

REFORMULATING RULES ON DUAL OBJECT TARGETING

ISHITA CHAKRABARTY*

I. INTRODUCTION

The debate over conducting a United Nations-led inquiry into attacks on Syrian hospitals brought the issue of dual object targeting to the forefront of academic attention. This development followed an airstrike on a Libyan detention center at Al Sabaa in July 2019, in spite of prior knowledge of both parties to the conflict (the United Nations-recognized government of Prime Minister Fayez al-Sarraj and forces loyal to Khalifa Haftar) regarding its coordinates.¹ In both cases, the authorizers of the attack justified the strike on the ground that belligerent parties were using the centers to store ammunitions, missiles, and other weapon systems.² As Kevin Jon Heller puts it, a “categorical prohibition”³ on targeting might not be the solution, but rather would only lead to more incidences of flouting of international humanitarian law (IHL) rules.⁴ While understanding that parties to the conflict cannot be expected to refrain from attacking dual-use objects at all times, this note attempts to formulate certain rules in the event that an attack is the only viable military option.

The principle of distinction distinguishes not only between civilians and those directly participating in the conduct of hostilities, but also between civilian objects and military objects. The principle finds its legal justification primarily in Article 51 of Additional Protocol I to the Geneva Conventions (AP I), which lays down rules of warfare in the case of international armed conflicts (IACs). Article 51 expressly forbids direct,

* B.A. LL.B (Hons.) Candidate, Hidayatullah National Law University, India, 2020. The author is also currently engaged with the Quill Foundation, Delhi as a part of its Special Procedures mechanism. The author expresses her thanks to Heather McAdams and the rest of the *N.Y.U. Journal of International Law & Politics* for their extensive and helpful edits. The views expressed in this note are strictly the author's.

¹ Peter Beaumont, *Why Attack on Libya Detention Centre Was Grimly Predictable*, *GUARDIAN* (July 3, 2019), <https://www.theguardian.com/world/2019/jul/03/why-attack-libya-detention-centre-grimly-predictable>.

² Michelle Nichols, *Two-Thirds of UN Security Council Ask U.N. Chief for Syria Hospital Attacks Inquiry*, *REUTERS*, July 30, 2019, <https://www.reuters.com/article/us-syria-security-un/two-thirds-of-un-security-council-ask-un-chief-for-syria-hospital-attacks-inquiry-idUSKCN1UP29U>; *id.*

³ Kevin Jon Heller, *Don't Blame IHL for Attacks on "Hospital Shields,"* *OPINIO JURIS* (Oct. 21, 2016), <http://opiniojuris.org/2016/10/21/dont-blame-ihl-for-attacks-on-hospitals>.

⁴ See Kurt Sanger, *Letter to the Editor: The Best Way to Protect Hospitals in Wartime—Enforce Existing Law*, *JUST SECURITY* (Oct. 24, 2016), <https://www.justsecurity.org/33805/letter-editor-protect-hospitals-wartime-enforce-existing-law> (describing how suggested bans on targeting could encourage combatants to violate the law in other ways).

deliberate, and “indiscriminate attacks.”⁵ Article 51(4) describes indiscriminate attacks as those: (a) where the attacks are “not directed” towards specific objects, (b) where the mode of warfare used is not capable of targeting specific objectives, or (c) where the effects of such mode of warfare cannot be limited to specific objectives.⁶ Additionally, Article 13 of the Additional Protocol II to the Geneva Conventions (AP II) embodies provisions similar to AP I Article 51 that are applicable to non-international armed conflicts (NIACs), but fails to provide for an explicit prohibition against indiscriminate means and methods of warfare.⁷ However, the absence of a similarly worded prohibition can hardly be deemed significant, since authorities have described the principle of distinction, on several occasions, as part of customary international law.⁸

The laws of war state that only military objectives qualify as objects of attack. AP I Article 52 explicitly prohibits attacks and reprisals against civilian objects.⁹ However, instead of defining what civilian objects are, Article 52 only states that objects that are not military objects under paragraph two of Article 52 qualify as civilian objects.¹⁰ Article 52 goes on to define military objectives as those objects which by their “nature, location, purpose or use make an effective contribution,” and whose destruction “offers a definite military advantage.”¹¹ Attempting to destroy anything falling beneath the effective contribution standard would be violative of the proportionality principle. Finally, the precautionary principle embodied under AP I Article 57 mandates that belligerents are to do everything “feasible” to avoid or minimize collateral damage arising from the attack.¹² An attack should be “cancelled or suspended if it becomes apparent that the objective [targeted] is not a military one,” or is otherwise entitled to protection.¹³ The problem, however, lies with the degree of protection afforded to dual-use objects.

⁵ Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I) art. 51(4), June 8, 1977, 1125 U.N.T.S. 3 [hereinafter Additional Protocol I].

⁶ *Id.*

⁷ Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of Non-International Armed Conflicts (Protocol II) art. 13, June 8, 1977, 1125 U.N.T.S. 609 [hereinafter Additional Protocol II].

⁸ For examples of international authorities making such findings, see, e.g., Juan Carlos Abella v. Argentina, Case 11.137, Inter-Am. Comm’n H.R., Report No. 55/97, OEA/Ser.L./V/II.95, doc 7 rev. ¶¶ 159–62, 177 (1997); Prosecutor v. Strugar, Case No. IT-01-42-AR72, Decision on Interlocutory Appeal, ¶ 9 (Int’l Crim. Trib. for the Former Yugoslavia Nov. 22, 2002); Rep. Pursuant to Paragraph 5 of S.C. Resolution 837 (1993) on the Investigation into the 5 June 1993 Attack on U.N. Forces in Somalia Conducted on Behalf of the Secretary-General, ¶ 9, U.N. Doc. S/26351, annex (Aug. 24, 1993).

⁹ Additional Protocol I, *supra* note 5, art. 52(1), 1125 U.N.T.S. at 27.

¹⁰ *Id.* art. 52(2), 1125 U.N.T.S. at 27.

¹¹ *Id.*

¹² *Id.* art. 57, 1125 U.N.T.S. at 29.

¹³ *Id.*

II. PRELIMINARY CONSIDERATIONS OF TARGETING RULES AND DUAL-USE OBJECTS

When it comes to targeting objects, the answers to what constitutes dual-use objects and how far such objects are entitled to protection remain ambiguous. As opposed to the definition of the terms “military objectives” and “civilian objects,”¹⁴ there is no equivalent definition or even a reference to the term dual-use objects in the Geneva Conventions or their Additional Protocols. Some have described dual-use objects as objects which are not “normally dedicated” to civilian populations, and hence do not immediately enjoy the benefit of doubt under AP I Article 52(3).¹⁵ Matthew Waxman describes dual-use objects as including those objects lying within the grey area of protection that serve both civilian and military functions.¹⁶

Initially, the term was confined to weapons and technologies of mass destruction, but it is now increasingly used in the course of targeting decisions for conventional weapons.¹⁷ During Operation Iraqi Freedom in 2003, the U.S. Army’s airborne division learned that Iraqi forces in As Samawah were using “schools, mosques, and hospitals as headquarters and logistics sites.”¹⁸ The manner of use of these objects rendered them military targets.¹⁹ However, not all such targeting is lawfully justified. For instance, since 2015, the “Saudi Arabia-led coalition” party to Yemen’s armed conflict has consistently targeted not only belligerents, but also schools, hospitals, and cultural properties in their military operations against the Houthi rebels in Yemen.²⁰

¹⁴ *Id.* art. 52(2), 1125 U.N.T.S. at 27.

¹⁵ Marco Sassòli & Lindsey Cameron, *The Protection of Civilian Objects—Current State of the Law and Issues de Lege Ferenda*, in *THE LAW OF AIR WARFARE* 35, 57 (Natalino Ronzitti & Gabriella Venturini eds., 2006) (quoting Additional Protocol I, *supra* note 5, art. 52(3), 1125 U.N.T.S. at 27). Under AP I, Article 52(3), “[i]n case of doubt whether an object which is normally dedicated to civilian purposes, such as a place of worship, a house or other dwelling or a school, is being used to make an effective contribution to military action, it shall be presumed not to be so used.” Additional Protocol I, *supra* note 5, art. 52(3), 1125 U.N.T.S. at 27.

¹⁶ MATTHEW C. WAXMAN, *INTERNATIONAL LAW AND THE POLITICS OF URBAN AIR OPERATIONS* 20–21 (2000).

¹⁷ See generally Henry Shue & David Wippman, *Limiting Attacks on Dual-Use Facilities Performing Indispensable Civilian Functions*, 35 *CORNELL INT’L L.J.* 559 (2002) (using the term “dual-use objects” in a context broader than weapons and technologies of mass destruction).

¹⁸ GREGORY FONTENOT ET AL., *ON POINT: THE UNITED STATES ARMY IN OPERATION IRAQI FREEDOM* 214 (1st ed. 2004).

¹⁹ *Id.*; see Yoram Dinstein, *Legitimate Military Objectives Under the Current Jus In Bello*, 78 *INT’L L. STUD.* 139, 150 (2002) (“If, for instance, the minaret of a mosque is used as a sniper’s nest, the presumption [under Article 52(3)] is rebutted and the enemy is entitled to treat it as a military objective”).

²⁰ *Yemen: No Accountability for War Crimes*, HUM. RTS. WATCH (Jan. 12, 2017), <https://www.hrw.org/news/2017/01/12/yemen-no-accountability-war-crimes>.

While some jurists, citing the expansive interpretations of the term military objectives,²¹ have no problem treating dual-use objects as military objectives, others insist that this would be problematic because all objects are, in fact, dual-use objects—the question is only to what degree.²² This debate inevitably turns on an understanding of the terms “military necessity” and “proportionality,” but these are difficult assessments.²³ Such military necessity has to be “definite” and not “hypothetical” or assumed.²⁴ Objects that only offer a general and indefinite military advantage, or advantage on a cumulative basis, should be excluded during targeting.²⁵ This would include the assessment of the relative military value the object poses to the enemy compared to the collateral effects that the object’s destruction would pose to the civilian population.²⁶ For instance, the former Director of Legal Services of the British Army, A. P. V. Rogers, has stated that, because repeated attacks on power grids prevent repair and keep the facilities out of action, such attacks have consequences for the civilian population.²⁷

Consider the U.S. attack on the Al Firdos bunker during the Gulf War in Iraq: While the bunker mostly served as a control center and secret headquarters for military operations, it also housed several civilians, 204 of whom were killed after the United States launched an attack on the bunker.²⁸ Geoffrey Corn concluded that there had been no IHL violation because the attackers acted in good faith based on the information available during the time of attack.²⁹ However, several Western reporters have said that they saw a sign with the word “shelter” in both Arabic and

²¹ For an example of jurists that acknowledge such interpretations, see generally Shue & Wippman, *supra* note 17.

²² For examples of jurists that hold such attitudes, see generally SEUMAS MILLER ET AL., REPORT ON BIOSECURITY AND DUAL USE RESEARCH (2011), <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.457.7085&rep=rep1&type=pdf>; Ronald Lehman, *Latent Dual-Use Technology and the Future of Nonproliferation*, CTR. FOR INT'L POL'Y STUD. (Oct. 9, 2012), <http://cips.uottawa.ca/event/dual-use-technology-and-future-of-nonproliferation>.

²³ See CLAUDE PILLOUD ET AL., INT'L COMM. OF THE RED CROSS, COMMENTARY ON THE ADDITIONAL PROTOCOLS OF 8 JUNE 1977 TO THE GENEVA CONVENTIONS OF 12 AUGUST 1949, at 636, 683, 743 (Yves Sandoz et al. eds., 1987) (grappling with the definitions and applications of these terms).

²⁴ Waldemar A. Solf, *Protection of Civilians Against the Effects of Hostilities Under Customary International Law and Under Protocol I*, 1 AM. U. J. INT'L L. & POL'Y 117, 128 (1986); see 1 JEAN-MARIE HENCKAERTS & LOUISE DOSWALD-BECK, CUSTOMARY INTERNATIONAL HUMANITARIAN LAW 34–36 (2005) (discussing the standard for assessing military objectives).

²⁵ MICHAEL BOTHE ET AL., NEW RULES FOR VICTIMS OF ARMED CONFLICTS: COMMENTARY ON THE TWO 1977 PROTOCOLS ADDITIONAL TO THE GENEVA CONVENTIONS OF 1949, at 326 (1982).

²⁶ *Id.* at 323–25.

²⁷ A.P.V. ROGERS, LAW ON THE BATTLEFIELD 42, 75–76 (2d ed. 2004).

²⁸ EMILY CRAWFORD & ALISON PERT, INTERNATIONAL HUMANITARIAN LAW 170 (2015).

²⁹ Geoffrey S. Corn, *Hamdan, Lebanon, and the Regulation of Hostilities: The Need to Recognize a Hybrid Category of Armed Conflict*, 40 VAND. J. TRANSNAT'L L. 295, 352 (2007).

English near the raid site.³⁰ Assuming that the attack was in fact sufficient to meet the military necessity standard, did it also meet the standards of precaution and proportionality? Could a “partial” neutralization, as contemplated under AP I Article 52(2),³¹ not have sufficed? To illustrate this point, the Yugoslav Wars saw extensive reliance on military and political propaganda through communication networks.³² While some have justified the classification and subsequent bombing of radio stations and satellite services as military objectives,³³ in any event, where partial neutralization is sufficient to gain a military advantage over the other party, complete destruction would be both an act of war and a war crime.³⁴

Under IHL, war only with the motivation to cause destruction based on the adage “the end[s] justify the means” is not permissible.³⁵ This also applies to targets that have been identified as military objectives.³⁶ Enemy morale is not an objective. As such, any attack that gives rise to political over military advantage cannot be legitimate.³⁷ Political advantage here refers to a forced “change in the negotiating attitudes” of an adverse party.³⁸ In the context of air raids conducted through autonomous strikes against dual-use infrastructure, some authors note that, despite attacks on such infrastructure, the military is more likely to have a constant source of backup power and other emergency systems, and so such an attack would only pose harm to the civilian population.³⁹ This is why attacks on dual-

³⁰ Alessandra Stanley, *War in the Gulf: The Overview; Iraq Says U.S. Killed Hundreds of Civilians at Shelter but Allies Call It Military Post*, N.Y. TIMES (Feb. 14, 1991), <https://www.nytimes.com/1991/02/14/world/war-gulf-overview-iraq-says-us-killed-hundreds-civilians-shelter-but-allies-call.html>.

³¹ See Additional Protocol I, *supra* note 5, art. 52(2), 1125 U.N.T.S. at 27 (referencing “total or partial destruction, capture or neutralization” with regard to military objectives).

³² Michael Bothe, *Targeting*, 78 INT'L L. STUD. 173, 179 (2002).

³³ Wolff H. von Heinegg, *Commentary*, 78 INT'L L. STUD. 203, 205 (2002).

³⁴ ROGERS, *supra* note 27, at 83. Even so, *sufficiency* itself, with regard to neutralization necessary, can have different interpretations. For example, countries like the United States speak of a contribution made to “war-fighting or war-sustaining” capabilities, which implies that the margin of sufficiency is higher in their case, as such interpretations would allow targeting objects that contribute even economically to war. HENCKAERTS & DOSWALD-BECK, *supra* note 24, at 31.

³⁵ See Lydia Davenport & Paula Martinez Gutierrez, *The War on Terror: Does the End Justify the Means?*, BROWN POL. REV. (Dec. 9, 2014), <http://brownpoliticalreview.org/2014/12/the-war-on-terror-does-the-end-justify-the-means> (providing an example of the debate, in the context of a global war on terrorism, on whether the mode of weaponries used and manner of targeting is justified in the absence of imminent threats, and without affording due process rights to the accused).

³⁶ United States v Wilhelm List et al. (The Hostage Case), XI T.W.C. 1230, 1253–54 (1948).

³⁷ Bothe, *supra* note 32, at 180; see also YORAM DINSTEIN, *THE CONDUCT OF HOSTILITIES UNDER THE LAW OF INTERNATIONAL ARMED CONFLICT* 116 (1st ed. 2004) (discussing the line between military and other objective in the context of bridges).

³⁸ Burrus M. Carnahan, “Linebacker II” and Protocol I: *The Convergence of Law and Professionalism*, 31 AM. U. L. REV. 861, 867 (1982).

³⁹ E.g., THOMAS E. GRIFFITH, JR., *STRATEGIC ATTACK OF NATIONAL ELECTRICAL SYSTEMS* 52 (1994); ROBERT A. PAPE, *BOMBING TO WIN: AIR POWER AND COERCION IN WAR* 76 (1996).

use infrastructure like national electrical systems may not be an appropriate option. In fact, it is likely to impel civilians to side with the militants and push for more aggression.

States have an obligation under AP I Article 35(2) to prevent acts that cause “unnecessary suffering” and violate principles of humane treatment.⁴⁰ The term “unnecessary suffering”—along with the prohibition on “cruel treatment” under the Geneva Conventions and AP II⁴¹—have served as the basis for outlawing several illegal weaponries and methods in the course of war.⁴² Often, these acts are nevertheless undertaken to instill fear within the civilian population; however, the prohibition against unnecessary suffering is not limited to the actual act of terrorizing. Even acts that might result in the spread of violence, or that create feelings of helplessness among the civilian population, are prohibited.⁴³ This is also considered a “peremptory norm” under international law.⁴⁴ In the *Radulovic* case in 1997, Croatian court convicted the defendant Serbian fighters on several counts, including “plan[ning] [on] terrorising and mistreating the civilians” under AP I Article 51 and AP II Article 13.⁴⁵ The court held Serbian forces responsible for indiscriminately firing at civilian areas and for causing the destruction of dams with the intention of causing floods.⁴⁶

The prohibition further extends to bombardments and attacks on undefended buildings, which are presumed to be civilian buildings.⁴⁷ Both the Geneva and Hague Conventions additionally incorporate the “Martens clause,” which is an interpretative tool that fills any lacunae in the actual provisions by taking recourse to “usages established among civilized peoples, from the laws of humanity, and the dictates of the public

⁴⁰ Additional Protocol I, *supra* note 5, art. 35(2), 1125 U.N.T.S. at 21.

⁴¹ See Additional Protocol II, *supra* note 7, art. 4(2), 1125 U.N.T.S. at 612 (prohibiting “cruel treatment such as torture” and “[o]utrages upon personal dignity, in particular humiliating and degrading treatment”); Geneva Convention Relative to the Protection of Civilian Persons in Time of War art. 3, Aug. 12, 1949, 75 U.N.T.S. 287 (prohibiting “violence to life and person, in particular . . . cruel treatment and torture” and “outrages upon personal dignity, in particular humiliating and degrading treatment”).

⁴² YORAM DINSTEIN, NON-INTERNATIONAL ARMED CONFLICTS IN INTERNATIONAL LAW 213 (2014); JULIUS STONE, LEGAL CONTROLS OF INTERNATIONAL CONFLICT 550–51 (1954); see, e.g., Additional Protocol I, *supra* note 5, art. 51(4), 1125 U.N.T.S. at 26 (prohibiting indiscriminate attacks, which are defined to include attacks that “cannot be directed at a specific military objective” or whose effects “cannot be limited”).

⁴³ Prosecutor v. Galić, Case No. IT-98-29-A, Judgement, ¶ 102 (Int’l Crim. Trib. for the Former Yugoslavia Nov. 30, 2006).

⁴⁴ Prosecutor v. Galić, Case No. IT-98-29-T, Judgement and Opinion, ¶¶ 98, 105, 592 (Int’l Crim. Trib. for the Former Yugoslavia Dec. 5, 2003).

⁴⁵ *Id.* ¶ 97 (quoting Prosecutor v. R. Radulović et al., Split County Court, Republic of Croatia, Case No. K-15/95, Verdict of 26 May 1997).

⁴⁶ *Id.*

⁴⁷ Rep. of the Secretary General Pursuant to Paragraph 2 of S.C. Resolution 808 (1993), U.N. Doc. S/25704, annex, Statute of the International Tribunal for the Former Yugoslavia, art. 3(c) (May 3, 1993).

conscience.”⁴⁸ The Martens clause lays down the general principles of IHL and ensures that the provisions that establish these principles do not remain static, especially considering the “rapid” pace of technological development.⁴⁹

III. PRESENT TECHNOLOGICAL CHALLENGES

In the context of technological advances in targeting, autonomous weapons have almost become ubiquitous. Autonomous weapons have moved beyond surveillance, reconnaissance, fulfillment of logistical issues, and provision of civilian protection, and are now increasingly relied on in direct combat roles.⁵⁰ But even these weapons encounter challenges in the course of targeting, specifically in evaluating the relative positions of military objectives. Whether or not these objectives are truly “separated and distinct”⁵¹ is the paramount question. This is because an isolated military advantage obtained through neutralization or destruction is always preferred over a combined military advantage.⁵²

While it is possible to develop machines that simply sort objects into the civilian and military categories by some algorithmic measure, in reality, objects are unlikely to be of similar size, shape, significance, or value as those initially fed as inputs.⁵³ Consider a case wherein a building that is otherwise a civilian property also houses ammunitions and logistics prepared by commercial enterprises for supply to the belligerent party. Would that make the whole building an object of attack? More importantly, even if it were determined to potentially provide substantial military advantage, individuals residing within the building, who may be

⁴⁸ Hague Convention (II) Respecting the Laws and Customs of War on Land pmb., July 29, 1899, 32 Stat. 1803; Theodor Meron, *The Martens Clause, Principles of Humanity, and Dictates of Public Conscience*, 94 AM. J. INT'L L. 78, 78 (2000); see Additional Protocol I, *supra* note 5, art. 1(2), 1125 U.N.T.S. at 7 (“In cases not covered by this Protocol or by other international agreements, civilians and combatants remain under the protection and authority of the principles of international law derived from established custom, from the principles of humanity and from the dictates of public conscience.”).

⁴⁹ Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, 1996 I.C.J. Rep. 226, ¶ 78 (July 8); Int'l Law Comm'n, Rep. on the Work of Its Forty-Sixth Session, U.N. Doc. A/49/10, at 131 (1994).

⁵⁰ See Rep. of the 2014 Informal Meeting of Experts on Lethal Autonomous Weapons Systems (LAWS), ¶¶ 35–36, U.N. Doc. CCW/MSP/2014/3 (June 11, 2014) (discussing the importance of autonomous weapons for intelligence and logistics, as well as the “risks associated” with their use “in the operational context”); see also INT'L COMM. OF THE RED CROSS, AUTONOMOUS WEAPON SYSTEMS: TECHNICAL, MILITARY, LEGAL AND HUMANITARIAN ASPECTS 11 (2014) (discussing the typical use of autonomous weapons, but noting that there is “continued interest” in expanding their role).

⁵¹ Additional Protocol I, *supra* note 5, art. 51(5), 1125 U.N.T.S. at 26.

⁵² WILLIAM H. BOOTHBY, *THE LAW OF TARGETING* 282, 284–85 (1st ed. 2012). Boothby explains that an assessment of whether the objects are separate and distinct arises after observing the distance between the two objects, and seems to emphasize that, in areas which are primarily civilian, if targeting of the objective would give rise to an advantage only on a cumulative basis (summation of all other attacks), it would not be lawful. *Id.* at 407.

⁵³ *Id.* at 285.

only commercially associated with the conflict, would be protected since they do not participate “directly” in the conduct of hostilities.⁵⁴ Resorting to an attack on these dual-use objects would also violate the protection granted to these civilians.⁵⁵ Similarly, remote warfare and autonomous weapons can fail to take account of unforeseen changes in circumstances. One author has taken the example of robotic bulldozers for “dismantl[ing] houses in urban combat zones,” which might find it extremely difficult, if not impossible, to detect the presence of children “amongst the reportedly empty houses” involved “in a game of hide and seek.”⁵⁶ The robot would strictly follow the orders programmed, whereas a human soldier would be able to accurately take note of the situational realities.⁵⁷

AP I Article 36 implies a duty to test newly designed weaponries to see whether they meet standards under international law.⁵⁸ However, Peter Asaro has observed that this would be more difficult with the emerging complexities in technology.⁵⁹ Imagine a case where nanotechnological developments result in the development of firearms with a greatly reduced metal content, preventing targeting machines from using metal content to identify stored ammunitions.⁶⁰ This would result in difficulties within the target recognition framework. The danger in the form of erroneous artificial intelligence outputs—and, consequently, targeting decisions—would be further compounded in the cases of highly “cluttered, dynamic, and populated areas,”⁶¹ and internal armed conflicts where civilians are more likely to assist the insurgents, which are often comprised of members of the same territorial population.

Since the number of dual-use objects and technologies has been increasing, it will become extremely difficult in the future to process the

⁵⁴ See Additional Protocol I, *supra* note 5, arts. 43(2), 67(1), 1125 U.N.T.S. at 23, 34 (defining armed forces, and further outlining protection granted to members of such forces assigned to “civil defence organizations”).

⁵⁵ See *Direct Participation in Hostilities: Questions & Answers*, INT’L COMMITTEE RED CROSS (June 2, 2009), <https://www.icrc.org/eng/resources/documents/faq/direct-participation-ihl-faq-020609.htm> (describing the protections afforded to civilians).

⁵⁶ Hanna Brollowski, *Military Robots and the Principle of Humanity: Distorting the Human Face of Law?*, in *ARMED CONFLICT AND INTERNATIONAL LAW* 53, 82 (Mariëlle Matthee et al. eds., 2013).

⁵⁷ *Id.*

⁵⁸ Additional Protocol I, *supra* note 5, art. 36, 1125 U.N.T.S. at 21.

⁵⁹ Peter Asaro, *On Banning Autonomous Weapon Systems: Human Rights, Automation, and the Dehumanization of Lethal Decision-Making*, 94 INT’L REV. RED CROSS 687, 692–93 (2012).

⁶⁰ WILLIAM H. BOOTHBY, *CONFLICT LAW: THE INFLUENCE OF NEW WEAPONS TECHNOLOGY, HUMAN RIGHTS AND EMERGING ACTORS* 108 n.62 (2014).

⁶¹ NATHALIE WEIZMANN, *AUTONOMOUS WEAPON SYSTEMS UNDER INTERNATIONAL LAW* 14 (Geneva Academy, Academy Briefing No. 8, 2014), https://www.geneva-academy.ch/joomlatools-files/docman-files/Publications/Academy%20Briefings/Autonomous%20Weapon%20Systems%20under%20International%20Law_Academy%20Briefing%20No%208.pdf.

high volume of information.⁶² Moreover, human operators are more likely to rely on robotic analysis as opposed to their own judgements in data processing efforts.⁶³ An oft-stated advantage of remote operations is that there are fewer chances for error because pilots of remote vehicles are located in secure locations, and so will hardly operate under the stress of impending consequences, unlike decision-makers on the battlefield.⁶⁴ Increased use of remote operations, then, would eventually lead to reduced casualty rates and lower operating costs of having to enter battlefields.⁶⁵ However, these arguments do not consider the fact that, with the eventual progression of technology, there will also be an increase in civilianization in targeting.⁶⁶ It is not unusual for civilians to fly remote vehicles while those in the military may be responsible for the payloads that they carry. It is ultimately these civilians who possess expertise in the use of these modern technologies.⁶⁷ In practice, there are already considerable circumventions of IHL treaties, as those on the battlefield apply the general principles of IHL along with their own considerations of the situation and commands from superiors.⁶⁸ The participation of private operators, completely detached from war-like situations and without battlefield experience, would further lead to excessive casualties and collateral damages, because they are aware that they will either not be prosecuted at all or prosecuted with lesser charges.

Even with highly sophisticated technologies, the danger of errors always exists. Since the controller of an autonomous weapon ultimately makes a decision on the basis of data reflected on a screen, any error within, for example, the sensor would result in an information deficit. Such deficit can also arise as a result of attacks from the adversary.⁶⁹ Kenneth Anderson and Matthew Waxman have also noted how, with the advent of technology, enemy cyberattacks may lead to the distortion of targets and the sensor feeds that are mounted on the autonomous weapons.⁷⁰ A precautionary measures-based approach would demand that, where any

⁶² Hitoshi Nasu & Robert McLaughlin, *Conclusion: Challenges of New Technologies for the Law of Armed Conflict*, in NEW TECHNOLOGIES AND THE LAW OF ARMED CONFLICT 247, 252 (Hitoshi Nasu & Robert McLaughlin eds., 2014).

⁶³ Brollowski, *supra* note 56, at 82.

⁶⁴ Steven Simon, *In Defense of Drones*, MSNBC (Apr. 26, 2015), <http://www.msnbc.com/msnbc/defense-drones>.

⁶⁵ *Pro & Con Quotes: Should the United States Continue Its Use of Drone Strikes Abroad?*, PROCON.ORG, <https://drones.procon.org/view.answers.php?questionID=001894> (last updated Apr. 17, 2017).

⁶⁶ See Michael Mertes, *What are "Military Objectives"?*, KONRAD-ADENAUER-STIFTUNG (Nov. 27, 2013), [https://www.kas.de/web/israel/veranstaltungsberichte/detail/-/content/was-sind-militaerische-ziele-\(referring-to-increased-involvement-of-civilians-as-a-new-challenge\[\]\)](https://www.kas.de/web/israel/veranstaltungsberichte/detail/-/content/was-sind-militaerische-ziele-(referring-to-increased-involvement-of-civilians-as-a-new-challenge[])) to traditional objective designations").

⁶⁷ HEATHER HARRISON DINNISS, *CYBER WARFARE AND THE LAWS OF WAR* 25–26 (2012).

⁶⁸ W. Hays Parks, *Teaching the Law of War: A Reprise*, 3 *ISR. DEF. FORCES L. REV.* 9, 15–16 (2007).

⁶⁹ BOOTHBY, *supra* note 60, at 117.

⁷⁰ *Id.* at 137–38.

equipment vital to the functioning of the system is corrupted—whether due to malfunction or enemy attack—necessary software must be installed to pick up such failure and either remedy it or avert the mission.⁷¹ Of course, in practice, the extent to which precautionary measures can be deployed largely depends on factors such as the degree of “control exercised over the territory,” the kind of weaponries involved, the immediacy of the attack, and the weight of the security risks that might otherwise be posed while taking additional initiatives.⁷²

IV. STRATEGIES PROPOSED TO BE ADOPTED WHILE TARGETING DUAL-USE OBJECTS

During an ongoing conflict, it is possible for belligerents to make errors in their assessment and targeting of objects that are supposed to be protected under IHL. The crucial question before attacking is: What is the level of certainty required? Additionally, what quantifiable amount of doubt, as considered under AP I Articles 50 and 52(3),⁷³ is required to allow benefit of doubt while targeting? The International Committee of the Red Cross Interpretive Guidance states that the standard is not extremely burdensome, and would depend on “information that can be said to be reasonably available.”⁷⁴ Additionally, the Manual on International Law Applicable to Air and Missile Warfare notes that, in the case of air and missile warfare methods, merely marking protected locations is not enough, and other methods are necessary to bring the true nature of the object to the attention of the adversary.⁷⁵ The latter instruction is without a doubt important, as it is reflective of the convictions of states during the time of military operations.⁷⁶

While several authors call for consideration of a dual-use object as entirely a military objective, there is considerable authority, under both commentaries and state practice, that mandates that total destruction must not be pursued in cases where it is possible to limit destruction to only the military aspects of the object.⁷⁷ William Boothby cites, as an example, satellites, which might carry both civilian and military communications traffic.⁷⁸ Boothby states that such a satellite would qualify as a military

⁷¹ *Id.* at 117, 137.

⁷² European Parliament Study EXPO/B/DROI/2012/12, Nils Melzer, Human Rights Implications of the Usage of Drones and Unmanned Robots in Warfare 24 (May 3, 2013).

⁷³ Additional Protocol I, *supra* note 5, arts. 50(1), 52(3), 1125 U.N.T.S. at 26–27.

⁷⁴ NILS MELZER, INT’L COMM. OF THE RED CROSS, INTERPRETIVE GUIDANCE ON THE NOTION OF DIRECT PARTICIPATION IN HOSTILITIES UNDER INTERNATIONAL HUMANITARIAN LAW 75 (2009), <https://www.icrc.org/en/doc/assets/files/other/icrc-002-0990.pdf>.

⁷⁵ PROGRAM ON HUMANITARIAN POLICY AND CONFLICT RESEARCH AT HARVARD UNIV., COMMENTARY ON THE HPCR MANUAL ON INTERNATIONAL LAW APPLICABLE TO AIR AND MISSILE WARFARE 140–41 (2010).

⁷⁶ See 1 MARCO SASSÒLI ET AL., HOW DOES LAW PROTECT IN WAR? 220 (2005) (noting that the Manual has “led to genuine progress is clarifying the law).

⁷⁷ See *supra* note 34 and accompanying text.

⁷⁸ WILLIAM H. BOOTHBY, WEAPONS AND THE LAW OF ARMED CONFLICT 298 (2d ed. 2016).

objective, and space weaponries could be directed against it to “reasonably limit” its functions.⁷⁹ This would satisfy the requirements under AP I Articles 51(4)(b)–(c); however, he further considers that, since proportionality issues are an equal concern, other methods like cyberattacks specifically directed at military links and networks—which can, for example, place the military systems under a “shadow”⁸⁰—would seem more appropriate.⁸¹

In cases where the civilian parts of the adversary must also be eliminated, the attacking country must consider “incidental damage.”⁸² U.S. Army policy states that, while undergoing a proportionality assessment for dual-use objects, the belligerent parties must always consider the “unintended” and “cascading” effects arising from the attack, as well as the effect of such an attack on the civilian population’s use of the object.⁸³ Another aspect of warfare practice is that, if the objects in question are critical infrastructure—such as electrical systems or telecommunications—then military benefits must be weighed against legitimate civilian need.⁸⁴

Cordula Droege notes that AP I Article 51(5)(b) uses the words “may be expected,” which means even long-term foreseeable damages must be considered.⁸⁵ Additionally, Marco Sassòli and Lindsey Cameron agree that, while weighing civilian losses, assessment of the extent of expected collateral damages of the dual-use object as well as other relevant collateral damage is necessary.⁸⁶ But what standard of reasonableness would suffice? Some jurists have rejected the foreseeability standard of a “reasonable person,” instead embracing the standard of a “reasonable commander.”⁸⁷ Even though a military commander, motivated by the circumstances of war, could consider something as innocuous as a desolated ground previously used for storing arsenal to be militarily advantageous to destroy, the reasonable commander standard would be a better alternative. The standard is considerably higher because it involves

⁷⁹ *Id.*

⁸⁰ *Radar Image Distortions*, NAT. RESOURCES CAN., <https://www.nrcan.gc.ca/maps-tools-publications/satellite-imagery-air-photos/remote-sensing-tutorials/microwave-remote-sensing/radar-image-distortions/9325> (last updated Nov. 20, 2015).

⁸¹ BOOTHBY, *supra* note 78, at 298.

⁸² Laurent Gisel, *Relevant Incidental Harm for the Proportionality Principle*, 46 COLLEGIUM 118, 123 (2016).

⁸³ U.S. JOINT CHIEFS OF STAFF, JOINT PUBL’N 3-60, JOINT TARGETING, at II-35 (2013).

⁸⁴ *Id.* at I-3–I-4; see generally Christopher Greenwood, *Customary International Law and the First Geneva Protocol of 1977 in the Gulf Conflict*, in THE GULF WAR 1990–91 IN INTERNATIONAL AND ENGLISH LAW 63, 63-79 (Peter Rowe ed., 1993) (discussing the coalition practice in the Gulf War, which reflected the balancing of military benefits against civilian need).

⁸⁵ Cordula Droege, *Get Off My Cloud: Cyber Warfare, International Humanitarian Law, and the Protection of Civilians*, 94 INT’L REV. RED CROSS 533, 572 (2012) (quoting Additional Protocol I, *supra* note 5, art. 51(5), 1125 U.N.T.S. at 26).

⁸⁶ Sassòli & Cameron, *supra* note 15, at 67.

⁸⁷ *Id.* at 64–65.

both subjective and objective considerations.⁸⁸ For example, a normal person may not foresee that cutting off electricity would result in cutting off life-saving hospital facilities, or that lack of fresh water might result in famine and starvation deaths, or that destruction of dams may eventually result in the spread of waterborne diseases, and so on. However, a military commander, by virtue of his experience, would better understand the interconnectedness within infrastructure grids and the far-reaching effects of destruction.⁸⁹ One possible question to consider in the process of remotely targeting dual-use objects could be whether the object forms part of a larger and significant network. For example, is the object connected to any critical infrastructure? Israel, for one, has incorporated this standard within its state practice: Accordingly, the commander is supposed to assess the “expected collateral damage” during the time of the attack, as opposed to the damage that actually arises from the attack.⁹⁰ Another question could be whether or not the lines are connected to a common grid network. If the answer is in the affirmative, autonomous or remote weapons such as drones could be used to precisely target only substations or electrical lines instead of generating stations or hydroelectric power stations.⁹¹

Military commanders would also be more likely to make an appropriate collateral damage assessment by considering the present situation within the area, the number of attacks previously undertaken, the background of the attack, and the consequences of previous attacks. Boothby notes that in the case of urban areas, expected incidental damages could be measured with technical expertise such as the effects on utilities, the duration of repairs to the objects, and the nature of injuries that could occur in the meantime.⁹² In the case of imminent attacks, such a reasonable commander would be in a better position to adopt feasible measures, as junior level personnel may not be able to understand why an operation ought to be conducted in a particular way. Further, states equipped with autonomous technologies could first explore the possibility of averting any incoming attacks from critically important infrastructure. This could be done, for example, with autonomous embedded enhancements, which would ensure the states’ compliance with their obligation to take all possible precautions, at least in cases in which any counter-attack they launch could result in a high collateral loss to the civilian population.⁹³ One example is the U.S. Navy’s placement of “close-in weapon systems”

⁸⁸ Enzo Cannizzaro, *Proportionality in the Law of Armed Conflict*, in THE OXFORD HANDBOOK OF INTERNATIONAL LAW IN ARMED CONFLICT 332, 340–41 (Andrew Clapham & Paola Gaeta eds., 2014).

⁸⁹ Sassòli & Cameron, *supra* note 15, at 65.

⁹⁰ STATE OF ISR., THE 2014 GAZA CONFLICT (7 JULY–26 AUGUST 2014), xviii, 181 (2015).

⁹¹ Michael N. Schmitt, *Targeting in Operational Law*, in THE HANDBOOK OF THE INTERNATIONAL LAW OF MILITARY OPERATIONS 269, 288 (Terry D. Gill & Dieter Fleck eds., 2d ed. 2015).

⁹² BOOTHBY, *supra* note 52, at 414.

⁹³ Additional Protocol I, *supra* note 5, arts. 57(2), 58, 1125 U.N.T.S. at 29.

on its warships, which have functioned as a protective measure against oncoming attacks since the 1970s.⁹⁴

Next, belligerents could adopt a system of categorization for the purposes of identifying the value of military advantage that can be obtained by targeting objectives. In their recently published work, Neve Gordon and Nicola Perugini call for an “absolute” prohibition on targeting medical units.⁹⁵ They argue that medical facilities occupy a rather borderline position by catering for both civilians and the injured; however, by that rationale, similar “life-enabling and war-making activities”⁹⁶ could also be performed by other dual-use objects—such as electrical grids and water installations—that act as essential services to sustain life. Moreover, unlike health units, which can be mobile, relocation is not a feasible option in the case of such dual-use objects. Thus, such a proposed system of categorization would help in the strengthening of IHL provisions,⁹⁷ at least more so than any absolute prohibition on attacks.

The United States recognizes at least three categories of targets controlled by belligerents.⁹⁸ The targets expected to result in the highest degree of military advantage are the individuals who directly participate in the conduct of hostilities, such as senior leaders within organized groups, and are classified in the list of “high-value targets.”⁹⁹ A similar kind of classification could also be adopted in the case of dual-use objects. The logic behind this suggestion is that, through constant observation and assessments over time, the status of dual-use objects might be clearer. Not all dual-use objects are entitled to the same level of protection. For example, even protected objects, such as cultural properties, that have warranted separate mention in the Hague Conventions and the Additional Protocols, have been subject to differing levels of protection: protection in general, special protection, and enhanced protection.¹⁰⁰ Terminology such as “exceptional cases of unavoidable military necessity”¹⁰¹ and “only

⁹⁴ Jeffrey S. Thurnher, *Feasible Precautions in Attack and Autonomous Weapons*, in DEHUMANIZATION OF WARFARE 99, 104 (Wolff Heintschel von Heinegg et al. eds., 2018).

⁹⁵ Neve Gordon & Nicola Perugini, *‘Hospital Shields’ and the Limits of International Law*, 30 EUR. J. INT’L L. 439, 463 (2019).

⁹⁶ *Id.* at 442, 451.

⁹⁷ Yishai Beer, *Save the Injured – Don’t Kill IHL: Rejecting Absolute Immunity for ‘Shielding Hospitals’*, 30 EUR. J. INT’L L. 465, 475 (2019).

⁹⁸ Rep. of the Special Rapporteur on the Promotion and Protection of Human Rights and Fundamental Freedoms While Countering Terrorism, ¶ 74, U.N. Doc. A/68/389 (Sept. 18, 2013).

⁹⁹ *Id.*

¹⁰⁰ See Second Protocol to the Hague Convention of 1954 for the Protection of Cultural Property in the Event of Armed Conflict art. 10, Mar. 26, 1999, 2253 U.N.T.S. 172 (establishing an opportunity for cultural objects to receive “enhanced” protection); Convention for the Protection of Cultural Property in the Event of Armed Conflict arts. 4, 8(1), May 14, 1954, 249 U.N.T.S. 215 (distinguishing between general protection and “special” protection); see also Additional Protocol I, *supra* note 5, art. 57(3), 1125 U.N.T.S. at 29 (referring to “civilian objects” as warranting protection).

¹⁰¹ Convention for the Protection of Cultural Property in the Event of Armed Conflict, *supra* note 100, art. 11(2), 249 U.N.T.S. at 250.

feasible means of terminating the use of the property”¹⁰² clearly indicate stricter standards of protection. However, the drafters of these agreements still recognized the realities of war: As Jiri Toman comments, while certain objects of limited objective value may be of great importance to national culture, other objects, even of great monetary or practical value, may deserve less protection because they are replaceable and, hence, of lesser importance.¹⁰³ Similarly, the *Tallinn Manual on the International Law Applicable to Cyber Warfare* also indicates that not all data in the context of cyberattacks is equally important, and therefore classification is necessary.¹⁰⁴

Finally, if more conventional weapons (i.e. weapons traditionally employed directly on the battlefield) and general methods of attacks are available—which would allow for improved recognition of the targetable objectives—then the mandate to take feasible measures of precaution under AP I Article 57 is fulfilled by use of those conventional weapons.¹⁰⁵ On the other hand, if the attack proceeds without the use of such conventional means of warfare where available, then the mandate should be considered to have been violated. This is because questions of whether objectives are truly military objectives cannot be determined in hindsight. These decisions must be made with a real-time perspective of the person targeting, and should be clearly separated from military reconnaissance and other investigation. In the context of targeted killings by state directed drones, Dan Saxon has stated that such attacks must involve a two-way decision process: an initial decision by the drone team based on the data obtained, and then a decision based on direct verification through on-ground presence.¹⁰⁶ Even if such verification is not possible, other methods—such as aircrafts or autonomous weapons such as drones at lower altitudes—could be an option for obtaining better ground-level information. Such direct verification could easily be accomplished in the case of internal armed conflicts, where the parties to the conflict, by virtue of belonging to the same territory, are more likely to be acquainted with the object coordinates and with their protected or civilian statuses. This would result in considerable reductions in arbitrary targeting.

V. CONCLUSION

¹⁰² Second Protocol to the Hague Convention of 1954 for the Protection of Cultural Property in the Event of Armed Conflict, *supra* note 100, art. 13, 2253 U.N.T.S. at 217.

¹⁰³ JIŘÍ TOMAN, *CULTURAL PROPERTY IN WAR: IMPROVEMENT IN PROTECTION* 193 (2009).

¹⁰⁴ See TALLINN MANUAL ON THE INTERNATIONAL LAW APPLICABLE TO CYBER WARFARE 54 (Michael N. Schmitt ed., 2013) (discussing the classification of “some cyber operations” as an “armed attack”).

¹⁰⁵ Additional Protocol I, *supra* note 5, art. 57(2), 1125 U.N.T.S. at 29.

¹⁰⁶ Dan Saxon, *International Humanitarian Law and the Challenges of the Changing Technology of War*, in *INTERNATIONAL HUMANITARIAN LAW AND THE CHANGING TECHNOLOGY OF WAR* 337, 342 (Dan Saxon ed. 2013).

As part of their obligation under international law, states are required to conform to the principles of distinction, precaution, and proportionality. While much ink has been spilt on discussing the principle of distinction in reference to civilians, there has been considerably less attention paid to the standards to be adopted while confronting dual-use objects, either because states presume that these objects can be validly attacked as if they were military objectives (as in the case of the United States), or because states fail to foresee the risks that their destruction poses to the civilian population. In reality, the objects increasingly targeted on the pretext of having a dual-use nature—such as electricity grids, hospitals, and even economic facilities that employ a considerable portion of the civilian population—are intrinsically related to human health, including life and death. Thus, any targeting decision should be undertaken not merely on the basis of an object's nature and function, but on the basis of the extent of their function as a military objective. The aim of targeting should not be to cause the complete submission of the enemy as soon as possible.

The laws of war intend to strike a balance between military and humanitarian considerations, and hence, to the extent feasible, contemplate measures to reduce any collateral damages or even abort an attack. For this purpose, this note advocates the use of technological warfare, including autonomous weaponries, but only when they are guided and precise. It further proposes that any attack must always be evaluated from the point of a reasonable commander. Finally, where the incidence of loss could be higher, such as through the loss of critical infrastructure, this note suggests that the parties involved could assign values to targets in such manner that only those affording the greatest military advantage are compromised.