SELF-DETERMINATION IN THE
AGE OF ALGORITHMIC WARFARE

Henning Lahmann [*] iD

The paper advances the claim that the pervasive surveillance practices employed for the purpose of feeding AI-supported decision-support systems prevent spontaneous and collective political action, thus violating the right to self-determination. Analysing recent events in Gaza and the West Bank, the article describes Israel's utilisation of algorithmic systems in armed encounters with Palestinians, in particular for the purpose of the detecting 'anomalous behaviour'. It claims that because the Israeli security apparatus can point to the legal strictures of IHL targeting rules to rationalise the further entrenchment of surveillance architectures that are necessary for the increasing deployment of machine-learning algorithms, the law of armed conflict functions as a justificatory rhetorical framework for the perpetuated, structural denial of the exercise of the right to self-determination by the Palestinian people. This claim is defended through the conceptualisation of spontaneous political action as advanced by Rosa Luxemburg and Hannah Arendt. Spontaneity is inherent in the idea of collective political agency, which in turn is presupposed in the concept of self-determination as a procedural right to political action. As the algorithmic rationalities of the military and security context inevitably

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inhibit the possibility to act spontaneously, the deployment of such systems will thus violate the right to self-determination.

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> And then there is that other assumption, which is terribly dangerous – that we are constant, and that our reactions can be predicted.
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> Olga Tokarczuk, *Flights*[1]

The senior officer of the Israel Defence Force (IDF) Intelligence Corps was, evidently, rather pleased with himself and his subordinates: in May 2021, Israel's armed forces had just ceased another round of pummelling Gaza with rockets and missiles for eleven days, a campaign during which they had killed, according to the United Nations, around 245 Palestinians, of whom 128 were believed to be civilians, including 63 children.[2] Yet something had been different this time, the officer insisted: 'For the first time, artificial intelligence was a key component and power multiplier in fighting the enemy. [...] We implemented new methods of operation and used technological developments that were a force multiplier for the entire IDF.'[3] Laying claim to having just fought the world's 'first AI war', Israel's military maintained that it had deployed algorithmic systems to conduct and support intelligence, surveillance, and reconnaissance (ISR) activities as well as targeting, using platforms that fused and analysed data from signals, visual, human, and geospatial intelligence to generate predictive recommendations for targets in Gaza in real time.[4] Algorithms for combat drones with names such as 'Alchemist' and 'Gospel', all devised by Intelligence Corps Unit 8200,

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[1] Olga Tokarczuk, *Flights* (Riverhead Books 2018), 15.

[2] United Nations Office for the Coordination of Humanitarian Affairs, Occupied Palestinian Territory (oPt): Response to the escalation in the oPt, Situation Report No. 1: 21-27 May 2021.

[3] Anna Ahronheim, 'Israel's Operation against Hamas Was the World's First AI War' *The Jerusalem Post* (Jerusalem, 27 May 2021) <https://www.jpost.com/arab-israeli-conflict/gaza-news/guardian-of-the-walls-the-first-ai-war-669371> accessed 16 July 2023.

[4] Ibid; Judah Ari Gross, 'IDF Intelligence Hails Tactical Win in Gaza, Can't Say How Long Calm Will Last' *The Times of Israel* (Jerusalem, 27 May 2021) <https://www.timesofisrael.com/idf-intel-hails-tactical-win-over-hamas-but-cant-say-how-long-calm-will-last/> accessed 16 July 2023.

enabled the IDF to strike purported Hamas infrastructure and combatants with increasingly reduced human intervention.[5]

Since this 'Operation Guardian of the Walls' in May 2021, Israel has further expanded the use of AI in its military operations. The IDF reports that the entirety of Gaza is now covered at all times by surveillance balloons[6] and a squadron of unmanned aerial vehicles (UAVs),[7] allegedly enabling intelligence units to constantly produce and locate new targets in a process that now takes a month, rather than the years it took before.[8] Israel has recently begun to extend its drone surveillance programme to the West Bank,[9] an area that had already been blanketed with increasingly "smart" cameras equipped with facial recognition software.[10] Aside from real-time aerial footage and CCTV, Israeli intelligence personnel also deploy

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[5] Carma Estetieh, 'Israel's Push Towards a "Frictionless" Occupation: A Blessing or a Dystopian Nightmare?' (*Euro-Med Human Rights Monitor*, 3 October 2022) <https://www.euromedmonitor.org/en/article/5358/Israel%E2%80%99s-push-towards-a-%E2%80%9Cfrictionless%E2%80%9D-occupation:-A-blessing-or-a-dystopian-nightmare?>; Yuval Abraham, '"Lavender": The AI Machine Directing Israel's Bombing Spree in Gaza' (*+972 Magazine*, 3 April 2024) <https://www.972mag.com/lavender-ai-israeli-army-gaza/> accessed 11 April 2024.

[6] Emad Moussa, 'Israeli AI Is Turning Palestine into a Dystopian Reality' (*The New Arab*, 22 June 2023) <https://www.newarab.com/opinion/israeli-ai-turning-palestine-dystopian-reality> accessed 8 August 2023.

[7] Emanuel Fabian, 'Armed Drones Gave IDF "Surgical" Precision During Recent Gaza Fighting, Officers Say' *The Times of Israel* (Jerusalem, 17 August 2022) <https://www.timesofisrael.com/armed-drones-gave-idf-surgical-precision-during-recent-gaza-fighting-officers-say/> accessed 8 August 2023.

[8] Sophia Goodfriend, 'How AI Is Intensifying Israel's Bombardments of Gaza' (*+972 Magazine*, 6 June 2023) <https://www.972mag.com/israel-gaza-drones-ai/> accessed 8 August 2023.

[9] Sophia Goodfriend, 'Drones Terrorized Gaza for Years. Now They'll Do the Same in the West Bank' (*+972 Magazine*, 13 October 2022) <https://www.972mag.com/drones-idf-west-bank-gaza/> accessed 26 March 2023.

[10] Elizabeth Dwoskin, 'Israel Escalates Surveillance of Palestinians with Facial Recognition Program in West Bank' *Washington Post* (Washington, DC, 8 November 2021) <https://www.washingtonpost.com/world/middle_east/israel-palestinians-surveillance-facial-recognition/2021/11/05/3787bf42-26b2-11ec-8739-5cb6aba30a30_story.html> accessed 27 June 2023.

algorithms to continuously monitor Palestinians' online activities[11] and routinely collect cell phone location data.[12] In June 2023, the head of the IDF's cyber division voiced his expectation that in a few years' time, 'every area of warfare [conducted by the IDF] will be based on generative AI information'.[13]

Taking events in Gaza and the West Bank between May 2021 and October 2023 as the principal point of departure for its analysis, this article provides a detailed description of the salient points of Israel's utilisation of algorithmic systems in armed encounters with Palestinians. Based on this account, the article claims that because the Israeli security apparatus can invoke the legal requirements of international humanitarian law (IHL) targeting rules to rationalise pervasive and constant surveillance to sustain the deployment of machine-learning algorithms, the law of armed conflict has assumed the function of a justificatory rhetorical framework for the perpetuated, structural denial of the exercise of the right to self-determination by the Palestinian people.[14] I base this claim on the conceptualisation of spontaneous political action as advanced in the works of Rosa Luxemburg and Hannah Arendt. I demonstrate that spontaneity is inextricable from the idea of collective political agency, which in turn is presupposed in self-determination as a procedural right to political action. As the algorithmic

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[11] Melanie Swan, 'Israel Develops "Cyber Iron Dome" to Find Terrorists Online' *The Times* (London, 8 August 2023) <https://www.thetimes.co.uk/article/israel-develops-cyber-iron-dome-to-find-terrorists-online-h8gwsxjpw> accessed 8 August 2023.

[12] Goodfriend (n 9).

[13] Yonah Jeremy Bob, 'IDF Will Run Entirely Generative AI Very Soon – Israeli Cyber Chief' *The Jerusalem Post* (Jerusalem, 28 June 2023) <https://www.jpost.com/israel-news/defense-news/article-748028> accessed 8 August 2023.

[14] It bears noting at the outset that this argument in no way intends to interfere with the more general, and correct, observation that Israel's indefinite occupation of Palestinian lands violates the Palestinian people's right to self-determination in and of itself; see on this only Ralph Wilde, 'Using the Master's Tools to Dismantle the Master's House: International Law and Palestinian Liberation' (2021) 22 The Palestine Yearbook of International Law Online 1.

rationalities of the military and security context inevitably inhibit the possibility to act spontaneously, it follows that the deployment of such systems will come to violate the collective right to self-determination.

The first draft of this article was finalised and submitted on 9 August 2023. Almost exactly two months later, Hamas and the Palestinian Islamic Jihad breached the highly fortified outer perimeter of Gaza, launching a devastating attack against IDF military bases, kibbutzim and other communities in southern Israel, as well as a music festival, killing approximately 1,139 people (including 36 children, 71 foreign nationals, and 373 members of Israeli security forces) and taking around 250 hostages.[15] Shortly thereafter, Israel responded with overwhelming and, at the time of finalising a revised version, still ongoing military force through the air and by means of a ground invasion of Gaza that began on 27 October 2023. Up until 7 October 2024, according to the Hamas-controlled health ministry in Gaza, the IDF's all-out campaign had killed at least 41,870 Palestinians, the overwhelming majority of them civilians.[16] While several aspects concerning the terrorist attack itself and the reaction to it did make a careful re-evaluation of the arguments advanced in this article necessary, both the core premises and the principal conclusions derived from the theoretical framework conceived in the following sections have lost none of their validity or explanatory power.

The argument unfolds in the following four steps. Section 1 begins by describing the increasing use of machine learning technologies in military decision support systems. While the focus is on Palestinian territories as a salient case to expose the particulars and intentionalities of such technologies and the related data practices, it also points to the broader implications of

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[15] France 24, 'Israel Social Security Data Reveals True Picture of Oct 7 Deaths' (15 December 2023) <https://www.france24.com/en/live-news/20231215-israel-social-security-data-reveals-true-picture-of-oct-7-deaths> accessed 15 March 2024.

[16] Al Jazeera, 'One Year of Israel's War on Gaza: Key Moments Since October 7' (7 October 2024) <https://aje.io/crs9jl> accessed 8 October 2024.

such developments. After laying out how the current regime of IHL, especially the law of targeting, can be used to rationalise the further use of algorithms and big data, the third sub-section explains how recourse to the rules of IHL has helped to obscure one of the principal use cases of machine learning in this context, which is the process of anomaly detection as opposed to "simple" target identification and verification.

Section 2 critiques emerging scholarly interventions that have responded to the algorithmic data practices by militaries and intelligence agencies as described in Section 1 by applying the conceptual framework of privacy and data protection. Although such attempts are helpful in shedding light on some of the more egregious and consequential misuses of personal data for the purposes of warfare, the basic principles of machine learning render this particular analytical lens ultimately futile while deflecting from the more fundamental and problematic aspects of the described uses of machine learning algorithms.

Building on this assessment, Section 3 analyses the consequences of the workings of warfare algorithms through the concept of spontaneous political action as developed by Rosa Luxemburg and Hannah Arendt. After reappraising the collective right to self-determination as (also) amounting to a primordial procedural right to political practice, the paper explicates the critical role of spontaneity for any emancipatory politics in the understanding of the two political theorists. Based on this investigation, Section 4 synthesises the previous findings by advancing the argument that systems of algorithmic warfare suppress the spontaneous and collective political will-formation that is the condition of possibility of the exercise of self-determination.

I. THE VISION OF ALGORITHMIC WARFARE IN PALESTINE

Israel has erected vast and ever-expanding surveillance architectures that constantly collect new data to feed the models of an array of algorithmic military decision-support systems to sustain the administration and control

of the occupied Palestinian territories.[17] This mode of security governance is pursued with the objective of detecting threats before they can materialise, directly furthering the security interests of the occupying power both in the territories under its control and in its own adjacent territory. This practice is rhetorically justified by recourse to the rationales of the core rules of the law of armed conflict – a critical connection that will emerge more clearly from the following explication.

1. War Algorithms

The idea that AI – understood as any system 'capable of learning, reasoning and problem-solving'[18] – is set to revolutionise all facets of military affairs has already become a cliché.[19] Among many other armed forces, the IDF has started working towards systematically incorporating AI-based applications across the entire organisation.[20] So-called decision-support systems (DSS) have assumed a particularly prominent position in the strategic considerations on the integration of AI technologies in light of the increasing complexity of contemporary armed conflicts. AI-based DSS are broadly understood as algorithmic systems that are capable of assisting

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[17] I will omit a deeper discussion of whether Gaza is to be considered remaining under military occupation, as this question is immaterial for the arguments presented here. For treatments of this question, see most recently the ICJ in *Legal Consequences Arising from the Policies and Practices of Israel in the Occupied Palestinian Territory, Including East Jerusalem*, Advisory Opinion of 19 July 2024, at paras. 86–94; for earlier scholarly examinations see e.g. Shane Darcy and John Reynolds, 'An Enduring Occupation: The Status of the Gaza Strip from the Perspective of International Humanitarian Law' (2010) 15 Journal of Conflict and Security Law 211; Yuval Shany, 'Binary Law Meets Complex Reality: The Occupation of Gaza Debate' (2008) 41 Israel Law Review 68.

[18] International Organization for Standardization (ISO), 'What Is Artificial Intelligence (AI)?' <https://iso.org/artificial-intelligence/what-is-ai>.

[19] Paul Scharre, 'AI's Inhuman Advantage' (*War on the Rocks*, 10 April 2023) <https://warontherocks.com/2023/04/ais-inhuman-advantage/> accessed 10 April 2023.

[20] Seth Frantzman, 'Israel Unveils Artificial Intelligence Strategy for Armed Forces' (*C4ISRNet*, 11 February 2022) <https://www.c4isrnet.com/artificial-intelligence/2022/02/11/israel-unveils-artificial-intelligence-strategy-for-armed-forces/> accessed 26 March 2023.

military decision-makers at every step, from gathering and analysing intelligence and suggesting possible courses of action, to identifying and marking military objectives in armed engagements.[21] The emergent technologies underlying AI-based DSS are big data and machine learning.

Whereas the concept of "big data" broadly describes the accumulation and analysis of massive swathes of data from a variety of sources,[22] machine learning is the currently prevalent methodology of training algorithms tasked to parse these large databases. Machine learning systems are trained on vast amounts of data that allow them to build their own models to effect certain outcomes instead of operating on the processing of pre-programmed rules, as was the case with earlier generations of AI. This means that the output depends on a number of variant and interdependent factors, such as the type of learning process and the resulting model, which is a function of the data with which the algorithm is fed. In other words, machine learning is a type of statistical analysis based on the principle of induction.[23] It follows that the output is always a prediction based on the discovery of patterns, that is, links and correlations between data points. Machine learning algorithms attempt to 'detect the mathematical target function that properly describes a dataset, hoping that the function will apply to new data'.[24] One crucial distinction is between supervised and unsupervised learning. For the former, human operators will first label input data (e.g. pictures of cats) to indicate

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[21] Klaudia Klonowska, 'Article 36: Review of AI Decision-Support Systems and Other Emerging Technologies of Warfare' (17 March 2021), 15 <https://papers.ssrn.com/abstract=3823881> accessed 26 June 2023.

[22] Shiri Krebs, 'Predictive Technologies and Opaque Epistemology in Counterterrorism Decision-Making' in Arianna Vedaschi and Kim Lane Scheppele (eds), *9/11 and the Rise of Global Anti-Terrorism Law: How the UN Security Council Rules the World* (Cambridge University Press 2021), 205.

[23] Erik J Larson, *The Myth of Artificial Intelligence: Why Computers Can't Think the Way We Do* (The Belknap Press of Harvard University Press 2021), 118; first-generation AI was based on deductive frameworks.

[24] Mireille Hildebrandt, 'Privacy as Protection of the Incomputable Self: From Agnostic to Agonistic Machine Learning' (2019) 20 Theoretical Inquiries in Law 83, 85.

the patterns that constitute the desired predictive output (e.g. the correct identification of cats in a large set of visual data). Such classification tasks are common types of machine learning algorithms. When the system is programmed to find patterns in the data on its own, this is called unsupervised learning.[25]

Military decision support has long been marked as especially fit for exploiting the purported advantages of machine learning technologies. Ever since the 9/11 attacks prompted the 'datafication of counter-terrorism',[26] the amount of data recording the behaviour of individuals collected by intelligence agencies has grown to such an extent that human analysts have simply lost the capacity of making sense of the amassed information.[27] Personal data scraped from social media and other online communication is combined with visual or audio-visual feeds from sensors mounted on satellites in geostationary or low earth orbit or drones that autonomously cover a wide range of territory, complemented by a rapidly expanding array of internet-of-things devices that effectively act as remote sensors.[28] In effect,

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[25] Larson (n 23), 133–4.

[26] Fionnuala D Ni Aolain, 'The Datafication of Counter-Terrorism' in Laura A Dickinson and Edward W Berg (eds), *Big Data and Armed Conflict: Legal Issues Above and Below the Armed Conflict Threshold* (Oxford University Press 2023) <https://papers.ssrn.com/abstract=4083433> accessed 7 July 2023. See in this context also the revelations by Edward Snowden, about them e.g. David Lyon, 'Surveillance, Snowden, and Big Data: Capacities, Consequences, Critique' (2014) 1 Big Data & Society 2053951714541861.

[27] Adam Frisk, 'What Is Project Maven? The Pentagon AI Project Google Employees Want out Of' (*Global News*, 5 April 2018) <https://globalnews.ca/news/4125382/google-pentagon-ai-project-maven/> accessed 8 August 2023.

[28] Nishwan S Smagh, 'Intelligence, Surveillance, and Reconnaissance Design for Great Power Competition' (Congressional Research Service 2020) R46389 <https://fas.org/sgp/crs/intel/R46389.pdf> accessed 8 August 2023; Ed Stacey, 'Future Warfighting in the 2030s: An Interview with Franz-Stefan Gady' (*Strife*, 9 September 2020) <https://www.strifeblog.org/2020/09/09/future-warfighting-in-the-2030s-an-interview-with-franz-stefan-gady/> accessed 8 August 2023; Richard H Schultz and Richard D Clarke, 'Big Data at War: Special Operations Forces, Project Maven, and Twenty-First Century

everything has become a prospective source to continuously feed the deluge of big data.[29] It takes machine learning algorithms to parse such amounts of data to put out predictions aimed at raising strategic, operational, or situational awareness for military commanders.[30]

The latest generation of these technologies, so-called platform-independent fusion architectures, can integrate an even greater variety of sensors and other sources whose data streams are dynamically analysed in real time, instantly providing a large network of connected military assets and units with suggested courses of action in the theatre of conflict.[31] Such 'battlefield management systems' are imagined to produce an accurate and comprehensive operating picture at all times, crucially including the ability to reliably classify and identify objects and persons encountered in the field.[32]

Israel has been among the first states to fully embrace the promises of machine learning for its own security purposes. For years now, Israel's intelligence services have penetrated Palestinian communications networks to surveil all online activities by the population located in the territories and to build models for algorithms based on the data streams being constantly

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Warfare' (*Modern War Institute*, 25 August 2020) <https://mwi.usma.edu/big-data-at-war-special-operations-forces-project-maven-and-twenty-first-century-warfare/> accessed 8 August 2023.

[29] Jessica Bayley, 'Transforming ISR Capabilities through AI, Machine Learning and Big Data: Insights from Dr. Thomas Killion, Chief Scientist, NATO' (*Defence IQ*, 30 July 2018) <https://www.defenceiq.com/defence-technology/news/transforming-isr-capabilities-through-ai-machine-learning-and-big-data> accessed 8 August 2023.

[30] Margarita Konaev, 'With AI, We'll See Faster Fights, But Longer Wars' (*War on the Rocks*, 29 October 2019) <https://warontherocks.com/2019/10/with-ai-well-see-faster-fights-but-longer-wars/> accessed 18 July 2023.

[31] Arthur Holland Michel, 'There Are Spying Eyes Everywhere – And Now They Share a Brain' (*Wired*, 4 February 2021) <https://www.wired.com/story/there-are-spying-eyes-everywhere-and-now-they-share-a-brain/> accessed 18 July 2023.

[32] Jackson Barnett, 'Air Force Moving Project Maven into Advanced Battle Management System Portfolio' (*FedScoop*, 10 August 2020) <https://www.fedscoop.com/project-maven-air-forces-advanced-battle-management-system/> accessed 18 July 2023.

collected.[33] Big data analysis of young Palestinians' behaviour on social media combined with other intelligence sources was allegedly the critical factor in ending a string of knife attacks by individuals acting alone over the course of 2015: the algorithmic assessment led to the preventative detention of a large number of minors accused of having planned assaults.[34] Recently, Isarel's domestic intelligence service Shin Bet has begun talking about a comprehensive 'cyber Iron Dome' that will further expand such online monitoring.[35] In the West Bank in particular, these measures are complemented by a vast network of cameras that are now equipped with facial recognition software, a technology that is likewise based on machine learning.[36] UAVs, such as the Elbit Hermes 450 drone, and balloons provide a permanent feed of visual data from the Palestinian territories.[37] Since representatives of the IDF have recently revealed the existence of fusion architectures that use 'all of our existing advanced sensors and sources'[38] to train models for the generation of 'a common operating picture for the armed forces',[39] one may assume that all of these different data practices now

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[33] Asaf Lubin, 'The Duty of Constant Care and Data Protection in War' (2022) <https://papers.ssrn.com/abstract=4012023> accessed 15 June 2023, 6.

[34] Amos Harel, 'How Israel Stopped a Third Palestinian Intifada' *Haaretz* (4 October 2019) <https://www.haaretz.com/israel-news/2019-10-04/ty-article/.premium/how-israel-stopped-a-third-palestinian-intifada/0000017f-e355-df7c-a5ff-e37f99d30000> accessed 8 August 2023.

[35] Swan (n 11).

[36] Moussa (n 6); Keren Weitzberg, 'Biometrics and Counter-Terrorism: Case Study of Israel/Palestine' (Privacy International 2021) <https://privacyinternational.org/report/4527/biometrics-and-counter-terrorism-case-study-israelpalestine> accessed 8 August 2023.

[37] Fabian (n 7).

[38] Yaakov Lappin, 'IDF Identifies "As Many Targets in a Month as It Did in a Year"' (*Jewish News Syndicate*, 4 December 2022) < https://www.jns.org/idf-identifies-as-many-targets-in-a-month-as-it-did-in-a-year/> accessed 8 August 2023.

[39] Frantzman (n 20).

feed the same assembled systems.[40] Most recently, revelations published in early 2024 about the use of the 'Lavender' system for the production of targets in Israel's war against Hamas in Gaza has confirmed these suspicions,[41] despite some scholars with purported inside knowledge disputing some of the factual assertions and inferences.[42]

While the 2021 campaign against Gaza may have established Israel as the avant-garde in developing and actively deploying these capabilities,[43] an assessment reinforced by reports on the widespread reliance on algorithmic decision support during its 2023/24 campaign against Hamas, other recent events have shown states' growing incentives to exploit scientific progress in AI for battlefield applications. A salient catalyst for the wider acceptance and creeping normalisation of algorithmic practices in contemporary warfare has proven to be Ukraine's desperate attempt to fend off Russian military aggression since Russia's full-scale invasion in March 2022.[44] A June

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[40] To be sure, not all of the predictions put out by these machine learning algorithms lead to targeting decisions. Some of them "merely" result in detention. See Orr Hirschauge and Hagar Shezaf, 'How Israel Jails Palestinians Because They Fit the "Terrorist Profile"' *Haaretz* (31 May 2017) <https://www.haaretz.com/israel-news/2017-05-31/ty-article-magazine/.premium/israel-jails-palestinians-who-fit-terrorist-profile/0000017f-f85f-d044-adff-fbff5c8a0000> accessed 21 July 2023.

[41] Abraham (n 5); Christopher Elliott, 'Expedient or Reckless? Reconciling Opposing Accounts of the IDF's Use of AI in Gaza' (*Opinio Juris*, 26 April 2024) <https://opiniojuris.org/2024/04/26/expedient-or-reckless-reconciling-opposing-accounts-of-the-idfs-use-of-ai-in-gaza/> accessed 30 April 2024.

[42] Tal Mimran and Gal Dahan, 'Artificial Intelligence in the Battlefield: A Perspective from Israel' (*Opinio Juris*, 20 April 2024) <https://opiniojuris.org/2024/04/20/artificial-intelligence-in-the-battlefield-a-perspective-from-israel/> accessed 6 May 2024.

[43] Avi Kalo, 'AI-Enhanced Military Intelligence Warfare Precedent: Lessons from IDF's Operation "Guardian of the Walls"' (*Frost & Sullivan*, 9 June 2021) <https://www.frost.com/frost-perspectives/ai-enhanced-military-intelligence-warfare-precedent-lessons-from-idfs-operation-guardian-of-the-walls/> accessed 5 December 2022.

[44] See Bruno Maçães, 'How Palantir Is Shaping the Future of Warfare' (*Time*, 10 July 2023) <https://time.com/6293398/palantir-future-of-warfare-ukraine/> accessed 1 August 2023; Will Knight, 'The AI-Powered, Totally Autonomous Future of War Is Here' [2023] *Wired*

2023 article in the Atlantic approvingly noted notorious U.S.-based tech company Palantir's cooperation with Kiev to provide Ukrainian forces with its latest software for targeting assistance based on various machine-learning algorithms.[45] In turn, Palantir has begun to aggressively promote the product to a wider future customer base.[46] Debates to start harnessing the potentials of AI-based applications in the armed forces have also been ongoing among Member States of the European Union (EU) since at least 2019, when Finland, Estonia, France, Germany, and the Netherlands issued the joint discussion paper 'Digitalization and Artificial Intelligence in Defence'.[47] At the same time, the EU has been trying to position itself as a leading voice in the emphasis on the ethically and legally responsible development of the technology,[48] including by way of government-funded research projects in various Member States.[49]

<https://www.wired.com/story/ai-powered-totally-autonomous-future-of-war-is-here/> accessed 1 August 2023.

[45] Anne Applebaum and Jeffrey Goldberg, 'Zelensky's Plan to Defeat Russia—And Take Back Crimea' [2023] *The Atlantic* <https://www.theatlantic.com/magazine/archive/2023/06/counteroffensive-ukraine-zelensky-crimea/673781/> accessed 4 May 2023.

[46] Matthew Gault, 'Palantir Demos AI to Fight Wars but Says It Will Be Totally Ethical Don't Worry About It' (*Vice*, 26 April 2023) <https://www.vice.com/en/article/qjvb4x/palantir-demos-ai-to-fight-wars-but-says-it-will-be-totally-ethical-dont-worry-about-it> accessed 1 May 2023. Another dubious company that has seized on the opportunity provided by the invasion to mend its image is Clearview AI, see <https://www.clearview.ai/ukraine> accessed 1 May 2023.

[47] See on this Justinas Lingevicius, 'Military Artificial Intelligence as Power: Consideration for European Union Actorness' (2023) 25 Ethics and Information Technology 18.

[48] See Vincent Boulanin et al., 'Responsible Military Use of Artificial Intelligence: Can the European Union Lead the Way in Developing Best Practice?' (*SIPRI*, November 2020) <https://sipri.org/publications/2020/policy-reports/responsible-military-use-artificial-intelligence-can-european-union-lead-way-developing-best> accessed 13 August 2023.

[49] See e.g. in the Netherlands the ELSA Lab Defence <https://elsalabdefence.nl> accessed 13 August 2023.

2. Imperative Surveillance: The Law of Targeting as a Justificatory Rhetorical Framework for AI

Ostensibly, the new age of algorithmic warfare is to the benefit of everyone. Taking political and military decision-makers at their word, one might be forgiven for concluding that the advancement of AI technologies in military decision-support systems is almost exclusively motivated by the universal expectation that their widespread deployment will soon usher in a new era of completely sanitised warfare.[50] In reporting on Israel's recent technological gains, virtually no news outlet forgot to echo what IDF representatives have been repeating ad nauseam: that the algorithmically enabled targeting processes are ultimately being pursued only with the Palestinians' best interests in mind. In the Israeli armed forces' telling, the use of advanced AI will greatly enhance the precision of weapon systems, and thus minimise any unintended consequences of strikes against militants.[51] As one senior IDF official alleged, '[w]e always aim for low collateral damage. That is our assumption. Keeping that as a constant, and doing a lot more, means you *have* to be using advanced algorithms'.[52] According to the IDF Chief of Staff, it is thanks to such technological advantages that recent engagements with Palestinians in Gaza prior to October 2023 allegedly had 'the lowest combatant-to-civilian casualty ratio in the world'.[53]

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[50] In this, the AI narrative of course only further reinforces the already familiar trope in favour of unrestricted drone warfare against terrorist suspects, see only Daniel L Byman, 'Why Drones Work: The Case for Washington's Weapon of Choice' (*Brookings*, 30 November 1AD) <https://www.brookings.edu/articles/why-drones-work-the-case-for-washingtons-weapon-of-choice/> accessed 18 June 2023.

[51] Kalo (n 43).

[52] Frantzman (n 20) (emphasis added).

[53] Lappin (n 38); after the start of Israel's campaign against Hamas in Gaza in October 2023, several scholars suggested that the IDF to a large extent dispensed with all pretences of being guided by the principle of minimising civilian harm, see only Janina Dill, 'Law and Survival in Israel and Palestine' (*Just Security*, 26 October 2023) <https://www.justsecurity.org/89767/law-and-survival-in-israel-and-palestine/> accessed

That the deployment of machine learning algorithms in targeting systems will save many civilian lives is not an argument advanced exclusively by Israel. Quite the contrary, the claim has already assumed the status of received wisdom. Deeply impressed by the latest technological progress, the consensual outcome document of the 2023 high-level global Summit on Responsible Artificial Intelligence in the Military Domain (REAIM) explicitly recognises 'the potential of AI applications in the military domain for a wide variety of purposes, at the service of humanity, including AI applications to reduce the risk of harm to civilians and civilian objects in armed conflicts'.[54] Such optimistic official declarations are now regularly underwritten by emphatic academic engagement. Given the inescapable limitations of human cognitive capabilities and psychological flaws, one recent paper contends that *not* exploiting the potential of machine learning in warfare 'would be irresponsible and unethical'.[55] Indeed, on this view even the most contentious of such technologies, fully autonomous weapon systems, 'will eventually be able to use lethal force far more humanely than human soldiers ever have or ever will'.[56]

The rationale guiding such evaluations is not simply based on ethical positioning but directly flows from a particular framing of applicable legal

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26 October 2023. Instead, in the weeks after Hamas' massacres in Southern Israel it quickly became apparent that the existing AI-powered decision-support systems like "Gospel" and "Lavender" were appreciated primarily for their ability to vastly accelerate the production of new targets during the ongoing campaign rather than to increase precision for the benefit of civilian lives in Gaza, see Abraham (n 5); Yuval Abraham, '"A Mass Assassination Factory": Inside Israel's Calculated Bombing of Gaza' (*+972 Magazine*, 30 November 2023) <https://www.972mag.com/mass-assassination-factory-israel-calculated-bombing-gaza/> accessed 2 December 2023.

[54] REAIM 2023 Call to Action (16 February 2023), para. 2 <https://www.government.nl/documents/publications/2023/02/16/reaim-2023-call-to-action> accessed 8 August 2023.

[55] HW Meerveld and others, 'The Irresponsibility of Not Using AI in the Military' (2023) 25 Ethics and Information Technology 14.

[56] Kevin Jon Heller, 'The Concept of "The Human" in the Critique of Autonomous Weapons' (30 January 2023) <https://papers.ssrn.com/abstract=4342529> accessed 3 February 2023.

standards. The body of international humanitarian law mandates the protection of civilians in armed conflict to the greatest extent possible. If machine learning algorithms can ensure such outcomes, as more and more observers contend,[57] then for its proponents it follows that the widespread use of AI is not a matter of choice but is necessary for a state to comply with its legal duties.[58]

The set of legal obligations that provides this justificatory rhetorical framework can be found in Additional Protocol I to the Geneva Conventions (AP I),[59] as well as in corresponding customary international law. At its foundation lies the principle of distinction, set out in Article 48 AP I:

> In order to ensure respect for and protection of the civilian population and civilian objects, the Parties to the conflict shall at all times distinguish between the civilian population and combatants and between civilian objects and military objectives and accordingly shall direct their operations only against military objectives.

Accordingly, civilians may never be directly targeted unless and for such time as a civilian takes direct part in hostilities. The obligation to distinguish is complemented by the principle of proportionality, which prohibits attacks that are 'expected to cause incidental loss of civilian life, injury to civilians, damage to civilian objects, or a combination thereof, which would be excessive in relation to the concrete and direct military advantage anticipated', as stipulated in Article 51(5)(b) AP I.

The principle of distinction is further fleshed out by the third pivotal rule of IHL targeting law, the principle of precautions in attack. Article 57(1) AP I

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[57] See only ibid.

[58] For a detailed discussion of the IHL aspects in the context of AI and machine-learning see only Shivam Kumar Pandey and Anditya Narayan, 'Means and Methods of Warfare and International Humanitarian Law in the Age of Artificial Intelligence and Machine Learning' (2021) 5 International Journal of Legal Science and Innovation 160.

[59] Protocol Additional of 10 June 1977 to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (AP I), Article 51(5)(b).

provides that 'in the conduct of military operations, constant care shall be taken to spare the civilian population, civilians and civilian objects', thus setting up an 'obligation of conduct, i.e. a positive and continuous obligation aimed at risk mitigation and harm prevention and the fulfilment of which requires the exercise of due diligence'.[60] As the reference to the broad category of 'military operations' implies, the obligation should be interpreted as applying not only to 'attacks' but conduct by armed forces more generally.[61] For attacks specifically, Article 57(2)(a)(i) AP I obliges military commanders planning or deciding on an attack to do 'everything feasible to verify that the objectives to be attacked are neither civilians nor civilian objects and are not subject to special protection but are military objectives'. This provision is usually interpreted as mandating the collection of reliable intelligence as well as the conduct of surveillance and reconnaissance in the theatre of conflict to ensure that only legitimate targets are attacked.[62] The purpose of the rule is to spare civilians to the furthest extent possible.[63] A corresponding duty follows from the principle of proportionality: any reasonable calculation of possible harm to civilians requires a detailed and up-to-date picture of the target area regarding the presence of any legally protected persons or objects.[64] For the particular context of the practice of so-called 'targeted killings' carried out by the IDF in the Palestinian territories, in 2006 the High Court of Justice of Israel likewise clarified that

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[60] International Law Association Study Group on the Conduct of Hostilities in the 21st Century, 'The Conduct of Hostilities and International Humanitarian Law. Challenges of 21st Century Warfare' (2017) 93 International Legal Studies 322.

[61] Lubin (n 33), 10; Eliza Watt, 'The Principle of Constant Care, Prolonged Drone Surveillance and the Right to Privacy of Non-Combatants in Armed Conflicts' in Russell Buchan and Asaf Lubin (eds), *The Rights to Privacy and Data Protection in Times of Armed Conflict* (CCDCOE 2022), 169.

[62] Watt (n 61), 168; Asaf Lubin, 'The Reasonable Intelligence Agency' (2021) 47 The Yale Journal of International Law <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3805700> accessed 26 July 2023.

[63] Yves Sandoz, Christophe Swinarski and Bruno Zimmermann (eds), *Commentary on the Additional Protocols of 8 June 1977 to the Geneva Conventions of 12 August 1949* (1987) 680.

[64] Watt (n 61), 168.

'[i]nformation which has been most thoroughly verified is needed' when determining whether a civilian is actively taking part in hostilities and can thus be considered a legitimate target.[65]

While the obligation stemming from the principle of precautions does not require a hundred percent certainty before an attack may be carried out, the duty to verify targets by means of intelligence, surveillance and reconnaissance (ISR) is contingent on the technological capabilities and resources of the forces.[66] As put by Rosen, advanced equipment 'must be used if it is available, makes good military sense and will minimize civilian impact'.[67] To the extent that it is true that machine learning algorithms deployed in military assets – for example, facial recognition technologies – in fact 'significantly enhance a military commander's capacity to identify the enemy and comply with their humanitarian obligations',[68] it may be inferred that their use to the extent that is possible and feasible forms part of the obligation under Article 57(2)(a)(i) AP I. Even if this implication is considered too far-reaching, in any case the rules on targeting can be invoked to justify the deployment of such systems even if their primary objective is an increase in military efficiency and not in fact the protection of civilians.[69]

In turn, this alleged legal imperative to deploy algorithmic decision support systems necessarily entails the requirement to ramp up the collection of data. Since the foundational principle of machine learning is the detection of a

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[65] The Public Committee against Torture in Israel et al. v. The Government of Israel et al., HCJ 769/02, 14 December 2006, para. 40.

[66] Jean-François Quéguiner, 'Precautions under the Law Governing the Conduct of Hostilities' (2006) 88 International Review of the Red Cross 793, 797.

[67] Frederik Rosen, 'Extremely Stealthy and Incredibly Close: Drones, Control and Legal Responsibility' (2014) 19 Journal of Conflict & Security Law 113, 127.

[68] Leah West, 'Face Value: Precaution versus Privacy in Armed Conflict' in Russell Buchan and Asaf Lubin (eds), *The Rights to Privacy and Data Protection in Times of Armed Conflict* (CCDCOE 2022) 140.

[69] See the recent discussions surrounding the IDF's 'Lavender' system, Abraham (n 5).

target function that accurately describes a dataset so as to be applicable to new data, the likelihood of this to be the case rises with the volume of available data.[70] Despite the more recent experimentation with different approaches, so far it remains true that the only consistently and demonstrably reliable method to ensure that machine learning systems are validated against the widest possible degree of variance in data is to increase the size of the data sets on which they are trained and tested.[71] Critically, the reliability of predictive outputs does not simply improve with increasing the sheer amount of input data but heavily depends on the quality of the data that is used to train the model, which above all must be representative of the eventual operational environment.[72] In other words, a decision support algorithm for targeting recommendations that was trained on data from Afghanistan will be highly error-prone when deployed in Mali. If data on the particular context is non-existent, the related output will necessarily fail to produce meaningful predictions.[73] To avoid such a situation, militaries that consider relying on machine learning are incentivised to at all times 'preserv[e] all relevant data in useable form for future algorithms', as Deeks recommended a few years ago.[74] It follows that the more decision support tasks are handed over to machine learning algorithms, the more states can invoke the argument that the success of such operations, in the sense of both the meeting of military objectives and the sparing of civilian lives to discharge the legal obligations imposed by IHL, is directly contingent on the collection of contextually relevant, accurate, and high-quality data. And

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[70] Hildebrandt (n 24) 85.

[71] Arthur Holland Michel, 'Known Unknowns: Data Issues and Military Autonomous Systems' (United Nations Institute for Disarmament Research 2021), 27.

[72] Klonowska (n 21) 19.

[73] Avi Goldfarb and Jon R Lindsay, 'Prediction and Judgment: Why Artificial Intelligence Increases the Importance of Humans in War' (2022) 46 International Security 7, 19–20.

[74] Ashley S Deeks, 'Detaining by Algorithm' (*Humanitarian Law & Policy*, 25 March 2019) <https://blogs.icrc.org/law-and-policy/2019/03/25/detaining-by-algorithm/> accessed 17 July 2023.

for technical reasons, this can only be achieved through constant and pervasive multi-source surveillance of the population in the target area.[75]

3.   The Logic of Anomaly

The above-described prevalent framing of AI-based DSS enabling militaries to enhance the protection of civilians and thus to increase compliance with the core rules of IHL, however, obscures what is in fact one of the primary purposes of algorithmic security governance by means of pervasive surveillance. Prior to assigning a machine learning system with the task of verifying the identity of an object or person of interest in order to distinguish protected entities from military objectives, the object or person must have been discovered and identified – or *suspected* – as a potential target in the first place.[76] In a technical sense, different ways are conceivable for an algorithm to accomplish such a task. The 'Lavender' system deployed by the IDF during its campaign against Hamas in Gaza after 7 October 2023, for instance, works by finding markers in the input data that designate a person as a Hamas member based not on visual identifiers such as uniforms or the carrying of weapons but on generated ratings made up of '"hundreds and thousands" of features' detected in the data, for example 'being in a Whatsapp group with a known militant, changing cell phone every few months, and changing addresses frequently'.[77] Another, even more striking variety of AI-supported security governance is the use of machine learning algorithms that parse the masses of data collected through multi-source surveillance to engage in an operation that has come to be known as 'anomaly detection'. Amply utilised in other contexts, such as the uncovering of fraudulent bank transactions, anomaly detection is based on an analysis of frequencies, exploiting the fact that models can establish what is assumed to be a state (or

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[75] Henning Lahmann, 'The Future Digital Battlefield and Challenges for Humanitarian Protection: A Primer' (2022) 21.

[76] Klonowska (n 21), 18.

[77] Abraham (n 5).

pattern) of normality in a large dataset and then identify patterns that diverge from that state.[78]

As scholars have previously pointed out, attempting to algorithmically detect correlations between points in large sets of data that somehow stand out from what the algorithm has, through machine learning, determined to be the 'normal' state of things has become the principal means to discover suspicious persons or objects.[79] The idea is that once the algorithm has flagged an anomaly, this first suspicion can be analysed further,[80] which now usually implies not human intervention but the system itself seamlessly translating the anomaly into a suspicious pattern of behaviour that suggests a potential 'lawful target'.[81]

In the eyes of military and intelligence agencies, the genius of this method is that what makes a pattern stand out is inherently impossible to predetermine – the algorithm can detect anomalies that a human would never notice. Such deviations from the state (or pattern) of normality as described above may be as 'mundane and even absurd'[82] as 'the time or length of a phone call, an overnight stay, or rare use of a mobile device';[83] they may be some insignificant display of 'hostile or benign intent of individuals in a

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[78] Larson (n 23) 150–1. See in the context of the EU Passenger Name Record directive CJEU, Judgment of 21 June 2022, *Ligue des Droits Humains v. Conseil des Ministres*, C–817/19, EU:C:2022:491, at paras. 194–5.

[79] Claudia Aradau and Tobias Blanke, *Algorithmic Reason: The New Government of Self and Other* (Oxford University Press 2022) 71.

[80] Ashley S Deeks, 'Predicting Enemies' (2018) 104 Virginia Journal of International Law 1529, 1560.

[81] Nicola Perugini and Neve Gordon, 'Distinction and the Ethics of Violence: On the Legal Construction of Liminal Subjects and Spaces' (2017) 49 Antipode 1385, 1386; Geoff Gordon, Rebecca Mignot-Mahdavi and Dimitri Van Den Meerssche, 'The Critical Subject and the Subject of Critique in International Law and Technology' (2023) 117 AJIL Unbound 134, 135.

[82] Tasniem Anwar and Klaudia Klonowska, 'Co-Production of Terrorist Suspects: The Role of Law in Associating Security Assemblages' (2023) 15.

[83] Aradau and Blanke (n 79) 71.

crowded street' detected by an 'emotional prediction' algorithm,[84] perhaps by registering 'facial expressions, characteristics, involuntary gestures, and estimated heart rate' that somehow do not correspond with whatever is supposed to be normal in the system's model of the world.[85] The promise of this approach has long been recognised by Israeli security agencies in its suppression of violent Palestinian resistance.[86] As we have seen above, it was the detection of 'unusual activity' by young Palestinians on social media that allegedly allowed the Shin Bet to pre-empt the continuation of knife attacks carried out by lone perpetrators in 2015 by detaining a large number of suspects thus 'identified'.[87] The logic of anomaly was also at the heart of the algorithmic early warning systems as part of Israel's separation barrier with Gaza; obviously, a terrorist attack such as the one unfolding on the morning of 7 October 2023 was precisely the type of incident that the vast and pervasive surveillance architectures in and above Gaza were supposed to render virtually impossible. But as experts were quick to point out, there is such a thing as too much surveillance:[88] whether the algorithms did not pick up on any anomalies,[89] or whether the machine outputs were ignored or misinterpreted is not (yet) clear, though early media reports suggested that pervasive misogyny within the IDF was among the principal reasons why correctly identified clues, probably first flagged by algorithms parsing surveillance video footage, got stuck in the chain of command because the

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[84] Goldfarb and Lindsay (n 73) 37.

[85] Watt (n 61) 136.

[86] See e.g. David Siman-Tov, 'How Artificial Intelligence Is Transforming Israeli Intelligence Collection' (*The National Interest*, 28 April 2022) <https://nationalinterest.org/blog/techland-when-great-power-competition-meets-digital-world/how-artificial-intelligence> accessed 5 December 2022.

[87] Harel (n 34).

[88] Matt Burgess and Lily Hay Newman, 'Israel's Failure to Stop the Hamas Attack Shows the Danger of Too Much Surveillance' *Wired* <https://www.wired.com/story/israel-hamas-war-surveillance/> accessed 31 October 2023.

[89] See Sophia Goodfriend, 'Israel's High-Tech Surveillance Was Never Going to Bring Peace' (*Foreign Policy*, 30 October 2023) <https://foreignpolicy.com/2023/10/30/israel-palestine-gaza-hamas-war-idf-high-tech-surveillance/> accessed 31 October 2023.

women 'spotters' picking up those algorithmic outputs were not taken seriously.[90]

The algorithmic creation of potential targets on the basis of the constant mass collection of data through surveillance, either by way of identifying connections with known militants or through anomaly detection, is consistently framed as the necessary first step of distinction and precaution in targeting. The data practices of target detection, target identification, and target verification thus become inextricably linked. Yet, as pointed out by Shiri Krebs, what the foregoing makes clear is that rather than just describing the legal reality by strictly applying the core rules of targeting to the dataset, the algorithms in fact actively produce this reality to begin with.[91] In this way, the increasing deployment of machine learning algorithms serves to further Israel's narrative of the IDF as the 'most moral army in the world'[92] through the recourse to IHL, while it dictates pervasive surveillance practices that in turn produce more and more potentially 'lawful targets' that inevitably emerge from the masses of collected data.[93]

II. APPLYING THE PRIVACY LENS TO MILITARY DATA PRACTICES

The increasing deployment of machine learning algorithms in military applications has prompted a flurry of multi-disciplinary academic

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[90] Maya Lecker, 'On October 7, Sexism in Israel's Military Turned Lethal' *Haaretz* (Tel Aviv, 20 November 2023) <https://www.haaretz.com/israel-news/haaretz-today/2023-11-20/ty-article/.highlight/on-october-7-sexism-in-israels-military-turned-lethal/0000018b-ee5b-ddc3-afdb-fe5b25be0000> accessed 1 February 2024; Alice Cuddy, 'They Were Israel's "Eyes on the Border" – But Their Hamas Warnings Went Unheard' *BBC* (London, 15 January 2024) <https://www.bbc.com/news/world-middle-east-67958260> accessed 8 October 2024.

[91] Shiri Krebs, 'Drone-Cinema, Data Practices, and the Narrative of IHL' (2022) 82 Zeitschrift für ausländisches öffentliches Recht und Völkerrecht / Heidelberg Journal of International Law 309, 331.

[92] See James Eastwood, *Ethics as a Weapon of War: Militarism and Morality in Israel* (Cambridge University Press 2017).

[93] See also Gordon, Mignot-Mahdavi and Meerssche (n 81) 135.

engagement trying to grapple with the ramifications of this development. To date, the majority of scholars has been focused on the implications for the life and physical integrity of civilians present in theatres of armed conflict, attempting to solve the question of adherence to IHL targeting rules through elaborations on the concept of 'meaningful human control', both from a legal and an ethical perspective,[94] as well as questions of responsibility and accountability for the employment of such systems.[95] Only a few have turned their attention toward the large-scale data practices that sustain the

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[94] See only Berenice Boutin and Taylor Woodcock, 'Aspects of Realizing (Meaningful) Human Control: A Legal Perspective' in Robin Geiß and Henning Lahmann (eds), *Research Handbook on Warfare and Artificial Intelligence* (Edward Elgar 2024) 179; Tsvetelina van Benthem, 'Responsible Deployments of Militarised AI – The Power of Information to Prevent Unintended Engagements' (*Opinio Juris*, 2 April 2024) <https://opiniojuris.org/2024/04/02/symposium-on-military-ai-and-the-law-of-armed-conflict-responsible-deployments-of-militarised-ai-the-power-of-information-to-prevent-unintended-engagements/> accessed 4 July 2024; Georgia Hinds, 'A (Pre)Cautionary Note About Artificial Intelligence in Military Decision Making' (*Opinio Juris*, 4 April 2024) <https://opiniojuris.org/2024/04/04/symposium-on-military-ai-and-the-law-of-armed-conflict-a-precautionary-note-about-artificial-intelligence-in-military-decision-making/> accessed 4 July 2024; Ingvild Bode and Anna Nadibaidze, 'Human-Machine Interaction in the Military Domain and the Responsible AI Framework' (*Opinio Juris*, 4 April 2024) <https://opiniojuris.org/2024/04/04/symposium-on-military-ai-and-the-law-of-armed-conflict-human-machine-interaction-in-the-military-domain-and-the-responsible-ai-framework/> accessed 4 July 2024; Gary P Corn, 'De-Anthropomorphizing Artificial Intelligence – Grounding Notions of Accountability in Reality' (*Opinio Juris*, 5 April 2024) <https://opiniojuris.org/2024/04/05/symposium-on-military-ai-and-the-law-of-armed-conflict-de-anthropomorphizing-artificial-intelligence-grounding-notions-of-accountability-in-reality/> accessed 4 July 2024; Marta Bo and Jessica Dorsey, 'The "Need" for Speed – The Cost of Unregulated AI Decision-Support Systems to Civilians' (*Opinio Juris*, 4 April 2024) <https://opiniojuris.org/2024/04/04/symposium-on-military-ai-and-the-law-of-armed-conflict-the-need-for-speed-the-cost-of-unregulated-ai-decision-support-systems-to-civilians/> accessed 4 July 2024.

[95] See only Bérénice Boutin, 'State Responsibility in Relation to Military Applications of Artificial Intelligence' (2023) 36 Leiden Journal of International Law 133; Rebecca Crootof, 'Front- and Back-End Accountability for Military AI' (*Opinio Juris*, 2 April 2024) <https://opiniojuris.org/2024/04/02/symposium-on-military-ai-and-the-law-of-armed-conflict-front-and-back-end-accountability-for-military-ai/> accessed 4 July 2024.

algorithms employed for the military DSS themselves, as described in detail in the previous section. Those scholars have attempted to address the issue of entrenched surveillance to train and deploy machine learning systems by invoking principles from privacy and data protection frameworks, correctly pointing out that such questions remain insufficiently considered in the existing rules of IHL.[96] As these examinations are relevant for the larger issues explored in this article, this section briefly reproduces three salient scholarly interventions deploying this line of argumentation before concluding that these accounts fail to sufficiently capture the larger societal implications of the military data practices under study.

Departing from the premise that the drafters of the IHL frameworks were not in a position to anticipate the role that the collecting and processing of (personal) data would come to play in military operations, some authors have recently sought to find sites within the existing rules to anchor obligations to respect privacy and data protection principles. From this corpus of norms, the principle of constant care has emerged as the most probable candidate to provide the desired legal safeguards. Arguing that Article 57(1) AP I should be understood as governing all surveillance and other data collection activities carried out to support military operations, even if performed outside of the temporal and spatial limits of armed conflict,[97] Lubin identifies the rule as reflecting 'a primeval and elementary data protection rule',[98] in fact 'truly a data protection regime in disguise'.[99] His approach is largely pragmatic. Given that the body of IHL does not contain any specific rules

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[96] Watt (n 61) 159. Note in this context Rohan Talbot, 'Automating Occupation: International Humanitarian and Human Rights Law Implications of the Deployment of Facial Recognition Technologies in the Occupied Palestinian Territory' (2020) 102 International Review of the Red Cross 823, who analysed Israel's use of facial recognition technologies in the Palestinian territories under the law of belligerent occupation and applicable human rights instruments, concluding that the practice constitutes a violation of Palestinians' right to privacy.

[97] Lubin (n 33) 10.

[98] Ibid 8.

[99] Ibid 13.

to protect privacy, yet technological progress clearly calls for one, we only have Article 57 AP I as a reasonable normative lead to this effect.[100]

Further advocating for such a progressive interpretation of the duty of constant care, Eliza Watt claims that the concept of 'constant care' itself accounts for more than simply avoidance of physical harm to protected persons or objects. Instead, it extends to the protection of the rights of civilians against arbitrary interference during military operations generally, including their rights to privacy and data protection.[101] In practice, this amounts to an obligation for military commanders to observe 'fairness' by always weighing the need to gather intelligence for target verification against the obligation to respect the privacy of the civilians present in the theatre of conflict 'by imposing geographical and temporal limits on the surveillance and the amount of collected data'.[102] The author derives the legal considerations that should guide such balancing directly from data protection frameworks in civilian contexts, arguing for an application of the principles of legality, fairness, and transparency to data collection and processing practices.[103] As suggested by Gianclaudio Malgieri, compliance with the principle of fairness specifically involves not just observance of procedural safeguards but a substantial balancing of interests between the data controller and the data subject with the aim of mitigating unfair imbalances that lead to situations of 'vulnerability'.[104] To this effect, Watt understands fairness as dictating that personal data ought to be 'relevant' and 'not excessive' in relation to the purpose for which it is processed.[105]

Finally, focusing on the more specific obligation to take precautions in attack pursuant to Article 57(2)(a)(i) AP I in the context of facial recognition

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[100] Ibid 16.

[101] Watt (n 61) 175–7.

[102] Ibid 176.

[103] See e.g. Article 5(1)(a) GDPR.

[104] Gianclaudio Malgieri, 'The Concept of Fairness in the GDPR: A Linguistic and Contextual Interpretation' Proceedings of FAT* '20 (2020).

[105] Watt (n 61) 177–8.

technologies, Leah West seeks to develop practical guidance for military commanders to incorporate measures and processes that integrate privacy concerns into their operational protocols when using such equipment for target identification and verification.[106] She invokes the standard commentary to Additional Protocol I to support her claim that the rule's 'everything feasible' standard does indeed not imply that a commander must make use of advanced technology 'in all cases' but instead observe 'common sense and good faith' in doing so.[107] This effectively implies that an algorithmic system should be deployed only to the extent that it in fact assists in clarifying existing uncertainty as to the potential target's legal status while considering 'any potential risks associated with its deployment', including any privacy implications for present civilians.[108] Consequently, whenever the analysis suggests that less intrusive means suffice to verify the target in a way that satisfies the requirements of the precautions in attack obligation, it follows from the principles of necessity and proportionality in respect of the right to privacy that these means must be used. According to West, this will particularly apply to periods of less intense conflict when military commanders are under decreased pressure and time constraints.[109]

It makes sense to scrutinise existing rules in the law of armed conflict to uncover at least some preliminary legal instruments for limiting the unconstrained data practices that militaries and intelligence agencies currently engage in. However, ultimately the existing rules on targeting cannot provide a satisfying solution. For one, from a doctrinal perspective, rooting data protection obligations in the principle of constant care stands on shaky ground. Even if we accept the more expansive interpretation of the rule's protective scope, the problem remains that for whatever else Article 57 AP I might be invoked, its primary purpose remains to support and bolster

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[106] West (n 68), 137–8; in civilian uses of AI, such constructions are usually discussed under the concept of "privacy by design".

[107] Ibid 141–2; referring to Sandoz, Swinarski and Zimmermann (n 63) 680.

[108] West (n 68) 142.

[109] Ibid 150–1.

the foundational principle of distinction so that civilian casualties and damage to civilian objects be reduced to a minimum. Any further values that may reasonably be read into the provision's scope of protection, such as privacy, must come second in the case of a conflict with the overarching aim of protecting the physical integrity of civilians. The rule may indeed be open to encompass values other than life and limb, yet it is not obvious how 'good faith' considerations lead to an outcome that de-prioritises the avoidance of physical harm. If the purpose of the processing of data is the disposal of uncertainties through target verification, it is unclear how the data practices necessary to achieve that could ever fail to meet the 'fairness' requirement by being 'excessive' or 'irrelevant'. It is the principles of machine learning that seem to call for surveillance activities that cannot simply be switched on and off at will – for AI-based DSS to work reliably at all, their models must be trained on context-specific, timely, and by default large datasets. According to this rationale, the alternative would be the deployment of poorly adjusted systems that risk ill-considered targeting decisions and consequently rising civilian casualties, the very outcome the regime of Article 57 AP I was created to prevent. If that is the case, however, it is doubtful whether privacy considerations dictating a reduction of data collection practices within the framework of existing IHL could ever prevail.

To be sure, with a view to the Palestinian situation it must be conceded that human rights frameworks, with their unambiguous inclusion of the right to privacy,[110] have an important role to play due to their general applicability in situations of a state's effective control over territory, which is at least the case with regard to illegally annexed East Jerusalem and the prolonged belligerent occupation of the West Bank, which arguably also continues in Gaza.[111] Nevertheless, most of Israel's surveillance practices are carried out with a more or less direct nexus to armed engagements with militant

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[110] See only Article 17(1) ICCPR.

[111] Talbot (n 96); Watt (n 61) 170; see on this question *Legal Consequences Arising from the Policies and Practices of Israel in the Occupied Palestinian Territory, Including East Jerusalem*, Advisory Opinion of 19 July 2024, at paras. 86–94.

resistance in the territories, which are primarily governed by the principles of the law of armed conflict.

Either way, attempts to tackle excessive data practices and surveillance for the purpose of algorithmic warfare by way of applying principles of privacy and data protection ultimately fall short of accounting for the deeper harms such practices bring about. Even if one correctly understands privacy as the fundamental right underpinning political freedoms such as free expression, assembly, and association, and thus recognises its realisation as the condition of possibility of these freedoms' actualisation,[112] privacy as the principal lens through which to appraise algorithmic warfare fails to capture the essence of the relationship between these data practices and the subjects' political agency. To substantiate this critique, the following section explores this relationship in more detail.

III. MACHINE RATIONALITIES AND POLITICAL ACTION

Whereas the previous section interrogated attempts to capture the wider harms caused by large-scale data practices by militaries for the purpose of training AI systems, this section turns toward implications for collective political rights. The de-politicising effects of both algorithmic security[113] and of drone warfare have already been the subject of scholarly scrutiny.[114] To further deepen these lines of inquiry, the following deliberations reappraise the consequences of algorithmic rationalities in the security realm, in the specific case of Palestine but also more generally, through an

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[112] Talbot (n 96) 845.

[113] Louise Amoore, *Cloud Ethics: Algorithms and the Attributes of Ourselves and Others* (Duke University Press 2020).

[114] See only Alex Edney-Browne, 'The Psychosocial Effects of Drone Violence: Social Isolation, Self-Objectification, and Depoliticization' (2019) 40 Political Psychology 1341; International Human Rights and Conflict Resolution Clinic, Stanford Law School and Global Justice Clinic, NYU School of Law, 'Living Under Drones: Death, Injury, and Trauma to Civilians from US Drone Practices in Pakistan' (2012) <https://chrgj.org/wp-content/uploads/2016/09/Living-Under-Drones.pdf>.

application of Rosa Luxemburg's and Hannah Arendt's concepts of spontaneity. To do so, I first anchor the capability to spontaneous political action in the collective right to self-determination, which is clarified and differentiated in its procedural alongside its substantive normative dimension. Before finally explaining how systems of algorithmic warfare prevent the collective formation of political will in the exercise of self-determination in Section 4, it is then first necessary to inquire the role of spontaneity for political agency in the thinking of both Luxemburg and Arendt.

1. The Principle of Self-Determination as a Right to Collective Political Action

That the Palestinian people are the legitimate bearer of the right to self-determination within the Palestinian territories is not in dispute.[115] What is less straightforward is the precise content of such a right. Traditional international legal doctrine has focused on material outcomes, which can partly be explained by looking at the right's historical position within the nexus of non-self-governing territories and post–World War II processes of decolonialisation under the auspices of the United Nations.

According to this framing, self-determination is achieved once a certain legal status has been realised, be it autonomy within the structures of an existing state as an expression of 'internal' self-determination, on the one hand, or independence – through the termination of a colonial relationship to a metropolitan state or secession from a larger state – as the quintessential form of 'external' self-determination, on the other. Under existing international law, the precise manifestation of the right that the self-determination unit is entitled to depends on the specifics of the situation. In the context of

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[115] See only *Legal Consequences Arising from the Policies and Practices of Israel in the Occupied Palestinian Territory, Including East Jerusalem*, Advisory Opinion of 19 July 2024, at para. 230; *Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory*, Advisory Opinion of 9 July 2004, ICJ Rep 2004, 136, at para. 118.

decolonisation and in other situations of foreign occupation,[116] the people in question have an enforceable right to form their own state. Whether there is a right to 'external' self-determination in the form of secession outside of this context remains contentious and is in any case not settled law.[117] Within this approach, in regard to non-self-governing territories, such a result was mostly for an outside entity to bring about. Accordingly, Article 73(3) UN Charter obliged colonial powers to seek to 'develop self-government' and 'to assist [the people in non-self-governing territories] in the progressive development of their free political institutions', while Article 76(b) UN Charter urged administering authorities within the trusteeship system to

> promote the political, economic, social, and educational advancement of the inhabitants of the trust territories, and their progressive development towards self-government or independence as may be appropriate to the particular circumstances of each territory and its peoples.

This framing had its precursor in Article 22 of the Covenant of the League of Nations,[118] which even more starkly put responsibility on the 'advanced nations' to promote the 'well-being and development' of 'peoples not yet able to stand by themselves under the strenuous conditions of the modern world'. As late as 2004, the International Court of Justice (ICJ) approvingly cited this provision in its *Wall* Advisory Opinion as implying that the 'ultimate objective' of the trusteeship system was the self-determination of the peoples concerned.[119]

The highly paternalistic notion of self-determination as expressed in these rules prompted some states in the Third Committee of the UN General Assembly to speak out against the inclusion of a provision on self-determination in the two principal UN human rights instruments, the

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[116] *Policies and Practices of Israel in the Occupied Palestinian Territory* (n 115), para. 233.

[117] Daniel Thürer and Thomas Burri, 'Secession', in Rüdiger Wolfrum and Anne Peters (eds.) *Max Planck Encyclopedia of Public International Law* (Oxford University Press 2009).

[118] Covenant of the League of Nations, (adopted 28 June 1919) 108 LNTS 188.

[119] Ibid, at para. 88, with reference to the previous decisions *South West Africa*, *Western Sahara*, and *East Timor*.

International Covenant on Civil and Political Rights (ICCPR)[120] and the International Covenant on Economic, Social and Cultural Rights (ICESCR).[121] The argument was that while Articles 1 and 55 UN Charter clarified that the self–determination of peoples formed the basis of friendly relations among states, the *granting* of independence and self–government 'could only be achieved progressively and in line with the development of the peoples of these Territories and their readiness to govern themselves'.[122] And despite having found its positive manifestation as a (collective) human right in Article 1 common to the ICCPR and ICESCR, its third paragraph is still read as directing all states to 'take positive action to facilitate realization of and respect for the right of peoples to self–determination'.[123]

In contrast to this patronising account of self–determination, which ultimately implies that 'peoples do not actually possess a veritable right to self–determination' but are merely 'beneficiaries' of the right conferred by the two Covenants to the state parties,[124] stands an understanding that takes seriously the principle as reflecting and actualising 'the wishes of the people concerned'.[125] Among international legal instruments, this is expressed most succinctly in the African Charter on Human and Peoples' Rights, whose Article 20(2) unambiguously sets out that '[c]olonized or oppressed peoples shall have the right to *free themselves* from the bonds of domination *by resorting to any means* recognized by the international community'.[126]

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[120] International Covenant on Civil and Political Rights (adopted 16 December 1966, entered into force 23 March 1976) 999 UNTS 171.

[121] International Covenant on Economic, Social and Cultural Rights (adopted 16 December 1966, entered into force 1 March 1976) 993 UNTS 3.

[122] UN Doc. A/3077 (1955), at para. 30.

[123] Office of the High Commissioner for Human Rights, CCPR General Comment No. 12: Article 1 (Right to Self-determination) – The Right to Self-determination of Peoples, 13 March 1984, at para. 6.

[124] See, not supporting this view, Antonio Cassese, *Self-Determination of Peoples: A Legal Reappraisal* (Cambridge University Press 1995) 143.

[125] Ibid 242.

[126] Emphases added.

This understanding refers back to the concept's intellectual roots in Enlightenment thought; in this tradition, it was originally devised as meaning principally that 'the form of government in a state should be determined by the collective will of the people who are subject to it'.[127] Such notion, in turn, necessarily implies that the very process of forming authority and political will that enables the people to express their choice freely forms an integral part of the right itself.[128] This has been – in the very different context of external interference in elections – noted by Jens David Ohlin, who contends that true self-determination cannot be sustained without protecting the 'deliberations of the public' that precede electoral processes as the periodic actualisation of the right in democratic societies.[129] In other words, rather than merely stipulating a claim to a material-legal outcome in terms of political status, the right to self-determination would be incomplete, and indeed contradictory, without a corresponding procedural component that provides the right to form the political will that is a precondition for achieving the desired outcome in the first place.

Applying this reading to the situation in Palestine, it further bears mentioning that according to a correct interpretation of the law of occupation as a transitory and exceptional regime, the collective right to self–determination of the population of an occupied territory is implied within the ambit of Article 43 of the 1899 Hague Regulations.[130] The provision bestows on the occupying power the authority to 're-establish and insure

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[127] Tom Sparks, *Self-Determination in the International Legal System: Whose Claim, to What Right?* (Hart Publishing 2023) 20–1.

[128] See Nicholas Tsagourias, 'Electoral Cyber Interference, Self-Determination and the Principle of Non-Intervention in Cyberspace' (17 August 2019) 14 <https://papers.ssrn.com/abstract=3438567> accessed 8 July 2023.

[129] Jens David Ohlin, *Election Interference: International Law and the Future of Democracy* (Cambridge University Press 2020) 100–2 <https://www.cambridge.org/core/books/election-interference/62027877A63505C5B6D93F485C5208B5> accessed 12 June 2023.

[130] Eliav Lieblich and Eyal Benvenisti, *Occupation in International Law* (Oxford University Press 2022) 85.

public order and safety' while maintaining respect for sovereignty that remains vested in the occupied people.[131] It thus follows from the above that the law of occupation itself imposes on Israel, expressed in Hohfeldian terms,[132] a correlative duty to tolerate or even facilitate political will-formation among the Palestinian people as the holders of the right[133] (unless, that is, it directly interferes with public order and safety in the territory under occupation).[134]

Again, while there is no denying that the Palestinian people have an enforceable claim to a concrete material-legal outcome – political, 'external' self-determination in the guise of their own, fully formed state[135] – that claim must encompass the right to realise a set of procedures that together constitute the conditions of possibility of achieving such outcome through political action for the right itself to be at all meaningful. This reading acknowledges what should be self-evident not least with recourse to the concept's historical roots as a 'polity-based' claim, to borrow Sparks' terminology:[136] that self-determination is not something to be realised primarily through outside forces and processes but by the people as the claim's bearers themselves. More precisely, self-determination is primarily a procedural right, or it is nothing; as a procedural right, it is directed at enabling collective political agency and will-formation. As such, it is neither congruent with nor exhausted by the individual political rights of freedom of information, expression, assembly, association, and the rights to vote and

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[131] Orna Ben-Naftali, 'Belligerent Occupation: A Plea for the Establishment of an International Supervisory Mechanism' in The Late Antonio Cassese (ed), *Realizing Utopia: The Future of International Law* (Oxford University Press 2012) 543.

[132] See Wesley Newcomb Hohfeld, 'Some Fundamental Legal Conceptions as Applied in Judicial Reasoning' (1913) 23 The Yale Law Journal 16.

[133] Cassese (n 124) 143.

[134] As the ICJ observed in its *Wall* advisory opinion (n 115), although Israel is not party to the Fourth Hague Convention of 1907, to which the Hague Regulations are annexed, the provisions are reflective of customary international law, see at para. 89.

[135] Wilde (n 14).

[136] Sparks (n 127) 19.

to be elected, although it is in the rights' nature that infringement will frequently occur concurrently. As opposed to these individual rights, the principle of self-determination captures and protects the distinctive and critical *collective* dimension of political struggle. This understanding, finally, raises the question of what conditions must exist for a people to be able to actualise that political will-formation, which the next section investigates further.

2. *Spontaneity and Collective Political Agency*

> All the above great and partial mass strikes and general strikes (…) originated for the most part spontaneously, in every case from specific local accidental causes, without plan and undesignedly, and grew with elemental power into great movements (…).[137]

If the exercise of self-determination is contingent on a collective practice to form a directed political will, then what conditions must be present for the latter to become possible? One answer, as will emerge from the following, lies in a nuanced understanding of the concept of spontaneity as developed in the writings of Rosa Luxemburg and Hannah Arendt.

In her analysis of the struggles of workers' movements at the beginning of the twentieth century, Rosa Luxemburg put great and persistent emphasis on the significance of spontaneous action to bring about true political change.[138] As she wrote in her famous 1906 essay *The Mass Strike, the Political Party, and the Trade Unions*, which assessed the course of the Russian

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[137] Rosa Luxemburg, 'The Mass Strike, the Political Party, and the Trade Unions' in Helen Scott (ed), *The Essential Rosa Luxemburg* (Haymarket 2008) 142.

[138] In this context, it bears noting at the outset that Luxemburg was famously opposed to the idea of 'national self-determination' as she conceived it as an obstacle to the universal cause of the working class, which could be achieved not within the boundaries of a state but only in an international movement, see Rosa Luxemburg, 'The National Question' in Le Blanc and Helen Scott (eds), *Socialism or Barbarism: Selected Writings by Rosa Luxemburg* (Pluto Press 2010). As will become clear, however, this does not prevent us from fruitfully using her insights on the role of spontaneity for political agency.

Revolution that had begun in January of the previous year and the contrast between (organised) political strikes and (spontaneous) mass strike as the principal instruments of revolutionary struggle, 'in the mass strikes in Russia the element of spontaneity plays such a predominant part not because the Russian proletariat is "uneducated", but because revolutions do not allow anyone to play the schoolmaster with them'.[139] Luxemburg's insistence on the substantial importance of the spontaneity of the masses has traditionally been interpreted as her implying that it constituted the pivotal factor for the eventual success of revolution at the expense of considered direction and leadership as embodied by the social democratic party and the labour organisations.[140] In this, she found fierce opposition not only among the socialist and communist leaders in Germany and elsewhere,[141] but also from theorists such as Antonio Gramsci who, while not dismissing the utility of spontaneity entirely, argued that it needed to be combined with 'conscious leadership' and 'discipline' to become 'the real political action of the subaltern classes, insofar as it is mass politics and not a mere adventure by groups that appeal to the masses'.[142] Without such coordination, he claimed, the political struggle would remain ineffective and even regressive.[143]

Several writers, however, have since noted that this is not the only, and indeed not the most persuasive, way to conceive Luxemburg's understanding of spontaneity. What she had in mind instead was the 'capacity for producing change' that spontaneous political action

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[139] Luxemburg, 'The Mass Strike, the Political Party, and the Trade Unions' (n 137) 148.

[140] See Ottokar Luban, 'Rosa Luxemburg's Concept of Spontaneity and Creativity in Proletarian Mass Movements – Theory and Practice' (2019) 9 International Critical Thought 511, 512.

[141] See Sidonia Blättler and Irene M Marti, 'Rosa Luxemburg and Hannah Arendt: Against the Destruction of Political Spheres of Freedom' (2005) 20 Hypatia 88, 90–2.

[142] Antonio Gramsci, *Prison Notebooks, Vol. II, Notebook 3* (Joseph A Buttigieg ed, 1996) §48.

[143] Marcus E Green, 'Gramsci and Subaltern Struggles Today: Spontaneity, Political Organization, and Occupy Wall Street' in Mark McNally (ed), *Antonio Gramsci* (Palgrave 2015) 156.

generates.[144] Rather than focusing on concrete outcomes, Luxemburg emphasised the 'creative spirit'[145] of such activity that first makes visible[146] and produces critical consciousness of the people's objective conditions,[147] as 'the stormy gesture of the political struggle causes [them] to feel with unexpected intensity the weight and the pressure of [their] economic struggle'.[148] Consequently, spontaneous action intensifies 'the inner urge of the workers to better their position, and their desire to struggle',[149] and thus acts as a catalyst that engenders the collective conditions that must exist to *initiate* a transformative politics. Spontaneous mass action is thus not about tangible practical 'success', but the experience and knowledge gained about the political situation and the next steps in the sense of a 'self-enlightenment' of the people without which a struggle moving toward emancipation remains impossible.[150] As put by Paulina Tambakaki, with its inherent connection to *initiative*, spontaneity makes an 'opening to change' by creating and honing a 'capacity for resistance'.[151]

Expanding upon Luxemburg's considerations, whose work she admired and had studied intensively, Hannah Arendt further advanced our understanding of the pivotal role that spontaneity plays in political affairs.[152] For Arendt,

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[144] Paulina Tambakaki, 'Why Spontaneity Matters: Rosa Luxemburg and Democracies of Grief' (2021) 47 Philosophy & Social Criticism 83, 83–4.

[145] Luban (n 140) 515.

[146] Tambakaki (n 144) 92.

[147] Alex Levant, 'Rethinking Spontaneity Beyond Classical Marxism: Re-Reading Luxemburg through Benjamin, Gramsci and Thompson' (2012) 40 Critique 367, 371–2.

[148] Luxemburg, 'The Mass Strike, the Political Party, and the Trade Unions' (n 137) 146.

[149] Ibid 144.

[150] Blättler and Marti (n 141) 91.

[151] Tambakaki (n 144) 98–9.

[152] Maria Tamboukou, 'Imagining and Living the Revolution: An Arendtian Reading of Rosa Luxemburg's Letters and Writings' (2014) 106 Feminist Review 27, 32; Blättler and Marti (n 132) 90. See also Arendt's review of J.P. Nettl's biography of Luxemburg, Hannah Arendt, 'A Heroine of Revolution' [1966] *New York Review of Books* <https://www.nybooks.com/articles/1966/10/06/a-heroine-of-revolution/> accessed 6 August 2023.

political freedom as such can only be actualised through *action*, the highest form of human activity within the hierarchy of the *vita activa*, which she distinguishes from the two lower activities *labour* and *work*. Whereas labour only serves the purpose of sustaining a person's biological functions through eating, drinking, and other such activities,[153] the notion of work describes the fabrication of objects, which above all involves imposing a preconceived model upon the world and using the physical world as material.[154]

Action, in contrast, 'is not forced upon us by necessity, like labor, and it is not prompted by utility, like work'.[155] It is the only 'truly political'[156] of the human activities and implies both *initiating* something new that interrupts the course of events and *interaction* as it occurs in the public sphere of politics.[157] When people act 'in concert', they engender power;[158] in Jürgen Habermas's reading of Arendt, 'the fundamental phenomenon of power is (...) the formation of a *common* will in a communication directed to reaching agreement'.[159] Such communicative power of the people, however, can only be sustained for the 'fleeting moment of action',[160] vanishing 'the moment [the people] disperse'.[161] With its capacity to initiate the unexpected and

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[153] Hannah Arendt, *The Human Condition (HC)* (2nd edition, The University of Chicago Press 1958) 79 ff.; see on this further Paul Voice, 'Labour, Work and Action' in Patrick Hayden (ed), *Hannah Arendt: Key Concepts* (Routledge 2014) 36.

[154] Arendt, HC (n 153) 140; see on Arendt's conception of "work" further Pritika Nehra, 'Judging Work: The Concept of "Work" in Hannah Arendt's "The Human Condition"' in Dominika Polkowska (ed), *The Value of Work in Contemporary Society* (Brill 2014).

[155] Arendt, HC (n 153) 177.

[156] Marieke Borren, 'Plural Agency, Political Power, and Spontaneity' in Christopher Erhard and Tobias Keiling (eds), *The Routledge Handbook of Phenomenology of Agency* (Routledge 2020) 164.

[157] Ibid 165.

[158] Hannah Arendt, *On Violence (OV)* (Harcourt Brace Jovanovich 1970) 44.

[159] Jürgen Habermas, 'Hannah Arendt's Communication Concept of Power' (1977) 44 Social Research 3, 4.

[160] Arendt, HC (n 153) 201.

[161] Ibid 200.

incalculable,[162] action is consequently also the only human activity that is fully defined by spontaneity. Spontaneity, for Arendt, is 'a man's power to begin something new out of his resources, something that cannot be explained on the basis of reactions to environment and events'.[163] Through its spontaneous character, action is intrinsically creative, contingent, unpredictable, and 'boundless' – as opposed to work, which is always directed at producing a certain material outcome – not least because action takes place in 'an already existing web of human relationships, with its innumerable, conflicting wills and intentions'.[164] While the human capacity to spontaneous action itself is conceived as pre-political, Arendt insisted that 'all political freedom would forfeit its best and deepest meaning without this freedom of spontaneity'.[165] In other words, political freedom deprived of spontaneity is effectively meaningless.[166]

Both Luxemburg and Arendt understood the significance of spontaneity for a truly emancipatory politics through collective action that fosters the creative potential and generates the political will that is necessary to take the initiative.[167] It is only through spontaneous activity that individuals can relate themselves to the world[168] and consequently, as a collective, bring about political change.[169] If the initiative to such political action prevails and sparks a catalysing event, the people can be said to exercise a genuinely self-determined politics even if the action fails to succeed, as insinuated in Arendt's emphatic *Reflections on the Hungarian Revolution*:

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[162] Hannah Arendt, *The Origins of Totalitarianism (OT)* (Penguin Classics 1951) 598.

[163] Ibid 596; in this, spontaneity is intimately related to Arendt's concept of *natality*; see Hildebrandt (n 24) 89.

[164] Arendt, HC (n 153) 183–4; 190–1.

[165] Hannah Arendt, *The Promise of Politics* (2005) 127–8.

[166] Katarzyna Eliasz, 'The Structure of the Concept of Political Freedom in Hannah Arendt's Philosophy' (2019) 10 Avant 29, 33.

[167] See Blättler and Marti (n 141) 94.

[168] Erich Fromm, *Escape from Freedom* (Holt Paperbacks 1941) 261.

[169] Suzanne Jacobitti, 'Hannah Arendt and the Will' (1988) 16 Political Theory 53, 65.

> If there was ever such a thing as Rosa Luxemburg's "spontaneous revolution" – the sudden uprising of an oppressed people for the sake of freedom and hardly anything else, without the demoralizing chaos of military defeat preceding it, without coup d'état techniques, without a closely knit apparatus of organizers and conspirators, without the undermining propaganda of a revolutionary party, something, that is, which everybody, conservatives and liberals, radicals and revolutionists, had discarded as a noble dream – then we had the privilege to witness it.[170]

As Heba Raouf Ezzat and Artemy Magun have observed, more recent upheavals such as the initial phase of the Arab Spring in Egypt and Tunisia in 2011 or the Maidan Revolution in Ukraine in 2014 may be taken as further examples of catalysing events that demonstrated the merit of Arendt's theory, demonstrating how '[s]pontaneity can create windows of political opportunities'.[171] At the same time, Arendt's observation also explains why the terrorist attacks by Hamas on 7 October 2023, contrary to some early interpretations that likened them to a 'pogrom',[172] cannot be conceived as a 'spontaneous' political uprising – unlike, arguably, the First Intifada that began in 1987.[173] The operation was launched after years of meticulous

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[170] Hannah Arendt, 'Totalitarian Imperialism: Reflections on the Hungarian Revolution' (1958) 20 The Journal of Politics 5, 8.

[171] Heba Raouf Ezzat, 'Palimpsests of Civicness: Spontaneity and the Egyptian Uprising/Cairo 2011' (2022) 18 Journal of Civil Society 239, 256; Artemy Magun, 'Spontaneity and Revolution' (2017) 116 The South Atlantic Quarterly 815, 822–3. However, Magun, 828–9, claims that in such situations, spontaneity is difficult to prove and thus ultimately "in the eye of the beholder".

[172] Jonathan Dekel-Chen, 'Does the Hamas Massacre of October 7 Echo the Holocaust?' *Haaretz* (Tel Aviv, 30 January 2024) <https://www.haaretz.com/opinion/2024-01-30/ty-article-opinion/.premium/does-the-hamas-massacre-of-october-7-echo-the-holocaust/0000018d-5abf-d997-adff-dffffbc90000> accessed 31 January 2024.

[173] Ibrahim Al-Marashi, 'What the World Can Learn from the History of Hamas' (*TIME*, 17 October 2023) <https://time.com/6324221/hamas-origins-history/> accessed 31 January 2024.

planning.[174] Relatedly, to contend that the atrocities were somehow the inevitable outcome of the suppression of any other type of political expression by the citizens of Gaza is equally insufficiently nuanced an explanation, if only as it fails to account for the guiding ideology of Hamas and the other involved militant groups, an ideology that by itself – aside from calling for the destruction of Israel – has set up political structures in Gaza that systematically deny the exercise of political rights by anyone other than the organisation itself.[175]

The work of Luxemburg and Arendt reveals the capacity to spontaneous initiative as the condition of possibility to enact an emancipatory politics, which is intrinsically linked to the collective exercise of the right to self-determination. In Luxemburg's words, for a people to form the political will to determine its own political future, it must be able to creatively shape 'the forms that will carry the revolutionary movements to a successful outcome'[176] without preconceived external direction, in a voluntary, impromptu, and not priorly predictable manner. Spontaneity is, as the essential expression of political freedom,[177] diametrically opposed to, as Erich Fromm put it, the 'activity of the automaton, which is the uncritical adoption of patterns suggested from the outside'.[178] The next section investigates what happens when the postulates of the 'automaton' are imposed on spontaneous political action by machine learning algorithms.

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[174] Sophia Goodfriend, 'Israel's High-Tech Surveillance Was Never Going to Bring Peace' (*Foreign Policy*, 30 October 2023) <https://foreignpolicy.com/2023/10/30/israel-palestine-gaza-hamas-war-idf-high-tech-surveillance/> accessed 31 October 2023.

[175] See: Shaul Bartal, 'Ḥamās: The Islamic Resistance Movement' in Muhammad Afzal Upal and Carole M Cusack (eds), *Handbook of Islamic Sects and Movements* (Brill 2021) <https://www.jstor.org.ezproxy.leidenuniv.nl:2048/stable/10.1163/j.ctv1v7zbv8.23> accessed 1 February 2024.

[176] Rosa Luxemburg, 'The Junius Pamphlet: The Crisis in German Social Democracy' in Peter Hudis and Kevin B Anderson (eds), *The Rosa Luxemburg Reader* (Monthly Review Press 2004) 329.

[177] Arendt, *The Promise of Politics* (n 165) 127.

[178] Fromm (n 168) 257.

IV. Freezing the Past

Having established the critical function of spontaneous action as a precondition to form the will necessary for the exercise of a self-determined emancipatory politics, the question about the nature and consequence of the relationship between such behaviour and the inner workings of machine learning algorithms under conditions of perpetual surveillance remains to be answered. The point that the increasing use of algorithmic surveillance negatively impacts the ways in which politics is performed and actualised in the public sphere has been made before.[179] The argument I want to advance here is that this effect is a direct and inevitable consequence of how spontaneity, as conceived by Luxemburg and Arendt, interacts with machine learning algorithms in the security context.

Although 'the outputs of predictive technologies are often perceived as objective, complete, and neutral',[180] and indeed increasingly as omnipotent and superior to human cognitive faculties,[181] all evidence suggests that such trust in their capabilities is misguided. For one, despite recent advances with large language models that some take as seeming to suggest otherwise, even the latest generations of machine learning algorithms continue to lack any sense of contextual understanding[182] or the faculty of common sense (abductive) reasoning.[183] Expectations of imminent breakthroughs toward

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[179] See: Amoore (n 113). In respect to facial recognition technologies in Palestine see Talbot (n 96). For very instructive qualitative research on this issue see most recently Daragh Murray and others, 'The Chilling Effects of Surveillance and Human Rights: Insights from Qualitative Research in Uganda and Zimbabwe' [2023] Journal of Human Rights Practice 1.

[180] Krebs (n 22) 201.

[181] Katja Grace and others, 'Viewpoint: When Will AI Exceed Human Performance? Evidence from AI Experts' (2018) 62 Journal of Artificial Intelligence Research 729.

[182] Klonowska (n 21) 18; Larson (n 23) 130, 139.

[183] Gaël Gendron and others, 'Large Language Models Are Not Abstract Reasoners' (arXiv, 31 May 2023) <http://arxiv.org/abs/2305.19555> accessed 23 July 2023; Xiang Lorraine Li and others, 'A Systematic Investigation of Commonsense Knowledge in Large Language Models'

'artificial general intelligence' (AGI)[184] or that at least take as a given that 'autonomous technology is far more likely to improve than human decision-making'[185] are frequently based on category errors,[186] whereas any actual progress is far off.[187]

Because machine learning is based on the principles of statistical analysis and inductive reasoning, the lack of contextual 'world knowledge' means that

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(arXiv, 31 October 2022) <http://arxiv.org/abs/2111.00607> accessed 23 July 2023. For an earlier argument that it is possible to provide computer systems with abductive reasoning capabilities see John R Josephson and Susan G Josephson (eds), *Abductive Inference: Computation, Philosophy, Technology* (Cambridge University Press 1994).

[184] The concept of AGI is generally understood as describing software at the same level as or beyond human-like intelligence, see Reece Rogers, 'What's AGI, and Why Are AI Experts Skeptical?' (*Wired*, 20 April 2023) <https://www.wired.com/story/what-is-artificial-general-intelligence-agi-explained/>.

[185] Heller (n 56) 67. Pointing to inherent limitations of human capacities to contrast them with machine abilities, as Heller does, is of no avail insofar as time and again it has been demonstrated that reliance on "AI" does not compensate for but exacerbates human cognitive insufficiencies.

[186] See: Arjun Ramani and Zhengdong Wang, 'Why Transformative Artificial Intelligence Is Really, Really Hard to Achieve' (*The Gradient*, 26 June 2023) <https://thegradient.pub/why-transformative-artificial-intelligence-is-really-really-hard-to-achieve/> accessed 9 July 2023. Recently, Rylan Schaeffer, Brando Miranda and Sanmi Koyejo, 'Are Emergent Abilities of Large Language Models a Mirage?' (arXiv, 22 May 2023) <http://arxiv.org/abs/2304.15004> accessed 23 July 2023 have suggested that any perceived hints of emergent capabilities toward abductive reasoning in large language models "appear due to the researcher's choice of metric rather than due to fundamental changes in model behavior with scale".

[187] There is some talk of developing "third wave AI", with the current state of the art of machine learning algorithms, including large language models, by combining the rules-based (of first wave AI) and statistical approach of machine learning to create models that are capable of understanding context, see Brandi Vincent, 'How DARPA's AI Forward Program Seeks "New Directions" on the Path to Trustworthy AI' (*DefenseScoop*, 31 March 2023) <https://defensescoop.com/2023/03/31/how-darpas-ai-forward-program-seeks-new-directions-on-the-path-to-trustworthy-ai/> accessed 13 April 2023. Whether such attempts will be successful, or are even promising, remains to be seen. Either way, such technology requires a paradigm shift in how the mainstream of the scientific field approaches the idea of artificial intelligence.

these algorithms are intrinsically incapable of dealing with situations that fall outside of what is represented within the dataset fed to it during training. By definition, 'no algorithm can be trained on future data',[188] yet the 'real world generates datasets all day long, twenty-four hours a day, seven days a week, perpetually', so that 'any given dataset is only a very small time slice representing, at best, partial evidence of the behavior of real-world systems'.[189] It is for this reason that any prediction as the output of machine learning systems is necessarily based on the premise that the future will 'look like the past',[190] i.e. the corpus of data on past events that was used to build the model. Concerning areas of conflict, one salient problem with this is that such environments have a tendency to generate only limited data in the first place.[191] More importantly, and fundamentally, it follows that the algorithms proceed on the baseline assumption that human behaviour remains constant, that is consistent with whatever patterns and frequencies have been detected in the dataset.[192] But the real world is inherently surprising, and the new data generated by such unexpected events 'can always disrupt the predictive accuracy of the hypothesis target function'.[193]

It is important to note that these inherent limitations of machine learning affect both classification tasks, such as image recognition, visual object recognition, or in the guise of sequence classification used in natural language processing,[194] and anomaly detection as the inverse of frequency assumptions. As far as the latter is concerned, as explained, the frequencies in the past data are used to determine the state of 'normality' which is set against any unexpected events subsequently picked up by the system, which will accordingly mark them as suspicious. In this context, critical observers have

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[188] Hildebrandt (n 24) 92.

[189] Larson (n 23) 139.

[190] Ibid 119.

[191] Goldfarb and Lindsay (n 73) 26.

[192] Klonowska (n 21) 21.

[193] Hildebrandt (n 24) 99.

[194] Larson (n 23) 135.

pointed to the so-called base-rate fallacy, which means that 'if you are looking for very rare instances or phenomena in a very large dataset, you will inevitably obtain a very high percentage of false positives in particular – and this cannot be remedied by adding more or somehow 'better' data: by adding hay to a haystack'.[195]

How this plays out can be explained by the example of SKYNET. In 2007, the U.S. National Security Agency deployed its machine learning model to uncover terrorist suspects in Pakistan. Parsing metadata from 55 million domestic mobile phone users, the algorithm tried to detect usage patterns matching that of a few known individuals working as couriers for al-Qaeda, which reportedly generated a false positive rate of merely 0.008 percent – yet while that figure may seem very low, it still implies that approximately 15,000 people were wrongly marked as potential terrorist couriers by the model.[196] Claudia Aradau and Tobias Blanke have noted that this is hardly accidental, as public surveillance algorithms are set to tolerate high false positive rates in order to detect or identify persons of interest.[197] Consequently, even small, completely innocuous 'anomalies' of human behaviour, incidental correlations between data points that do not match existing patterns, will be registered and flagged as suspicious. This is another way of saying that these models do not simply *discover* potential targets; they *produce* them. And it is in the nature of the 'opaque epistemologies'[198] such models engender that it will be impossible to comprehend or reproduce the reason for the algorithm to have arrived at a certain predictive output.[199]

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[195] Douwe Korff, 'The Limitations of and Flaws in Algorithmic/AI-Based Technologies' (3 May 2023) 2 <https://papers.ssrn.com/abstract=4437110> accessed 29 June 2023.

[196] See: Kathleen McKendrick, 'Artificial Intelligence Prediction and Counterterrorism' (Chatham House 2019) 11. Notoriously, SKYNET marked the Al Jazeera reporter Ahmad Muaffaq Zaidan as a potential al-Qaeda courier, see Klonowska (n 21) 21.

[197] Aradau and Blanke (n 79) 170.

[198] Krebs (n 22) 220.

[199] Hildebrandt (n 24) 100. See on this also *Ligue des Droits Humains* (n 78) paras. 194–5.

At this point, it bears emphasising that nothing we have come to know to date suggests that the described issues could be mitigated through the concept of 'meaningful human control'.[200] For one, the problem of over-reliance has been demonstrated over and over again.[201] One of the psychological phenomena inevitably at play is interpretation bias, describing the situation in which a human operator misunderstands the implications of the model's prediction.[202] Closely related is the problem of selective adherence, a type of confirmation bias, meaning 'the strong tendency of decision-makers to selectively seek and interpret information in light of pre-existing stereotypes, beliefs, and social identities', with the consequence that they 'assign greater weight to information congruent with prior beliefs and contest inputs that contradict them'.[203] In the case of Israel and Palestine, add to this reports that the IDF puts great pressure on its personnel to constantly produce new targets and add them to the database, further incentivising

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[200] See for a good overview of the concept Boutin and Woodcock (n 94).

[201] See for the latest large language models e.g. OpenAI, 'GPT-4 Technical Report' (arXiv, 27 March 2023) 59–60 <http://arxiv.org/abs/2303.08774> accessed 21 July 2023.

[202] UNIDIR, 'Algorithmic Bias and the Weaponization of Increasingly Auonomous Technologies: A Primer' (United Nations Institute for Disarmament Research 2018) 5 <https://unidir.org/sites/default/files/publication/pdfs/algorithmic-bias-and-the-weaponization-of-increasingly-autonomous-technologies-en-720.pdf> accessed 21 July 2023.

[203] Saar Alon-Barkat and Madalina Busuioc, 'Human-AI Interactions in Public Sector Decision-Making: "Automation Bias" and "Selective Adherence" to Algorithmic Advice' (2023) 33 Journal of Public Administration Research and Theory 153. How such selective adherence plays out in reality could be witnessed in the case of the 2021 drone strike in Kabul in which the U.S. killed 10 civilians, see Matthieu Aikins and others, 'Times Investigation: In U.S. Drone Strike, Evidence Suggests No ISIS Bomb' *The New York Times* (10 September 2021). Available information strongly suggests that the incident started with an algorithm analysing visual surveillance data collected from satellites and UAVs and detecting an anomaly that flagged the Afghan aid worker as a potential ISIS terrorist.

intelligence analysts to de-emphasise whatever safeguards exist that could amount to *meaningful* human control.[204]

If machine learning algorithms function on the basic expectation that the future will look like the past, and that whatever does not fit this backward-looking pattern is raising suspicion, then it becomes manifest how such processes interrelate with Luxemburg's and Arendt's understanding of emancipatory political action as intrinsically linked to spontaneity. With its 'transformative potential'[205] that Luxemburg so strongly advocated for, it lies in the very nature of spontaneous political action that it generates rifts in the dominant fabric; more to the point, that it creates anomalies. It is always directed at *initiating* something new by disrupting the predetermined course of events.[206] For spontaneity, as Arendt has shown, is 'the human capacity to begin, to initiate something that did not exist before and which cannot be deduced from precedents'.[207] Emancipatory politics is messy, unruly, and *disorderly* – resisting the order of the regime it encounters and resists. With its intrinsic 'incalculability',[208] then, spontaneous action can by definition not find representation in the dataset and will thus be registered as an anomaly by the algorithm. As Arendt reminds us, '[t]he new always happens against the overwhelming odds of statistical laws and their probability'.[209]

This is what Arendt meant with the 'inherent boundlessness of action': its 'inherent unpredictability' not just in the sense of an 'inability to foretell all the logical consequences of a particular act', because if it were not more than

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[204] Abraham (n 5); Yaniv Kubovich, 'Vacation Days for New Targets: Israeli Officers on Bombing Gaza, Casualties and Political Pressure' *Haaretz* (15 December 2019) <https://www.haaretz.com/israel-news/2019-12-15/ty-article/.premium/vacation-days-for-new-targets-how-israel-builds-its-gaza-target-database/0000017f-ef50-df98-a5ff-effdbcdc0000> accessed 26 July 2023.

[205] Tambakaki (n 144) 92.

[206] Borren (n 156) 165; see Arendt, HC (n 153) 189.

[207] Ibid 169.

[208] Arendt, OT (n 162) 598.

[209] Arendt, HC (n 153) 178.

that, then 'an electronic computer would be able to foretell the future':[210] if simple logical complexity were the issue, an algorithm would indeed be the right instrument to calculate human action. But no, the unpredictability of spontaneous action by definition reaches beyond the capacities of any algorithm. The very idea that big data analysis with machine learning algorithms could ever generate valuable and reliable predictions about collective politics is based on a conflation of 'action' with 'work' – algorithmic rationalities unfold according to Arendt's concept of 'work', meaning the imposition of a preconceived model upon the world,[211] which in the case of machine learning algorithms was created by means of analysing the training data. In the case of such 'fabrication' (i.e., work), 'the light by which to judge the finished product is provided by the image or model perceived beforehand'.[212] Arendt warned that attempting to apply this approach to the world of politics, i.e. the realm of 'action', betrays either 'the delusion that we can 'make' something in the realm of human affairs' or 'the utopian hope that it may be possible to treat men as one treats other "material"'.[213]

This explains why the models engendered by machine learning algorithms are incapable of accounting for the intrinsic unpredictability of human action. However, while this must have a direct impact on the accuracy and reliability of predictive outcomes, it does not follow that the systems will simply cease to operate. On the contrary, such spontaneous activities will all the more be registered, yet with unpredictable outcomes for those individuals who are subjected to the predictive technologies. These individuals can never trust that acting in concert politically will not cause the emergence of spurious correlations in the data that raise suspicion and suggest activities that provoke a security intervention; as Krebs has pointed

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[210] Ibid 191–2.

[211] Ibid 140–4.

[212] Ibid 192.

[213] Ibid 188.

out, 'anybody and everybody can become a target'.[214] In their quest to uncover 'unknown unknowns' through anomaly detection,[215] the rationalities of machine learning algorithms in AI–based military DSS thus render spontaneous political action fraught with great risk for anyone involved.[216]

Arendt makes clear that the 'inherent boundlessness of action' means that such activity is always and inevitably risky to some extent, but in normal societal configurations of modernity, such risk is at least somewhat mitigated through the protections offered by 'the various limitations and boundaries we find in every body politic',[217] which is necessary for individuals to be able to fully express their humanity.[218] In democratic societies, the arrangement that fulfils this function is that of the rule of law, which defines the limits of tolerated action and thus establishes a sense of predictability for the subjects, who as a result are mostly able to rely on the given legal determinations to guide their behaviour.

By now it has become apparent how the 'opaque epistemologies' of machine learning undercut any such sense of reliability. The unpredictability of spontaneous political action – the input data – renders algorithmic processes – the output – unpredictable. As a consequence of the 'lack of control and inability to predict the next violent episode',[219] the – frequently lethal – security interventions are experienced by those subjected to them as random

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[214] Krebs (n 22) 206.

[215] Aradau and Blanke (n 79) 76.

[216] In the specific context of U.S.–led drone warfare as part of the "war on terror" see already Edney-Browne (n 114) 1349: "[C]ongregating in busy communal spaces and socially interacting with new people is considered risky. Drone attacks on 'gatherings', 'parties', and 'jirgas' (...) create fear about entering these spaces and participating in these activities". Also see International Human Rights and Conflict Resolution Clinic, Stanford Law School and Global Justice Clinic, NYU School of Law (n 114) 95 ff.

[217] Arendt, HC (n 153) 191.

[218] Voice (n 153) 46.

[219] Edney-Browne (n 114) 1350.

and arbitrary acts of violence. Needless but important to add for the context of Palestine in this regard is that there are no legal remedies available for potentially affected Palestinians, not least as the algorithmically produced target databases by the IDF are secret, but also because targeting decisions will often be made instantaneously based on incidental correlations and 'emergent patterns'[220] becoming visible within the dataset.

To the extent that it thus follows that constant algorithmic surveillance for the purposes of warfare does not simply render spontaneous political action fraught with risks but effectively suppresses the potentiality of imagined political futures that may arise from spontaneous acting in concert, finally, it follows that the technology is totalitarian – perhaps not in its intent but in its impact. As Arendt reminds us, the primary mode for any totalitarian regime to establish and exert control is the elimination of spontaneous action.[221] In a situation where individuals are unable to predict the reaction to their actions due to the randomness of violence, they will not only be frightened 'into impotence',[222] but it will indeed be a rational response to 'avoid all intimate contacts'[223] if any spontaneous association or assembly might be picked up by the algorithm and marked as suspicious. Such self-isolation out of necessity, in turn, prevents the actualisation of any emancipatory politics directed at engendering genuine change – recall that according to Arendt, political power to form a common will is contingent on the ability to act 'in concert',[224] indeed that 'to be isolated is to be deprived of the capacity to act'.[225] By modifying their behaviour in an attempt to

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[220] Gordon, Mignot-Mahdavi and Meerssche (n 81) 134.

[221] Arendt, OT (n 162) 598; see on this Michal Aharony, 'Hannah Arendt and the Idea of Total Domination' (2010) 24 Holocaust and Genocide Studies 193.

[222] Lon Fuller, *Morality of Law* (Yale University Press 1969) 40; see on this further Colleen Murphy, 'Lon Fuller and the Moral Value of the Rule of Law' (2005) 24 Law and Philosophy 239.

[223] Arendt, OT (n 162) 423.

[224] Arendt, OV (n 158) 44.

[225] Arendt, HC (n 153) 188.

mitigate the risks originating with the algorithmic data practices, individuals become conditioned and *calculable*, which in Arendt's theory is the last step toward achieving '[t]otal domination'[226] even if the potential for spontaneity itself can never be extinguished entirely.[227] Ultimately, this is how, by freezing the past and treating it as a model that is imposed on collective human behaviour to generate predictions about the future that lead to targeting decisions or other security interventions, algorithmic surveillance practices corrode the possibility of spontaneous political action and thus of the exercise of the right to self-determination.

V. CONCLUDING REMARKS

In this article, I have defended the claim that the pervasive surveillance practices employed for the purpose of training and feeding AI-based military DSS negate the conditions of possibility of spontaneous and collective political action, a practice that is both a precondition of and legally secured by the right to self-determination. I have argued that the political theory of Rosa Luxemburg and Hannah Arendt provides the conceptual tools to understand how the intrinsically backward-looking principles of machine learning cannot but stifle a practice that is determined by spontaneity as required to initiate a transformative and emancipatory politics of change. This far-reaching consequence of the increasing proliferation of the use of machine learning algorithms in the conduct of military operations has so far been largely overlooked in the prevalent discourse in international legal scholarship. The article, in contrast, has demonstrated how the focus on the rules of IHL makes the use of such technologies seem legally imperative once we accept the premise that technological progress will soon and inevitably lead to the superiority of machines when it comes to targeting precision and thus the sparing of the lives of civilians.

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[226] Hannah Arendt, 'Social Science Techniques and the Study of Concentration Camps' (1950) 12 Jewish Social Studies 49, 60.

[227] Arendt, *The Promise of Politics* (n 165) 128.

One might be tempted to look at the issue, then, through the prism of an ostensible conflict of rules of *jus cogens*: after all, in its Draft conclusions on identification and legal consequences of peremptory norms of general international law (*jus cogens*), the International Law Commission referred to both the 'right of self-determination' and the 'basic rules of international humanitarian law' – whose content the ILC Study Group on the fragmentation of international law had described as amounting to 'the prohibition of hostilities directed at civilian populations'[228] – as having peremptory status.[229] If that is the case, a doctrinal approach might call for an attempt to disentangle and then somehow resolve such a normative conflict.[230] But this would mean to already have bought into the false dichotomy the prevailing IHL narrative engenders and entrenches. Ultimately, however, we must reject the insinuation that we *need* machine learning algorithms in decision support systems in order to improve IHL compliance and that all it will take to preserve the rights of affected populations is to inject some considerations borrowed from privacy and data protection principles and the contested notion of meaningful human control.

In the realm of warfare, fairness is no appropriate category to appraise the deployment of machine learning technologies. As the article has demonstrated, doing so fails to account for and will only further entrench the larger harms to communities affected by algorithmic warfare by rationalising that harm and presenting it as an inevitable trade-off in the pursuit to protect the life of civilians in armed conflict with the assistance of

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[228] Report of the Study Group on the fragmentation of international law (finalised by Martti Koskenniemi), UN Doc. A/CN.4/L.682 and Add.1, 13 April 2006, at para. 374.

[229] International Law Commission, Draft conclusions on identification and legal consequences of peremptory norms of general international law (*jus cogens*), with commentaries, 2022, at 87.

[230] See e.g. João Ernesto Christófolo, *Solving Antinomies Between Peremptory Norms in Public International Law* (Schulthess 2016); Valentin Jeutner, 'Rebutting Four Arguments in Favour of Resolving Ius Cogens Norm Conflicts by Means of Proportionality Tests' (2020) 89 Nordic Journal of International Law 453.

cutting-edge technology. In that respect, such a fairness narrative revolving around privacy and data protection can be seen as yet another building block in the larger, much-scrutinised account that upholds the virtues of humanitarian law to sanitise warfare at the expense of avoiding war in the first place.[231] For the case of Palestine in particular, it furthermore helps to bolster 'Israel's liberal democratic investment in humanitarian gestures of "let live"'[232] while obscuring the fact that any technological improvement to spare civilians in the name of the laws of armed conflict will only legitimise and reinforce the continued control of the Palestinian people. At the same time, while it is important to acknowledge and emphasise the specific situation and lived experience of Palestinians, the arguments made in this paper point to the larger implications for the possibility of an emancipatory politics in the algorithmic age beyond the 'Palestine Laboratory'[233] of occupation and modern warfare. In this, despite Geoff Gordon, Rebecca Mignot-Mahdavi and Dimitri van den Meerssche recently having compellingly deemed 'reinvigorated ideals of liberal subjectivity to be ill-suited in curtailing technoscopic regimes, especially for those historically made vulnerable',[234] I nevertheless want to insist on preserving the ability to act spontaneously in concert as the precondition to create the 'capacity for resistance'[235] that opens up the potential to imagine an alternative future.

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[231] On this only Samuel Moyn, *Humane: How the United States Abandoned Peace and Reinvented War* (Verso 2022); Craig Jones, *The War Lawyers: The United States, Israel, and Juridical Warfare* (Oxford University Press 2020).

[232] Jasbir K Puar, *The Right to Maim: Debility, Capacity, Disability* (Duke University Press 2017) 141.

[233] Antony Loewenstein, *The Palestine Laboratory* (Verso 2023).

[234] Gordon, Mignot-Mahdavi and Meerssche (n 81) 138.

[235] Tambakaki (n 144) 99.