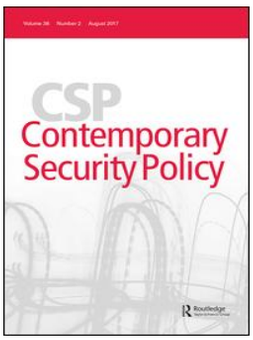

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How (not) to stop the killer robots: A comparative analysis of humanitarian disarmament campaign strategies

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ABSTRACT

Whether and how Lethal Autonomous Weapons Systems (LAWS) can and should be regulated is intensely debated among governments, scholars, and campaigning activists. This article argues that the strategy of the Campaign to Stop Killer Robots to obtain a legally binding instrument to regulate LAWS within the framework of the United Nations Convention on Certain Conventional Weapons is not likely to be effective, as it is modeled after previous humanitarian disarmament successes and not tailored to the specifics of the issue. This assessment is based on a systematic comparison of the autonomous weapons case with the cases of blinding laser weapons and anti-personnel landmines that makes use of an analytical framework consisting of issue-related, actor-related, and institution-related campaign strategy components. Considering the differences between these three cases, the authors recommend that the LAWS campaign strategy be adjusted in terms of institutional choices, substance, and regulatory design.

KEYWORDS Humanitarian disarmament; anti-personnel landmines; blinding laser weapons; convention on certain conventional weapons; artificial intelligence; lethal autonomous weapons systems

Humankind is on the cusp of the fourth industrial revolution. How we live, work, and communicate is changing. A key feature of this new epoch is automation, enabled by breakthroughs in artificial intelligence (AI).[1] Machines today are able to perform more numerous and complex tasks with minimal or no human assistance or supervision. Naturally, militaries around the globe also intend to benefit from this development. As a result, what has come to be

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called "autonomy" in weapons systems is on the rise (Roff, 2016). Weapons systems increasingly operate without human intervention, even with respect to the selection and engagement of targets.[2] Weapon autonomy is a military development of paramount importance and has been described as "the third revolution in warfare, after gunpowder and nuclear arms" (Future of Life Institute, 2015).

At the United Nations (UN), the international community is discussing weapon autonomy under the designation "Lethal Autonomous Weapons Systems" (LAWS). The UN epicenter of deliberations on possible arms control for LAWS is the Convention on Certain Conventional Weapons (CCW) in Geneva. Attempting to prohibit LAWS within the CCW, a global coalition of non-governmental organizations (NGOs) coordinated in a joint campaign, the Campaign to Stop Killer Robots (KRC), is raising awareness of the legal, ethical, and security concerns accompanying weapon autonomy.

While it is generally true that "arms races involving strategically appealing technologies can be slowed, channeled, or stopped" (Maas, 2019, p. 294), the feasibility of a legally binding arms control regime for LAWS remains a point of contention (Sauer, 2016). Governments question, for instance, whether LAWS need to be regulated at all, why the time for regulation is now, or whether a regulatory regime will ever be verifiable. Among scholars, optimists do see potential for preventive regulation (Garcia, 2016), but others argue that legal norms will always lag behind, which is why norms emerging through LAWS-related practices should be taken into account (Bode & Huelss, 2018, p. 400).

In this article, we raise the question of *how* a legally binding regulation of LAWS can be brought about. The campaign strategy of the global NGO coalition against LAWS is our focal point in the search for answers for two reasons. First, there is near unanimity among governments that civil society as represented by the KRC is responsible for weapon autonomy becoming part of the UN's arms control discussion in the first place. Second, International Relations (IR) scholarship on weapons prohibitions demonstrates the influence of humanitarian advocacy campaigns and their potential to shift preferences and reach agreements, even against the interests of militarily advanced powers (Bower, 2015; Petrova, 2016). Moreover, scholars have identified a broad spectrum of strategies that make such successes more (or less) likely (Petrova, 2018; Price, 1998). Following this line of reasoning, strategic choices guiding the campaigns have a major impact on their outcomes.

Our main finding is that the strategies adopted by KRC are suboptimal. We arrive at this conclusion by a comparative analysis of the process on LAWS and two previous, *successful* weapons regulation processes on blinding laser weapons (BLW) and anti-personnel landmines (APL). This comparison is structured by a framework condensed from the literature on norm building that identifies issue-, actor-, and institution-related components of success strategies. We selected BLW and APL as comparative cases for empirical as well as conceptual reasons. BLW and APL are frequently referenced in the

discourse on LAWS (both within and outside the CCW), most commonly to draw parallels between them with regard to possible incompatibilities with key tenets of International Humanitarian Law (IHL). Additionally, while the BLW and APL cases share the same outcome (successful regulation), the respective weapons and regulatory processes in question differ significantly. Systematically exposing all of these potentially relevant aspects, such as BLW being regulated from within the UN's CCW framework and APL being regulated outside of it, further increases our analytical leverage and allows, in turn, for a more nuanced analysis of the LAWS process.

One key observation underpins our assessment that the current campaign design can be improved: So far, the LAWS campaign has been modeled after earlier campaigns conducted under the "inhumane weapons" umbrella. But weapon autonomy differs fundamentally from the previously banned BLW, APL, and cluster munitions (CM). Not only is the technology more abstract and complex, but it is also less clear that LAWS (would) violate basic IHL principles.

Nevertheless, the KRC's current norm-setting strategy resembles its predecessors in several ways. First, the *substance* of the campaign's key argument is the same: It is argued that machines will not be able to distinguish between civilians and combatants, highlighting the inherent indiscriminateness of LAWS and making the same IHL-nested case that resulted in securing bans on APL and CM. Second, the aspired *regulatory design* is the standard one: It would take the form of a legally binding prohibition treaty, either as a protocol to the CCW (like protocol IV on BLW) or as a standalone convention (like those on APL and CM). Finally, the *institutional choices* are similar: The initial venue is the CCW, but the process might continue outside the UN framework, reflecting the KRC's increasing skepticism about the CCW's ability to act (Campaign to Stop Killer Robots, 2019b).

Considering the special characteristics of the weapon autonomy issue, we propose changes to the substance of the argument, the expected regulatory design, and the institutional choices. Instead of deploying the IHL frame of inherent indiscriminateness, we propose highlighting the more fundamental problem of LAWS infringing on human dignity. Instead of calling for a "ban," we suggest calling for a positive obligation; that is, shifting from a prohibition of LAWS toward codifying the requirement of human control. Instead of moving and concluding the LAWS process outside the CCW, we suggest contesting the CCW's traditional consensus principle and lobbying for a majority vote.

Analyses of the various ethical, legal, political, and technical implications of LAWS, as well as on their potential impact on peace and stability, are rapidly expanding (see e.g., Altmann & Sauer, 2017; Asaro, 2019; Scharre, 2018; Sharkey, 2012, 2019). While others study the construction and contestation of the emerging normative framework through individual states or regional

groups (Barbé & Badell, 2019; Bode, 2019), the normative impact of practices related to the development and operation of autonomy in weapons (Bode & Huelss, 2018), or the very appearance of the LAWS issue on the transnational and international agenda (Carpenter, 2014), we analyze the norm-setting efforts by the KRC. Through its comparative design, this article advances research on the question of why some weapons norms emerge while other fail to do so (Cooper, 2011; Mathur, 2012; Rosert, 2019b).

Analytical framework: Strategies of norm-setting in humanitarian disarmament

What are the strategies that make norm adoption more likely, according to the literature? In a nutshell, successful norm building requires the initial raising of awareness by active and committed norm entrepreneurs (advocacy organizations, affected individuals or groups, members of epistemic communities, and states as well), who subsequently construct a resonant framing, mobilize their audience, pressure the norm addressees, and choose (or create) a favorable institutional setting (Coleman, 2013; Finnemore & Sikkink, 1998; Keck & Sikkink, 1998). Our analytical framework breaks down the strategies into their issue-related, actor-related, and institution-related components. The examples provided illustrate the specific clues that we look for in the empirical analysis.

Framing is a component of the issue-related strategy through which norm entrepreneurs describe issues in a certain way by attributing certain features to them (Keck & Sikkink, 1998, pp. 10–19). An effective framing has to be both simple and concrete to make it easier for the target audience to understand the message; it also has to be emotional to invoke feelings through linkages to fear, bodily harm, or threats to moral and societal values (Keck & Sikkink, 1998, pp. 27–28). Nuclear weapons, for instance, have been framed as inducing apocalyptic fear (Sauer, 2015), chemical weapons have been framed as "uncivilized" (Price, 1995, p. 98), and incendiary weapons have been framed as burning Vietnamese children (Rosert, 2019b, pp. 91–92).

To resonate, the framing should be tailored to the normative environment, mobilizing existing normative resources ("grafting") (Price, 1998, pp. 628–630). When addressing explosive remnants of war (ERW), humanitarian advocates have embedded the problem in the broader framework of post-conflict reconstruction by highlighting that ERW slow down the recovery of societies (Rosert, 2019a, p. 1120). In addition to their alignment with general themes, the targeted behavioral practices are being associated with already stigmatized practices (Crawford, 2002, pp. 101–102). Claiming that cluster munitions are "de facto landmines" is a case in point (Petrova, 2018, p. 639).

The components of actor-related strategies that norm entrepreneurs direct toward other advocacy groups, the broader public, and governments include mobilization, social pressure, lobbying, and coalition-building. A primary target of mobilization are so-called *gatekeepers*—established and influential organizations at the top of the transnational hierarchy. Because gatekeepers determine which issues deserve and subsequently receive attention, it is crucial that norm entrepreneurs succeed in placing issues on their agenda (Bob, 2002, p. 38). In the field of humanitarian arms control, Human Rights Watch (HRW) and the International Committee of the Red Cross (ICRC) have been deemed gatekeepers. In the past, their commitment to issues such as small arms has resulted in norm-setting processes, and their neglect of issues such as depleted uranium has correlated with the absence of such processes (Carpenter, 2011, p. 83).

Mobilizing the public through awareness-raising campaigns as well as publicly naming and shaming norm-violating governments are two ways to exert social pressure (Keck & Sikkink, 1998, pp. 19–25). Additional strategy components aim to alter the positions and behaviors of decision-makers through reputational concerns or changes in preferences. In contrast, lobbying is geared not toward the actors' reputation but toward their beliefs, which norm entrepreneurs hope to change by providing scientific expertise and policy suggestions (Bloodgood, 2011, p. 104). Another actor-related strategy component is the building of coalitions between different norm-supporting actors, who exchange their resources to compensate for structural disadvantages and divide various tasks among themselves (Bolton & Nash, 2010). A recent example of the concerted application of actor-related strategies is the process that led to the adoption of the Treaty on the Prohibition of Nuclear Weapons in 2017. The International Campaign to Abolish Nuclear Weapons (ICAN) succeeded in sparking off a new anti-nuclear movement by drawing the public back into the nuclear discourse, reviving the scientific evidence of the humanitarian consequences of nuclear weapons use, and joining forces with a diverse coalition of NGOs, academics, elder statesmen, and non-nuclear weapon states (Davis Gibbons, 2018; Hanson, 2018).

The institution-related strategy components involve choosing the most promising institutional platform for the adoption of the particular norm (venue choice), transforming existing institutional arrangements (venue reform), or moving the debate to other forums (venue shift) (Coleman, 2013; Cottrell, 2009, pp. 225–226; Fehl, 2014, p. 520). To make such decisions, norm entrepreneurs must be aware of the opportunity structures available in different institutional settings. Whether these enable or constrain persuasion and, hence, political action, depends upon features such as access, participation, communication and decision-making rights, as well as transparency and public scrutiny of the decision-making processes

(Coleman, 2013, pp. 167–168; Deitelhoff & Müller, 2005, p. 172). Due to a lack of such features, two processes of humanitarian arms control were shifted away from the CCW, which had failed to reach an agreement, and into different forums. Both the Mine Ban Treaty and the Convention on Cluster Munitions were adopted in ad hoc processes with a more favorable institutional setting that offered, among other features, learning opportunities at regional conferences and the possibility of a two-thirds majority vote if a consensus could not be reached (Cottrell, 2009, p. 238; Rosert, 2019a, p. 1123).

In the following, we compare and assess the cases of BLW, APL, and LAWS in light of the campaign strategy components contained in the analytical framework. The case studies show that the two historical processes display most of the advantageous factors, whereas the current process on LAWS displays some while lacking others.

Ban on blinding laser weapons

The ban on BLW, adopted as CCW Protocol IV at the First Review Conference of the CCW (RevCon1) in 1995, is a remarkable achievement in several regards. First, it is the only *ban* on a weapon to be negotiated within the CCW, which in other cases agreed only on restrictions. Second, it is the first ban on a conventional weapon to prohibit not only the weapon's use, but also its transfer. Third, it is a *preventive* ban adopted before the weapons in question were introduced into the battlefield, whereas other weapons norms are *reactive,* regulating weapons already in use. Fourth, it is the only contemporary weapons ban based on the principle of unnecessary suffering, and thus intended to protect combatants. Finally, the BLW ban was adopted despite the fact that the transnational campaigning efforts were less concerted than those against APL and LAWS.

Characteristics and framing of BLW

Dating back to the mid-1960s, the military use of "light amplification by the stimulated emission of radiation," or "laser" for short, attracted the interest of militaries in roughly thirty countries (including China, the United Kingdom, the United States, and Syria) in subsequent decades (Morton, 1998, p. 698; Peters, 1996, p. 742). A laser beam travels great distances silently, in a straight line, and at the speed of light, making it faster than any projectile. Moreover, laser weapons ease the burden of military logistics because they do not require ammunition, only energy (Anderberg et al., 1992, pp. 290–291; Gillow, 1995, p. 348; Marshall, 1997, p. 1392). They are used militarily for a variety of purposes, such as range finding, guided munition target designation, communication, and training simulation (Peters, 1996, p. 737).

More importantly, however, lasers can destroy optical sensors or even non-optical material (Marshall, 1997, p. 1392; Morton, 1998, p. 698). Thus, these weapons possess the unique capability (albeit one limited to line of sight) to "soft kill," that is, to incapacitate armor by destroying its sensors (Peters, 1996, p. 738). However, this capability can voluntarily or involuntarily affect the optical sensors of the human crew—their usually unshielded eyes (Gillow, 1995, p. 348; ICRC, 1994, p. 151; Marshall, 1997, p. 1392). While a point of humanitarian concern for some, this "non-lethal" effect made lasers acceptable and even desirable for others (Peters, 1996, p. 756).

When BLW first appeared on the international agenda in the Ad Hoc Committee of the ICRC Diplomatic Conference in the 1970s, they were subsumed under the category of future weapons. This futuristic frame made the topic seem less urgent compared to existing inhumane weapons such as napalm, which had already inflicted terrible damage (Peters, 1996, p. 753). In the next attempt at a ban, BLW were addressed not as a part of a category of weapons, but on their own. Even though a ban on anti-personnel lasers would still have been a preemptive one at that point, the technology had progressed further; some variants had even been used on the battlefield, which lessened the issue's largely futuristic vibe (Anderberg et al., 1992, p. 287). Additionally, although the weapon was new and unfamiliar, its effect—the blinding of human beings—was not.

By exploiting the familiarity with the issue of blinding and countering the perception that "blinding is better than killing," the proponents of a ban on laser weapons activated three main frames. The IHL frame portrayed BLW as barbaric weapons causing unnecessary suffering. The very infliction of the injury was considered cruel, as the exposure of human eyes to directed electromagnetic energy can cause not only extremely painful tissue damage but can, in the worst case, even lead to an "actual explosion of the eyeballs" (Morton, 1998, p. 698; Peters, 1996, p. 739). Soldiers would be blinded permanently. Without the possibility to reconstruct the damaged parts of the eye, and with no prosthetic treatment available to mitigate its effects, this irreversible, sudden and "exceptionally severe handicap" was also considered likely to cause psychological trauma, shock, depression, and social isolation (ICRC, 1994, p. 152; Marshall, 1997, p. 1392; Morton, 1998, pp. 698–699).

The fear frame builds on the vital importance of sight, "an essential irreplaceable sense, which provides eighty to ninety per cent of a person's sensory stimulation" (Peters, 1996, p. 752). The loss of sight is one of the most dreaded injuries, especially because people are able to imagine blindness, and because societies have experience with this handicap (ICRC, 1994, p. 152). In underscoring that blinding as a result of warfare had occurred previously (with the use of gas in World War I and cluster munitions in the Vietnam War, for example), the ICRC expected both a public outcry and

an increase in combat stress disorder (ICRC, 1994, p. 152; Marshall, 1997, p. 1392; Morton, 1998, p. 700). In addition, the effects of blinding were embedded into a larger socioeconomic, post-conflict frame: Veterans, permanently robbed of their eyesight and limited in their capacity to participate in the labor market, would overload medical and social infrastructure with the resulting rehabilitation costs (Morton, 1998, p. 699).

The ban on BLW, norm entrepreneurs, and the institutional setting

Initially a state-led effort, the ban on BLW eventually gained the attention of the ICRC and, later on, HRW, the two gatekeepers in the humanitarian disarmament field. During the twenty-fifth ICRC Conference in 1986, Sweden and Switzerland decided to pursue a ban. In 1989, the United States and the Soviet Union declared in a bilateral agreement to withdraw from "dangerous military activities," including the use of BLW (Morton, 1998, p. 697; Peters, 1996, p. 741, 754).

The ICRC adopted the issue in 1989. Instead of mobilizing the public or openly shaming governments, it relied on providing expertise to persuade governments that blinding constituted an inhumane and inappropriate method of warfare (Peters, 1996, p. 760). To that end it convened four expert meetings between 1989 and 1991 on the technical, medical, psychological, and legal aspects of BLW; the participating experts backed the ban request (Morton, 1998, p. 699; Parks, 2006, p. 525). A pro-ban coalition emerged: NGOs such as Physicians for Social Responsibility or Pax Christi International declared support for the ban, while HRW proved crucial in generating further attention by casting the issue as a human rights concern (Carpenter, 2011, p. 89). Some governments—France and Sweden in particular—took up the ICRC's request and convened a Review Conference of the CCW (CCW RevCon1) in 1995–1996, with BLW as one of its agenda items (Morton, 1998, p. 700; Parks, 2006, p. 525).

The conference's institutional setting—classic intergovernmental negotiations—was not particularly favorable, but the preceding efforts paid off nevertheless. The ICRC's educational approach had facilitated a general consensus against BLW among governments. The United States went from opposing the ban to becoming a leading supporter, and it paved the way to the ban with a national non-use policy on BLW (Parks, 2006, pp. 739–744). Yet disagreement persisted on the issue of intent and the question of whether to prohibit the *weapons* or the *method of warfare* (Peters, 1996, pp. 756–758). Countries such as France and Germany were making a case for prohibiting the latter, that is, prohibiting blinding; others (the United Kingdom and the United States) favored a narrower prohibition that would only cover weapons *designed to* cause permanent blindness, not those that caused accidental injuries (Morton, 1998, p. 700). In the end, in a closed meeting between the advocates of different

positions, the United States prevailed (Parks, 2006, p. 535). The Fourth Protocol to the CCW was adopted in Vienna in October 1995.

Ban on anti-personnel landmines

The international ban on APL has been hailed as the first major success of humanitarian disarmament. Previously, the CCW RevCon1, in lieu of passing an absolute prohibition in the Amended Protocol II, differentiated between APL and anti-tank mines as well as between "dumb" and "smart" mines (Cottrell, 2009, p. 236; Fehl & Freistein, 2020). This weak outcome motivated a coalition of like-minded states and NGOs to seek a more ambitious agreement outside of the UN framework in the so-called Ottawa Process. In 1997, its participants established the Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction. Deemed one of the most effective arms control treaties, whose special "social power" induces even non-parties to comply (Bower, 2015, pp. 361–363), the Ottawa Treaty has almost completely halted the use, production of, and trade in APL, and has resulted in the clearing of millions of APL worldwide as well as in assistance for their many victims.

Characteristics and framing of APL

Proponents of an APL ban faced the challenge of redefining three features of the shared perception of landmines. First, APL had been regarded for most of their existence as weapons "of no particular ill repute," legal under IHL (Price, 1998, p. 617). They had been opposed as barbarous and cowardly immediately after their introduction to the battlefield in the nineteenth century, but gradually gained "grudging acceptance" (Youngblood, 2006, p. 35, 171). Second, the use of APL was considered legitimate due to their defensive and protective functions (De Larrinaga & Sjolander, 1998, p. 370). Third, the military utility of APL was undisputed; they were deemed efficient, effective, and indispensable (Mathur, 2012, p. 429).

The neutral and depoliticized military discourse on APL needed to be transformed into a humanitarian one (Bower, 2015, p. 367). Therefore, the campaigners appealed to emotions by putting the victims center stage, highlighting socioeconomic costs, activating the human security frame, and drawing connections to weapons of mass destruction (WMD). Despite data to the contrary, civilians were presented as the most likely victims of APL to demonstrate that these inhumane weapons violated the IHL principle of discrimination (De Larrinaga & Sjolander, 1998, p. 376). Data collected in field hospitals and published in several reports by the ICRC, Asia Watch, and Physicians for Human Rights demonstrated the (previously unknown) extent of the problem and its geographical spread (Price, 1998, p. 622).

Photographs of victims both counterbalanced the sterility of the discourse by exhibiting the crippling effects of lost limbs, and counterbalanced the anonymous nature of the data by connecting human faces and stories to the numbers (Price, 1998, p. 623).

Exposing the socioeconomic consequences of APL use, the campaign pointed to clearance costs, hampered agricultural activities in contaminated areas, the financial burden for families and health care systems providing long-term care for survivors, and the survivors' limited ability to earn an income (Maslen, 2001, pp. 125–128). Moreover, studies disproved the military utility of APL by showing their limited offensive value and negligible effect on conflict outcomes (Petrova, 2018, pp. 641–642; Price, 1998, pp. 632–633). The issue also aligned neatly with the shift from the security of states to the security of individuals that occurred after the end of the Cold War: APL were no longer viewed as legitimate protectors of state borders, but rather as a menace to people (Cooper, 2011, p. 140; De Larrinaga & Sjolander, 1998, p. 371). WMD were a major reference point for the stigmatization of APL (Petrova, 2018, p. 638). Three shared characteristics of APL and WMD—threatening masses of people, killing indiscriminately, and a tendency toward loss of control—gave rise to a parallel normative demand that APL, like WMD, were unusable and needed to be banned absolutely (Price, 1998, pp. 628–630).

The ban on APL, norm entrepreneurs, and the institutional setting

A wide spectrum of norm entrepreneurs, including the gatekeepers ICRC and HRW as well as some governments, devoted their attention to APL. After World War II, the ICRC had included APL in its efforts to regulate potentially inhumane weapons, which resulted in the (weak) Protocol II to the Convention on Certain Conventional Weapons in 1980. A few years later, three smaller, field-experienced NGOs (the Women's Commission for Refugee Women and Children, Asia Watch, and Physicians for Human Rights) provided the impulse for the mine ban movement through public appeals and reports (Price, 1998, p. 620). HRW co-launched the International Campaign to Ban Landmines (ICBL) in 1992 and joined its steering committee. Spreading rapidly, the movement soon included more than a thousand national and international NGOs as well as UN organizations such as UNICEF and the UN Department of Humanitarian Affairs (Carpenter, 2011, pp. 85–86; Dolan & Hunt, 1998, p. 400). Among the governments championing the anti-APL cause were the United States, which had issued an export moratorium; Belgium, which was the first country to adopt a national ban; France, which requested the UN Secretary-General Boutros Boutros Ghali to convene the CCW RevCon1; and Canada, which

eventually took the lead in the Ottawa Process (Price, 1998, p. 625; Rutherford, 2011, p. 60).

Different coalition members assumed different functions. HRW professionalized the campaign and provided funding and access to decision-makers; the ICRC, for the first time in its history, actively participated in a public advocacy campaign while also maintaining its tradition of discreet diplomacy (Mathur, 2012, pp. 428–431; Price, 1998, pp. 620–621). Like-minded governments led by example and persuaded their allies through direct consultation. Princess Diana used her popularity to draw attention to the landmine problem. To mobilize public support for a ban, the campaign informed the public through evidence, statistics and reports while simultaneously appealing to emotions through photo exhibitions or installations such as the Broken Chair in front of the UN headquarters in Geneva.

Governments were subjected to various forms of social pressure. The victim-focused campaign aimed at invoking guilt and shame in states that were engaged in activities such as the trade, production or use of APL (Mathur, 2012, p. 432). When the CCW RevCon1 negotiations began, the ICBL published lists that shamed some states for their objection to the ban and praised others for their support (Dolan & Hunt, 1998, p. 401). Some governments publicly supported a ban and passed unilateral measures, establishing a pro-ban position as appropriate behavior and creating further pressure on deviants (Cottrell, 2009, p. 233; Dolan & Hunt, 1998, p. 401; Price, 1998, p. 635). The campaign's education efforts, which publicized new facts just as much as personal tragedies, aimed at belief changes and stimulated governments' intrinsic motivation to address the APL problem (Price, 1998, pp. 622–623).

The norm prohibiting APL was negotiated in three steps, which took place in different institutional settings. The first CCW negotiations at the end of the 1970s were led almost exclusively by government representatives, and they lacked public scrutiny. Two decades later, the RevCon1 remained a traditional process, led by major powers such as the United States, Russia, and China. NGOs, however, were granted some access: In the Preparatory Committee, the ICRC and the ICBL could approach diplomats, address the Plenary and submit working papers. At the main conference, only NGOs accredited as members of official governmental delegations could attend sessions and make statements (Price, 1998, p. 624).

Yet despite—or perhaps because of—the CCW's shortcomings, the political will to initiate a diplomatic process outside the UN to ban APL took form (Cottrell, 2009, pp. 232–235). Announced by the Canadian Foreign Minister Lloyd Axworthy and launched in 1996, the Ottawa process was characterized by transparency, inclusiveness, and the leading role of NGOs (Cottrell, 2009, p. 234; Dolan & Hunt, 1998, p. 393). Decisions could be made by a two-thirds majority vote, and only states explicitly supporting the goal of a

ban were granted full voting rights. The others participated only as observers, just like the NGOs (Fehl & Freistein, 2020). The negotiations were convened in various capital cities and supported by regional conferences (Petrova, 2019, pp. 607–610). Some major powers—China, India, and Russia—did not participate at all; the United States participated, but attempted to weaken the treaty (Dolan & Hunt, 1998, pp. 411–413). Nevertheless, after 14 months of negotiations, the Ottawa Convention was signed in Ottawa, Canada in December 1997.

Lethal autonomous weapons systems

The ban on LAWS promoted by the KRC is only gradually gaining the support of CCW States Parties, 30 of which are currently heeding the campaign's call (Campaign to Stop Killer Robots, 2020). Nevertheless, LAWS have continuously climbed the UN arms control agenda since 2013, with the CCW as the main discussion venue. After three informal meetings of experts, the CCW established a Group of Governmental Experts (GGE), which will continue to meet until the next CCW RevCon in 2021. Dissatisfied with the slow pace of the GGE process, the KRC is questioning whether the CCW is the right forum for negotiating a legal instrument prohibiting LAWS. In addition to such institutional considerations, what other strategy components have been implemented in this case, and how effective has the effort been so far when compared to the cases of BLW and APL?

Characteristics and framing of LAWS

LAWS, or fully autonomous weapons, function without external commands over the course of the entire cycle of finding, fixing, tracking, selecting, and engaging targets. They are able to exert force without meaningful human control or supervision. According to their proponents, LAWS have various positive characteristics. They are cheaper to operate, requiring less personnel; they are more precise, allowing for a more discriminate and IHL-compliant use of force; they render control and communication links optional, providing a tactical advantage and protecting assets against capture or other impairments; and, lastly and most importantly, they remove the invariable delay between a human operator's commands and a system's response, allowing for a battle at machine speed (Amoroso et al., 2018; Garcia, 2016; Horowitz, 2019; Mayer, 2015; Scharre, 2018).

In contrast, critics (among them members of the scientific and tech communities, NGOs, and government representatives) are mobilizing legal, ethical, and security-related arguments against LAWS. The legal argument against LAWS is grounded in the belief that only humans can make IHL judgments, rendering the delegation of decision-making authority to a machine

illegal per se (Asaro, 2012, p. 689; Heyns, 2016; ICRC, 2019). The argument continues by pointing out that the limits of technology will make LAWS indiscriminate, that is, unable to distinguish between combatants and civilians; incapable of proportionality assessments, that is, of weighing the expected advantages of military operations against the damage the operation would inflict; and the cause of attribution and accountability problems when responsibilities for the use of violent force, in particular in cases of undue civilian harm, need to be determined (Brehm, 2017; Chengeta, 2016; Docherty, 2015). The ethical line of argument, which draws in part on International Human Rights Law (IHRL) such as the right to life, contends that delegating life-and-death decisions on the battlefield to machines reduces human being to objects and thus violates human dignity (Asaro, 2012; Rosert & Sauer, 2019). Moreover, the proponents of a ban voice strategic concerns about arms races and crisis instabilities, and they warn of the overall danger of a lowered threshold of war due to a reduced risk of casualties (Altmann & Sauer, 2017; Bode & Huelss, 2018, p. 405; Sauer & Schörnig, 2012).

Although these objections are persuasive, constructing a tangible and unequivocal framing of LAWS turns out to be difficult with regard to terminology, definition, concreteness, and grafting. In the cases of both BLW and of APL, norm entrepreneurs were able to present simple and catchy messages: Blinding is cruel; mines maim civilians. In the case of LAWS, the term "killer robots" aims at simplification as well. But the term is a double-edged sword. It conveys the powerful notion of an existential threat and resonates considerably with the media and the wider public (news items are routinely accompanied by an image of the Terminator). However, it also muddies the message by giving it a "sci-fi-feel" and fueling the notion that "LAWS do not exist yet." Ban opponents use this to declare the ongoing CCW efforts a premature, speculative discussion about future weapons. As can be seen in the BLW case, this can potentially stall a CCW process.

Another contentious topic related to terminology is how to define LAWS (Haas & Fischer, 2017, p. 285). This problem is comprised of at least three sub-problems, namely: (non-)lethality, the nature of weapon autonomy, and its polymorphous applications. First, lethality is not necessarily the key issue—autonomy raises serious questions even if its effects are not lethal. Second, the international community still struggles to define what autonomy is. Over time, the discussion has shifted from anthropomorphizations (Van Rompaey, 2019, pp. 115–119) and philosophical perspectives on cognition or free will toward more practical considerations: How should humans and machines interact, and how much do humans need to be involved, particularly at different stages of the above mentioned targeting cycle (Bode & Huelss, 2018, p. 397; iPRAW, 2019)?

In the wake of this shift, CCW participants have converged on a minimalist-functionalist concept of autonomy. This concept was introduced in official

U.S. doctrine (Department of Defense, 2017 [2012]) and later adopted by the KRC and the ICRC. It understands weapon autonomy to be the execution of the two critical functions of target selection and engagement without human intervention (ICRC, 2016, p. 8). In support of this framing, the NGO Article 36 introduced a crucial, albeit still quite fuzzy, accompanying concept: meaningful human control (Article 36, 2016).

Focusing on the human-machine interaction in targeting processes put a damper on the futurism initially evoked by the killer robot meme.[3] Yet it did not mitigate the third definitional issue: LAWS as a *category* of weapons. Sorting weapons into categories was an essential component of all previous regulation processes. The problem with LAWS is the very notion of a category. Aside from the fact that almost every weapons system will soon be able to be made (partially or fully) autonomous, autonomy is a platform- and technology-agnostic function that is flexible, gradual, and an add-on. The degree of autonomy may vary from time to time, and it may vary between different tasks performed by the same human-machine-system (Haas & Fischer, 2017, p. 286). In other words, autonomous weapons, in contrast to other weapons like cluster munitions or landmines, do not constitute a clearly definable category, or at least not one that is inclusive and exclusive.[4] This entails the difficulty of discerning "LAWS" (bad) from "not-LAWS" (good), which hampers stigmatization that relies on the creation of dichotomies and bright lines (Maas, 2019, p. 296; Tannenwald, 2007, pp. 47–48).

Stigmatizing LAWS is also difficult because the issue—weapon autonomy—is polymorphous and lacks isolatable effects. Both BLW and APL come in different designs, but both are nevertheless comparably easy to recognize and categorize. Not so for fully autonomous weapons, for which there are not only no iconic images but also potentially myriad variants that, from the outside, might be indiscernible from remotely operated weapons. Neither gruesome images of victims nor data exposing a global crisis exist (as of yet). Additionally, since various weapons can potentially operate autonomously, LAWS will not produce characteristic injuries of the kind that were critical in justifying the reactive bans on APL (limb loss) and the preventive ban on BLW (blindness).

The next difficulty in stigmatizing LAWS concerns grafting onto fundamental IHL principles pertinent to weapons prohibitions. Previous restrictions were grounded either in the principle of unnecessary suffering (as in the ban on BLW) or the principle of distinction/discrimination (as in the ban on APL). And while the conformity of LAWS with IHL and IHRL plays an important role in the debate, the legal framing is not straightforward for two reasons. First, LAWS do not *necessarily* violate legally binding IHL principles. Even opponents recognize that LAWS may be used lawfully, despite IHL providing very limited room for this (Bode & Huelss, 2018, p. 404; Brehm, 2017, pp. 68–69). Furthermore, technological progress *might*

render LAWS at least as IHL-compliant as—or even more IHL-compliant than—remotely operated weapons (Bode & Huelss, 2018, p. 411; Rosert & Sauer, 2019, p. 372).

Second, the principle that LAWS *do* violate—the nascent concept of meaningful human control over weapons systems—is not yet a legally binding IHL principle. Consequently, in the absence of legal provisions that would unequivocally establish the unlawfulness of LAWS, actors in favor of a prohibition stress that IHL in its current form is "not sufficient to regulate LAWS" (Barbé & Badell, 2019, p. 143, quoting the European Parliament). A requirement for the controllability of weapons has indeed motivated some previous weapons bans and can be traced to other areas of public international law (Human Rights Watch & International Human Rights Clinic, 2016, pp. 10–16; Petrova, 2018, p. 651). But, as mere customary law, the controllability principle is a weaker reference point than other, enshrined IHL principles.

The ban on LAWS, norm entrepreneurs, and the institutional setting

Like the campaigns against BLW and APL, the campaign against LAWS enjoys support from gatekeepers, other transnational norm entrepreneurs, and some governments. The opposition to LAWS has academic roots: More than 15 years ago, concerned scholars pointed to the potentially worrisome trajectory of the use of AI and system autonomy for military purposes (see e.g., Altmann, 2004, pp. 66–74). The International Committee for Robot Arms Control (ICRAC), formed in 2009, moved the expert debate further toward a concerted outreach effort. Between 2010 and 2013, the ICRAC raised awareness in expert and academic communities (Bolton & Mitchell, 2020, pp. 38–40). Only after HRW adopted the issue in 2012–2013 and the KRC was launched in 2013 did the issue begin to gain traction politically. It then attracted the interest of other humanitarian disarmament NGOs and publicly visible UN officials such as the Special Rapporteur on extrajudicial, summary or arbitrary executions, Christof Heyns (Bolton & Mitchell, 2020, p. 41; Carpenter, 2014, pp. 109–110). Currently (as of 13 May 2020), the KRC coalition comprises 160 international, regional, and national NGOs in 66 countries. It is a global campaign with NGOs on all five continents and representatives in key locations such as Silicon Valley.

In the CCW, which has been discussing LAWS since 2014, a group of governmental supporters is calling to immediately begin negotiations on a legally binding instrument that would prescribe meaningful human control over weapons. Right now, this goal is supported by 30 States Parties, mainly from the Global South, with Austria the only EU member state represented (Barbé & Badell, 2019, p. 143). The large group of NAM countries has also stated (in the recent session of the First Committee of the UN General Assembly GA1st, among other places) that they see a need for regulation and new

international law (Campaign to Stop Killer Robots, 2019c). A majority of governments pay lip service to the argument that meaningful human control over weapons systems must be retained. Since the GGE meeting in April 2018, China has been sending signals that have been interpreted as supporting a ban on (only) the use of LAWS (Bode & Huelss, 2018, p. 399). The French President Emmanuel Macron publicly stated in an interview with *Wired* magazine that he is "dead against" autonomous weapons and that "the go or no-go decision should be a human decision" (quoted in Thompson, 2018). German government coalition treaties and German officials have been calling for a ban on LAWS since 2013 (CDU, CSU, & SPD, 2013, p. 126; 2018, p. 149).

To increase support among governments, seasoned campaigners with years of experience gathered during the APL and CM processes build strategy, disseminate knowledge, report on the issue, and facilitate NGO presence at the UN. The KRC is engaging and educating governments on a regular basis at side events (not solely at the CCW in Geneva but also in New York in the GA1st). It has provided expert panels, reports, memorandums, pamphlets, and FAQs on a broad set of topics, from AI to robotics to human-machine interaction. As a result, the international community has experienced a steep learning curve since 2014.

States, especially from the Global South, routinely acknowledge in official statements that the campaign significantly influences the process in Geneva (Bode, 2019, p. 362). Also, KRC members directly lobby and educate governments in local capitals. In addition, they maintain close relationships with representatives of the ICRC and the United Nations Institute for Disarmament Research (UNIDIR). Other institutions—such as the Future of Life Institute (FLI)—are not officially part of the campaign. But they align fully with its goals and echo the KRC's message. In May 2018, another important gatekeeper, the UN Secretary General António Guterres, included LAWS on his disarmament agenda (United Nations, 2019). Celebrities are not directly involved with the KRC, but well-known public figures such as the late Stephen Hawking have endorsed the KRC's goal (Future of Life Institute, 2015).

In contrast to the BLW and APL processes, which occurred in eras much less impacted by the internet and social media, the KRC mobilizes the public mostly online via tweets, social media posts, op-eds, podcasts, and video clips. Considerable effort is poured into reaching out to expert communities such as AI and robotics engineers or tech workers at big companies. Several open letters in support of the KRC's goals have since been published and were signed and endorsed by tens of thousands of experts and public figures from the tech and business communities. FLI was also the driving force behind the attention-grabbing, widely seen "Slaughterbots" video, which was produced using expert advice from Stuart Russell, an eminent figure in

the AI community. Even though "the wider political discourse is not particularly concerned with the most fundamental questions and realities of [L]AWS" (Bode & Huelss, 2018, p. 404), social pressure on governments is increasing: Representative global polling data shows that growing majorities in many countries oppose LAWS, mainly due to concerns about crossing a moral line (Campaign to Stop Killer Robots, 2019d).

The process of eliciting regulation from the CCW seems to be on a similar institutional trajectory as that of the APL case, with the discussion beginning within the UN framework but concluding outside of it. So far, three UN fora have been involved: the Human Rights Council, where the LAWS issue entered the UN agenda in the summer of 2013 through a report by the UN Special Rapporteur on extra-judicial killings; the GA1st, where governments made statements on LAWS for the first time later that same year, and where LAWS have become a regular topic of discussion; and the CCW, now the principal forum for negotiating a legal instrument on LAWS. Having held three informal expert meetings in 2014, 2015, and 2016, the CCW decided at its Fifth Review Conference to elevate the issue by installing a GGE. This GGE first met in 2017 and has continued to meet ever since.

In the eyes of most States Parties, the CCW is the appropriate venue for debating and regulating LAWS. (A few others—most notably Russia—are questioning this and doubting whether the issue is ripe for discussion at all.) NGOs and think tanks with participation rights are involved, regularly giving statements and organizing side events. The ICRC and UNIDIR are actively engaged in the issue, with the ICRC inching closer and closer to openly demanding new international law (ICRC, 2018, p. 1; 2019).

Compared to the informal expert meetings, which were mostly concerned with the dissemination of knowledge, the debate gained in formal status by moving to the GGE format. But the GGE's mandate has remained weak: It has repeatedly been tasked only with discussing and reporting on the issue to the CCW States Parties Meeting, not with preparing formal negotiations for a new CCW protocol. The goal orientation increased minimally in November 2019 when the States Parties Meeting tasked the GGE with considering "aspects of the normative and operational framework" on LAWS in 2020 and 2021 (CCW, 2019). With progress in the CCW impeded by its traditional consensus voting (Haas & Fischer, 2017, p. 296), the current GGE process is, in fact, aptly described as going slow and aiming low, as disgruntled campaigners like to put it. The increasingly frustrated KRC has begun to publicly think about pursuing a process outside the CCW.

However, the conditions for moving the process to another venue are not (yet) favorable. Theoretically speaking, a critical mass of about a third of all states—including influential governments—is necessary to trigger a norm cascade (Finnemore & Sikkink, 1998, p. 901). Empirically, we observe that influential states had taken on leading roles in previous norm-setting

processes: Sweden and France led on BLW, Canada on APL, and Norway on CM. Before the APL process left the CCW, consensus on a ban on APL had already emerged (Cottrell, 2009, p. 235). In the CM process, in which only 25 states supported the declaration presented by Sweden at the end of the Third Review Conference, there were indeed fears that too few states would accept Norway's invitation to Oslo to negotiate a ban on CM. However, with several European middle powers in the supporters' group and clear signs that general momentum was picking up, the optimism paid off (Borrie, 2009, pp. 135–149).

All of these factors look different in the case of LAWS. The one "champion state" (Garcia, 2015, p. 61) has not yet appeared on the scene, and former humanitarian disarmament leaders like Norway and Canada have remained relatively quiet (Bode, 2019, p. 362; Eilstrup-Sangiovanni & Breen, 2019, p. 15). States of the Global South that tend to be active in disarmament efforts and were among the advocates of previous bans (Bode, 2019) have so far been unable to form a coalition with Western states. The ban coalition also needs more influential members, and more members in general. The 30 ban-supporting States Parties are not enough to make success the likely outcome.

Conclusion

In this article, we set out to answer how an international, legally binding regulation of LAWS can be brought about. Humanitarian advocacy campaigns wield significant influence in general; the Campaign to Stop Killer Robots does so in particular. We thus focused on its strategy in engaging the international community at the CCW in Geneva, the epicenter of the debate surrounding a possible regulation of LAWS.

We found the campaign's strategy to be less than optimal. As our comparative analysis of three humanitarian disarmament processes revealed, the campaign against LAWS is modeled after past successes, despite weapon autonomy differing from blinding lasers or landmines in several important ways. These differences limit the portability of some tried-and-tested strategy components. Actor-related components such as awareness-raising, dissemination of expertise, and coalition-building are similar in the three campaigns against LAWS, BLW and APL, and appear to be conducive to the goal of a ban on LAWS too. However, rehashing the issue- and institution-related components of the BLW and APL campaign strategies creates weak spots in the case of LAWS. The "killer robots" frame, for instance, while attempting to convey a simple and dramatic message, also renders the issue futuristic and, thus, less urgent. The prominent focus on the indiscriminateness of LAWS is an attempt to activate an argument that proved powerful against APL and CM, but might turn out to be obsolete in the case of LAWS due to

technological improvements. Most importantly, LAWS are portrayed as a category of weapons, which is not accurate because weapon autonomy is an elusive function in a human-machine system. Lastly, due to the lack of critical mass and "champion state" leadership, the LAWS process is not (yet) ripe for a venue shift.

Our approach confirms the necessity of the components we studied, but it cannot (nor was it designed to) specify their relative importance or identify sufficient combinations. That said, our findings do highlight an aspect that deserves further attention: the fit of the framing to the issue. This insight is less trivial than it may seem. In theoretical literature thus far, the framing's fit has been considered almost exclusively with regard to different audiences and normative environments. The issue itself has remained neglected. Having shown how a mismatch between the framing and the issue's key characteristics can compromise a campaign's message, we suggest exploring the relevance of the framing/issue fit in additional cases.

Our findings also suggest that modifying the substance of the argument, the expected regulatory design, and the institutional factors would increase the likelihood of the KRC's strategy achieving its stated goal. In terms of substance, the most straightforward argument against LAWS is not a legal but an ethical one, namely, the argument that delegating life and death decisions to machines infringes upon human dignity. We therefore propose moving further away from the KRC's initial messaging, which was heavily focused on the indiscriminateness of LAWS, their incompatibility with IHL, and the plight of civilians. Shifting toward more fundamental ethical concerns will, first, make the case against LAWS less susceptible to consequentialist counter-positions (which argue that the illegality of LAWS will be remedied by technological progress). Second, it makes it more likely that the general public will react viscerally and reject LAWS more sharply (Rosert & Sauer, 2019; Sharkey, 2019, p. 83).

In terms of regulatory design, the complex and polymorphic nature of weapon autonomy represents a special challenge. "Ban killer robots" sounds straightforward, but it is not as cut-and-dried as "ban anti-personnel landmines" due to the sheer amount of endless variations on what "killer robots" might look like. The LAWS debate within the CCW is thus less firmly grounded in existing IHL principles and more prone to definitional struggles. Therefore, it is encouraging that the CCW's focus is currently shifting from a categorical definition of LAWS toward the role of the "human element," that is, the creation of conditions to retain meaningful human control. We strongly suggest doubling down on the corresponding regulatory option, namely, codifying meaningful human control as a principle requirement in IHL (Rosert, 2017). The KRC has already begun to embrace this idea of a positive obligation in its latest working paper on the key elements of a future treaty (Campaign to Stop Killer Robots, 2019a).

Lastly, instead of taking the issue outside the UN framework, we suggest exploring the option of a venue reform that targets the CCW's mode of decision-making. Consensus, while being the traditional rule in Geneva, is not necessarily required under the convention. The CCW could, theoretically, resort to majority voting (United Nations, 1995, pp. 454–455). Hence, the LAWS issue has not only the potential to come to fruition and result in a legally binding instrument from the CCW, but also to induce institutional change and restore the CCW's originally intended function—a development from which future norm-setting processes would benefit as well.

Notes

1. Artificial Intelligence is a broad, underdefined umbrella term for various computer-based techniques and procedures to automate tasks that previously required the application of human intelligence. The goalposts of what is considered "artificially intelligent" are constantly moving. Despite its fuzziness, the term AI is used ubiquitously.
2. AI is not necessarily required to automate a weapon system—terminal defense systems have engaged targets without it for decades. But AI is a very powerful enabling technology. So, while "weapon autonomy" is not brand new, it is only the recent innovations in AI that allow it to come to full fruition.
3. There are currently operational weapon systems—most notably the loitering munition '"Harpy"—that qualify as fully autonomous, performing target selection and engagement without human intervention.
4. We are aware that we should refrain from using the designation "LAWS" altogether at this point in the article. We chose not to do so for reasons of reader-friendliness.

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