook account moves from Hugo Grotius’s 1625 text *On the Law of War and Peace*, to the “great European Jurist” Georg Friedrich von Martens, to the Battle of Solferino and Henri Dunant’s activism leading to the signing of the 1864 Geneva Convention by the European powers; see Emily Crawford and Alison Pert, *International Humanitarian Law* (Cambridge: Cambridge University Press, 2015).

³⁵ Article 11 of the General Act of the Conference of Berlin, 26 February 1885, in Barbara Harlow and Mia Carter, eds., *Archives of Empire: Volume II, The Scramble for Africa* (Durham: Duke University Press, 2003), 33. See also Matthew Craven, “Between Law and History: The Berlin Conference of 1884–1885 and the Logic of Free Trade.” *London Review of International Law* 3, no. 1 (2015): 31–59.

³⁶ Christiane Wilke examines the racialized and gendered assumptions at work in the development of the 1923 Draft Rules on Aerial Warfare, noting how during the 1920s, despite the fact that the new technologies of aerial bombardment were primarily used in colonial territories, “discussions about regulations of aerial bombardment by UK and US international lawyers and international relations scholars focused almost exclusively on examples of aerial bombardment within Europe.” See “How International Law Learned to Love the Bomb: Civilians and the

Regulation of Aerial Warfare in the 1920s,” *Australian Feminist Law Journal* 44, no. 1 (2018): 36.

³⁷ On “aerial sovereignty,” see Munro, “Mapping the Vertical Battlespace.” On “conditional equality” see Tanja Aalberts, “Rethinking the Principle of (Sovereign) Equality as a Standard of Civilization,” *Millennium: Journal of International Studies* 42 (2014): 767–89. Marcus Gunneflo observes that “targeted killing is deployed in an American homeland which is the planet”; see *Targeted Killing* (Cambridge: Cambridge University Press, 2016), 82.

³⁸ Hugh Gusterson, *Drone: Remote Control Warfare* (Boston: MIT University Press, 2016), 148.

³⁹ Michael Horowitz makes a similar point in arguing that, in the context of questions of *jus in bello*, “it makes the most sense to think about autonomous weapons in comparison with existing weapons in realistic scenarios”; see “The Ethics and Morality of Autonomous Warfare: Assessing the Debate over Autonomous Weapons,” *Daedalus: The Journal of the American Academy of Arts and Sciences* 4 (2016): 29.

⁴⁰ Nehal Bhuta et al., *Autonomous Weapons Systems: Law, Ethics, Policy* (Cambridge: Cambridge University Press, 2016), 4.

⁴¹ Grégoire Chamayou, *Drone Theory* (London: Penguin, 2015), 77.

⁴² Another possibility would be contract or tort law, as Noll notes in his chapter, though this appears unlikely and in any case would be uneven across domestic jurisdictions.

⁴³ See generally Didier Fassin, *Humanitarian Reason: A Moral History of the Present* (Berkeley: University of California Press, 2012).

⁴⁴ Weizman, *The Least of All Possible Evils*, 3.

⁴⁵ Lindqvist, *A History of Bombing*, 2.

⁴⁶ See Kendall, “Cartographies of the Present.” The US now refers to “unwilling or unable” as a “legal standard”; see The White House, “Report on the Legal and Policy Frameworks Guiding the United States’ Use of Military Force and Related National Security Operations” (December 2016), 10, available at <https://www.lawfareblog.com/white-house-releases-report-legal-and-policy-frameworks-american-uses-military-force>.

⁴⁷ Nasser Hussain observed that “[b]ecause drones are able to hover at or above 30 thousand feet, they are mostly invisible to the people below them. But they can be heard. Many people from the tribal areas of Pakistan (FATA) describe the sound as a low-grade, perpetual buzzing, a signal that a strike could occur at any time. The locals call the drones *machar*, mosquitos. Because the drone can surveil the area for hours at a time, and because each round of surveillance may or may not result in a strike, the fear and anxiety among civilians is diffuse and chronic.” Hussain, “The Sound of Terror.”

⁴⁸ See Massumi, *Ontopower*. Massumi describes ontopower as “a power of becoming whose force is maximally abstract . . . a power of emergence” (ibid., 223) or a force of life that manifests temporally as a “force-to-own time” (ibid., 73).

⁴⁹ MacKenzie, “How Algorithms Interact,” 53.

⁵⁰ Massumi, *Ontopower*, 60.

⁵¹ Ibid., 97.

⁵² Arendt, “The Conquest of Space,” 46.

⁵³ Ibid., 52.

⁵⁴ “Project Maven is the first activity of an ‘Algorithmic Warfare’ initiative in the US military designed to harness the potential of AI and translate it into usable military

capabilities.” Michael Horowitz, Artificial Intelligence, International Competition, and the Balance of Power,” *Texas National Security Review* 1, no. 3 (May 2018): 42.

⁵⁵ The JAIC “will have oversight over almost all service and defense agency AI efforts.” Sydney Freedberg Jr., “Joint Artificial Intelligence Center Created Under DoD CIO,” *Breaking Defense*, June 29, 2018,

<https://breakingdefense.com/2018/06/joint-artificial-intelligence-center-created-under-dod-cio/>.

⁵⁶ Remarks by Deputy Secretary of Defense Robert Work at the Center for New American Security Defense Forum, as quoted in Lawrence Freedman, *The Future of War: A History* (London: Allen Lane, 2017), 244.

⁵⁷ United States Deputy Secretary of Defense, “Establishment of an Algorithmic Warfare Cross-Functional Team (Project Maven),” Memorandum (April 26, 2017), available at

https://www.govexec.com/media/gbc/docs/pdfs_edit/establishment_of_the_awcft_project_maven.pdf. (emphasis added).

⁵⁸ *Ibid.*

⁵⁹ Paul McLeary, “Pentagon’s Big AI Program, Maven, Already Hunts Data in Middle East, Africa,” *Breaking Defense*, May 1, 2018,

<https://breakingdefense.com/2018/05/pentagons-big-ai-program-maven-already-hunts-data-in-middle-east-africa/>.

⁶⁰ Marine Corps Colonel Drew Cukor, July 2017, as quoted by Kelsey Atherton,

“Targeting the Future of the DoD’s Controversial Project Maven Initiative,”

C4ISRNET, July 27, 2018, <http://c4isrnet.com/it-networks/2018/07/27/targeting-the-future-of-the-dods-controversial-project-maven-initiative/>.

⁶¹ Cheryl Pellerin, “Project Maven to Deploy Computer Algorithms to War Zone by Year’s End,” *US Department of Defense News*, July 17, 2017, <https://dod.defense.gov/News/Article/Article/1254719/project-maven-to-deploy-computer-algorithms-to-war-zone-by-years-end/>.

⁶² In Simonite, “Pentagon will Expand AI Project”, *Wired*, 29 May 2018. The image appears in “Disruption in UAS: the Algorithmic Cross-Functional Team (Project Maven)”, presentation by Lieutenant General Jack Shanahan, OUSDI Director for Defense Intelligence (Warfighter Support), 20 March 2018, also available at <http://airpower.airforce.gov.au/APDC/media/Events-Media/RAAF%20AP%20CONF%202018/1130-1200-Shanahan-Disruption-in-UAS-The-AWCFT.pdf>

⁶³ McLeary, “Pentagon’s Big AI Program.”

⁶⁴ Pellerin, “Project Maven to Deploy Computer Algorithms.”

⁶⁵ Clarke Alan and Daniel Knudson III, “Examination of Cognitive Load in the Human-Machine Teaming Context” (Master’s thesis, Naval Postgraduate School, June 2018), 8.

⁶⁶ *Ibid.*

⁶⁷ Atherton, “Targeting the future.”

⁶⁸ Mallory Locklear, Ex-Pentagon Official behind Project Maven ‘Alarmed’ by Google Withdrawal,” *Engadget*, June 26, 2018, <https://www.engadget.com/2018/06/26/pentagon-official-project-maven-alarmed-google-withdrawal/>.

⁶⁹ The petition’s signatories noted that a senior Google official had sought to reassure them that the technology would not be used for weapons or drones, but added that “the technology is being built for the military, and once it’s delivered it could easily

be used to assist in these tasks.” Letter to Sundar Pichai, available at <https://static01.nyt.com/files/2018/technology/googleletter.pdf>.

⁷⁰ Lee Fang, “Google Hedges on Promise to End Controversial Involvement in Military Drone Contract,” *The Intercept*, March 1, 2019, <https://theintercept.com/2019/03/01/google-project-maven-contract/>; Lee Fang, “Defense Tech Startup Founded by Trump’s Most Prominent Silicon Valley Supporters wins Secretive Military AI Contract,” *The Intercept*, March 19, 2019, <https://theintercept.com/2019/03/09/anduril-industries-project-maven-palmer-luckey/>.

⁷¹ ““They say, look this data could potentially, down the line, at some point, cause harm to human life,’ said Work. ‘I said, yes but it might save 500 Americans or 500 allies or 500 innocent civilians.’” Locklear, “Ex-Pentagon Official behind Project Maven ‘Alarmed.’”

⁷² Weizman writes that the principle of proportionality is “the clearest manifestation of the lesser evil principle”; “IHL does not seek to end wars but rather to ‘regulate’ and ‘shape’ the way militaries wage them. . . . Western militaries tend to believe that by moderating the violence they perpetrate, they might be able to govern populations more efficiently.” Weizman, *The Least of All Possible Evils*, 11.

⁷³ US Opening Statement at the Group of Government Experts (GGE) on Lethal Autonomous Weapons Systems, Geneva, April 9, 2018, available at <https://geneva.usmission.gov/2018/04/09/ccw-u-s-opening-statement-at-the-group-of-governmental-experts-meeting-on-lethal-autonomous-weapons-systems/>.

⁷⁴ Talal Asad, “Reflections on Violence, Law and Humanitarianism,” *Critical Inquiry* 42, no. 2 (2015): 390–427.

⁷⁵ The founder of the firm, Anduril Industries, is also a financial supporter of the current US president, Donald Trump, and the Republican Party. Fang, “Defense Tech Startup” (I am grateful to Hyo Yoon Kang for this reference).