

# THE CHEMICAL WEAPONS CONVENTION AND RIOT CONTROL AGENTS: ADVANTAGES OF A “METHODS” APPROACH TO ARMS CONTROL

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## INTRODUCTION

Breathing through chemical smoke has been described as “drowning on dry land.”<sup>1</sup> When one imagines chemical weapons, one often imagines that indelible image of Doughboys choking in trenches through a fog of yellow mustard gas. Though World War I did not see the first use of chemical weapons, it did produce the first large-scale industrialized chemical warfare. The effects of this kind of warfare live on in the conventions and taboos associated with chemical weapons. In 1993, the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction (Chemical Weapons Convention, or CWC) was signed and later ratified by the U.S. and 187 other states.<sup>2</sup> The history of the legal regime surrounding chemical weapons (CW) reflects the long-term trend of banning weapons systems and technologies that are considered inhumane or undesirable. However, these legal regimes often have difficulty keeping up with the pace of technology and sometimes restrict the use of potentially more humanitarian weapons systems. One such example is the development of non-lethal weapons (NLW).<sup>3</sup> The CWC provides some leeway in this regard by

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1. Jacques Forster, Vice-President, Int’l Comm. of the Red Cross, Statement at the International Seminar on the Biological and Chemical Weapons Threat: Preventing the Use of Biological and Chemical Weapons (Oct. 6, 2005).

2. Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction, Jan. 13, 1993, S. TREATY DOC. NO. 103-219, 1974 U.N.T.S. 317 [hereinafter CWC]; U.S. DEPARTMENT OF STATE, TREATIES IN FORCE 334-35 (2011), available at <http://www.state.gov/documents/organization/169274.pdf>.

3. The term “non-lethal weapons” has proven extremely controversial as it is not an accurate description of the technologies and weapons that fall within the category. Even advocates of NLW do

allowing for the use of one type of non-lethal chemical weapons, Riot Control Agents (RCAs), in law enforcement.

The debate over RCAs mirrors in large part the debate over weapons conventions generally. Some military officials have advocated getting rid of weapons conventions in favor of internal reviews.<sup>4</sup> The most prominent example of this view can be found in the writing of General John Alexander, former Commander of the Joint Non-lethal Weapons Directorate (JNLWD). He argues that these conventions are fundamentally flawed because they focus on the technology rather than undesired results.<sup>5</sup> Advocates of the weapons conventions counter that so-called NLW are not so non-lethal.<sup>6</sup> They further contend that non-lethal chemical weapons, including RCAs, are dangerous to use on the battlefield because they are “threshold weapon[s],” which may lead to faster escalation to more lethal chemical weapons.<sup>7</sup>

This note will analyze how the CWC affects how the U.S. may use RCAs in a war zone and compares the result to that from a more basic review guided by the principles of the Law of Armed Conflict (LOAC)—a review grounded in the methods, rather than the means of warfare. I apply these rules to hypotheticals drawn from real world examples, and argue that the most significant differences between the means-based CWC approach and the methods-based LOAC approach are in the weapons available for use against combatants, not the impact on civilians. Nevertheless, I do not advocate withdrawal of the U.S. from the CWC regime because history suggests that using chemical NLW on the battlefield may make war no more humane than before. However, the example of RCAs within the means-based CWC regime demonstrates the limitations and the unintended consequences of an arms control regime focused on the “means” of warfare. A more basic LOAC approach that focuses on the methods of warfare, rather than the means, may better balance the humanitarian

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not claim they are fully non-lethal, but simply less lethal. This note will use the Department of Defense’s intent-based definition of NLW as “a weapon that is explicitly designed and primarily employed so as to incapacitate personnel or materiel, while minimizing fatalities, permanent injury to personnel, and undesired damage to property and the environment.” U.S. Dep’t of Defense, *Nonlethal Weapon*, DICTIONARY OF MILITARY TERMS, [http://www.dtic.mil/doctrine/dod\\_dictionary/data/n/11245.html](http://www.dtic.mil/doctrine/dod_dictionary/data/n/11245.html) (last visited May 6, 2011).

4. See generally John B. Alexander, *Optional Lethality*, 23 HARV. INT’L REV., no. 2, 2001, at 64, available at <http://hir.harvard.edu/the-future-of-war/optional-lethality>.

5. JOHN B. ALEXANDER, *FUTURE WAR 198-99* (1999).

6. NEIL DAVISON, ‘NON-LETHAL’ WEAPONS 3 (2009) (highlighting the intent rather than effect-based definition of non-lethal).

7. See generally Kyle M. Ballard, *Convention in Peril? Riot Control Agents and the Chemical Weapons Ban*, ARMS CONTROL TODAY Sept. 2007, available at [http://www.armscontrol.org/act/2007\\_09/RiotFeature](http://www.armscontrol.org/act/2007_09/RiotFeature).

interests than flat weapons bans. Thus, I conclude that the U.S. should consider pursuing (1) new treaties to focus and elaborate on the rules governing methods of warfare rather than the means and (2) stronger internal reviews of new weapons systems around the world. By using widely-accepted standards, the international humanitarian system may prove better able to adapt to ever-changing technological realities.

## I. THE HISTORY OF CHEMICAL WEAPONS AND RCAS

Chemical weapons have, for at least the last century, been viewed as a dishonorable and offensive kind of weapon.<sup>8</sup> However, chemical weapons of some sort have been part of warfare as far back as Thucydides, when “the Peloponnesians . . . tried to reduce the town of Plataea with sulphur fumes in the fifth century BC.”<sup>9</sup> The first international agreement aimed at restricting their use took place at the Hague Conference of 1899, where certain attendees agreed “to abstain from the use of projectiles the sole object of which is the diffusion of asphyxiating or deleterious gas.”<sup>10</sup> The two most significant military powers to refuse the above provision were the U.S. and the U.K. By the outbreak of World War I, a more universal taboo against the use of chemical weapons began to take hold. In the Great War, German forces “handed the allies a propaganda coup” by being the first to use lethal chemical munitions.<sup>11</sup> This first-to-act status enabled their adversaries to blame Germany for “the initiation of ‘frightfulness’ (as gas warfare was dubbed).”<sup>12</sup> It is important to note that some of the chemical weapons used in WWI were RCAs, including, “[l]achrymators (tear-producing agents) like . . . chloroacetophenone (CN), along with vomiting agents.”<sup>13</sup> Initially, CN gas was developed for domestic law enforcement use in France.<sup>14</sup> In fact, the first chemical munition brought to the front was a canister of CN gas carried by a French policeman.<sup>15</sup>

The inter-war period saw a proliferation of international institutions and conventions. Among these newly founded agreements was the

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8. BARRY R. SCHNEIDER, *FUTURE WAR AND COUNTERPROLIFERATION: U.S. MILITARY RESPONSES TO NBC PROLIFERATION THREATS* 84 (1999).

9. EDWARD M. SPIERS, *A HISTORY OF CHEMICAL AND BIOLOGICAL WEAPONS* 28 (2010); THUCYDIDES, *HISTORY OF THE PELOPONNESIAN WAR* 172 (Rex Warner trans., Penguin Books 1972).

10. *Id.* at 29.

11. *Id.* at 31.

12. *Id.*

13. Kip Lindberg, *The Use of Riot Control Agents During the Vietnam War*, *ARMY CHEMICAL REV.*, Jan.-June 2007, at 51.

14. DAVISON, *supra* note 6, at 16.

15. James D. Fry, *Gas Smells Awful: U.N. Forces, Riot-Control Agents and the Chemical Weapons Convention*, 31 *MICH. J. INT'L L.* 475, 481 (2010).

Washington Treaty, championed by the U.S. The Washington Treaty established that “[t]he use in war of asphyxiating, poisonous or other gases, and all analogous liquids, materials or devices” is prohibited.<sup>16</sup> This agreement is notable in that it did not prohibit the stockpiling or development of chemical weapons—simply their use. Additionally, the U.S. did not consider RCAs “chemical weapons.”<sup>17</sup> The language of the Washington Treaty was reproduced in the 1925 Geneva Protocol, which the U.S. signed, though did not actually ratify until 1975.<sup>18</sup>

During World War II, none of the belligerents used chemical weapons, though all maintained capabilities in the area.<sup>19</sup> The reasons for the non-use of chemical weapons varied, but in part it was based on the fear of alienating neutral parties, fear of retaliation in kind, and the limited utility of chemical weapons in a fast-moving war.<sup>20</sup>

The next major use of chemical weapons came in Vietnam, where the U.S. used chemical defoliants to destroy ambush-friendly jungles<sup>21</sup> and riot control agents, including ortho-chlorobenzylidene-malononitrile (CS), to force enemy combatants out of hiding in order to facilitate lethal targeting.<sup>22</sup> The use of such chemicals in Vietnam stirred outrage in much of the international community and within the U.S.<sup>23</sup> In response, the General Assembly of the United Nations in 1969 passed Resolution 2603A, “which purportedly gave its definitive interpretation of the [Geneva] Protocol to include tear gas.”<sup>24</sup> However, the status of tear gas, RCAs, and other chemical agents remained unresolved.

## II. THE CHEMICAL WEAPONS CONVENTION AND RCAS

States party to the 1993 CWC have agreed “never under any circumstances” to develop, use, prepare its military to use chemical weapons, or to assist anyone in doing so.<sup>25</sup> The Convention defines

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16. Edward Spiers, *Gas Disarmament in the 1920s: Hopes Confounded*, 29 J. STRATEGIC STUD. 281, 289 (2006) (quoting 1 FOREIGN RELATIONS OF THE UNITED STATES 269 (1992)).

17. Lindberg, *supra* note 13, at 51.

18. SPIERS, *supra* note 9, at 51; Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous, or Other Gases, and of Bacteriological Methods of Warfare, June 17, 1925, 26 U.S.T. 571, 94 L.N.T.S. 65.

19. See SPIERS, *supra* note 9, at 59.

20. *Id.* at 58-60.

21. Lloyd G. Miller, *The Use of Chemicals in Stability Operations*, MIL. REV., Dec. 1966, at 43, 46.

22. Lindberg, *supra* note 13, at 52.

23. Miller, *supra* note 21, at 46.

24. Fry, *supra* note 15, at 484.

25. CWC, *supra* note 2, art. 1(1).

chemical weapons *inter alia* as “(a) [t]oxic chemicals and their precursors, except where intended for purposes not prohibited under this Convention, as long as the types and quantities are consistent with such purposes.”<sup>26</sup> Separately, the CWC defines those purposes not prohibited under the Convention as peaceful research, protective purposes, military purposes “not connected with the use of chemical weapons,” (such as using weed-killing chemicals on military bases) and “(d) [l]aw enforcement including domestic riot control purposes.”<sup>27</sup> It further defines toxic chemical as “[a]ny chemical which through its chemical action on life processes can cause death, *temporary incapacitation*, or permanent harm to humans or animals.”<sup>28</sup> Parties to the CWC also agree to not use RCAs “as a method of warfare.”<sup>29</sup> The CWC defines Riot Control Agents as “any chemical not listed in a Schedule, which can produce rapidly in humans sensory irritation or disabling physical effects which disappear within a short time following termination of exposure.”<sup>30</sup> Thus, the CWC exempts RCAs and other law enforcement related toxic chemicals from the definition of chemical weapon, but prohibits the use of RCAs as a method of warfare.

The text of the CWC leaves a great deal of ambiguity on a number of important questions. For instance, the CWC declares that chemicals intended for purposes not prohibited, such as law enforcement, are not chemical weapons.<sup>31</sup> However, the CWC does not specify whether the relevant intent concerns the design or use of the chemicals. If a toxic chemical is designed and intended for use in law enforcement but used in a non-law enforcement manner, would the CWC prohibit such use?<sup>32</sup>

Additionally, defining “law enforcement” and “method of warfare” has proven exceedingly difficult. These two terms are “important concepts

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26. *Id.* art. 2(1)(a).

27. *Id.* art. 2(9).

28. *Id.* art. 2(2) (emphasis added).

29. *Id.* art. 1(5).

30. *Id.* art. 2(7).

31. *See id.* art. 2(1)(a).

32. This ambiguity may be limited some by the requirement that toxic chemicals exempted under this “purposes not prohibited” section also be of a type and quantity consistent with their asserted non-prohibited purposes. *See id.* Presumably, if a certain toxic chemical intended for law enforcement use were used, for instance, as a “method of warfare,” such use would require the offending party to stockpile the chemicals in such a way as to violate the consistent type and quantity provision. Additionally, using a toxic chemical as a method of warfare, even if not strictly prohibited by the text, should be seen as forbidden. One must interpret treaties consistent with their object and purpose and not act contrary to that purpose. Vienna Convention on the Law of Treaties arts. 31(1), 18, May 23, 1969, 1155 U.N.T.S. 331. Although the Vienna Convention has not been ratified by the U.S. Senate, it is considered to be an accurate codification of customary international law. *See Chubb & Son, Inc. v. Asiana Airlines*, 214 F.3d 301, 309 (2d Cir. 2000).

[that] were left undefined by the negotiators [of the CWC].”<sup>33</sup> It seems clear from the negotiating history of the treaty that these terms were deliberately left undefined in order to achieve a more widespread acceptance of the Convention, in particular by the U.S.<sup>34</sup> Several questions have been raised regarding the scope of “law enforcement activities.” Some have included peacekeeping and humanitarian missions as “law enforcement,” while others claim that such use would be a violation of the CWC.<sup>35</sup>

Counter-terrorism operations cause particular difficulties for the “law enforcement” term. For instance, in 2002 Chechen terrorists took control of the Dubrovka Theatre Center in Moscow, taking 800 hostages.<sup>36</sup> The terrorists wired the theatre to explode and strapped suicide vests to themselves.<sup>37</sup> After a three day standoff and after one hostage had been executed, Russian special forces (*Spetsnaz*) raided the theatre.<sup>38</sup> However, before breaching they filled the theatre with an aerosolized chemical incapacitant.<sup>39</sup> In the ensuing raid, 125 hostages died (all by complications from the chemical agent), scores more were injured and all the terrorists were killed. Almost all of the terrorists had been incapacitated by the chemical agent, but when the *Spetsnaz* entered the theatre they shot those who had not been affected and “peremptorily executed” those terrorists who had been knocked unconscious.<sup>40</sup> The vexing question this situation posed to the CWC regime was whether this raid was “law enforcement” or a military operation. Military forces were used in the raid against those currently engaging in what the Russian Constitutional Court has called an armed conflict with the Russian Federation.<sup>41</sup> Nevertheless, many writers have opined that the use of a chemical agent in this raid was consistent with

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33. MICHAEL CROWLEY, DANGEROUS AMBIGUITIES: REGULATION OF RIOT CONTROL AGENTS AND INCAPACITANTS UNDER THE CHEMICAL WEAPONS CONVENTION 10 (October 2009), available at <http://www.brad.ac.uk/acad/nlw/publications/BNLWRPDangerous1.pdf>.

34. Ernest Harper, *A Call for a Definition of Method of Warfare in Relation to the Chemical Weapons Convention*, 48 NAVAL L. REV. 132, 136-37 (2001).

35. Fry, *supra* note 15, at 506.

36. David A. Koplow, *Tangled Up in Khaki and Blue: Lethal and Non-lethal Weapons in Recent Confrontations*, 36 GEO. J. INT'L L. 703, 770-71 (2005).

37. *Id.* at 771.

38. *Id.* at 771-72.

39. David P. Fidler, *Incapacitating Chemical and Biochemical Weapons and Law Enforcement Under the Chemical Weapons Convention*, in INCAPACITATING BIOCHEMICAL WEAPONS 175 (Alan Pearson et al. eds., 2007) [hereinafter Fidler, *Incapacitating CBW*].

40. Koplow, *supra* note 36, at 772.

41. Paola Gaeta, *The Armed Conflict in Chechnya Before the Russian Constitutional Court*, 7 EUR. J. INT'L L. 563, 568 (1996).

the CWC.<sup>42</sup> Would this analysis be the same had it occurred in Chechnya itself as other military operations were ongoing in the region? The question would be much less likely to yield a majority opinion than the Dubrovka raid did.<sup>43</sup>

Another ambiguous phrase is “method of warfare.” The “method of warfare” restriction is meant to prevent confusion on the battlefield which may lead to the escalation from RCA to lethal CW.<sup>44</sup> Many international treaties concerning the LOAC use the term “method of warfare.” Most such treaties, however, refer to “methods or means of warfare.”<sup>45</sup> The omission of “means of warfare” from the CWC has led to wrangling about the difference between “means” and “methods” of warfare.<sup>46</sup> There is no “widely accepted, or even readily identifiable, definition [of either term] in all of international law.”<sup>47</sup> Nevertheless, in common usage, “means” generally refers to the tools of war, i.e. weapons, while “methods” refers to the manner in which those weapons are used.<sup>48</sup> Omission of the term “means” may signify that there are cases where use of RCA would be lawful in war. If the drafters of the treaty meant to ban every use of RCA in a war zone then it would have been better to include or only use the phrase “means of warfare.” However, as in the case of “law enforcement,” “[t]his ambiguity is precisely what led to the inclusion of the term method of warfare in the language of the Convention.”<sup>49</sup> Nevertheless, there have been calls both from the arms control community and from military lawyers for greater clarity in this area.<sup>50</sup>

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42. See, e.g., Fidler, *Incapacitating CBW*, *supra* note 39, at 174.

43. See, e.g., CROWLEY, *supra* note 33, at 34; see also Ballard, *supra* note 7 (“The definition of law enforcement should mean domestic law enforcement within the recognized, sovereign borders of a country and activities undertaken in conjunction with a UN mandate.”).

44. Harper, *supra* note 34, at 151-52.

45. See, e.g., Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I) art. 35, June 8, 1977, 1125 U.N.T.S. 17512 [hereinafter AP I]. Though the U.S. is not a party to AP I, it does follow some provisions as a matter of policy and considers other provisions reflective of customary international law. INTERNATIONAL AND OPERATIONAL L. DEP’T THE JUDGE ADVOCATE GENERAL’S SCHOOL, U.S. ARMY, *Law of War*, in OPERATIONAL LAW HANDBOOK 9, 11, n.6 (2010) [hereinafter OPLAW HANDBOOK].

46. See, e.g., Harper, *supra* note 34, at 154.

47. *Id.* at 133.

48. See, e.g., Kathleen Lawand, *Reviewing the Legality of New Weapons, Means and Methods of Warfare*, 88 INT’L REV. RED CROSS 925, 927 (2006).

49. Harper, *supra* note 34, at 133.

50. *Id.* at 159.

### III. THE U.S. INTERPRETATION OF THE CWC

The U.S. interpretations of the CWC, especially the provisions regarding method of warfare and law enforcement, are generally at odds with those of the rest of the States Parties to the CWC, even close allies like the United Kingdom. Geoff Hoom, then-U.K. Defense Secretary, said in 2003 that non-lethal chemical weapons “would not be used by the United Kingdom in any military operations or on any battlefield.”<sup>51</sup> The U.S., on the other hand, has a more moderate interpretation of chemical weapons. Since nearly the beginning of efforts to control chemical weapons, the U.S. has announced that it does not consider RCAs to be chemical weapons.<sup>52</sup> This interpretation was first codified in Executive Order 11850 and emphasized by the U.S. Senate in its advice and consent.<sup>53</sup> The main objection to this interpretation concerns the threat of escalation from RCAs to other chemical agents. Critics point out that before more lethal agents were used in WWI, the Iran-Iraq war, and other chemical conflicts, RCAs were deployed.<sup>54</sup> Defenders of the U.S. position would respond that it is quite simple to tell the difference between RCAs and more toxic chemical agents. Additionally, the Executive Order restricts the use of RCAs to defensive modes where escalation would be least likely.

#### A. Executive Order 11850

Executive Order 11850 [EO 11850] was first issued by President Ford in 1975. It was considered “a compromise policy . . . [that maintained the] military’s ability to use RCA’s.”<sup>55</sup> EO 11850 outlines four acceptable uses of RCAs:

- (a) Use of riot control agents in areas under direct and distinct U.S. military control, to include controlling rioting prisoners of war.
- (b) Use of riot control agents in situations in which civilians are used to mask or screen attacks and civilian casualties can be reduced or avoided.
- (c) Use of riot control agents in rescue missions in remotely isolated areas of downed aircrews and passengers, and escaping prisoners.
- (d) Use of riot control agents in rear echelon areas outside the zone of immediate combat to protect convoys from civil disturbances, terrorists

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51. CROWLEY, *supra* note 33, at 28 (internal quotation marks removed).

52. Harper, *supra* note 34, at 134.

53. See Exec. Order No. 11,850, 40 Fed. Reg. 16,187 (Apr. 8, 1975) [hereinafter EO 11,850]; 143 CONG. REC. S3657 (daily ed. Apr. 24, 1997).

54. Fry, *supra* note 15, at 540 (“[E]very confirmed resort to lethal chemical warfare has started with tear gas.”) (quoting “*Non-Lethal Weapons, the CWC and the BWC*,” 61 CBW CONVENTIONS BULL., Sept. 2003, at 2).

55. Harper, *supra* note 34, at 135-36.

and paramilitary organizations.<sup>56</sup>

Further, before using RCAs in war, such use must be approved by the President.<sup>57</sup> Thus, RCAs are in the rather unique position of being a weapon system whose use is so restricted that it must be approved by the President prior to its use on the battlefield. Most other weapons systems, by contrast, must simply be approved *ex ante* by a competent legal reviewer.<sup>58</sup> Nevertheless, some prominent commentators have argued that sections (b) and (c) of EO 11850 are inconsistent with the CWC.<sup>59</sup>

## B. Understandings of the CWC

The CWC was a contentious treaty when President Clinton brought it to the Senate for ratification. As part of the compromise which facilitated ratification, the Senate included an interpretation of the CWC as applied to Riot Control Agents in its advice and consent resolution.<sup>60</sup> The Senate resolved that “the United States is not restricted by the Convention in its use of riot control agents, including use against combatants who are parties to a conflict” in three cases: (1) where the U.S. is not a party to the conflict, (2) consensual Chapter VI peacekeeping operations and (3) Chapter VII peacekeeping operations.<sup>61</sup> Additionally, the Senate imposed a condition that “[t]he President shall take no measure, and prescribe no rule or regulation, which would alter or eliminate Executive Order 11850 of April 8, 1975.”<sup>62</sup>

## IV. CURRENT APPROACH TO REGULATING THE MEANS AND METHODS OF WARFARE

There are three principal sources of LOAC as it concerns means and methods<sup>63</sup> of warfare: (1) means-specific treaties like the CWC, (2) treaty

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56. EO 11,850, *supra* note 53.

57. U.S. DEP'T OF ARMY, FIELD MANUAL NO. 3-11.11, FLAME, RIOT CONTROL AGENT, AND HERBICIDE OPERATIONS 1-2 (March 2003) (“Only the *President* may authorize the following: •Use of RCAs in war, including defensive military modes.”).

58. INT'L AND OPERATIONAL LAW DEPT., THE JUDGE ADVOCATE GENERAL LEGAL CENTER AND SCHOOL, U.S. ARMY, LAW OF WAR DESKBOOK 142 (Brian Bill ed., 2010) [hereinafter *LAW OF WAR DESKBOOK*], available at [http://www.loc.gov/rr/frd/Military\\_Law/pdf/LOW-Deskbook-2010.pdf](http://www.loc.gov/rr/frd/Military_Law/pdf/LOW-Deskbook-2010.pdf).

59. Fidler, *Incapacitating CBW*, *supra* note 39, at 182; Nicholas Wade & Eric Schmitt, *A Nation at War: Weapons; Use of Tear Gas Could Violate Treaty, Critics Say*, N.Y. TIMES, April 5, 2003, <http://query.nytimes.com/gst/fullpage.html?res=950CE4D61438F936A35757C0A9659C8B63>.

60. 143 CONG. REC. S3657 (daily ed. Apr. 24, 1997).

61. *Id.* § 26(A).

62. *Id.* § 26(B).

63. There is no widely accepted definition of either “means” or “methods” of warfare. Harper, *supra* note 34, at 133 This note, however, will follow the International Committee of the Red Cross’

rules governing the methods of warfare and (3) Martens Clause material—customary law and general principles of international law.

Like the CWC, other arms control treaties forbid the use of certain means of warfare. For instance, the Biological Weapons Convention prohibits the use of “[m]icrobial or other biological agents, or toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes.”<sup>64</sup> Another line of treaties bans certain kinds of “conventional weapons.” For instance, the UN Convention on Certain Conventional Weapons has several protocols, each dealing with a different means of warfare, such as blinding lasers.<sup>65</sup> Some of the oldest weapons bans concern conventional weapons. The 1899 Hague Declaration banned the use of expanding or “dum-dum” bullets.<sup>66</sup> The reasons for the bans varied, but all were generally justified on humanitarian grounds.<sup>67</sup>

The second method of regulating warfare is the control of the methods of warfare combatants can employ. The Geneva Conventions, for instance, prohibit attacks on protected targets.<sup>68</sup> Commanders must take into account whether a given attack on a military target will result in disproportionate injury to civilian lives and property.<sup>69</sup> These prohibitions and analytical methods are then turned into fact-specific regulations for combatants through the rules of engagement.<sup>70</sup> The rules of engagement take into account legal constraints, the policy objectives of the mission, and the overall strategic interests of the campaign.<sup>71</sup> They inform the combatant

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usage of those terms. See INT’L COMM. OF THE RED CROSS, A GUIDE TO THE LEGAL REVIEW OF NEW WEAPONS, MEANS AND METHODS OF WARFARE 11, (2006), available at <http://www.icrc.org/eng/resources/documents/publication/p0902.htm> [hereinafter GUIDE TO LEGAL REVIEW] (describing means of warfare as weapons, while methods of warfare as how the means are used). Thus, the “means” of warfare will include weapons systems and platforms (e.g., an M1A1 Abrams tank or RCA canister). “Methods,” by contrast, means the ways in which those weapons are used at the tactical level. In this case, the means would be non-lethal chemical weapons (NLCW) and the method would be the use of NLCW against a given target (e.g. enemy combatants hiding in a cave).

64. Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and Their Destruction art. 1(1), Apr. 10, 1972, 26 U.S.T. 583, 1015 U.N.T.S. 163 [hereinafter BWC].

65. See, e.g., Protocol on Blinding Laser Weapons (Additional Protocol IV to the UN Convention on Prohibitions or Restriction on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects of 1980), 13 Oct. 1995, 1380 U.N.T.S. 370 [hereinafter AP IV to the CCW].

66. OPLAW HANDBOOK, *supra* note 45, at 17.

67. See, e.g., BWC, *supra* note 64, Preamble ¶ 10.

68. Geneva Convention Relative to the Protection of Civilian Persons in Time of War art. 3, Aug. 12, 1949, 6 U.S.T. 3516, 75 U.N.T.S. 287 [hereinafter GC IV].

69. OPLAW HANDBOOK, *supra* note 45, at 20.

70. *Id.* at 73.

71. *Id.* at 73-74.

about when he can employ the means of warfare at his disposal and against whom.<sup>72</sup>

There is a wide swath of warfare which is covered by no positive international law. Where there is no positive international law, nations should look to customary international law (CIL) and general principles of international law for guidance.<sup>73</sup> This idea comes in part from the Martens Clause of the 1899 Hague Convention, which was then reproduced in Additional Protocol I to the 1949 Geneva Conventions.<sup>74</sup> The contours of what this clause means, however, are subject to a vigorous debate.<sup>75</sup> Some believe that the Martens Clause is merely a reminder that non-positive international legal norms exist.<sup>76</sup> Others contend that it “has a normative status in its own right and therefore works independently of other norms.”<sup>77</sup> To some extent the clause reflects the natural law origins of much of the LOAC principles.<sup>78</sup>

After the rapid codification of LOAC, the basic principles can be gathered from the various international treaties and relevant state practice. Though these principles are reflected in treaty law, they are also generally considered CIL and thus are binding even on states not party to the relevant conventions. These principles are: the principle of discrimination,<sup>79</sup> the principle of proportionality,<sup>80</sup> and the principle of humanity.<sup>81</sup>

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72. *Id.* at 73.

73. *See* Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, 1996 I.C.J. 226, paras. 74, 78 (July 8) [hereinafter Nuclear Weapons Opinion].

74. Rupert Ticehurst, *The Martens Clause and the Laws of Armed Conflict*, INT'L REV. RED CROSS, Apr. 30, 1997, available at <http://www.icrc.org/eng/resources/documents/misc/57jnhy.htm> (last visited May 6, 2011); AP I, *supra* note 45, art. 1(2).

75. *See* Emily Crawford, *The Modern Relevance of the Martens Clause*, 6 ISIL Y.B. INT'L HUMANITARIAN AND REFUGEE L. 1, 2, 7 (2006), available at <http://ssrn.com/abstract=1810177> (last visited May 8, 2011).

76. *Id.* at 18.

77. Ticehurst, *supra* note 74.

78. *Id.*

79. Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field, Aug. 12, 1949, 6 U.S.T. 3114, 75 U.N.T.S. 31 [hereinafter GC I]; Geneva Convention for the Amelioration of the Condition of Wounded, Sick, and Shipwrecked Members, Aug. 12, 1949, 6 U.S.T. 3217, 75 U.N.T.S. 85 [hereinafter GC II]; Geneva Convention Relative to the Treatment of Prisoners of War, Aug. 12, 1949, 6 U.S.T. 3316, 75 U.N.T.S. 135 [hereinafter GC III]; GC IV, *supra* note 68; AP I, *supra* note 45, art. 51(4).

80. AP I, *supra* note 45, art. 51; *see generally* Prosecutor v. Stanislav Galic, Case No. IT-98-29-A, Judgment and Opinion (Int'l Crim. Trib. for the Former Yugoslavia Dec. 5, 2003).

81. Convention Respecting the Laws and Customs of War on Land art. 23(e), Oct. 18, 1907, 36 Stat. 2277 [hereinafter Hague IV]; AP I, *supra* note 45, art. 35(2).

### A. Discrimination and Proportionality

The basic principle of discrimination is that combatants must distinguish between combatants and non-combatants and refrain from attacking civilians or civilian objects.<sup>82</sup> Additionally, in any attack on combatants, the anticipated loss of civilian life and damage to civilian property incidental to attacks must be proportionate to the *concrete and direct* military advantage expected to be gained.<sup>83</sup> It can be difficult to apply both of these principles in the context of non-lethal weapons. Traditionally, attack meant lethal attack.<sup>84</sup> However, many argue that “the term ‘attack’ logically includes all acts that cause violent consequences, i.e., death or injury to civilians (including significant human physical or mental suffering) or damage to, or destruction of, tangible civilian objects.”<sup>85</sup>

Non-lethal weapons, including riot control agents, may cause death or serious injury among a percentage of the targeted group. Even Oleoresin Capsicum (OC), pepper spray, “can cause respiratory failure in susceptible individuals.”<sup>86</sup> RCAs like chlorobenzylidene-malonitrile (CS) and chloroacetophenone (CN) “have a lethality rate of approximately 0.5 %.”<sup>87</sup> For comparison, the lethality rates for military-grade individual firearms is approximately 35%, and that of artillery, approximately 20%.<sup>88</sup> Because RCAs are not fully non-lethal, some have concluded that “the use of an indiscriminate ‘non-lethal’ weapon just because civilians are incapacitated but not killed would eat at the heart of the [International Humanitarian Law] protections for civilians.”<sup>89</sup> In an armed conflict, a civilian or other non-combatant may only be targeted, even by a non-lethal weapon, if it is

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82. GC IV, *supra* note 68, Art. 27; 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(2), June 8, 1977, 1125 U.N.T.S. 17513.

83. U.S. DEP'T OF ARMY, FIELD MANUAL NO. 27-10, LAW OF WAR HANDBOOK 157 (2005).

84. Richard Taylor, *The Capture Versus Kill Debate: Is the Principle of Humanity Now Part of the Targeting Analysis when Attacking Civilians who Are Directly Participating in Hostilities*, 2010 ARMY LAW 103, 109 (“Numerous scholars agree that the plain meaning of attack is the application of lethal force against an enemy.”).

85. Michael Schmidt, *Fault Lines in the Law of Attack*, in TESTING THE BOUNDARIES OF INTERNATIONAL HUMANITARIAN LAW 277, 291 (Susan Breau & Agnieszka Jachec-Neale eds., 2006).

86. M.C. JORDAN, LEGAL REVIEW OF OLEORESIN CAPSICUM (OC) PEPPER SPRAY, REPORT TO THE COMMANDER, MARINE CORPS SYSTEMS COMMAND 5 (1998), available at <http://www.sunshine-project.org/incapacitants/jnlwdpdf/jagocrev.pdf>.

87. Fry, *supra* note 15, at 538.

88. *Id.* at 537-38; see also David P. Fidler, The International Legal Implications of “Non-Lethal” Weapons, 21 MICH. J. INT'L L. 51, 56 (1999) [hereinafter *Fidler*, Non-Lethal Weapons].

89. Fidler, *Non-Lethal Weapons*, *supra* note 88, at 84.

necessary in response to a hostile act and proportional to the threat.<sup>90</sup> By contrast, absent the CWC and the Geneva Gas Protocol, there would be nothing in LOAC which would prohibit the use of RCAs against combatants, so long as harm to civilians was proportionate.

#### B. Humanity – Avoiding Superfluous Injury or Unnecessary Suffering

Traditionally, this principle prohibited the use of weapons such as dum-dum bullets, which were deemed to cause injury disproportionate to its military effectiveness.<sup>91</sup> The ICRC has suggested that one determines which weapons cause such injury or suffering by analyzing “design-dependent, foreseeable effects of weapons when they are used against human beings.”<sup>92</sup> RCAs usually cause no permanent injury and have an extremely low lethality rate.<sup>93</sup> Comparing such a low injury and death rate to potentially great military advantage would weigh heavily in their favor. Therefore, they would pass the per se superfluous injury inquiry.

Unnecessary suffering is generally considered to be the “balancing of the military necessity in employing a weapon and the likely suffering occasion by that employment.”<sup>94</sup> This analysis would be much more fact-specific. Generally, one must compare “other existing technologies and comparable wounding mechanisms” to determine whether the suffering is necessary or unnecessary.<sup>95</sup> Thus, there must be an ongoing and fact-specific process of legal review.<sup>96</sup>

### V. APPLICATION OF THE CWC AND THE LOAC GENERAL PRINCIPLES

In this section, I will apply the law from the CWC, including its ambiguities, to three hypotheticals, loosely based on real situations—one in Iraq and two in Afghanistan. Then, I will apply the LOAC general principles to the same situations and compare the results from the two modes of analysis.

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90. JORDAN, *supra* note 86, at 6.

91. LAW OF WAR DESKBOOK, *supra* note 58, at 142.

92. Fidler, *Non-Lethal Weapons*, *supra* note 88, at 87.

93. U.S. DEP'T OF ARMY, FIELD MANUAL NO. 8-9, NATO HANDBOOK ON THE MEDICAL ASPECTS OF NBC DEFENSIVE OPERATIONS § 701 (1996).

94. JORDAN, *supra* note 86, at 6-7.

95. *Id.* at 7.

96. *See id.* at 6.

## A. Iraq

### 1. Human Shields in Basra during the 2003 Invasion of Iraq<sup>97</sup>

A large unit of the *fedayeen* have taken refuge in Basra. They have placed tanks near schools and positioned their command and control in hospitals, surrounding themselves with civilians. The civilians are unwilling human shields, but cannot escape the city. Many civilians and friendly forces will die if coalition forces attempt to take the city. The *fedayeen* refuse to surrender and will continue using human shields if the Coalition forces attempt to take the city. Could the Coalition employ RCAs to separate the combatants and non-combatants?

#### a. CWC

Under the non-U.S. interpretation of the CWC, the answer is a straightforward “no.” As mentioned above, U.K. forces, for instance, would not be allowed to use RCAs in this circumstance. U.S. forces, however, may be able to under EO 11850(b), as this is a case where arguably civilians are being used to screen the *fedayeen* force. Normally, “screening” an attack means to use another force (in this case civilians) to protect the advance of the main force in question.<sup>98</sup> Most likely, the use of human shields in this case would qualify as “screening.” However, the word “attack” causes some problems, as “attack” normally means an offensive movement.<sup>99</sup> Thus, under most readings of EO 11850, use of RCAs would only be permitted in “defensive modes.”<sup>100</sup>

The fundamental question under the CWC analysis is whether the combatant is using RCAs as a “method of warfare.” Understanding the plain meaning of “method of warfare,” the regular use of RCAs, even in defensive or life-saving postures, may suggest that they are being used as a “method” as opposed to simply a “means.”<sup>101</sup> There is no exception in the CWC for use of RCAs as a less-damaging method of warfare. Thus, the CWC, even under the U.S. interpretation, would probably prohibit the use

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97. See Koplou, *supra* note 36, at 781-88 (relating the background of the British assault on Basra, upon which this hypothetical is based).

98. See, e.g., U.S. DEP’T OF ARMY, FIELD MANUAL 7-92, THE INFANTRY RECONNAISSANCE PLATOON AND SQUAD (AIRBORNE, AIR ASSAULT, LIGHT INFANTRY) paras. 5-2, 5-5 (1992) (describing how “screening” forces are used to protect a main force and provide advance information), available at <http://www.marines.mil/news/publications/Documents/FM%207-92%20W%20CH%201.pdf>.

99. See, e.g., U.S. DEP’T OF ARMY, FIELD MANUAL 3-21.8, INFANTRY RIFLE PLATOON AND SQUAD para. 7-10 (1992), available at <https://rdl.train.army.mil/soldierPortal/atia/adlsc/view/public/23583-1/FM/3-21.8/chap7.htm#2> (“An attack is an offensive action characterized by movement supported by fire.”).

100. See, e.g., OPLAW HANDBOOK, *supra* note 45, at 18.

101. GUIDE TO LEGAL REVIEW, *supra* note 63, at 11.

of RCAs in this context.

#### b. LOAC

LOAC principles lead to a very different conclusion than the CWC analysis. The RCAs here are deployed against combatants specifically to minimize damage to civilians, in an effort to abide by the principle of discrimination. The targets of this attack are the combatants, not the civilians, thus a proportionality analysis must be conducted. The damage to civilians in terms of collateral damage in using RCAs would be minimal, while the discrete and concrete military advantage—forcing the combatants into the open—is clear. Thus, the attack would be proportionate. When comparing the lethality rates of RCAs to the use of high explosives, for instance artillery, the balance clearly favors the RCAs, 0.5% to 20%.<sup>102</sup> Therefore, the attack would not cause unnecessary suffering. However, the commanders would have to be careful not to target combatants *hors de combat*, rendered so by the RCAs.<sup>103</sup> Whether the fighters could be targeted after being driven out by the RCAs would depend on whether or not they give a clear sign of surrender.<sup>104</sup>

### B. Afghanistan

#### 1. Rioting in Kabul<sup>105</sup>

An American mine resistant ambush protected (MRAP) vehicle loses control and runs over twelve civilian vehicles. Some of the civilians are injured; others die. News of this traffic accident spreads quickly across the city and sparks widespread rioting. The protestors attack embassies and throw stones at U.S. troops. Afghan security forces are deployed to suppress the riot, but they are unable to control the crowds. The rioters begin to target aid organizations and government buildings. U.S. soldiers are called in to respond. Consistent with their Rules of Engagement (ROE), they demand that the crowd disperse and fire warning shots over the crowd, to no avail. Can they use RCAs?

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102. See *supra* notes 85-87.

103. See GC IV, *supra* note 68, art. 3. A person *hors de combat* is generally a previously targetable combatant who has been rendered a “protected person” because he has been taken “out of combat” by some wound or surrender. OPLAW HANDBOOK, *supra* note 45, at 25, 75; see Fry, *supra* note 15, at 537-38; see Fidler, *Non-Lethal Weapons*, *supra* note 88, at 56.

104. JAN RÖMER, KILLING IN A GRAY AREA BETWEEN HUMANITARIAN LAW AND HUMAN RIGHTS 78 (2010).

105. See Carlotta Gall, *Convoy Crash Sparks Kabul Riots*, INT’L HERALD TRIB., May 29, 2006, <http://www.nytimes.com/2006/05/29/world/asia/29iht-afghan.1843499.html> (describing deadly riots in Kabul following a fatal traffic accident involving a NATO MRAP).

### a. CWC

The CWC allows for the use of RCAs in “law enforcement.” There is no textual basis for concluding that this provision only includes domestic law enforcement. Here, the U.S. troops are arguably enforcing Afghan law and order. If their presence at the riot was requested by the Afghan government, they would be on strong legal ground. Additionally, since the rioters are not combatants, it would be unlikely to be interpreted as using RCAs as a “method of warfare.” How the U.S. forces could respond to the riot would arguably be governed by both LOAC and human rights principles if they are operating in a law enforcement capacity.<sup>106</sup> However, even human rights law allows for the use of force in self-defense and to disperse riots, so long as that force is proportionate to the threat.<sup>107</sup> In this situation, where the crowd has proved its hostile intent and has thrown rocks at U.S. forces, it would be proper, even if human rights law applied, for them to respond with RCAs.<sup>108</sup> Of course, under an absolutist interpretation of the CWC, even this use of RCAs would be disallowed.

### b. LOAC

Under LOAC principles, one may not direct violence against civilians except in self-defense. There is no explicit allowance in the Geneva Conventions for any use of force, even non-lethal force, against civilians, unless they are directly participating in hostilities.<sup>109</sup> However, the *lex specialis* principle may suggest that since Human Rights Law has the more specific provision regarding the use of force against civilians in a law enforcement setting, it should govern this situation.<sup>110</sup> Further, state practice suggests that it is acceptable for military force operating in a law-enforcement capacity to use non-lethal munitions and RCAs against civilians.<sup>111</sup> For instance, RCAs were used in the peacekeeping missions in

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106. See U.N. HIGH COMM’N ON HUMAN RIGHTS, HUMAN RIGHTS AND LAW ENFORCEMENT at 131, U.N. Sales No. E.03.XIV.1 (2002), available at <http://www.ohchr.org/Documents/Publications/training5Add2en.pdf> [hereinafter HUMAN RIGHTS AND LAW ENFORCEMENT].

107. Eighth United Nations Congress on the Prevention of Crimes and the Treatment of Offenders, Aug. 27 – Sept. 7, 1990, *Basic Principles on the Use of Force by Law Enforcement Officials*, Principle 9, OFFICE OF THE U.N. HIGH COMM’R FOR HUM. RIGHTS, <http://www2.ohchr.org/english/law/firearms.htm> (last visited Nov. 11, 2011).

108. *Id.* Principle 14.

109. See GC IV, *supra* note 68, art. 27 (“Protected persons . . . shall be protected against all acts of violence”); AP I, *supra* note 45, art. 51.

110. Karima Bennouna, *Toward a Human Rights Approach to Armed Conflict: Iraq 2003*, 11 U.C. DAVIS J. INT’L L. & POL’Y 171, 225 (2004) (“The maxim *lex specialis derogat generalis* means broadly that a specific or special rule of international law is to take precedence over a general rule.”).

111. The *Spetsnaz*’s use of a fentanyl incapacitant in the Moscow standoff would be a prime example of such state practice. See, e.g., Fidler, *Incapacitating CBW*, *supra* note 39, at 175.

both Yugoslavia and Liberia.<sup>112</sup> Thus, since the civilians have used violence against the security forces and U.S. troops, they would be justified in responding with proportionate violence.<sup>113</sup> Further, RCAs may be the least harmful option available to the U.S. forces. Even other NLW, such as “rubber bullets,” are far more likely to cause injury or death than RCAs.<sup>114</sup> Thus, the use of RCAs avoids superfluous injury and unnecessary suffering. RCAs would therefore be permitted under a simple LOAC review.

## 2. Cave Combat

Intelligence reports indicate that some high-level Taliban fighters have fled into the caves of southern Afghanistan. The caves are heavily fortified and any raid by ground troops would lead to unacceptable casualties. There is evidence to suggest that they are looking to fight to the death and will refuse calls for surrender. The commander’s Staff Judge Advocate advises him that use of a thermobaric weapon would be legal. A thermobaric bomb would explode near the mouth of the cave and create a huge fireball.<sup>115</sup> The change in pressure and oxygen caused by the fireball would suffocate and kill nearly everyone in the cave.<sup>116</sup> Can the U.S. launch RCAs into the cave to drive them out?

### a. CWC

The CWC would forbid the use of RCAs in this situation. The use of RCAs against combatants in order to more effectively target them would not be consistent with the method of warfare restriction. The use of RCAs as a method of cave combat dates back to the Vietnam war, when U.S. forces used RCAs to drive the Vietcong and North Vietnamese Army out of their tunnels. In cave combat, the RCAs would arguably both be the means and the method of warfare. This use of RCAs would even be disallowed under EO 11850. Since there are no human shields involved, and none of the other three conditions of EO 11850 are met, the use of RCAs would be strictly prohibited. Further, state practice indicates this use

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112. Fry, *supra* note 15, at 487, 492.

113. See HUMAN RIGHTS AND LAW ENFORCEMENT, *supra* note 106, at 122.

114. Judy Siegel-Itzkovich, *Israeli Doctors Warn Against Rubber Bullets*, 324 BRITISH MED. J. 1296-97 (2002).

115. See *BLU-118/ B Thermobaric Weapons*, GLOBALSECURITY, <http://www.globalsecurity.org/military/systems/munitions/blu-118.htm> (last visited May 6, 2011); *Pentagon to Use New Bomb on Afghan Caves*, CNN NEWS (December 22, 2001), [http://articles.cnn.com/2001-12-22/us/ret.new.weapon\\_1\\_caves-and-tunnels-thermobaric-fuel-air?\\_s=PM:US](http://articles.cnn.com/2001-12-22/us/ret.new.weapon_1_caves-and-tunnels-thermobaric-fuel-air?_s=PM:US).

116. See Noah Schachtman, *When a Gun Is More than a Gun*, WIRED (Mar. 20, 2003), <http://www.wired.com/politics/law/news/2003/03/58094>.

would be disallowed. In the 1999 fighting in Chechnya, for instance, Russian forces used thermobaric weapons because the use of chemical munitions was forbidden.<sup>117</sup>

#### b. LOAC

Under the LOAC principles, this use of RCAs would be permitted. There are no civilians present and the combat is not likely to result in any damage to civilian lives or property. Thus, there is no distinction problem. Under proportionality, there is no civilian cost, so the use of RCAs would be proportionate to the military necessity. Further, RCAs may be the most humane option available. If the best alternative weapon system is a thermobaric bomb, discussed above, then RCAs look extremely humane by contrast. The use of an RCA in a cave would likely lead to higher lethality and greater injury than using an RCA in the open would, as the toxic concentration would be higher.<sup>118</sup> However, even this appears to be more humane than the thermobaric option. Thus, the U.S. could use the RCAs in this context under the basic LOAC principles.

### VI. ARGUMENT

Using solely the methods-based LOAC framework leads to far fewer restrictions on the use of RCAs than the CWC imposes. The most prominent difference in the use of RCAs is in the targeting of combatants, especially as a force multiplier and in the cave context. However, given the unique context and history of chemical weapons, substantially modifying or withdrawing from the CWC regime in order to more fully use RCAs would not be in the interest of the United States.

RCAs and other NLW give commanders a spectrum of force options.<sup>119</sup> In the case of the Afghan rioters, rather than having to fire over the heads of the crowd in Kabul, they could have relied on RCAs to disperse the crowd. Forbidding the use of RCAs in these contexts gives the commander the option of firing into the crowd or retreating. It is hard to dispute that RCAs and NLW more broadly provide a middle ground. Yet, the CWC would, in a theatre of armed conflict, prohibit such a use (if one adopts the majority understanding). The U.S. understanding, however,

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117. *Fuel-Air Explosives*, GLOBALSECURITY, [www.globalsecurity.org/military/systems/munitions/fae.htm](http://www.globalsecurity.org/military/systems/munitions/fae.htm) (last visited May 6, 2011).

118. Koplow, *supra* note 36, at 762 (describing the questionable safety of CS gas when used in confined spaces).

119. James C. Duncan, *A Primer on the Employment of Non-Lethal Weapons*, 45 NAVAL L. REV. 1, 34 (1998).

would permit the use of RCAs in this fashion.<sup>120</sup> Therefore, the U.S. understanding of RCAs as relates to EO 11850 may be the more “humane” interpretation. Further, this example demonstrates the limitations of using a “means of warfare” approach, which focuses on the technology used, rather than the method by which it is employed.

Arms control “treaties often provide a false sense of security and can prevent prudent research” into more effective weapons systems.<sup>121</sup> The use of basic principles or “methods” approach allows a much greater flexibility than a technology specific convention. Rather than focusing on the technology, focusing on the methods by which weapons could be used would allow legal advisers to always keep in mind the ultimate objective of LOAC—to reduce unnecessary human suffering in war. For instance, if there were a new chemical incapacitant which had a lethality rate under about 10%, would it not be preferable in humanitarian terms to traditional high explosive munitions? To be sure, there are some severe risks with this system. As the Russian opera house siege makes clear, just because someone is incapacitated does not mean that they will be spared from kinetic targeting.<sup>122</sup> There is no guarantee that even the best NLW available would be used in a non-lethal manner. However, like any other weapon system, NLW would be subject to the existing methods of warfare restrictions.<sup>123</sup>

Additionally, the weakness of the methods approach is that while the CWC has one or two points of ambiguity, the entire LOAC analysis is fraught with ambiguous terms. Its flexibility is therefore both its greatest strength and its greatest weakness. Unlike interpretations of the CWC, however, there is a great deal of state practice upon which one can base interpretations of the LOAC principles.<sup>124</sup> Additionally, with the creation of the ICC and the case law from the ad hoc tribunals, there has been and will likely continue to be a great deal of persuasive interpretations of the LOAC principles.<sup>125</sup>

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120. See EO 11,850, *supra* note 53.

121. Alexander, *supra* note 4, at 67.

122. See David P. Fidler, *The Meaning of Moscow: “Non-lethal” Weapons and International Law in the 21<sup>st</sup> Century*, 87 INT’L REV. RED CROSS 525, 533 (Sept. 2005).

123. *Id.* at 530-31.

124. Compare Int’l Comm. of the Red Cross, *Practice Relating to Rule 75. Riot Control Agents*, ICRC: CUSTOMARY IHL, [http://www.icrc.org/customary-ihl/eng/docs/v2\\_rul\\_rule75](http://www.icrc.org/customary-ihl/eng/docs/v2_rul_rule75) (last visited May 8, 2011), with Int’l Committee of the Red Cross, *Practice Relating to Rule 47. Attacks Against Persons Hors de Combat*, ICRC: CUSTOMARY IHL, [http://www.icrc.org/customary-ihl/eng/docs/v2\\_rul\\_rule47](http://www.icrc.org/customary-ihl/eng/docs/v2_rul_rule47) (last visited May 8, 2011).

125. See, e.g., *Practice Relating to Rule 47*, *supra* note 124 (discussing international criminal tribunals and their impact on customary international humanitarian law).

A possible objection to the methods system would be that the major innovation of the CWC was its monitoring and compliance mechanisms. Unlike the CWC, there is no accountability or monitoring mechanism for the LOAC reviews. Yet, even the CWC is ultimately a voluntary body of law.<sup>126</sup> It depends on the cooperation and the consent of the States Parties to make it function. Nothing guarantees that states will follow arms control treaties with specific provisions more than they would the broad LOAC principles. There have been several prominent examples of arms control treaties being immediately and secretly undermined by the States Parties. For instance, almost immediately following the signing of the Biological Weapons Convention, the USSR began the most extensive bioweapon program to date.<sup>127</sup>

In some instances, being able to use RCA in a theatre of war may be both more humane and more effective than the use of other weapons. However, the U.S. should not withdraw from the CWC regime. Given the history of CW, including their history of misuse, withdrawing from the CWC would risk hindering our ability to work in military coalitions. Further, withdrawing from the CWC would forever link future systems, including non-lethal weapons, to the horrors of chemical weapons and thereby impair their legitimacy.<sup>128</sup>

Nevertheless, the example of non-lethal CW shows the limits of positive international law in the context of arms control. This example has particular relevance looking forward as new weapons systems, from unmanned vehicles to directed energy weapons, come online.<sup>129</sup> For these new weapons systems, the existing regulations on the methods of warfare will govern.<sup>130</sup> The ICJ had the opportunity to consider such a situation in the court's advisory opinion on the legality of nuclear weapons.<sup>131</sup> In that case, the question presented to the court was whether nuclear weapons could ever be used in a manner consistent with international law.<sup>132</sup> The

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126. Thomas Herthel, *On the Chopping Block: Cluster Munitions and the Law of War*, 51 A.F. L. REV. 229, 244 (2001).

127. Alexander, *Optional Lethality*, *supra* note 4, at 67.

128. See GRAHAM ALLISON ET AL., COUNCIL ON FOREIGN RELATIONS, NONLETHAL WEAPONS AND CAPABILITIES 32 (2004) (discussing how withdrawing from the CWC would risk "impairing the legitimacy of all NLW").

129. See, e.g., U.S. AIR FORCE RESEARCH LABORATORY, FACT SHEET: ACTIVE DENIAL SYSTEM ADVANCED CONCEPT TECHNOLOGY DEMONSTRATION (2006), available at <http://www.kirtland.af.mil/shared/media/document/AFD-070404-026.pdf>; MARC RAIBERT ET AL., BIGDOG THE ROUGH TERRAIN QUADUPED [sic] ROBOT (2008), available at [http://www.bostondynamics.com/img/BigDog\\_IFAC\\_Apr-8-2008.pdf](http://www.bostondynamics.com/img/BigDog_IFAC_Apr-8-2008.pdf).

130. Duncan, *supra* note 119, at 26.

131. Nuclear Weapons Opinion, *supra* note 73, para. 85.

132. *Id.* para. 20.

court responded that it would generally be illegal to use nuclear weapons, except in the most extreme circumstances of self-defense.<sup>133</sup> The court, lacking existing positive law, relied heavily on basic principles of LOAC and a methods-based approach to this means-related question.<sup>134</sup> The ICJ implicitly recognized that positive international law, such as it is, will always lag developments in technology.<sup>135</sup> Standards of humanity and public conscience, as highlighted in the Martens Clause, on the other hand, can be applied to every new iteration of military technology.<sup>136</sup> The ICJ opined that this clause “has proved to be an effective means of addressing the rapid evolution of military technology.”<sup>137</sup>

Indeed, the Martens Clause is effective as a means to address the rapid evolution of technology precisely because, unlike the CWC, it establishes standards, not rules.<sup>138</sup> The standards set by LOAC principles can likely achieve their objectives as well or better than a CWC-style regime of means-based rules. The rules of the CWC, as this note has demonstrated, end up forbidding the use of potentially more humane weapons out of a fear of going down a slippery slope. Chemical weapons are indeed a uniquely dangerous means of warfare. Mustard gas and aerosolized nerve agents can strike fear into the heart of every combatant and civilian in an especially powerful way.<sup>139</sup> They have been used to intentionally kill and disfigure civilian populations.<sup>140</sup> However, the fact that these weapons can be and have been abused does not necessarily mean that a blanket ban on such weapons best achieves the humanitarian goals of LOAC.

How then can communities concerned with arms control respond? The solution is not to completely abandon arms control treaties or LOAC rules. Rather, the solution going forward is two-fold: (1) ensure future arms treaties focus on the methods of warfare—how should this new weapon system be used—rather than the means of warfare themselves, and (2) bolster internal legal reviews for new weapons systems.

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133. *Id.* para. 105.

134. *See id.* para. 78

135. *See id.*

136. *Id.* para. 86 (explaining that the basic principles of LOAC “appl[y] to all forms of warfare and to all kinds of weapons, those of the past, those of the present and those of the future.”)

137. *Id.* para. 78.

138. The use of standards to deal with changing technological realities has often been recognized as superior to a rules-based approach in other contexts. *See, e.g.*, Derek Bambauer, *Rules, Standards and Geeks*, 5 BROOK. J. CORP. FIN. & COM. L. 49, 52 (2010); Paul Otto, Note, *Reasonableness Meets Requirements: Regulating Security and Privacy in Software*, 59 DUKE L.J. 309, 337 (2009).

139. *See* Forster, *supra* note 1.

140. *See generally* Gwynne Roberts, *Poisonous Weapons*, in CRIMES OF WAR 2.0: WHAT THE PUBLIC SHOULD KNOW (Roy Gutman et al. eds., 2007), available at <http://www.crimesofwar.org/a-z-guide/poisonous-weapons-2/> (last visited Nov. 14, 2011).

The rationale behind recent arms control treaties, such as the Protocol on Explosive Remnants of War to the Convention on Certain Conventional Weapons, is the effect of these weapons on civilians.<sup>141</sup> Current arms control regimes, however, focus on the nature of the weapons. A methods approach to arms control would focus combatants and their legal advisors on the fundamental principles of LOAC, such as the minimization of unnecessary human suffering. Combatants intent on violating LOAC can inflict massive amounts of harm on civilian populations without advanced weapons.<sup>142</sup> Indeed, some of the most truly horrific abuses in war are committed with no weapons at all.<sup>143</sup> Those combatants who value LOAC and take its provisions seriously, on the other hand, find themselves forced to choose a more damaging tactic, such as dropping a fuel-air bomb, when precluded from using more effective and potentially less harmful means.

An important part of a “methods” approach would be for the U.S. to champion an agreement which sets international standards for the legal review of new weapons systems. Articles 35 and 36 of Additional Protocol 1 to the 1949 Geneva Conventions (AP1) set out some basic standards for a legal review of weapons systems. However, “only a limited number of States[, such as the U.S.,] are known to have put in place mechanisms or procedures to conduct legal reviews.”<sup>144</sup> The U.S. legal reviews look at the principles of LOAC and at their most likely methods of employment.<sup>145</sup>

The ICRC has produced a guide which may be a model for such reviews. The ICRC’s *Guide to the Legal Review of New Weapons, Means and Methods of Warfare* provides certain guidelines for implementing Article 36 of AP1. They suggest looking, in addition to treaty law, to considerations of “public conscience” and the principles of humanity (i.e., the LOAC principles). The ICRC points specifically to the Martens Clause in Article 1(2) of AP1, which states that those areas which fall outside of the existing legal regime “remain under the protection and authority of the principles of international law derived from established custom, from the principles of humanity and from dictates of public conscience.”<sup>146</sup> By standardizing international legal reviews, the humanitarian community may be able to more fully integrate the humanitarian principles that define the

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141. See, e.g., Herthel, *supra* note 126, at 251.

142. See, e.g., Philip Verwimp, *Machetes and Firearms: The Organization of Massacres in Rwanda*, 43 J. PEACE RES. 5, 13 (2006).

143. See, e.g., Francois Grignon, *Rape as a Weapon of War in Congo*, DER SPIEGEL ONLINE, June 11, 2009, <http://www.spiegel.de/international/world/0,1518,629885,00.html>.

144. GUIDE TO LEGAL REVIEW, *supra* note 63, at 5.

145. Donna M. Verchio, *Just Say No! The SlrUS Project: Well-Intentioned But Unnecessary and Superfluous*, 51 A.F. L. REV. 183, 218-220 (2001).

146. AP I, *supra* note 45, art. 1(2).

LOAC into the development and deployment of all new weapons systems.

Additionally, non-legal considerations will always restrict what weapons a commander can and would choose to use. Any use of a “cowardly,” over-destructive or indiscriminate weapon will likely be noticed and publicized. This publicity will undoubtedly affect public opinion both in the population within which one is fighting and domestic public opinion. This “lawfare” effect with regard to chemical weapons can be seen as far back as World War I.<sup>147</sup> Indeed, this effect can be quite long-lasting. For instance, the use of chemical weapons like Agent Orange during the Vietnam War has continued to affect U.S. international relations many decades later.<sup>148</sup> In WWI, the German decision to use toxic gas undoubtedly contributed to the Allies’ narrative of the German nation as one of barbarians who use such horrible weapons.<sup>149</sup> Further, working in a coalition effectively limits the types of weapons a country can use. For instance, in Operation Iraqi Freedom, though the President had authorized the use of RCAs, the use of RCAs in a coalition operation with almost any of our partners would have been inhibited by their legal obligations.<sup>150</sup>

In modern conflicts, especially counterinsurgency and military operations other than war, the perception of illegality or immorality can prevent the warfighters from achieving their strategic objectives.<sup>151</sup> Therefore, even the perception of illegality can be effective at inhibiting the use of certain weapons systems in modern warfare.<sup>152</sup> Even if a given weapon has certain tactical advantages, lawfare and political realities may help prevent their use. In this way, concepts like lawfare may help fill the gaps in a methods-based approach to arms control.

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147. The term “lawfare” was first coined by Maj. Gen. Charles Dunlap. It generally refers to the use or misuse of legal tools and perceptions of legality to effect military objectives. See Charles J. Dunlap, Jr., *Law and Military Interventions: Preserving Humanitarian Values in 21<sup>st</sup> Century Conflicts* 11 (Carr Center for Human Rights Policy Workshop Paper 2001), available at [www.ksg.harvard.edu/cchrrp/Web%20Working%20Papers/Use%20of%20Force/Dunlap2001.pdf](http://www.ksg.harvard.edu/cchrrp/Web%20Working%20Papers/Use%20of%20Force/Dunlap2001.pdf).

148. See MICHAEL MARTIN, CONG. RESEARCH SERV., VIETNAMESE VICTIMS OF AGENT ORANGE AND U.S.-VIETNAM RELATIONS 1 (2009), available at <http://www.fas.org/sgp/crs/row/RL34761.pdf> (last visited Nov. 15, 2011).

149. SPIERS, *supra* note 9, at 31.

150. As noted before, the British had taken an absolutist approach to the use of RCAs, while the U.S. had authorized their use. Joseph Tessier, *Shake & Bake: Dual-use Chemicals, Contexts, and the Illegality of American White Phosphorous Attacks in Iraq*, 6 PIERCE L. REV. 323, 337, 339 (2007).

151. U.S. DEP’T OF ARMY, FIELD MANUAL NO. 3-24, THE U.S. ARMY AND MARINE CORPS COUNTERINSURGENCY FIELD MANUAL 43 (Dec. 2006).

152. Charles J. Dunlap, *Lawfare: A Decisive Element of 21st-Century Conflicts*, 2009 JOINT FORCES QUARTERLY, no. 54 at 36.

## CONCLUSION

RCAs have been an element of war since that French policeman first brought chloroacetophenone, CN gas, to the Western Front. The international community has responded to the horrors witnessed in war in two principal ways: by technology-specific treaties and by principles which govern the ever changing battlefield. The technology-specific treaties may have had an important role to play in creating and reinforcing norms against the use of certain weapons that the majority of the human race considers immoral. However, they often fail to keep pace with technology. The development and advancement of non-lethal RCAs demonstrates the weakness of such a regime and that it can inhibit the use of certain technologies which could help minimize unnecessary human suffering in war. As the ICJ noted in the *Nuclear Weapons* opinion, principles of humanity and the basic principles of LOAC are best situated to keep pace with technology.<sup>153</sup>

The principles-based method approach to questions of arms control has one indelible benefit over means-based treaties: it is timeless. Methods standards apply to a bow and arrow the same as they do to a Tomahawk missile. They also direct the analysis immediately to the concern of LOAC—the minimization of human suffering in war. Perhaps looking to the future, a re-emphasis of the basic principles of LOAC, either in policy statements or a new international agreement, would be preferable to a new arms control treaty. To the extent new technologies threaten to stretch existing LOAC principles, new treaties should consider the most humane rules governing their method of use, rather than banning the means itself. To demonstrate its dedication to such principles, the U.S. may want to push for a new agreement which expands on AP1, Art. 36 and mandates that all nations undertake legal reviews of their weapons system. Such internal reviews may lead to greater internalization of these most important principles of LOAC and thereby promote the ultimate goal of all LOAC—to minimize unnecessary human suffering in war.

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153. *Nuclear Weapons Opinion*, *supra* note 73, para 78.