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The Expansion of DPH Regarding Emerging Technological Weapons

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INTRODUCTION

Over the years, the United States has taken a more expansive view regarding targeting objects, mostly with objects that have economic worth for the opposing side of the conflict. This Article focuses on taking the more expansive view of targeting objects and applying it to the targeting of civilians in relation to the changing circumstances of modern warfare. The United States should expand its definition of civilians who are Directly Participating in Hostilities (DPH) and therefore can be targeted.

The specific focus of this Article is the way in which civilians interact with modern warfare, namely emerging technological weapons. New weapons that change the way war is carried out are being produced, thus creating a need to change the rules of war themselves. The civilians who interact with these weapons from the time they are designed until the time they are used in an armed conflict can be considered to be participating in hostilities. However, is the connection direct enough to make them direct participants in the hostilities, thus becoming targetable civilians?

The International Committee of the Red Cross (ICRC) and the United States have ways to determine if a civilian is DPHing. Currently, the ICRC considers people who initiate the use of the weapons and those who deliver weapons to the front lines as DPHing. The United States considers civilians who initiate and deliver to the front lines, and even some sellers and some manufacturers of the weapons, to be DPHing.

This Article proposes that the United States' view of DPHing should be expanded based upon the use of emerging technological weapons. The reasons for the proposed expansion begin with the fact that emerging technologies are often illegal on their face, whereas traditional weapons are not. Merely possessing many of the new emerging technological weapons is illegal. Also, there are often no

other possible uses for these new technologies besides weaponization, and only specific individuals possess the technological know-how of these new technologies. It may be intimidating that more civilians could be targeted, but with the limiting principles explained in this Article, these fears can be mitigated.

Part I of this Article explains the distinct views of the ICRC and the United States concerning DPH and explains the laws surrounding the targeting of objects. Part II combines the theory put forth by Ryan Goodman concerning the expansion of the targeting of objects and the theory of DPH expansion related to the emerging technologies. Part III analyzes how and why the emerging technologies should be treated differently with respect to civilians who come into contact with the emerging technologies. Finally, Part IV describes the limiting principles that are associated with DPH currently and my theory of the application of the limiting principles to DPHing related to emerging technological weapons.

I BACKGROUND

Civilians have the right to be protected from the dangers of war.¹ Civilians cannot be attacked or targeted during war, neither can they be used by the military against the opposing party.² But what happens when civilians participate in the conflict? Because they are civilians, are they immune from any attack regardless of what actions they take? Article 51(3) of the Additional Protocol I (API) states that “civilians shall enjoy the protection afforded by this Section, unless and for such time as they take a direct part in hostilities.”³ The protection afforded to civilians does not last if the civilian directly participates in the hostilities.

A. Direct Participation in Hostilities

These protections are stripped away when the civilian is found to be directly participating in hostilities. When civilians DPH, they forfeit the protections of being civilians, and as a result they can be the object

¹ Protocol Additional to the Geneva Conventions of 12 August 1949 Relating to the Protection of Victims of International Armed Conflicts, art. 51, June 8, 1977, 1125 U.N.T.S. [hereinafter API].

² *Id.*

³ *Id.*

of attack.⁴ While they are DPHing, civilians have no more protections under the laws of war than enemy combatants. Because of this, it is important to determine when civilians are DPHing.

1. The ICRC's View

Many countries follow the view of the ICRC, but the United States does not. The ICRC has issued a guide titled “Interpretive Guidance on the Notion of Direct Participation in Hostilities Under International Humanitarian Law”⁵ that explains the ICRC’s position on DPH.

The ICRC defines hostilities in treaty law as “situations of international or non-international conflict.”⁶ This does not refer to any conduct that happens outside of situations of conflict, including riots and isolated incidents of violence.⁷ “Participation” is defined as individual involvement in these hostilities.⁸ According to the ICRC, civilians can DPH and lose their protections based on their temporary activity.⁹ The civilians DPHing can be doing so on a “revolving door” basis, where one minute they are considered DPHing but the next minute they are not, and their protections are afforded back to them. If they make another decision to DPH, they lose those privileges again, over and over.¹⁰

The ICRC uses a three-part test to determine the constitutive elements of DPH.¹¹ The first part of this test is the “threshold of harm.”¹² The threshold of harm is based upon a specific act of the civilian. That act must be *likely* to adversely affect military operations, or the act must be *likely* to inflict death, injury, or destruction against protected persons or objects.¹³ The harm does not have to ever manifest itself, it just must be likely that it would occur, based on the individual’s actions.¹⁴

⁴ DEP’T OF DEFENSE LAW OF WAR MANUAL, § 5.8 (2016) [hereinafter DOD MANUAL].

⁵ INT’L COMM. OF THE RED CROSS [ICRC], *Interpretive Guidance on the Notion of Direct Participation in Hostilities Under International Humanitarian Law* (May 2009) (Prepared by Nils Melzer) [hereinafter Interpretive Guidance].

⁶ *Id.* at 41, n.75.

⁷ *Id.* at 41.

⁸ *Id.* at 43.

⁹ *Id.* at 44.

¹⁰ *Id.* at 70.

¹¹ *Id.* at 46.

¹² *Id.* at 47.

¹³ *Id.*

¹⁴ *Id.*

The second part of the ICRC's test is causation between the specific act and the harm that is likely to result.¹⁵ The "direct" participant in hostilities is referring to the "direct" causation of harm and the harm must be brought about in only one causal step.¹⁶ This means that the civilian's specific action must directly affect the conflict. This does not mean that the civilian must be indispensable to the causation of harm, nor does it mean that the civilian has to be connected through an uninterrupted causal chain of events. It simply means that the specific action of the civilian directly affects the harm that is likely going to result.¹⁷

The third and final step of the ICRC's test is that there must be a "belligerent nexus."¹⁸ A belligerent nexus means the "act must be specifically designed to directly cause the required threshold of harm."¹⁹ This is not something that depends on the mindset of the civilians performing the acts. It matters only what the act, objectively, was specifically designed to do.²⁰ The only time civilians' mindset matters is when they were either totally unaware of the role that they were playing, or when they have had their physical freedom taken away.²¹

When these three parts of the ICRC's test are combined, it reveals that for a civilian to be considered to be DPHing the civilian must have performed an act which was specifically designed to likely and directly cause harm to the opposing forces.²²

2. The United States' View: Department of Defense Law of War Manual

An alternative theory is provided by the Department of Defense Law of War Manual (hereinafter Law of War Manual) that is followed by the United States.²³ The United States has not adopted the Additional Protocol I (API) of the Geneva Convention, but it does support the

¹⁵ *Id.* at 51.

¹⁶ *Id.* at 53.

¹⁷ *Id.* at 54.

¹⁸ *Id.* at 58.

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Id.* at 59.

²² *Id.* at 58.

²³ DOD MANUAL, *supra* note 4.

“customary principle on which Article 51(3) is based.”²⁴ The Law of War Manual states that there are parts of the ICRC Interpretive Guidance that are consistent with the United States’ customary international law; however, there are significant parts that are inconsistent.²⁵

The United States’ view on DPH as written in the Law of War Manual is more permissive than the ICRC view. The Law of War Manual does not lay out a specific test that must be followed when determining if a civilian is DPHing. Rather, the Law of War Manual lays out relevant considerations that determine the status of a civilian, but makes clear that such determinations depend on the context of the conflict.²⁶

There are five relevant considerations listed in the Law of War Manual. The manual states that this is not an exhaustive list, thereby allowing for other considerations to be weighed if they are relevant.²⁷ The first consideration that the Law of War Manual deems relevant is the degree to which the act causes harm.²⁸ Is this action a proximate cause or a “but for” cause? To what degree will this act likely adversely affect the military of the opposing party? What kind of harm will this act cause and how severe will it be?²⁹

The second consideration is the degree to which the act is connected to the hostilities.³⁰ Is the act performed temporally or geographically close to the fighting? Is the act connected to a military operation?³¹

The third consideration asks what are the specific purposes that underlay the act? What is the reason behind committing this certain act?³²

The fourth consideration is to what extent is there “military significance of the activity to the party’s war effort?” Does this act contribute to the military’s war effort? Does this act pose a significant threat to the opposing party?³³

²⁴ *Id.* at 227.

²⁵ *Id.*

²⁶ *Id.* at 229.

²⁷ *Id.*

²⁸ *Id.* at 230.

²⁹ *Id.*

³⁰ *Id.*

³¹ *Id.*

³² *Id.*

³³ *Id.*

The final consideration is the degree to which the activity is “viewed inherently or traditionally as a military one.”³⁴ Is this action traditionally performed by military forces?³⁵

As previously stated, there can be other considerations, as long as the party can prove the relevancy of the consideration. Determining if someone is DPHing is something that, in the United States’ view, is done on a case-by-case basis, following no specific formula for determination.³⁶ The United States views civilians as DPHing not only when they are participating in actual combat but also when they are “engaging in combat . . . that effectively and substantially contributes to an adversary’s ability to conduct or sustain combat operations.”³⁷

The ICRC and the United States’ views differ when interpreting the Law of War Manual regarding the revolving door protection. The Law of War Manual states that DPHing civilians do not always regain their protection between instances of DPHing.³⁸ If civilians are repetitiously in and out of DPHing, then they do not receive that protection.³⁹

Kenneth Watkin describes the idea of a “revolving door” by explaining, that the term “revolving door” evokes the idea of a form of carnival shooting gallery, where soldiers must wait until an opponent pops out from behind a door to be shot at. At some point, the credibility of the law begins to be undermined by suggesting an opponent can repeatedly avail themselves of such protection.⁴⁰

The United States sees the ICRC’s view of the revolving door protection as placing these people on better footing than the lawful combatants.⁴¹ The lawful combatants can be attacked at any time, whether or not they are participating in the hostilities at that moment. Yet, according to the ICRC, those DPHing can use the revolving door protection to their advantage and live their normal protected civilian

³⁴ *Id.*

³⁵ *Id.*

³⁶ Michael N. Schmitt, *Deconstructing Direct Participation in Hostilities: The Constitutive Elements*, 42 N.Y.U. J. INT’L L. & POL. 697, 705 (2010).

³⁷ DOD MANUAL, *supra* note 4, at 228–29 (§ 5.8.3).

³⁸ Major Ryan T. Krebsbach, *Totality of the Circumstances: The DoD Law of War Manual and the Evolving Notion of Direct Participation in Hostilities*, 9 J. NAT’L SECURITY L. & POL’Y 125, 149 (2017).

³⁹ DOD MANUAL, *supra* note 4, at 235 (§ 5.8.4.2).

⁴⁰ Kenneth Watkin, *Opportunity Lost: Organized Armed Groups and the ICRC “Direct Participation in Hostilities” Interpretive Guidance*, 42 N.Y.U. J. INT’L L. & POL. 641, 689 (2010).

⁴¹ DOD MANUAL, *supra* note 4, at 236 (§ 5.8.4.2).

lives whenever they want, but they are able to attack and participate directly in the hostilities.

B. Targeting

Warfare is constantly evolving. From ancient warfare, to gentlemen's warfare, to guerilla warfare, to modern warfare, the way that wars are fought is always changing. Modern warfare is a new type of war everyone has to learn. Weapons are becoming more powerful and smaller. From behind their computers, individuals play a large part in cyberwarfare. Participants in armed conflicts are no longer only states but also non-state actors, such as terrorist groups. Modern warfare has caused the line between the military and the civilian population to blur.⁴² In order to effectively combat this modern development, the United States is taking a more expansive view of what is legally targetable.

Targeting of an object is determined by an object's location, use, purpose, or nature.⁴³ An analysis done by Ryan Goodman, a professor at New York University, explained why the United States' view of targeting objects should be expanded. Before discussing how his analysis relates to expanding the theory of DPH, it is important to give background to the theory of targeting objects. The targeting of objects is governed by Article 52 of the API.

Article 52 has three parts. The first part states that civilian objects are not targetable.⁴⁴ The second part of Article 52 reads as follows:

Attacks shall be limited strictly to military objectives. In so far as objects are concerned, military objectives are limited to those objects which by their nature, location, purpose or use make an effective contribution to military action and whose total or partial destruction, capture or neutralization, in the circumstances ruling at the time, offers a definite military advantage.⁴⁵

The third part of Article 52 states that if an object usually dedicated to civilian purposes is thought to be used to make an "effective contribution" to the military, there remains a presumption that it is not being used for military contributions and is therefore non-targetable.⁴⁶

⁴² *Moving Targets: Ryan Goodman Examines How the Laws of Targeting Apply to the Modern Battlefield*, N.Y.U. L. NEWS (Mar. 28, 2017), <http://www.law.nyu.edu/news/ideas/ryan-goodman-targeting-war-sustaining-objects>.

⁴³ See generally *id.*

⁴⁴ API *supra* note 1, art. 52. 17512.

⁴⁵ *Id.*

⁴⁶ *Id.*

To determine whether an object is targetable, the location, use, purpose, or nature of the object must (1) make an effective contribution to military action, and (2) offer a definite military advantage.⁴⁷ If the object meets these criteria, the object may be targeted during armed conflict.⁴⁸

In his article, *Targeting ‘War-Sustaining’ Objects in Non-International Armed Conflict*, Ryan Goodman raises the question, “Under what circumstances, if any, do objects such as revenue-generating infrastructure of a non-State armed group qualify as military objectives?”⁴⁹ In other words, how far does the term “military objective” reach? What is an object that “effectively contributes to military action?”

For example, a number of people believe that both President George W. Bush and President Obama targeted the wrong kind of objects.⁵⁰ During the conflict with ISIL, President Obama targeted the economic infrastructure that was used to generate revenue for ISIL.⁵¹ Goodman agrees with Presidents Bush and Obama that through customary law, the United States *can* attack “war-sustaining” objects.⁵²

In Goodman’s article, he explains that most states agree that any objects making *direct* contributions to an armed military action are targetable.⁵³ However, there are also states that maintain that *indirect* contributions to an armed military action are targetable,⁵⁴ but how broad can an “indirect contribution” be?

The United States’ view on “indirect military contributions” is broken down into two types of targets: (1) “war-fighting” capabilities and (2) “war-sustaining” capabilities.⁵⁵ Goodman defines “war-fighting” capabilities as objects that are used to fight the war, including petroleum that is used to fuel military vehicles, as well as other energy

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ Ryan Goodman, *Targeting “War-Sustaining” Objects in Non-International Armed Conflict*, 2 (N.Y.U. Sch. of Law Public Law & Legal Theory Research Paper Series, Working Paper No. 16–20, 2016).

⁵⁰ *Id.*

⁵¹ *Id.* at 6.

⁵² *Id.* at 1.

⁵³ *Id.* at 2.

⁵⁴ *Id.*

⁵⁵ *Id.*

resources that are used mainly for military consumption.⁵⁶ Most states view “war-fighting” objects as targetable.⁵⁷

The second type of targets, those that are “war-sustaining,” are more controversial. The United States upholds the theory that “war-sustaining” objects are targetable. The theory of “war-sustaining” capabilities was recognized by the United States as early as 1980 in the United States Air Force Manual.⁵⁸

“War-sustaining” objects are defined as those that help sustain the war effort, even if they do not directly contribute to the war effort.⁵⁹ This includes indirect economic support of the war. The Air Force Manual states, “It is permissible to attack economic targets that give only indirect support to enemy operations, so long as that support is effective and definite military advantage can be foreseen.”⁶⁰ The standard required for “war-sustaining” is relatively low, although Goodman places a limiting factor on his theory of expansion by suggesting that only objects that are considered “great staples” can be targeted.⁶¹ According to Goodman, a “great staple” is “an export that was a crucial component of an enemy armed forces’ capabilities.”⁶² The “great staple” of the opposing forces is the object that is targetable as a “war-sustaining” object.⁶³

The first time that the United States documented “war-sustaining” objects as targetable was in the United States Air Force Manual—although the Manual does discuss a historic example from the 1870s.⁶⁴ During the Civil War, the Union justified destroying Confederate bales of cotton by arguing that the revenue generated from the sale of the cotton provided funds for Confederate arms and ammunition.⁶⁵ This was legally justified by the international courts.⁶⁶

⁵⁶ *Id.* at 2–3 (quoting INT'L COMM. RED CROSS [ICRC], *Commentary of 1987 General Protection of Civilian Objects*, art. 52, at 632, n.3.).

⁵⁷ *Id.* at 3.

⁵⁸ *Id.* at 4.

⁵⁹ *Id.* at 2–3.

⁶⁰ U.S. AIR FORCE, COMMANDER'S HANDBOOK ON THE LAW OF ARMED CONFLICT (Jul. 25, 1980).

⁶¹ Goodman, *supra* note 49, at 18.

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ *Id.*

Goodman understands the United States' view on this topic to be that war-sustaining objects are a subset of military objectives and that they can include an "industry that generates revenue used to fund an enemy's armed forces."⁶⁷ This view is supported by multiple authorities. First, the leading treatise on API, *New Rules for Victims of Armed Conflicts*, agrees that a "revenue-generating object can make an effective contribution to military action" and therefore can meet the definition of a military objective.⁶⁸ Second, the Joint Chiefs of Staff (JCS) review of Article 52(2) supports a broad interpretation of war-sustaining objects that includes "political and economic activities that support the enemy's war effort."⁶⁹

Finally, "war-sustaining" targeting is also supported through customary international law.⁷⁰ Customary international law requires both state practice and *opinio juris*. State practice is the general practice of the states and has two components to it: (1) it must be widespread and representative, and (2) it must be the practice of the states that are actually affected.⁷¹ *Opinio juris*—the other requirement for customary international law—means that a state is generally recognized to be following a law because it thinks it has a legal obligation to do so.⁷² With both state practice and *opinio juris*, a practice can be considered customary international law.

There are three examples that Goodman discusses to support the theory that customary international law supports "war-sustaining" targeting. First, France, Russia, and the United Kingdom have all targeted petroleum in the conflict against ISIL, because ISIL receives so much revenue from oil.⁷³ The second example is when NATO set their targets to military-industrial infrastructure and "other strategic targets."⁷⁴ NATO came out in support of attacking "not only an enemy's war-fighting capability, but also his capacity to sustain the

⁶⁷ *Id.* at 6.

⁶⁸ *Id.* at 7–8; see also MICHAEL BOTHE, *NEW RULES FOR VICTIMS OF ARMED CONFLICTS: COMMENTARY ON THE TWO 1977 PROTOCOLS ADDITIONAL TO THE GENEVA CONVENTIONS OF 1949* (Karl Josef Partsch et al. eds., 1982).

⁶⁹ Goodman, *supra* note 49, at 9.

⁷⁰ *Id.* at 10.

⁷¹ North Sea Continental Shelf, Judgment, 1969 I.C.J. 3 (Feb. 20), at 43.

⁷² *Id.* at 45.

⁷³ Goodman, *supra* note 49, at 10.

⁷⁴ *Id.* at 13.

conflict.”⁷⁵ And the third example is when electricity production facilities and oil refining and distribution facilities were targeted in the Persian Gulf by the Coalition since they provided “support for a nation’s war effort.”⁷⁶

Goodman argues that the reading of Article 52 has become broader and thus more capable of handling the intricacies of modern warfare by the expansion of targetable objects to include war-sustaining capabilities.

II

AN EXPANSIVE VIEW OF TARGETING CREATES AN EXPANSIVE VIEW OF DPH

Goodman argues that targeting objects have become more expansive in order to meet the realities and the needs of modern warfare.⁷⁷ This Part will discuss that targeting objects should not be the only thing that is expanded to meet this need.

As Article 51 explains, civilians cannot be attacked or targeted unless they are directly participating in a conflict.⁷⁸ As soon as they participate, civilians forfeit their protections and become targetable. The question then becomes: when are civilians acting as civilians and when are they acting as targets?

All states generally agree that if a civilian is DPHing directly, then they are targetable. Direct DPHing includes a civilian taking up arms against the enemy, placing an IED, or setting a bomb.

Goodman also discusses indirect contributions to the war effort. In light of Goodman’s justification for an expanded definition of what military objectives mean in modern conflicts, should the definition of DPH also be expanded? According to the ICRC, there is no way that civilians would be DPHing if they were not directly contributing to the war effort. The ICRC has a causation requirement that most likely would not be met by indirect contributions.⁷⁹

The United States analyzes this same issue by having a non-exhaustive list of considerations, rather than specific requirements for a civilian to be considered DPH.⁸⁰ Because this is a non-exhaustive list,

⁷⁵ *Id.*

⁷⁶ *Id.* at 14.

⁷⁷ *Id.* at 19.

⁷⁸ API, *supra* note 1, art. 51.

⁷⁹ *Interpretive Guidance*, *supra* note 5, at 52–53.

⁸⁰ DOD MANUAL, *supra* note 4, at 228–31 (§ 5.8.3).

it can be argued that different types of indirect contributions by a civilian could be considered DPH.

Modern warfare will be defined by the use of modern technologies. Among these are nano, chemical, and biological weapons. As these emerging technologies become weaponized, should the point at which a civilian is DPHing change from how it is treated under the current laws?

A. Weapons with Emerging Technology

Throughout this Article, I will focus on weapons that involve future technologies. Before I go through a DPH analysis, however, I will provide a general overview of each of the emerging technologies that I will refer to throughout this Article. Each of the emerging technologies analyzed here have the ability to become weapons, changing the DPH analysis because they are less straightforward as the DPH analysis for a firearm or an IED.

1. Nanotechnology

Nanotechnology is the understanding and control of matter that is measured in nanometers, the equivalent of one-billionth of a meter.⁸¹ The federal government defines nanotechnology as “science, technology, and engineering of things so small they are measured on a nanoscale.”⁸² A single nanometer is about ten times smaller than the width of a human DNA molecule.⁸³ Nanotechnology includes manipulating these minuscule measurements of matter, causing different kinds of matter to react differently at that small a level.⁸⁴ Some types of matter “exhibit unusual physical, chemical, and biological properties at the nanoscale.”⁸⁵

Nanotechnology has vastly contributed to innovations that help its user in wartimes. These inventions include clothing with a greater

⁸¹ *What It Is and How It Works*, NANOTECHNOLOGY 101, <https://www.nano.gov/nanotech-101/what> (last visited Mar. 30, 2018).

⁸² Jeff Daniels, *Mini-Nukes and Mosquito-Like Robot Weapons Being Primed for Future Warfare*, CNBC (Mar. 17, 2017, 10:32 AM), <https://www.cnbc.com/2017/03/17/mini-nukes-and-inspect-bot-weapons-being-primed-for-future-warfare.html>.

⁸³ *Id.*

⁸⁴ *What It Is and How It Works*, *supra* note 81.

⁸⁵ *Id.*

tolerance for temperature changes, smaller cameras, and even augmentation of human performance.⁸⁶

There are several countries that are in different phases of weaponizing nanotechnology by using mini nuclear bombs.⁸⁷ There are also small insect-like robots that can inject toxins into people or contaminate water supplies of large cities.⁸⁸ These nanobots could be used as a delivery system for bioweapons.⁸⁹ Del Monte, a scientist who deals in nanotechnology, predicts that terrorists could acquire nanoweapons on the black market as early as the late 2020s.⁹⁰ Not only are these new technologies being invented but they are also becoming more accessible.

2. Chemical Technology

Chemical technology is using chemicals and combinations of chemicals to either help or hinder society. Many different chemical compounds can be made; unfortunately, many compounds are made with the intent of being used as a weapon.

A chemical weapon is a manufactured chemical that is used to incapacitate, harm, or kill an individual.⁹¹ “A chemical weapon relies on the physiological effects of the chemical,” unlike chemical agents that are used only to “produce smoke or flame . . . or for riot control.”⁹² Chemical weapons are popular because they are cheaper and easier to make than biological or nuclear weapons.⁹³ These chemicals are placed in a delivery system such as a bomb.

After a chemical weapon is released, the chemical must have contact with the skin or mucous membranes, be inhaled, or be ingested to cause

⁸⁶ Jacob Heller & Christine Peterson, *Human Enhancement and Nanotechnology*, FORESIGHT INSTITUTE, <https://www.foresight.org/policy/brief2.html> (last visited Mar. 30, 2018); *The Future of Nanotechnology and Computers So Small You Can Swallow Them*, NPR (Nov. 23, 2015, 7:50 PM), <https://www.npr.org/sections/alltechconsidered/2015/11/23/457129179/the-future-of-nanotechnology-and-computers-so-small-you-can-swallow-them>; Will Soutter, *Nanotechnology in Clothing*, AZO NANO (Nov. 16, 2012), <https://www.azonano.com/article.aspx?ArticleID=3129>.

⁸⁷ Daniels, *supra* note 82.

⁸⁸ *Id.*

⁸⁹ *Id.*

⁹⁰ *Id.*

⁹¹ Anne Marie Helmenstine, *Chemical Weapons and Warfare Agents: What You Need to Know*, THOUGHTCO. (Mar. 8, 2017), <https://www.thoughtco.com/chemical-weapons-and-warfare-agents-602015>.

⁹² *Id.*

⁹³ *Id.*

its desired effect.⁹⁴ There are four types of chemical weapons: choking agents (chlorine), blistering agents (mustard), blood agents (hydrogen cyanide), or nerve agents (sarin). Each of these weapons has the ability to injure or kill the victim depending on the amount of chemical the individual comes into contact with.

Chemical weapons were first outlawed in 1925 as part of the Geneva Protocol.⁹⁵ The Protocol banned asphyxiating and poisonous gases, as well as bacteriological weapons.⁹⁶ Negotiations between nations began building upon this foundation. In 1980, a multilateral treaty was created to outlaw the use and possession of chemical weapons. This treaty was known as the Chemical Weapons Convention (CWC) and was entered into force on April 19, 1997.⁹⁷ The treaty currently has 192 state parties, with only three states that have neither signed nor ratified the convention.⁹⁸ The CWC is implemented by the Organization for the Prohibition of Chemical Weapons (OPCW), which is headquartered at the Hague.⁹⁹

The CWC bans chemical weapons and requires that all chemical weapons be destroyed within a given period of time.¹⁰⁰ The CWC specifically prohibits the development, production, acquisition, stockpiling, retention, transfer, or use of chemical weapons.¹⁰¹ One of the ways the OPCW enforces this treaty is through routine inspections and challenge inspections.¹⁰² Depending on the gravity of the violation, if a state violates the treaty, the issue could come up before the United Nation's Security Council and General Assembly.¹⁰³

Syria ratified the CWC in 2013, stating that it would observe the requirements of the CWC immediately, instead of waiting the thirty

⁹⁴ *Id.*

⁹⁵ *The Chemical Weapons Convention (CWC) at a Glance*, ARMS CONTROL ASS'N (June 22, 2018), <https://www.armscontrol.org/factsheets/cwclance> [hereinafter ARMS CONTROL ASS'N].

⁹⁶ *Chemical and Biological Weapons*, INT'L COMMITTEE OF THE RED CROSS (Apr. 8, 2013), <https://www.icrc.org/en/document/chemical-biological-weapons>.

⁹⁷ ARMS CONTROL ASS'N, *supra* note 95.

⁹⁸ *Id.*

⁹⁹ *Id.*

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ *Id.*

days required by the treaty.¹⁰⁴ In the summer of 2013, there were over 1000 civilians killed outside Damascus by the Syrian military in a chemical weapons attack that allegedly included sarin.¹⁰⁵ Since 2013, there have been at least six chemical weapons attacks by the Syrian military.¹⁰⁶ Despite ratifying the CWC, Bashar al-Assad's regime continues to use chemical weapons against civilians. It is still unknown if several other states have destroyed their stockpile of chemical weapons.¹⁰⁷ The numerous uncertainties mean that the problem of chemical warfare is still a prominent concern to the safety of the world.

3. Biotechnology

Biotechnology is technology that is based upon the biomolecular process in living organisms.¹⁰⁸ Different types of biotechnology are created by genetically modifying cells in order to produce the desired molecule.¹⁰⁹

Biotechnology can use human cells to help combat diseases. When plant and animal cells are used, biotechnology helps to feed the hungry, and it can also help with using less and cleaner energy. Medications and antibiotics are made through biotechnology, but biotechnology can also be used as a weapon. Biotechnology can be used for the intentional infliction of disease and the creation of new viruses with the intent of spreading the disease in order to infect as many people as possible.

The Biological Weapons Convention (BWC) entered into force on March 26, 1975. Similar to the Chemical Weapons Convention, the BWC bans the development, production, and stockpiling of biological weapons.¹¹⁰

¹⁰⁴ *Chemical Weapons Convention Signatories and State Parties*, ARMS CONTROL ASS'N (updated Jan. 2018), <https://www.armscontrol.org/factsheets/cwcsig>.

¹⁰⁵ Assaf Orion, *The United States, Syria, and Chemical Weapons: An Unfinished Symphony*, INSS (Oct. 6, 2016), <http://www.inss.org.il/publication/the-united-states-syria-and-chemical-weapons-an-unfinished-symphony/>.

¹⁰⁶ Krishnadev Calamur, *Assad Is Still Using Chemical Weapons in Syria*, THE ATLANTIC (Feb. 6, 2018), <https://www.theatlantic.com/international/archive/2018/02/syria-chemical-weapons/552428/>.

¹⁰⁷ These states include Iraq and Syria, plus the three states that never signed onto the CWC.

¹⁰⁸ *What Is Biotechnology?*, AMGEN, <http://www.biotechnology.amgen.com/biotechnology-explained.html> (last visited Mar. 30, 2018).

¹⁰⁹ *Id.*

¹¹⁰ *The Biological Weapons Convention*, UNITED NATIONS OFFICE FOR DISARMAMENT AFFAIRS, <https://www.un.org/disarmament/wmd/bio/> (last visited Apr. 12, 2018).

B. The Emergence of Technological Weapons Should Promote an Expanding View of DPH

Modern warfare is a completely new and ever-changing type of warfare. Nano, bio, and chemical weapons are only a handful of the new types of weapons systems. These weapons create a more indirect type of warfare that has the potential to affect more people. Following the traditional view of DPH would severely limit the fighting capabilities of states adhering to the laws of armed conflict. The civilians directly participating in the hostilities have the option to be more indirectly involved than ever before and often would not qualify as DPHing under the traditional view, even though they are contributing immensely to the war effort. With the new technological advances, civilians can do so much more of the killing, and it is important that they, too, can be targeted in an evolving manner.

III **CIVILIANS DPH WHILE INTERACTING WITH EMERGING TECHNOLOGICAL WEAPONS**

Goodman explained in his article why he believes that the requirements for targeting objects should be expanded. Similarly, I will explain how and why the requirements to consider a civilian to be DPHing should also be expanded.

A. Initiator

The initiator, or the last person that the weapon comes into contact with before being set into motion, is considered to be DPHing by both the ICRC and the United States. This type of DPH is undisputed. If there is a firefight and there are civilians caught in the middle and one of the civilians picks up a firearm and joins in the fight, that civilian is suddenly considered to be directly participating in the hostilities, and therefore become a legal target for the opposing side.

The view of the ICRC contains the three requirements to be considered DPH. The initiator of a weapon fulfills all three. The first is the threshold of harm. Releasing an emerging technological weapon is very likely going to be harmful, often times more so than a traditional weapon because many emerging technological weapons can injure or kill hundreds or thousands of people at a time. Secondly, there also has to be direct causation between the act and the harm. That is exactly what we have with initiators because such individuals know that they

are the last step between the action and the harm. They are the ones releasing these weapons into the armed conflict. Third, there must be a belligerent nexus, or it must be specifically designed to injure or kill. Modern technology is not only designed to injure or kill but often is designed to injure or kill as many people at once as possible. The ICRC's view of initiators is clear: they are DPH.

The United States' view of DPH has a combination of factors, but it is not an exhaustive list. Being the initiator, the act of initiating the weapon will cause harm. It is clearly directly connected to the hostilities, because initiators are releasing these weapons in the middle of the armed conflict. Another consideration is the purpose behind the act. When an individual releases an emerging technological weapon in an armed conflict, the purpose is usually to injure or kill. The release of a chemical, biological, or nanoweapon will likely contribute to the military by helping them take over their enemy by force or surrender. Finally, releasing emerging technological weapons is traditionally a military action. Clearly, initiating a weapon is considered DPH according to the United States.

There is no differentiation between the way that initiators are treated when using old technology and how they should be treated when using emerging technology. The individual who uses the biological weapon, the individual who puts the nanoweapon into action, and the person who releases a chemical weapon are all considered to be DPHing—just the same as someone who picks up a firearm or places an IED in a firefight.

B. Deliverer

The individual who delivers the weapon to the front lines is considered to be DPHing by both the ICRC and the United States.

The ICRC makes the distinction between the individual who delivers the weapon to the front lines and the person who delivers the weapon to the logistics base.¹¹¹ The ICRC determines what is too far away from the front lines by considering what is in the causal, temporal, and geographical proximity to the resulting harm.¹¹² The Law of War Manual has a similar test, but the individuals who are considered to be DPHing while transporting weapons must be in close geographic and temporal proximity to using the weapons.¹¹³

¹¹¹ *Interpretive Guidance*, *supra* note 5, at 55–56.

¹¹² *Id.*

¹¹³ DOD MANUAL, *supra* note 4, at 230 (§ 5.8.3).

The ICRC would consider these individuals to be DPHing because they would meet each of the three requirements set out by the ICRC. The individual who is delivering the weapons usually understands that the threshold of harm is very likely. These weapons can often destroy cities and can kill thousands of people. It is the act of delivering the weapons that allows for these deaths and injuries to happen. There is a direct causal link between delivering a weapon and that weapon, in turn, creating injury and death. It is a direct link because, without this act, the weapon cannot be on the front lines and cannot be released. The act of delivering the weapon is designed to cause the harm. There is no other reason for delivering a technological weapon to the front lines of a war, other than for that weapon to be used intentionally to cause death.

The United States would view the deliverer of weapons to the front lines to be DPHing based on the five considerations laid out in the Law of War Manual. The act of delivering the weapon itself does not cause harm, but it is clearly connected to the hostilities. It is likely that when an individual delivers a weapon to the front lines, that individual is doing it for the purposes of furthering the war effort and to destroy or harm the enemy. A weapon inherently has military significance because it contributes to the war effort. Without weapons, a war could not be fought. It is unclear whether it is typically the military that delivers the weapons to the front, but regardless, it is clear that the individuals who deliver the weapons to the front lines are DPHing and can be targeted while they are delivering that weapon.

There is no real distinction between the way that civilians should be treated when delivering old technological weapons and delivering emerging technological weapons to the front lines. Even the technological know-how of the emerging technology does not play a role when delivering weapons.

However, the difference lies with how far removed the deliverer of emerging technologies can be and still be considered DPHing. I believe that when delivering emerging technological weapons, the deliverers should be considered to be DPHing in further proximity than where the ICRC or the United States currently stands. Unlike old weapons, where the weapons themselves are not illegal, emerging technological weapons are often illegal on their face. Older weapons are not only inherently legal but there are often other purposes for possessing them. For example, a firearm is not inherently illegal. It can also be used for self-defense or for hunting food. New technological weapons are often

illegal, including chemical and bio weapons. New technology does not usually have other purposes accompanied with it. They are weapons used to cause hurt, pain, destruction, and fatality. Because of this, when civilians are delivering emerging technological weapons, and they have knowledge of what they are delivering, they should be considered DPHing, no matter how far removed from the front lines they may be.

C. Seller

What if we go one step further and analyze the seller of the emerging technological weapon? This individual is typically more removed from the situation than the other two individuals who have been discussed: the initiator and the deliverer. The seller may or may not know who is actually buying the weapons. The ICRC and the U.S. Department of Defense have a different viewpoint on whether the seller is DPHing.

According to the ICRC's view, the seller is not DPHing and cannot be a targeted civilian. The chemical, biological material, or nanotech may or may not be in weaponized form; therefore, it is uncertain that selling it will cause harm. Selling this material would only "maintain the capacity of a party to harm its adversary."¹¹⁴ Therefore, under the ICRC, the seller's action can only be indirect causation because it does not cause the injury or death in one causal step. Even if this was not the case, it would have to be proven that there was a belligerent nexus or that the seller was selling the material *in order to* cause injury or harm.

In the United States, where there has already been an expansion of targeting objects, the expansion would carry over into targeting people who were DPHing. The seller would cause no harm because by selling the material harm is not being caused—that comes further down the line. The selling of the material could or could not be connected to the hostilities, but it would be hard to prove. The seller's specific purpose is hard to prove in the act of selling. Generally, things are sold to make a profit, so it would be hard to prove that a seller had another reason for selling the material. On the other hand, selling this material may pose a threat to the opposing party even though there is no military significance to what is being done. When a seller is selling biological or chemical material, there is a very good chance that the seller would know if it was weaponized or not, depending on the amounts and the compounds that are being used. The circumstances with nanotech are not as clear, but it is pretty obvious that some nanotech, like nanobots, are being sold to be used in an armed conflict.

¹¹⁴ *Interpretive Guidance*, *supra* note 5, at 53.

The seller likely knows that the emerging technology is going into the hands of combatants. This is where a new consideration should be added and given weight: the likelihood that the seller knows the emerging technology is going into the hands of combatants. In this case, if the seller likely knows the emerging technology is going directly into the hands of combatants, then under the United States' view the seller is DPHing. However, if it is only indirectly going into the hands of combatants, then the seller is not DPHing. Under this analysis, the United States' view would find that a seller could in fact be DPHing and targetable.

The difference between the seller of old technological weapons and the seller of emerging technological weapons is that there is no legitimate seller of some of these emerging weapons, because biological weapons and chemical weapons are both illegal on their faces. No one can legally sell an illegal product. One can be charged merely with drug possession and dealing just because the product is inherently illegal. It does not matter if you use the drugs; it is illegal merely to have and sell them. With weapons that are inherently illegal, including chemical and bio weapons, it should not matter if you use them, only if you are in possession and sell them.

Some emerging technology (for example, nanotech) is not inherently illegal. However, the sellers of emerging technological weapons should also be considered to be DPHing because of the technological know-how that it takes to use these new weapons. Emerging technological weapons are not as simple as "point and shoot." One must know how to use them. An average person can shoot a gun but cannot use nanotech or chemical weapons without some technological know-how. As a result of the required technological knowledge, the seller should reasonably know that the buyer can most likely use the technology or get it to someone who can and whose knowledge may allow the technology to be used to destroy. It is reasonable to assume the seller understands this, and thus the seller should be considered to be DPHing.

D. Manufacturer

As we continue further back along the chain of production of these emerging technological weapons, we get to the manufacturer. The individuals or companies that manufacture the weapons may be considered DPHing, according to the view of the United States.

If the ICRC does not view the seller as DPHing, then it is highly unlikely that someone even further back on the chain of events could be considered to be DPHing. The manufacturers of these technologies are not going to pass the threshold of harm test. There could be no direct causation linked back to the manufacturer from the harm that is caused to individuals during war. It could be hard to prove that the reason that these materials are being manufactured is to cause harm. Therefore, under the ICRC view, the manufacturer is not DPHing and cannot be targeted.

According to the United States' view, there is an argument to be made for finding the manufacturer to be DPHing in some instances. The act of making a chemical, creating biological material, or building a nanobot is not an act that inherently causes harm. There should be a consideration at this point as to how likely it is that the manufacturer knows that it can cause harm and how likely it is that the chemical, biological material, or nanobot will cause harm. Manufacturing these technologies is not necessarily connected to hostilities, which makes these new technological weapons harder to deal with than normal weapons. Another consideration should be why the manufacturers are making these weapons—what is their motivation behind doing so? If it is to help the war effort or to sell to the combatants, these individuals should be considered DPHing and therefore can be targeted because the creation of such weaponized technology is significant to the military.

The difference between the manufacturer of old technological weapons and the manufacturer of emerging technological weapons is similar to the analysis for the seller of emerging technological weapons. With older, more traditional weapons, normal factory workers were not targetable under either the ICRC or the United States' view. The product itself was not illegal, even though there could be potential intention to use it as a weapon. The difference, again, is that there are emerging technological weapons that are inherently illegal. It is clearly illegal to manufacture an illegal product. Chemical weapons and biological weapons both fall into this category. There is also a know-how aspect to these manufacturers: they have considerable knowledge in order to create these emerging technologies, and often they are the only reason the weapons are created; therefore, the manufacturers should be considered DPHing. For the technologies that are not illegal on their faces, the intention of manufacturing for use as a weapon must be proven in order for the manufacturers to be considered DPHing.

Overall, the manufacturers of new emerging technologies should be viewed as DPHing.

E. Designer

The designer or the inventor of old technological weapons is not considered DPHing under the views of the ICRC or the United States. The theory is that the person who invents new technologies should not be the one responsible for the damage caused due to other people's actions.

Under the ICRC, these designers and inventors are clearly not DPH because their acts create no harm and there is no causal link between the invention and the possible injury or death. Even if they do have the intent to hurt or kill people with their ideas, they are too removed to make them legal targets under the ICRC's theory of DPH.

Under the United States' view, it would be nearly impossible to prove that these individuals should be considered DPH. There is no harm caused by what they are doing. If these individuals were considered DPH, then it would greatly hinder technological advancements because anything can be used for an evil purpose; as a result, people would be afraid to invent because it would then cause them to be targets. Before anything has even been done to create these materials, or even if these materials have been sold to people who use them to create injury or harm, there is no way to connect the designer of the technological advances to the hostilities. Therefore, the United States' view is that the individuals who design what may later become technological weapons are not DPHing.

I argue that, generally, DPH should extend as far back as the designer. Nanotech, for example, is not generally illegal, but the designer should be considered DPH when the only way that the weapon can be completed is by the work the designer does. Another example is the scientist who creates a genetic virus that is tied to an individual's DNA. Without this scientist, the weapon is never made, and the genetic virus has no other possible use than as a weapon. Also, if the designer is designing an inherently illegal weapon or product, even if it is not weaponized, the designer should be considered DPHing because the designer still intends to design an illegal product. Under this circumstance, the designer should be considered to be DPHing and thus targetable.

F. Under the United States' View, DPH Is More Expansive in Light of Technological Weapons

The United States' definition of DPH extends further than the definition provided by the ICRC, giving a natural basis to extend DPH in the United States to emerging technologies. Based on the theories in Goodman's article, where targeting is more expansive, DPH should be more expansive when implementing emerging technological weapons. The factors used by the Department of Defense, combined with the technological know-how required for emerging technologies, and the fact that biological and chemical weapons are facially illegal, DPH should extend to the manufacturer, and in some cases, even as far back as the designer.

IV
MITIGATING CONCERNs

There are some concerns that the proposed theory of broadening the view of individuals who are DPH will create an overly expansive view. There may be worries about what type of people can become targets based on DPHing, and people may be worried that some innocent act could be mistaken as DPHing. This Part will mitigate such concerns.

I briefly touch on a few of the limiting principles that both Article 52 and Goodman give weight to. Article 52 and Goodman's limiting principles do not apply directly or differently to new technology, but instead can help provide a framework for generally applicable limiting principles.

A. Article 52 Limiting Principles

Article 52(2) states that there must be a "definite military advantage" in order to consider an individual DPH.¹¹⁵ The destruction that is caused by the targeted object must not only cause harm but must create a "definite military advantage." This provides a constraint to the expanding view of targeting; it is one more hurdle that must be passed in order to target an object.¹¹⁶ If harm is caused but that harm does not provide a definite military advantage, then it is illegal to target it.

Another principle expressed in Article 52 is the proportionality argument.¹¹⁷ This principle says that there has to be a proportionality

¹¹⁵ API, *supra* note 1, art. 52(2).

¹¹⁶ Goodman, *supra* note 49, at 17.

¹¹⁷ API, *supra* note 1, arts. 52(2), 57.

analysis involved with each object that is targeted. By targeting the specific object, how many civilians die and how much damage is done to civilian objects? Does that harm outweigh the military advantage?¹¹⁸ If it does, then it is not protected.

B. Goodman's View of Limiting Principles

In Goodman's article, he addresses limiting principles that can mitigate concerns that individuals have over expanding the view of targeting to include war-sustaining objects.¹¹⁹

The example that Goodman uses is "if a source of economic support to a military can be easily substituted by another source," then it is speculative, and it cannot be targeted because it does not constitute a "definite military advantage."¹²⁰

Another limiting principle that Goodman uses is what he calls the "great staple."¹²¹ To legally target an economic source, it must be an "indispensable and principle source" for that State or group.¹²² Goodman references examples to build this point—the Confederacy had cotton, the Taliban had narcotics, and ISIL had petroleum as its "great staple."¹²³ The requirement that the economic source be indispensable and principle prevents any and every economic source from being targeted.

These limiting principles do not allow "free reign" when it comes to allowing just any object to be targeted. They create an environment where it is hard to excessively expand targetable objects.

C. Mitigating Concerns That the DPH Analysis Could Become Too Broad

There are valid concerns with expanding DPH all the way to the designer of new technological weapons. Central is the concern that the proposed DPH definition is too expansive and there could be too many civilians considered DPHing and therefore targetable. I present three

¹¹⁸ Goodman, *supra* note 49, at 18–19.

¹¹⁹ *Id.* at 16.

¹²⁰ *Id.* "Definite military advantage" refers to the limiting principle put forth in Article 52.

¹²¹ *Id.* at 18.

¹²² *Id.*

¹²³ *Id.*

limiting principles that curtail these concerns and are specifically designed to apply to new technological weapons.

1. “For Such Time” Language

Article 51 states that “civilians shall enjoy the protection afforded by this Section, unless and for such time as they take a direct part in hostilities.”¹²⁴ This is language that was briefly analyzed in the above DPH analysis under the “revolving door” policy, but the language plays a larger role in who can be considered DPH.

Civilians who are manufacturing, selling, delivering, or instigating the weapons—under a certain set of circumstances—can all be considered DPH, but only for such time as they are actually engaged in the act. Individuals who sell a weapon to a militant group are targetable for the time they are in the process of selling the weapon. However, once that weapon is out of their hands, they are not DPHing anymore and cannot be targeted. Civilians who deliver a weapon to the front lines are DPHing during the time that they have the weapon. Once they make their delivery, they are not DPHing anymore.

The difference that emerging technologies make in this analysis is that the “for such time” language should extend slightly longer with respect to emerging technologies. Individuals who spend time dealing with these emerging technologies are in possession of illegal weapons, and whether they use them or not, they are still illegal. So, for the entire time that these weapons are with them, those individuals should be targetable. Essentially, “for such time” that civilians are in possession of and have access to these emerging technologies or weapons, they should be considered to be DPHing.

2. Mens Rea

Criminal law requires two things to make an act a crime: mens rea and actus reus. Essentially, the actus reus of the crime is the physical act, and the mens rea is the mindset of an individual when committing a crime. Different crimes have different mens rea requirements. An individual does not get convicted for aggravated murder simply for killing someone, the actus reus of the crime. The individual must also have “intentionally or knowingly” caused the death of another.¹²⁵

I propose applying such a mens rea requirement to the DPHers as well. If there is a mens rea required, it will likely limit the people who

¹²⁴ API, *supra* note 1, art. 51(3).

¹²⁵ UTAH CODE ANN. § 76-6-202(1) (Westlaw 2012).

are considered DPH. If those who are selling an emerging technological weapon have no idea what they are selling, then they should not be held accountable for promoting the war effort. There should be factors identified to determine the likelihood of their knowledge and if they are intentionally contributing to the war. One factor for sellers of emerging technological weapons could be if the sale is taking place through regular channels or on the black market. Similarly, it should be determined that the deliverers have knowledge of what they are delivering.

Having a mens rea requirement would allow people who were not actually contributing to the war effort to not be considered DPH, while those helping and promoting the war effort would be targetable. I propose that mens rea should be a factor for both old weapons and new weapons; however, I believe mens rea would be easier to prove regarding new weapons, because so many are inherently illegal and any nanotech that is weaponized is generally easy to identify as such.

3. Proportionality

An additional limiting factor is proportionality. By instituting a proportionality analysis, the expansion of the DPH theory can be limited and prevent the unfair targeting of civilians. The proportionality analysis would remain the same as that used for old weapons. Considering that many of these new technologies do not result in direct killings but instead present slower ways to injure or kill, such as infecting the water, the proportionality analysis is even more needed in these situations.

The proportionality analysis asks one simple question: would targeting and killing this individual who is DPHing give your military an advantage that would be greater than allowing the individual DPHing to run free? If this question could be answered in the affirmative, then that individual should be targeted.

CONCLUSION

Due to emerging technological weapons, the United States should expand its definition of civilians who are DPHing and can therefore be targeted under the rules of war.

Civilians are involved in DPH at all different levels of the war, as evidenced by the analysis provided in this Article. Regarding technological weapons, the initiator, the deliverer, the seller, the manufacturer, and the designer should all be considered DPHing for

the time that they are performing those acts. It is important that there be stricter rules with emerging technological weapons because these weapons are facially illegal or require specific know-how that the average person does not have. If a civilian possesses an illegal weapon, it does not matter what is being done with it: it is still illegal. Therefore, that civilian should be considered to be without the protections from war and targetable.

However, such civilians can only be targeted if they have faced, and passed, the proportionality analysis as well as the other limiting principles. The limiting principles include general principles from Article 52 and from Goodman's article, as well as new limiting principles designed specifically for emerging technological weapons, including "for such time" language and a mens rea requirement.

This expansive view should not be considered a way to injure or kill more civilians but as a way to stop the opposing side in an age of modern warfare where emerging technological weapons are being used.