

Dear Contributor,

Enclosed please find page proofs for your article scheduled to be published in *Ethics & International Affairs*. Please follow these procedures:

Please list the corrections in an email, citing page number, paragraph number, and line number. Send the corrections to Katelynn Watkins (eiaproductio@cambridge.org) and Adam Read-Brown (areadbrown@cceia.org).

You are responsible for correcting your proofs. Errors not found may appear in the published journal.

The proof is sent to you for correction of typographical errors only. Revision of the substance of the text is not permitted, unless discussed with the editor of the journal.

Please answer carefully any queries raised from the typesetter.

A new copy of a figure must be provided if a correction is required—please provide this in EPS or TIFF format to the production editor.

To order reprints or offprints of your article or a printed copy of the issue, please visit the Cambridge University Reprint Order Center online at: www.sheridan.com/cup/eoc

Please note that delay in returning your proofs may require publication without your corrections. Thank you for your prompt attention to these proofs. Please contact me if you have any questions or concerns.

Sincerely,
Katelynn Watkins

Cambridge University Press
One Liberty Plaza
New York, NY 10006
email: eiaproductio@cambridge.org


Author Queries

Journal: EIA (Ethics & International Affairs)

Manuscript: S0892679423000291jra

- Q1** The distinction between surnames can be ambiguous, therefore to ensure accurate tagging for indexing purposes online (e.g. for PubMed entries), please check that the highlighted surnames have been correctly identified, that all names are in the correct order and spelt correctly.

Crimes of Dispassion: Autonomous Weapons and the Moral Challenge of Systematic Killing

Neil Renic  and Elke Schwarz¹

Q1

In June 1959, the German philosopher Günther Anders penned a letter to Claude Eatherly. Eatherly was a former U.S. Air Force pilot and then psychiatric patient, who experienced immense guilt over his relatively minor role in the Hiroshima bombing. In the correspondence that followed, both men wrote in detail about the event and their concern over what they saw as a gulf between the moral imagination of humanity and the material destructiveness of the new atomic age. Anders feared the “technification’ of our being” and the loss of agency this would invariably entail:

The fact that to-day it is possible that unknowingly and indirectly, like screws in a machine, we can be used in actions, the effects of which are beyond the horizon of our eyes and imagination, and of which, could we imagine them, we could not approve—this fact has changed the very foundations of our moral existence.²

For Anders, machine-logics were a potential—and potentially fatal—threat to conscience.³ In his 1950 book *The Human Use of Human Beings: Cybernetics and Society*, American mathematician and cybernetics pioneer Norbert Wiener similarly noted, with apprehension, that when humans are “knit into an organization in which they are used, not in their full right as responsible human beings, but as cogs and levers and rods, it matters little that their raw material is flesh and blood.

Neil Renic, University of Copenhagen, Copenhagen, Denmark (renic@ifsh.de)

Elke Schwarz, Queen Mary University of London, London, England (e.schwarz@qmul.ac.uk)

Ethics & International Affairs, 0, no. 0 (2023), pp. 1–23.

© The Author(s), 2023. Published by Cambridge University Press on behalf of Carnegie Council for Ethics in International Affairs. This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted re-use, distribution and reproduction, provided the original article is properly cited.

doi:10.1017/S0892679423000291

37 *What is used as an element in a machine, is in fact an element in the machine.*"⁴
38 The concern for Wiener, as for Anders, was that the increased tendency toward
39 human technification (the substitution of technology for human labor) and sys-
40 tematization would exacerbate the dispassionate application of lethal force and
41 lead to more, not less, violence.

42 This insight is as apposite today as it was then as we face a future of accelerated
43 and increasingly autonomous modes of highly systematized warfare. In particular,
44 the scale and speed of the rollout of AI-enabled weapons systems should prompt
45 reflection on the moral implications of this integration of nonhuman logics and
46 systems into existing processes of military violence.

47 Systems are near omnipresent in any task requiring concerted human effort.
48 Critically though, there are limits on the type and degree of systematization
49 that are appropriate in human conduct, especially when it comes to collective vio-
50 lence. The systematic application of violence has been a feature of some of the
51 most destructive episodes in modern human history, including colonial warfare,
52 ethnic cleansing, and genocide. While each of these episodes is unique, common-
53 alities can be identified among the processes: targeted peoples are classified by cer-
54 tain characteristics and organized into a pathologized category; violence is applied
55 instrumentally and often dispassionately via systems of diffused responsibility; and
56 the killing is in tension with moral values. Engaging these antecedents, we draw
57 out the parallels in process between historical episodes of systematic violence
58 and lethal autonomous weapons systems, a mode of violence that, by virtue of
59 its characteristics, is *inherently* systematic.

60 We argue that the process of killing with lethal autonomous weapon systems
61 (LAWS) is always a systematized mode of violence in which all elements in the
62 kill chain—from commander to operator to target—are subject to a technification.
63 This technification incentivizes a moral devaluation of those targeted, but also
64 degrades the moral agency of those involved in the application of autonomous
65 violence. As a result, important restraints on the use of military force are
66 jeopardized.

67 With this focus, the article builds on the extensive literature produced over the
68 past decade critiquing the development and use of LAWS on moral grounds.⁵
69 This article advances this critique in two important ways. First, by situating
70 LAWS within the *longue durée* of systematic killing, we more accurately draw out
71 the similarities and dissimilarities between these systems and earlier modes of sys-
72 tematic violence. Such analysis is too often lacking from criticisms of this technology,

73 which typically either exaggerate or downplay both the material and moral novelty of
74 this type of violence. Second, we add important nuance to the long-standing claim
75 that LAWS dehumanize human targets. This dehumanization is real, we argue,
76 but impacts the moral status of both the recipients and the dispensers of autonomous
77 violence. In the case of dispensers, dehumanization operates alongside, and is com-
78 pounded by, problematic effects of authorization and routinization. With LAWS, all
79 three are amplified—a technification that erodes moral constraints.

80 These insights serve as a counterpoint to the recent proliferation of scholarship
81 making the moral case in favor of LAWS as a potentially more humane, or oth-
82 erwise “better,” alternative in the administration of lethal force.⁶ These supportive
83 accounts, we argue, too often rest on an abstracted and overly idealistic concept of
84 how the logic of LAWS operates within the broader setting of warfare. These per-
85 spectives neither take sufficient account of the wider historical dimension that
86 underwrites the trajectory toward systematic killing nor adequately consider the
87 real-world complexities and specificities of the technological system and its affor-
88 dances in relation to killing in war. Correcting this oversight, we identify LAWS as
89 both a continuation of and departure from the past, perpetuating historical pro-
90 cesses of target and agent degradation while generating distinct and problematic
91 technological specificities of systematic killing.

92 We begin the article with a brief overview of the AI-enabled lethal autonomous
93 systems we are concerned with before tracing some of the key points in the current
94 debates. We consider the motivations for acquiring these systems and the argu-
95 ments put forward by proponents that they will ethically improve the battlefield.
96 Section two engages the history of systematic killing, evaluating the degree to
97 which such modes of violence influence and distort human relations and ethical
98 considerations inside and outside the battlefield. In the final section, we explore
99 how the factors that facilitate the erosion of moral restraint manifest in the pro-
100 cesses prioritized by, and within, LAWS.

101 THE ALLURE OF AUTONOMOUS VIOLENCE

102
103 In this article, we are concerned with the relationship between systematization and
104 violence in war. Before we engage with the types of lethal autonomous systems cur-
105 rently on the horizon, and the discourses associated with these systems and their
106 human use, a very brief contouring of the concept of systematization is in order.
107 Importantly, we do not argue that all systematic approaches to warfare are
108

109 problematic. Military organization and war fighting have been ordered and reor-
110 dered throughout history into more fixed and instrumental systems.⁷ The rules of
111 war have also been standardized to bind combatants to a more fixed set of proscrip-
112 tive and prescriptive measures that limit the scope of permissible violence.

113 Our specific concern is with “intensified systematization”—modes of violence in
114 which the logic of calculation, classification, and optimization for the act of elim-
115 ination become paramount. This formulation of violence imperils essential moral
116 restraints on the use of force and is intrinsic to AI-enabled lethal autonomous
117 weapons. In this way, LAWS reproduce, and in some cases intensify, the moral
118 challenges associated with prior episodes of intensified systematic killing.

119 Autonomous weapons technology has advanced significantly in recent years
120 and is anticipated to continue doing so in the years ahead. Sophisticated AI inno-
121 vations through neural networks and machine learning, paired with improve-
122 ments in computer processing power, have opened up a field of possibilities for
123 autonomous decision-making in a wide range of military applications, including
124 the targeting of adversaries. Definitions of LAWS vary and remain hotly con-
125 tested.⁸ The crucial aspect, however, is the weapon system’s potential to autono-
126 mously—without human intervention or action—select and engage targets. The
127 definition offered by the International Committee of the Red Cross is widely
128 used and offers a helpful delineation of autonomous weapons systems, and by
129 extension LAWS: “Any weapon system with autonomy in its critical functions.
130 That is, a weapon system that can select (search for, identify, track or select)
131 and attack (use force against, neutralize, damage or destroy) targets without
132 human intervention.”⁹ In contrast to remotely operated drones, LAWS relegate
133 the human to a supervisory role in the kill chain loop (humans-on-the-loop),
134 or remove the human entirely (humans-out-of-the-loop). In the latter case, target-
135 ing decisions and actions could be initiated and completed autonomously, based
136 on input and sensor data, algorithms, and software programs.

137 Examples of LAWS include AI-enabled loitering munitions and AI-equipped,
138 weaponized drone swarm systems that have the capacity to identify threats
139 based on certain input parameters, fix on certain targets, and eliminate them
140 once a threshold value has been reached. An AI-enabled weapon system like
141 this would need to be trained on data that are relevant to a zone of conflict or
142 area of engagement and require frequent updates, as “the introduction of new
143 parameters or slightly heterogeneous data to the data under which the weapon
144 has been trained will confound [LAWS].”¹⁰ The AI component of LAWS does

145 a significant amount of the independent cognitive work here. While several chal-
146 lenges arise from this highly dynamic process, for the commander as well as the
147 operator, the allure of accelerated action in complex contexts with LAWS is strong.
148 In theory—and in practice—LAWS can shorten the sensor-to-shooter timeline
149 from minutes to seconds. The ability to navigate high complexity in an accelerated
150 time frame is seen as a significant strategic benefit, even if it comes at the expense
151 of direct human oversight. As General John Murray put to a military academy
152 audience in 2021, “Is it within a human’s ability to pick out which [swarm robots]
153 have to be engaged?” and then make 100 individual decisions? “Is it even necessary
154 to have a human in the loop?”¹¹ Statements like General Murray’s align with a
155 broader vision of a fully networked, domain-crossing, and time-compressed
156 AI-enabled future war.

157 Instructive here are the projects undertaken by the United States for a fully net-
158 worked, domain-crossing “network of networks”—or a system of systems—that
159 connects the data sensors and shooters of all U.S. military domains and allied mil-
160 itaries for greater speed and scale of operations, as articulated in the
161 Joint-All-Domain Command and Control (JADC2) concept. The concept
162 responds to the problem identified by some U.S. Department of Defense officials
163 that “future conflicts may require decisions to be made within hours, minutes, or
164 potentially seconds compared with the multiday process to analyze the operating
165 environment and issue commands.”¹² It is a vision that is fully systematized in all
166 its processes and operations, including lethal targeting, and in which both the
167 speed and the scale envisioned clearly prioritize autonomous violence.
168 AI-enabled LAWS will be instrumental in realizing these visions.

169 The debate over the legal, ethical, and political implications of autonomous
170 weapons systems is protracted and ongoing. Seminal critical voices have urged
171 a halt to the development and use of LAWS on account of their incommensura-
172 bility with existing moral and legal standards in war.¹³ Noel Sharkey and Lucy
173 Suchman, for example, argue that LAWS lack the technological sophistication
174 and capabilities to adhere to the principle of distinction or proportionality, two
175 core elements of international humanitarian law (IHL).¹⁴ Robert Sparrow and oth-
176 ers have argued that AI-enabled weapons systems produce a responsibility gap in
177 situations where the system makes an unexpected or unlawful lethal decision for
178 which nobody can viably be held to account.¹⁵

179 More foundational, deontological objections to LAWS have also been voiced.
180 Christof Heyns, for example, makes a strong case against autonomous violence

181 based on the fact that “humans should not be treated similar to an object that sim-
182 ply has instrumental value . . . or no value at all.” In the case of LAWS, Heyns
183 writes, human targets have “no avenue, futile or not, of appealing to the humanity
184 of the enemy, or hoping their humanity will play a role, because it is a machine on
185 the other side.”¹⁶ Criticisms of this type frame autonomous violence as inherently
186 immoral, on account of its violation of the principle of human dignity. Our dis-
187 cussion builds on these interventions, clarifying both the technological shortcom-
188 ings of these systems and their problematic marginalization of human judgment
189 and values.

190 Moral arguments also extend in the other direction, in favor of the development
191 and use of LAWS. Deane Baker, for example, argues that LAWS ultimately reflect
192 the intent of, and can be controlled by, those who decide to employ them. Thus
193 LAWS can remain, in principle, “compliant with the ethics and laws of war.”¹⁷ In
194 this line of argumentation, the human remains foregrounded as the only relevant
195 moral actor. Baker objects to the idea that any kill decision is “ceded” or “dele-
196 gated” to the machine and for him, and others, it is obvious that humans will
197 always make the kill decision; LAWS are framed here as instruments—neutral
198 tools to be used or misused discretionarily like any other weapons. Heller
199 makes a similar point, noting that “[LAWS] do not ‘decide’ at all; they simply exe-
200 cute the targeting rules that humans have programmed into them.”¹⁸ These obser-
201 vations are true but incomplete, relying on an overly abstracted, highly idealized,
202 and, in some cases, overly simplified version of autonomous weapons and the
203 human relation to such systems. As Thompson Chengeta has convincingly argued
204 in response to such claims, “Where a machine is designed to make all critical deci-
205 sions without human control, responsibility to make legal and ethical judgments
206 has, in fact, been delegated to the machine.”¹⁹

207 The instrumental view of LAWS brackets the realities of machine-learning log-
208 ics, including the fact that AI-enabled systems must be trained, not merely pro-
209 grammed; that a significant degree of unsupervised calculations are a key part
210 of any AI-enabled system; that these systems rest on a logic of error and iteration,
211 meaning improvements will often be paid for in lost lives; that frequent updates
212 complicate any verification and validation process; and that it is highly unlikely
213 that such systems can work as intended, consistently, within the messy complex-
214 ities of any zone of conflict.²⁰

215 A related but different moral argument frames LAWS as a potentially lifesaving
216 technology, as illustrated by the arguments put forward in the 2021 National

217 Security Commission on Artificial Intelligence’s *Final Report*: “If properly
218 designed, tested, and used,” the argument goes, LAWS “could *improve* compliance
219 with International Humanitarian Law.”²¹ The idea here is that by using systems
220 capable of capturing and processing larger amounts of data more accurately
221 and at faster speeds, better decisions can be made, at the expense of fewer civilian
222 casualties.²² As Arkin points out, as have others, “Unmanned robotic systems can
223 be designed without emotions that cloud their judgment or result in anger and
224 frustration with ongoing battlefield events.”²³ Human cognition and emotion is
225 framed as an impediment, not facilitator, of good conduct in war; LAWS are
226 the corrective, enabling those empowered to “engage in unwavering, precise com-
227 bat.”²⁴ Cappuccio and colleagues take a similar line of reasoning in suggesting that
228 LAWS “can relieve military personnel from the burden of killing, thus sparing
229 them the risk of suffering moral injury, even if the available artificial intelligence
230 (AI) is not sophisticated enough to solve complex ethical puzzles.”²⁵

231 This is a compelling narrative, but it rests on a speculative and superficial
232 understanding of the logical implications of this technology specifically, and sys-
233 tematic violence more generally. It also decontextualizes these weapons to a prob-
234 lematic degree. As Alexander Bellamy notes in his work on mass atrocities,
235 “Arguments are not aired and received in a vacuum.” Social and other contexts
236 matter when it comes to understanding the dynamics of violence, including the
237 “material and institutional power of the perpetrators.”²⁶ LAWS proponents too
238 often ground their optimism in overly abstract potentialities while ignoring the
239 actual history of systematization in war, as well as the moral and legal records
240 of those most likely to utilize this technology.

241 We ask, what if instead of preserving or improving upon the “goodness” of
242 human military personnel, an intensified system logic facilitates a worsening of
243 battlefield conduct? In the next section, we historicize this claim, detailing how
244 intensified processes of systematic killing imperil the moral status of both the
245 recipients and the dispensers of violence, to the detriment of essential restraints
246 on military force.

247 SYSTEMATIC KILLING IN HISTORY

249 Much of the debate over the morality of autonomous weapons centers on the
250 function and value of “humanity” in war. Opponents of these systems have
251 been criticized for comparing autonomous weapons not to human combatants
252

253 as they most often are—confused, distressed, and volatile—but rather to human
254 combatants as they wish them to be—reflective, rational, and compassionate.
255 The “IHL compliant just warrior” image of humanity is an ideal type, at odds
256 with much of the human experience in past and present war.²⁷ Human combat-
257 ants internalize the rules of the battlefield too slowly and discard them too quickly
258 for them to be consistently effective. For as long as war has been fought, human
259 participants, driven by rage, fear, and hatred, have given in to their “mad passions”
260 and terrorized and murdered innocent parties.²⁸ It is this image of humanity—as a
261 cause, not a corrective, of misery in war—that proponents of autonomous weap-
262 ons reference when framing the technology as an ethically superior alternative.²⁹

263 While not incorrect, this pessimistic depiction of humanity is excessively nar-
264 row, excluding other types of human-driven misconduct and immorality that
265 autonomous weapons systems are more likely to accelerate than prevent. True,
266 atrocity in war is often sourced in passion—hate of the enemy and exhilaration
267 and joy in their suffering. However, alongside this are the more dispassionate
268 and systematically dispensed cruelties. “Cold violence,” Jonathan Glover writes,
269 “should disturb us far more than the beast of rage in man.”³⁰ These colder
270 modes of killing are driven less by personal animus than a logic-driven calculation
271 to extirpate. Systematic, dispassionate “pest control” models of killing have been a
272 feature of some of the most destructive episodes of human history.³¹

273 Discomfort over systematic killing derives primarily from its historical association
274 with inhumane and unjust harm; the harnessing of systems-oriented action in ser-
275 vice of the mass killing of the undeserving. Importantly though, many are also
276 repelled by the *process* of systematic killing and the degree to which subsuming
277 human agency and emotion into intensified systems of violence undermines the
278 moral status of both the dispensers and the recipients of harm. Drawing out this
279 history and the empirical realities of violence in war helps us move beyond auton-
280 omous weapons debates overly infused with abstract theoretical assumptions.

281 ***Target Degradation***

282 We argue that the processes associated with systematic killing, especially the more
283 intensified versions, imperil restraints on the use of force. This can first be
284 observed in relation to the status of those targeted. Systematization either directly
285 imposes or incentivizes totalizing categories that suppress the individual differ-
286 ences of the targeted, including differences that might inform our moral judgment
287 as to whether targeting is just.
288

289 These processes were at work in much of the colonial violence of previous cen-
290 turies. As Lawrence Freedman notes, “Colonialism established the idea of whole
291 populations as legitimate targets.”³² Categorization was fixed in this context,
292 with targeted individuals denied the opportunity to express their innocence,
293 and by extension, their immunity from direct and deliberate harm. British com-
294 mander in chief Herbert Kitchener’s description of British tactics during the
295 Second Boer War exemplifies this process. The British were to

296 flush out guerrillas in a series of systematic drives, organised like a sporting shoot, with
297 success defined in a weekly “bag” of killed, captured and wounded, and to sweep the
298 country bare of everything that could give sustenance to the guerrillas, including
299 women and children . . . It was the clearance of civilians—uprooting a whole nation—
300 that would come to dominate the last phase of the war.³³

301 As the colonial case makes clear, the moral challenges implicit in the contempo-
302 rary systematization of violence have a longer history.³⁴ Anchored as it is to
303 fixed categorization, killing by a system logic greatly reduces, if not eliminates,
304 the possibility of interpersonal connection, or even recognition. The objectified
305 person on the receiving end of lethal force has little-to-no agency in the targeting
306 process; no recourse to know how his or her data is dis- and re-aggregated in the
307 production of the category “enemy object.” Within such systems, inferences are
308 drawn and assumptions made that encase categories such as “enmity” in discrete
309 terms.

310 This logic stems from, and feeds into, what Hannah Arendt described as the
311 totalitarian ambition toward “knowing” the enemy based on data classification
312 and cross-tabulation. Nazi policies were characterized by a process of objectifica-
313 tion and dehumanization. The systematic classification of humans for elimination
314 en masse severed the very premise for human relations—that of being considered
315 as an individual: a subject, not an object. Under the SS corps, “Bestiality gave way
316 to an absolutely cold and systematic destruction of human bodies; calculated to
317 destroy human dignity,” and kill off any individuality of those imprisoned in
318 the camps.³⁵ Inmates became objects, classified based on a system of identification
319 “according to which each prisoner had a rectangular piece of material sewn onto
320 his or her uniform” upon which a “classification triangle” was placed that indi-
321 cated by color whether that person was categorized as a political prisoner, a
322 Jehovah’s Witness, a prostitute or other “asocial,” a homosexual, a criminal, a
323 Jew, and so on.³⁶ Harnessing new technologies to kill at a distance—both
324

325 physically and socially—and thus avoid the “horrors of face-to-face-killing,” the
326 violence of Nazi Germany offers a stark example of the moral challenge of system-
327 atic, dispassionate violence.³⁷

328 Readers may understandably question the relevance of such examples for cur-
329 rent debates over the dangers of autonomous weapons. We should firstly reiterate
330 that we do not seek to draw moral equivalence between the genocidal practices of
331 World War II and the use of distanced autonomous killing. What these historical
332 examples do show, however, is systematic killing at its most pathological. Analysis
333 of these cases allows us to better recognize the problematic features of
334 systematization-as-process that operates elsewhere, albeit to far less severe degrees.
335 In reality, the systematization of violence is a spectrum. It ranges from the routine
336 and unproblematic to the murderous and genocidal. In between are a number of
337 even more recent examples, including ones from armed conflict, of systematic kill-
338 ing that is nongenocidal but still radically in tension with prevailing moral
339 standards.

340 One such example can be found in the systems-logics that governed U.S. con-
341 duct in Vietnam. In 1960s U.S. military doctrine—particularly under the direction
342 of Robert McNamara, a Ford Motor Company executive turned secretary of
343 defense—modes of warfare were forged along the lines of highly quantitative com-
344 putational processes: James Gibson famously termed this “technowar.”³⁸ As Nick
345 Turse writes:

346 [McNamara] relied on numbers to convey reality and, like a machine, processed what-
347 ever information he was given with exceptional speed, making instant choices and not
348 worrying that such rapid-fire decision making might lead to grave mistakes. . . .
349 McNamara and his national security technocrats were sure that, given enough data,
350 warfare could be made completely rational, comprehensive, and controllable.³⁹

351 The implementation of this scientific computational management ethos translated
352 into an undue focus on cost-benefit evaluations that assumed—rationally—that
353 more deaths on the side of the enemy would spell victory for the United States.
354 The relevant statistic was “body count,” which led to a mandate to kill as many sus-
355 pected enemies as possible. Needless to say, quota-based killing is fraught with
356 moral risk. In Vietnam, enemy classification was broadly and often crudely
357 drawn: “Everyone in a conical hat or the loose-fitting Vietnamese clothes that
358 Americans called ‘black pajamas’ was a potential adversary.”⁴⁰ This objectification
359 facilitated and excused the commission of numerous acts of battlefield negligence
360

361 and atrocity by American forces during the conflict. The exact figures of combatant
362 and noncombatant deaths on the side of the Vietnamese is unclear; despite the
363 intense focus on data and body count, the innocent bodies were never fully counted.
364 Various estimates suggest that there were between 1.1 million and 3.8 million vio-
365 lent deaths (civilians and combatants) and around 5.3 million wounded civilians.⁴¹
366 According to U.S. medic Wayne Smith, the “body-count” system led to “a real
367 incentivizing of death and it just fucked up our value system.”⁴²

368 These same dangers endure in the algorithmic warfare of today. This danger is
369 twofold. In addition to the target degradation, intensified systematization threat-
370 ens the moral status of those who dispense violence.

371 *Agent Degradation*

372 A common question when examining systematic violence throughout history, par-
373 ticularly the more morally egregious examples, is how could they do it? How could
374 individuals, not all of whom seem outwardly evil, contribute to a system of
375 mass-produced murder? The answer to these questions can inform our under-
376 standing of the present and future dangers of autonomous killing.

377 The psychologist and scholar of atrocities Herbert C. Kelman offers one such
378 answer. He recognizes that a “historically rooted and situationally induced” hos-
379 tility—often along racialized lines—forms a substantive element in systematic
380 mass killing, but Kelman argues that it is not a primary instigator for large-scale
381 violence. Rather, he advises us to consider “the conditions under which the usual
382 moral inhibitions against violence become weakened.” In his 1973 work on mass
383 violence, he identifies “authorization,” “routinization,” and “dehumanization” as
384 important contributors to this weakening of moral restraint.⁴³

385 “Authorization” provides the necessary substrate for sanctioned transgressions
386 at scale. When a legitimate authoritative agent explicitly orders, implicitly encour-
387 ages, or tacitly approves acts of violence, “people’s readiness to condone them is
388 considerably enhanced.”⁴⁴ Through authorization, control is surrendered to
389 authoritative agents bound to larger, often abstract goals that “transcend the
390 rules of standard morality.”⁴⁵ For those tasked with the actual delivery of violence,
391 agency is lost, or abdicated, to central authorities, who in turn cede their authority
392 to still higher powers. This layered referral separates cognition from affect, and
393 personal morality from a rationalized appeal to overriding violence.

394 The second process Kelman highlights in the erosion of moral restraints is “rou-
395 tinization.” Whereas authorization overrides otherwise existing moral concerns,
396

397 processes of routinization limit the points at which such moral concerns can, and
398 will, emerge.⁴⁶ Routinization fulfills two functions: first, it reduces the necessity of
399 decision-making, thus minimizing occasions in which moral questions may arise;
400 and second, it makes it easier to avoid the implications of the action, since the
401 actor focuses on the details rather than the meaning of the task at hand.⁴⁷

402 The third process, and the one that arguably connects most closely with the tar-
403 get objectification already discussed, is “dehumanization.” Processes of dehuman-
404 ization work to deprive victims of their human status; “to the extent that the
405 victims are dehumanized, principles of morality no longer apply to them and
406 moral restraints against killing are more readily overcome.”⁴⁸ Importantly though,
407 the same processes that degrade the moral status of the victim may also dehuman-
408 ize perpetrators:

409 Through his unquestioning obedience to authority and through the routinization of his
410 job, he is deprived of personal agency. He is not an independent actor making judg-
411 ments and choices on the basis of his own values and assessment of the consequences.
412 Rather, he allows himself to be buffeted about by external forces. He becomes alienated
413 within his task.⁴⁹

414 This condition is pronounced within the digital logics of AI-enabled systems.
415 Before we detail this, however, it is again important to reemphasize that problem-
416 atic systematization is not specific to any one technology or mode of war.
417 Alongside the examples already given, we can look to the U.S. armed drone pro-
418 gram for a more recent illustration of the problematic effects of authorization, rou-
419 tinization, and dehumanization.

420 Within the U.S. drone program, armed drones were one part of a “flexible and
421 persistent network of capabilities spanning global distance and woven together by
422 arrays of streaming data.”⁵⁰ Within this system of integrated technologies, numer-
423 ous moral challenges emerged, particularly in the context of targeted killing.
424 Initially justified as a necessary response to “confirmed [terrorists] at the highest
425 level,” targeting standards deteriorated as drone killing became more routinized.⁵¹
426 Over the course of the War on Terror, the United States, argues Ryan Devereaux,
427 devoted “tremendous resources to kill[ing] off a never-ending stream of nobod-
428 ies.”⁵² Obama himself made reference to the systematic nature of U.S. drone kill-
429 ing, and the moral slippage it incentivized:

431 The problem with the drone program . . . is that it starts giving you the illusion that it is
432 not war . . . the machinery of it started becoming too easy, and I had to actually impose

internally a substantial set of reforms in the process to step back and remind everyone involved this isn't target practice.⁵³

Dehumanization was also a feature of the U.S. drone program, compounded by the data-driven nature of the killing, with those targeted sometimes likened to weeds and pests.⁵⁴ According to one American intelligence source, the internal view of the special operations community toward those hunted by armed drones was: "They have no rights. They have no dignity. They have no humanity to themselves. They're just a 'selector' to an analyst. You eventually get to a point in the target's life cycle that you are following them, you don't even refer to them by their actual name." This practice, he said, contributes to "dehumanizing the people before you've even encountered the moral question of 'is this a legitimate kill or not?'"⁵⁵

This section has highlighted a number of episodes of systematic killing, across a range of historical periods. They vary significantly, in terms of both the means and the ends of the violence in question. Within this variance, however, commonalities can be observed. Systematic violence, while not inherently problematic, generates inescapable moral challenges, particularly in cases of intensified systematization. This includes the erosion of moral status for both the dispensers and the recipients of violence. This loss has the potential to negatively impact restraint in war, a risk that endures today in the context of systematic autonomous killing.

THE MORAL CHALLENGE OF LAWS

New technologies can disrupt the status quo of war in different ways. In some cases, "disruptive" technological innovation does not create, but rather makes more salient, enduring but unresolved problems in war.⁵⁶ The moral challenge of autonomous violence is an example of this. Systematic killing in war precedes this technology and goes beyond it. Autonomous systems do, however, accelerate many of its worst features, by virtue of its particular technical characteristics.

Before expanding on these characteristics, it should be reiterated that the moral challenge of autonomous violence is not one of *inhumanity*. Humans will remain intrinsic to these systems—at issue is the *type* of humanity this technology makes less and more likely. Autonomous weapons, in delivering us from the passionate, volatile misconduct of human individuals, risk plunging us ever further into the cold, dispassionate misconduct of human systems.

469 *Seeing like a Computer: The Human Object*

470 Modes and systems of classification for the grouping and ordering of enemy cat-
471 egories are as old as warfare itself. We categorize and classify to give order to our
472 actions and interactions with others, and we frequently use signifiers (such as uni-
473 form and insignia) to do so. However, as warfare has become more complex, geo-
474 graphically distributed, and asymmetrical, traditional identifiers no longer render
475 the enemy coherently legible and visible, and increasingly data serves as a
476 stand-in. As Josef Ansorge writes, “Under such challenging conditions of illegibil-
477 ity and disfluency . . . data is sought to an unprecedented degree” to identify and
478 track enemies and predict who might become one.⁵⁷

479 This logic is amplified with LAWS, where AI systems understand and identify
480 targets based purely on object recognition and classification via neural networks.
481 AI renders the world as it perceives the world, as a set of objects and related pat-
482 terns from which outcomes can be predicted and calculated, including the deci-
483 sion over which “objects” are to be targeted. Why an individual might be
484 marked for elimination might have little to do with who they are, how they
485 behave, or what they intend. Rather, the target comes to be known through stat-
486 istical probability, wherein “seemingly discrete, unconnected phenomena are con-
487 joined and correlatively evaluated.”⁵⁸ Within this process, data—behavioral,
488 contextual, image, perhaps medical, and so on—are disaggregated and reaggre-
489 gated to conform to specific modes of classification. Drawing upon this data,
490 the system calculates a systematic inference of who, or what, falls within a pattern
491 of normalcy (benign) or abnormality (potential threat) in order to eliminate the
492 threat.

493 This form of enemy identification is fraught with the risk of seeing patterns and
494 drawing inferences where there are none—a well-known challenge in human rea-
495 soning that becomes “baked” into algorithmic structures and systematized. An AI
496 system tasked with image recognition, for example, “understands” an image as a
497 set of pixels, and each pixel as a set of fields—that is, an “array of numbers, cor-
498 responding to the brightness and color of the image’s pixels.”⁵⁹ In order to train
499 such systems for the purpose of identifying an enemy, the system would first need
500 to be trained on a sizable number of appropriately labeled images (for example,
501 for the category “terrorist” or “enemy”) fed into it. Through convolutional net-
502 works, certain image features are established as “useful for classifying the object
503 it is trained on.”⁶⁰ This information is then fed into a neural network, which
504 assorts and classifies the input to predict what *object* the image depicts with a

505 certain degree of confidence, expressed in percentage values. This is always an
506 approximation, never a true and complete reflection of reality.

507 As Paddy Walker notes, “It is systemically difficult for LAWS to classify an
508 event or object into a particular category. Its processes will instead review and dis-
509 sect it according to an inappropriately small number of characteristics.”⁶¹ To
510 remain relevant for the dynamic context of warfare, the weapon must “continually
511 [calculate] new probabilities for its immediate world,” a process that is “governed
512 by an error function.”⁶² In other words, a kill decision with LAWS is one that rests
513 on approximation, streamlining, and a smoothing out of data points. Within this
514 process, persons become not just objects in the selective application of violence,
515 but objects that are constituted through algorithmic patterns. Patterns are identi-
516 fied and lines of association are drawn (where there possibly are none) and based
517 on this, kill calculations are made. The very logic of AI rests on this classification
518 and codification of life into computable data to identify objects, and patterns
519 between objects. As John Cheney-Lippold notes, “To be intelligible to a statistical
520 model is . . . to be transcoded into a framework of objectification” and become
521 defined, cross-calculated, as a computationally ascertained, actionable object.⁶³
522 This epistemic grounding produces not only a pure objectification but also, if
523 the target is human, a desubjectification and deindividualization. Such individuals
524 “cannot rely on anything unique to them because the solidity of their subjectivity
525 is determined wholly outside of one’s self, and according to whatever gets included
526 within a reference class or dataset they cannot decide.”⁶⁴

527 These logics of objectification rest at the heart of most human dignity–centric
528 critiques of autonomous killing. The concept of “human dignity” is an ambiguous
529 one, particularly when considered in the context of armed conflict. Designating
530 *particular* weapons as “inhumane” may strike some as counterintuitive, given
531 that all weapons, by design, injure and kill humans, often in painful and gruesome
532 ways. Does it really make sense to label an autonomous weapon morally worse
533 than a remotely operated drone if both carry identical payloads that create the
534 same material effect: burnt, torn, and destroyed bodies? Focusing on the material
535 effect of the strike, however, misses the moral stakes at issue. The human dignity
536 challenge of LAWS stems not from the material character of the targeting *effect*,
537 but rather from the moral character of the targeting *process*. Humans deserve to
538 remain free of predation from systems that lack the capacity to properly assess
539 and weigh their moral worth. LAWS fail to meet this standard by virtue of
540 their inability to recognize and act upon the full range of factors that render an

541 individual morally liable—or not—to lethal targeting. This is especially true when
542 LAWS are proposed for counterterrorism and urban warfare scenarios, where they
543 would be necessarily tasked with significantly more complex duties than the object
544 recognition of uniformed adversaries.

545 Computational objectification of the sort LAWS produce necessarily dehuman-
546 izes the targeted individual. It reclassifies humans as *something* less; *something*
547 that is statistically determined, processed, and rendered actionable. LAWS have
548 no conception, by design, of a subject-object relation, as we humans would, nor
549 do they understand the subjective self in relation to the object upon which they
550 act. It is in *this* absence, not in the Hellfire missiles (or whatever else) used by
551 the platform to end the life of the targeted, where the challenge to human dignity
552 resides.

553 ***The Technification of Being***

554 It is not only the targeted who are negatively impacted by systematic killing.
555 Participant agency may also be reduced, or overwhelmed, by the systems logic
556 that governs the organization and infliction of violence. Within a context of sys-
557 tematic killing, many of the features we would wish to cultivate and preserve in
558 war—judgment, personal responsibility, self-reflection, moral restraint, and so
559 on—have little space to operate. What enters instead is a logic of efficiency and
560 speed in which the human—whether that is the commander or the operator—is
561 tasked to work within the respective system logic. This challenge is evident in
562 autonomous violence, a method of killing that generates, like its historical ante-
563 cedents, problems related to authorization, routinization, and dehumanization.

564 ***Authorization***

565 As highlighted in the second section, Kelman refers to structures of authority as
566 one of the prongs that license and sustain mass killing. The computational systems
567 of LAWS fit logically into this scheme of abstraction and abdicated responsibility.
568 Computational systems command deference from operators or commanders who
569 rarely fully understand the processes involved in the computational decision.
570 Within conditions of such complexity and abstraction, humans are left with little
571 choice but to trust in the cognitive and rational superiority of this clinical author-
572 ity. This relationship is often comprised under the term “automation bias” and is a
573 well-documented phenomenon in the literature on human-machine interac-
574 tions,⁶⁵ whereby technological authority serves to smooth over moral tensions.⁶⁶
575 At issue with LAWS is not a formal, hierarchical process of authorization, but
576

577 rather one that emerges from the ostensibly neutral and superior character of the
578 machine itself. Regardless of rank, the ability—and possibly willingness—to chal-
579 lenge the authority of the machine logic becomes weakened.

580 When placed within a complex digital environment, human cognition, experi-
581 ence, and action are mediated and moderated through machine logics. Within
582 such a framework, the possibility to exercise moral agency is significantly trun-
583 cated for both commanders and operators.⁶⁷ In other words, agency is affected
584 across the distributed control setting relevant to human control of LAWS.⁶⁸
585 The effect is, however, particularly pronounced when operators are called upon
586 to action incoming information—including information of life and death stakes—
587 within seconds. Operators burdened by such constraints may lack both a “sufficient
588 level of situational awareness to make meaningful judgements” and “sufficient
589 insights into the parameters under which the automated or autonomous parts of
590 the command modules select and prioritise threats to scrutinise target selection
591 and . . . abort the attack.”⁶⁹ As operators on the loop, the human thus becomes
592 the .exe module⁷⁰ in the wider computational network, with only limited—if
593 any—capacity to override or intervene into the preset action. The combination of
594 a commander deciding to deploy LAWS and the perceived superiority of the
595 machine logic is highly likely to yield a context in which military personnel become
596 “involved in an action without considering the implications of that action and with-
597 out really making a decision.”⁷¹

598 This is not to argue that humans are a foolproof safeguard against wrongdoing
599 in war; they very clearly are not. But critically, this does not rid LAWS of their
600 morally problematic aspects. We should prefer conditions where those charged
601 with doing violence understand the context and consequences of their actions,
602 are able to recognize when they should relent from violence, and have the ability
603 to act upon this impulse rather than becoming removed from the process. The
604 danger of LAWS is not that they will too often fall short of these standards—
605 more human-centric systems do this constantly—it is that they will lack the
606 very *capacity* to meet these standards.

607 **Routinization**

608 Routinization operates at both the individual and the organizational level, shifting
609 the focus onto the purely procedural. At the individual level, the operator, as a
610 functional element in the system’s logic, focuses on the specific executive task at
611 hand with limited situational overview. At the organizational level, tasks relating
612

613 to the action (system design, algorithm programming, setting parameters for sys-
614 tem action, and so forth) are divided and often diffuse. The process of routiniza-
615 tion facilitates efficiency, procedural accuracy, speed in executing the task, and so
616 on. This, in turn, becomes the norm, the standard for conducting the action well,
617 and “the nature of the task becomes completely dissociated from their perfor-
618 mance of it.”⁷² The primary danger of the routinization of violence is that it
619 will foreclose opportunities for moral intervention and thus weaken moral
620 restraint.⁷³

621 In conflict, there are always ambiguities that remain unresolved, where certainty
622 cannot be established as to the identity and liability of a potential target. Even
623 when we possess a set of parameters to make such determinations with reasonable
624 confidence, some degree of uncertainty endures. It is precisely these ambiguities
625 that leave space for ethical reasoning, which, in turn, allows for ethical interven-
626 tion. As we have seen above, such interventions are necessary when the system, or
627 indeed the rules, are either structurally or episodically overinclusive, mandating
628 the targeting of those who have been categorized falsely as legitimate targets.
629 LAWS, framed by some as having the potential for “ethical prowess,”⁷⁴ divorce
630 cognition from emotion, leaving us with less morally empowered agents of
631 violence.

632 Importantly, this challenge is not limited to the violent end of the kill chain.
633 The computerized routinization built into LAWS narrows the space for human
634 agency. Humans remain within the system, but responsibility for lethal force—
635 the parameters and formulation of objections, as well as the execution of vio-
636 lence—is diffused, or detached, through the systems process. At its worst, this
637 detachment of responsibility facilitates the careless or indeed deliberate applica-
638 tion of wrongful violence.

639 DEHUMANIZATION

641 As indicated above, where a systematic approach to killing is applied, dehuman-
642 ization is often twofold. Targets are objectified and stripped of the rights and rec-
643 ognition they would otherwise be owed by virtue of their status *as* humans. They
644 are then reinterpreted as something less, “*something* that needs killing.”⁷⁵ This
645 process also, however, typically dehumanizes the perpetrator. The dehumanization
646 of the soldier, the operator, and those that set the parameters for killing takes hold
647 gradually as he/she functions within the wider system of killing in which
648

649 cognition and affect become starkly separated. Where personal responsibility,
650 human relations, and empathy are systematically discarded, one cannot act as a
651 human moral being.⁷⁶ As the rich literature on this topic reveals, these processes
652 invite violence and abuse.⁷⁷

653 We may again ask whether these challenges are inherent to the system or
654 (potentially) resolvable. According to some, many of the problems we associate
655 with LAWS can be mitigated if we make humans functionally relevant within
656 the system; more fully lean into the *technification of being*, in other words.
657 Humans, the argument goes, must be able to understand and work with the
658 logic of the machine for a superior outcome: “*Weak human + machine + better
659 process [is] superior to [either] a strong computer alone [or] . . . a strong human
660 + machine + inferior process.*”⁷⁸ This is intuitive for future warfare only if we
661 accept that the system logic should prevail in the process of killing with LAWS.
662 Such a future would give sanction to systems of violence that cast enemies, ines-
663 capably, as inhuman objects, and render combatants ever more morally inert.
664 LAWS accelerate and rationalize the decision to kill, but, in doing so, open up
665 new spaces for moral infraction. Those concerned with the regulation and
666 “humanization” of war should look elsewhere than the computational and dispas-
667 sionate violence of autonomous weapons.

668 CONCLUSION

669
670 “Nothing is so dangerous in the study of war,” argued Sir Julian Corbett, “as to
671 permit maxims to become a substitute for judgment.”⁷⁹ This warning is equally
672 applicable to processes of systemization, which subsume human judgment on
673 the battlefield to a morally problematic degree. As highlighted above, international
674 humanitarian law is valued precisely because human judgment has proven
675 throughout history to be an insufficient check on individual conduct. The princi-
676 ple of discrimination, the prohibition against perfidy, and prisoner of war protec-
677 tions—these rules stand whatever situational pressures exist and regardless of the
678 vagaries of combatant judgment. Our appreciation for these rules should not,
679 however, blind us to the dangers of the inverse—cold and dispassionate forms
680 of systematic violence that erode the moral status of human targets, as well as
681 the status of those who participate within the system itself.

682 The argument that LAWS can be more ethical agents in war can only hold if we
683 think of war as a largely procedural and process-focused activity in which moral
684

685 lines are relatively easy to identify and sufficiently robust to withstand uncertainty
686 and ambiguity. This might be an ideal, but it is not, and likely never will be, a real-
687 ity. War is riven by a complexity that precludes certainty; and by extension, the
688 smooth and reliable application of systematic violence to target objects. To pro-
689 ceed as if this is not the reality, to impose systematic violence upon environments
690 structurally unsuited to such an approach, is to court foreseeable and ruinous
691 moral harm.

692 With LAWS, and AI-infused killing more broadly, violence becomes systema-
693 tized in the most literal sense. The system provides the organization, optimized
694 function, distancing, and moral vacuum required to expand modes of killing
695 rather than fostering restraint. This is neither genocide nor ethnic cleansing nor
696 any of the other forms of historical systematic murder examined in this article.
697 The violence of LAWS is not morally close to the mass killing that punctuated
698 so much of the twentieth century. What we do observe, however, is an echo of
699 the problematic past in the autonomous *processes* of today: an implicit set of con-
700 ditions that might facilitate moral infraction in the use of lethal violence in
701 warfare.

702 NOTES

703 ¹ Authors listed alphabetically.

704 ² *Burning Conscience: The Case of the Hiroshima Pilot Claude Eatherly, Told in His Letters to Günther Anders*, letter from Günther Anders to Claude Eatherly (London: Weidenfeld & Nicolson, 1962), p. 1.

705 ³ *Ibid.*, pp. 108–9.

706 ⁴ Norbert Wiener, *The Human Use of Human Beings: Cybernetics and Society* (London: Free Association Books, 1989) (emphasis in the original), p. 185.

707 ⁵ Christof Heyns, “Autonomous Weapons in Armed Conflict and the Right to a Dignified Life: An African Perspective,” *South African Journal of Human Rights* 33, no. 1 (April 2017), pp. 46–71; and Peter Asaro, “On Banning Autonomous Weapon Systems: Human Rights, Automation, and the Dehumanization of Lethal Decision-Making,” *International Review of the Red Cross* 94, no. 886 (June 2012), pp. 687–709.

710 ⁶ See, for example, Steven Umbrello, Phil Torres, and Angelo F. De Bellis, “The Future of War: Could Lethal Autonomous Weapons Make Conflict More Ethical?,” *AI & Society* 35 (March 2020), pp. 273–82; Erich Riesen, “The Moral Case for the Development and Use of Autonomous Weapon Systems,” *Journal of Military Ethics* 21, no. 2 (2022), pp. 132–50; Garry Young, “Should Autonomous Weapons Need a Reason to Kill?,” in “Honour and Admiration after War and Conflict,” special issue, *Journal of Applied Philosophy* 39, no. 5 (November 2022), pp. 886–900; Duncan MacIntosh, “Fire and Forget: A Moral Defense of the Use of Autonomous Weapons Systems in War and Peace,” in Jai Galliot, Duncan MacIntosh, and Jens David Ohlin, eds., *Lethal Autonomous Weapons: Re-Examining the Law and Ethics of Robotic Warfare* (New York: Oxford University Press, 2021), pp. 9–24; Massimiliano Lorenzo Cappuccio, Jai Christian Galliot, and Fady Shibata Alnajjar, “A Taste of Armageddon: A Virtue Ethics Perspective on Autonomous Weapons and Moral Injury,” *Journal of Military Ethics* 21, no. 1 (2022), pp. 19–38; Kevin Jon Heller, “The Concept of ‘The Human’ in the Critique of Autonomous Weapons,” *Harvard National Security Journal* (forthcoming 2023); and Ryan Jenkins and Duncan Purves, “Robots and Respect: A Response to Robert Sparrow,” *Ethics & International Affairs* 30, no. 3 (Fall 2016), pp. 391–400.

717 ⁷ John Keegan, *A History of Warfare* (London: Pimlico, 1994).

718 ⁸ A lack of definitional coherence has been frequently cited as a regulatory roadblock throughout the international debate over the legality of LAWS. See Mariarosaria Taddeo and Alexander Blanchard,

721 “A Comparative Analysis of the Definitions of Autonomous Weapons,” *Science and Engineering Ethics*
722 28, no. 37 (August 2022), pp. 1–22.

723 ⁹ International Committee of the Red Cross, “Views of the International Committee of the Red Cross
724 (ICRC) on Autonomous Weapon System” (Convention on Certain Conventional Weapons [CCW],
725 Meeting of Experts on Lethal Autonomous Weapons Systems [LAWS], Geneva, April 11–15, 2016),
726 p. 1, www.icrc.org/en/download/file/21606/ccw-autonomous-weapons-icrc-april-2016.pdf.

727 ¹⁰ Paddy Walker, “Leadership Challenges from the Deployment of Lethal Autonomous Weapon Systems,”
728 *RUSI Journal* 166, no. 1 (May 2021), pp. 10–21, at p. 14.

729 ¹¹ John Murray, quoted in Will Knight, “The Pentagon Inches toward Letting AI Control Weapons,”
730 *WIRED*, May 10, 2021, www.wired.com/story/pentagon-inches-toward-letting-ai-control-weapons/;

731 ¹² Congressional Research Service, “Defense Primer: Command and Control,” “In Focus,” updated
732 November 14, 2022, p. 2.

733 ¹³ Asaro, “On Banning Autonomous Weapon Systems,” p. 688.

734 ¹⁴ Noel Sharkey and Lucy Suchman, “Wishful Mnemonics and Autonomous Killing Machines,” *AISB*
735 *Quarterly* 136 (May 2013), pp. 14–22.

736 ¹⁵ Robert Sparrow, “Killer Robots,” *Journal of Applied Philosophy* 24, no. 1 (2007), pp. 62–77. For a com-
737 prehensive overview of the various perspectives in the debate on the responsibility gap, see Ann-Katrien
738 Oimann, “The Responsibility Gap and LAWS: A Critical Mapping of the Debate,” *Philosophy &*
739 *Technology* 36, no. 1 (January 2023), pp. 1–22.

740 ¹⁶ Heyns, “Autonomous Weapons in Armed Conflict and the Right to a Dignified Life,” p. 63. See also
741 Elvira Rosert and Frank Sauer, “Prohibiting Autonomous Weapons: Put Human Dignity First,”
742 *Global Policy* 10, no. 3 (September 2019), pp. 370–75; and Daniele Amoroso and Guglielmo
743 Tamburrini, “The Ethical and Legal Case against Autonomy in Weapons Systems,” *Global Jurist* 18,
744 no. 1 (September 2017), www.degruyter.com/document/doi/10.1515/gj-2017-0012/html?lang=en. p
745 63 (for both quotes)

746 ¹⁷ Deane Baker, *Should We Ban Killer Robots?* (Cambridge, U.K.: Polity, 2022), p. 111; and Heller, “The
747 Concept of ‘the Human’ in the Critique of Autonomous Weapons.”

748 ¹⁸ Heller, “The Concept of ‘the Human’ in the Critique of Autonomous Weapons,” p. 5.

749 ¹⁹ Thompson Chengeta, “A Critique of the Canberra Guiding Principles on Lethal Autonomous Weapon
750 Systems,” E-International Relations, April 15, 2020, [www.e-ir.info/2020/04/15/a-critique-of-the-](http://www.e-ir.info/2020/04/15/a-critique-of-the-canberra-guiding-principles-on-lethal-autonomous-weapon-systems)
751 [canberra-guiding-principles-on-lethal-autonomous-weapon-systems](http://www.e-ir.info/2020/04/15/a-critique-of-the-canberra-guiding-principles-on-lethal-autonomous-weapon-systems).

752 ²⁰ Walker, “Leadership Challenges from the Deployment of Lethal Autonomous Weapon Systems.”

753 ²¹ National Security Commission on Artificial Intelligence, *Final Report* (Washington, D.C.: National
754 Security Commission on Artificial Intelligence, March 2021), p. 91 (italics added), [www.nscai.](http://www.nscai.gov/2021-final-report)
755 [gov/2021-final-report](http://www.nscai.gov/2021-final-report).

756 ²² Close to half of all U.S.-caused civilian casualties in the war in Afghanistan, for example, were the result
757 of human misidentification. See Larry Lewis, *Redefining Human Control: Lessons from the Battlefield for*
758 *Autonomous Weapons* (Arlington, Va.: Center for Autonomy and AI, Center for Naval Analysis, 2018).

759 ²³ Ronald Arkin, “Lethal Autonomous Systems and the Plight of the Non-Combatant,” *AISB Quarterly*
760 137 (July 2013), p. 3.

761 ²⁴ Umbrello et al., “The Future of War,” p. 276.

762 ²⁵ Cappuccio et al., “A Taste of Armageddon,” p. 20.

763 ²⁶ Alexander J. Bellamy, *Massacres and Morality: Mass Atrocities in an Age of Civilian Immunity* (Oxford:
764 Oxford University Press, 2012), p. 384.

765 ²⁷ John Williams, “Locating LAWS: Lethal Autonomous Weapons, Epistemic Space, and ‘Meaningful
766 Human’ Control,” *Journal of Global Security Studies* 6, no. 4 (December 2021), pp. 1–18, at p. 9.

767 ²⁸ Geoffrey Best, *Humanity in Warfare: The Modern History of the International Law of Armed Conflicts*
768 (London: Methuen, 1980).

769 ²⁹ Riesen, “The Moral Case for the Development and Use of Autonomous Weapon Systems,” p. 133.

770 ³⁰ Jonathan Glover, *Humanity: A Moral History of the Twentieth Century* (London: Pimlico, 2001), p. 64.

771 ³¹ Herfried Münkler, *Die neuen Kriege* (Hamburg: Rowohlt, 2003), p. 30.

772 ³² Lawrence Freedman, *The Future of War: A History* (St. Ives, U.K.: Allen Lane, 2017), p. 36.

773 ³³ Herbert Kitchener, quoted in Thomas Pakenham, *The Boer War* (London: Weidenfield & Nicolson,
774 1979), p. 493.

775 ³⁴ We examine this contemporary systematization in section three.

776 ³⁵ Hannah Arendt, *The Origins of Totalitarianism* (New York: Random House, 2004), p. 585.

777 ³⁶ Robert Jay Lifton, *The Nazi Doctors: Medical Killing and the Psychology of Genocide* (New York: Basic
778 Books, 2000), p. 153.

779 ³⁷ *Ibid.*, p. 162.

- 757 ³⁸ James W. Gibson, *The Perfect War: Technowar in Vietnam* (New York: Atlantic Monthly Press, 1986).
758 See also Nick Turse, *Kill Anything That Moves: The Real American War in Vietnam* (New York:
759 Metropolitan Books, 2013), p. 38; and Antoine Bousquet, *The Scientific Way of Warfare: Order and
760 Chaos on the Battlefields of Modernity* (New York: Columbia University Press, 2009), p. 149.
- ³⁹ Turse, *Kill Anything That Moves*, p. 38.
- ⁴⁰ *Ibid.*, p. 27.
- ⁴¹ *Ibid.*, p. 16–17.
- ⁴² Wayne Smith, quoted in *ibid.*, p. 45.
- ⁴³ Herbert C. Kelman, “Violence without Moral Restraint: Reflections on the Dehumanization of Victims
762 and Victimizers,” *Journal of Social Issues* 29, no. 4 (Fall 1973), pp. 25–61, at p. 52.
- ⁴⁴ *Ibid.*, p. 39.
- ⁴⁵ *Ibid.*, p. 44.
- ⁴⁶ *Ibid.*, p. 48.
- ⁴⁷ *Ibid.*, p. 46.
- ⁴⁸ *Ibid.*, p. 48.
- ⁴⁹ *Ibid.*, p. 51.
- ⁵⁰ Timothy P. Schultz, “Remote Warfare: A New Architecture of Air Power,” in Phil M. Haun, Colin
767 F. Jackson, and Timothy P. Schultz, eds., *Air Power in the Age of Primacy: Air Warfare since the
768 Cold War* (Cambridge, U.K.: Cambridge University Press, 2022), pp. 26–53, at p. 28.
- ⁵¹ John Kerry, quoted in “U.S. Drone Programme: ‘Strict, Fair and Accountable’—Kerry,” News, BBC,
769 May 28, 2013, [www.bbc.com/news/av/world-radio-and-tv-22690918/us-droneprogramme-strict-fair-
770 and-accountable-kerry](http://www.bbc.com/news/av/world-radio-and-tv-22690918/us-droneprogramme-strict-fair-and-accountable-kerry).
- ⁵² Ryan Devereaux, “Manhunting in the Hindu Kush: Leaked Documents Detailing a Multi-Year U.S.
771 Military Campaign in Afghanistan Reveal the Strategic Limits and Startling Human Costs of Drone
772 Warfare,” *Intercept*, October 15, 2015, theintercept.com/drone-papers/manhunting-in-the-hindu-kush.
- ⁵³ Barack Obama, “Barack Obama: The 2020 60 Minutes Interview,” interview by Scott Pelley, *CBS News*,
773 November 16, 2020, www.cbsnews.com/video/barack-obama-60-minutes-2020-11-15.
- ⁵⁴ Ed Pilkington, “Life as a Drone Operator: ‘Ever Step on Ants and Never Give It Another Thought?’,”
774 *Guardian*, November 19, 2015, [www.theguardian.com/world/2015/nov/18/life-as-a-drone-pilot-
775 creech-air-force-base-nevada](http://www.theguardian.com/world/2015/nov/18/life-as-a-drone-pilot-creech-air-force-base-nevada).
- ⁵⁵ Quoted in Jeremy Scahill, “The Assassination Complex,” *Intercept*, October 15, 2015,
776 theintercept.com/drone-papers/the-assassination-complex. This dehumanization functioned primarily
777 at the policy, rather than the combat, level. There also exist numerous accounts of drone use that
778 emphasize the intimacy and psychological strain of such strikes. See, for example, John Williams,
779 “Distant Intimacy: Space, Drones, and Just War,” *Ethics & International Affairs* 29, no. 1 (Spring
780 2015), pp. 93–110.
- ⁵⁶ For a detailed overview of these distinctions in a legal context, see Rebecca Crotoof, “Regulating New
781 Weapons Technology,” in Eric Talbot Jensen and Ronald T. P. Alcalá, eds., *The Impact of Emerging
782 Technologies on the Law of Armed Conflict* (New York: Oxford University Press, 2019), pp. 3–26.
- ⁵⁷ Josef Teboho Ansoorge, *Identify & Sort: How Digital Power Changed World Politics* (London: C. Hurst &
783 Co., 2016), p. 124.
- ⁵⁸ John Cheney-Lippold, “Accidents Happen,” *Social Research: An International Quarterly* 86, no. 2
784 (Summer 2019), pp. 513–35, at p. 523.
- ⁵⁹ Melanie Mitchell, *Artificial Intelligence: A Guide for Thinking Humans* (London: Penguin Books, 2019),
785 p. 78.
- ⁶⁰ *Ibid.*, pp. 86–87.
- ⁶¹ Walker, “Leadership Challenges from the Deployment of Lethal Autonomous Weapon Systems,” p. 17.
- ⁶² *Ibid.*, pp. 17, 14.
- ⁶³ Cheney-Lippold, “Accidents Happen.”
- ⁶⁴ *Ibid.*, pp. 523–24.
- ⁶⁵ See, for example, M. L. Cummings, “Automation Bias in Intelligent Time Critical Decision Support
787 Systems” (AIAA [American Institute of Aeronautics and Astronautics] 3rd Intelligent Systems
788 Conference, Chicago, September 20–22, 2004); and Noel Sharkey, “Guidelines for the Human
789 Control of Weapons Systems,” (working paper for the CCW GGE, International Committee for
790 Robot Arms Control, April 2018).
- ⁶⁶ Neta C. Crawford, “Bugsplat: US Standing Rules of Engagement, International Humanitarian Law,
791 Military Necessity, and Noncombatant Immunity,” in Anthony F. Lang Jr., Cian O’Driscoll, and
792 John Williams, eds., *Just War: Authority, Tradition, and Practice* (Washington, D.C.: Georgetown
University Press, 2013), pp. 231–50.

- 793 ⁶⁷ Elke Schwarz, “Autonomous Weapon Systems, Artificial Intelligence and the Problem of Meaningful
794 Human Control,” *Philosophical Journal of Conflict and Violence* V, no. 1 (2021), pp. 53–72.
- 795 ⁶⁸ For a discussion of distributed control related to the concept of meaningful human control of LAWS,
796 see Merel Ekelhof, “Moving beyond Semantics on Autonomous Weapons: Meaningful Human Control
797 in Operation,” *Global Policy* 10, no. 3 (September 2019), pp. 343–48.
- 798 ⁶⁹ Ingvild Bode and Tom Watts, *Meaning-Less Human Control: Lessons from Air Defence Systems on
799 Meaningful Human Control for the Debate on AWS* (Odense: Center for War Studies, University of
800 Southern Denmark, February 2021), p. 28.
- 801 ⁷⁰ In programming, an .exe file is known as an executable file. Such a file contains coded instructions for a
802 computational process that are activated by a user or another event.
- 803 ⁷¹ Kelman, “Violence without Moral Restraint,” p. 46.
- 804 ⁷² *Ibid.*, p. 47.
- 805 ⁷³ John Emery discusses these opportunities for moral engagement within any system of war as “mean-
806 ingful inefficiencies,” which makes space for important ethical deliberation. See John R. Emery,
807 “Algorithms, AI, and Ethics of War,” *Peace Review* 33, no. 2 (2022), pp. 205–12.
- 808 ⁷⁴ Umbrello et al., “The Future of War,” p. 276.
- 809 ⁷⁵ David Livingstone Smith, *On Inhumanity: Dehumanization and How to Resist It* (New York: Oxford
810 University Press, 2020), p. 9.
- 811 ⁷⁶ Kelman, “Violence without Moral Restraint,” p. 52.
- 812 ⁷⁷ See, for example, Linda LeMoncheck, *Dehumanizing Women: Treating Persons as Sex Objects* (Totowa,
813 N.J.: Rowman & Allanheld, 1985); Martha C. Nussbaum, “Objectification,” *Philosophy and Public
814 Affairs* 24, no. 4 (Autumn 1995), pp. 249–91; and Eileen L. Zurbruggen, “Objectification,
815 Self-Objectification, and Societal Change,” *Journal of Social and Political Psychology* 1, no. 1
816 (December 2013), pp. 188–215.
- 817 ⁷⁸ Gary Kasparov, quoted in Trevor Philips-Levine, Michael Kanaan, Dylan “Joose”
818 Phillips-Levine, Walker D. Mills, and Noah Spataro, “Weak Human, Strong Force: Applying
819 Advanced Chess to Military AI,” *War on the Rocks*, July 7, 2022, warontherocks.com/2022/07/
820 weak-human-strong-force-applying-advanced-chess-to-military-ai.
- 821 ⁷⁹ Julian S. Corbett, *Some Principles of Maritime Strategy* (London: Longmans, Green & Co., 1911), p. 167.

812 Abstract: Systematic killing has long been associated with some of the darkest episodes in human
813 history. Increasingly, however, it is framed as a desirable outcome in war, particularly in the context
814 of military AI and lethal autonomy. Autonomous weapons systems, defenders argue, will surpass
815 humans not only militarily but also morally, enabling a more precise and dispassionate mode of
816 violence, free of the emotion and uncertainty that too often weaken compliance with the rules
817 and standards of war. We contest this framing. Drawing on the history of systematic killing, we
818 argue that lethal autonomous weapons systems reproduce, and in some cases intensify, the
819 moral challenges of the past. Autonomous violence incentivizes a moral devaluation of those tar-
820 geted and erodes the moral agency of those who kill. Both outcomes imperil essential restraints on
821 the use of military force.

818 Keywords: war, armed conflict, ethics, technology, violence, autonomy, military AI, LAWS, lethal
819 autonomous weapons systems, dehumanization