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Brian Rappert, Richard Moyes, Anna Crowe, and Thomas Nash

Brian Rappert is a Professor of Science, Technology and Public Affairs in the Department of Sociology and Philosophy at the University of Exeter. His latest book, *How to Look Good in a War*,* examines how secrecy and transparency, as well as knowledge and ignorance, mix and meld together in the practice of statecraft.

Richard Moyes is Managing Partner of the UK non-governmental organization Article 36 and is an Honorary University Fellow at the University of Exeter.

Anna Crowe recently completed her Master of Laws at Harvard Law School. She previously worked as a New Zealand government lawyer and prior to that as a clerk to the Chief Justice of New Zealand.

Thomas Nash is Director of the UK non-governmental organization Article 36. He coordinated the Cluster Munition Coalition, the international campaign that led to the 2008 treaty banning cluster munitions.

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*   Brian Rappert, *How to Look Good in a War. Justifying and Challenging State Violence*, Pluto Press, London, 2012.

Abstract

This article considers the role of civil society in the development of new standards around weapons. The broad but informal roles that civil society has undertaken are contrasted with the relatively narrow review mechanisms adopted by states in fulfilment of their legal obligations. Such review mechanisms are also considered in the context of wider thinking about processes by which society considers new technologies that may be adopted into the public sphere. The article concludes that formalized review mechanisms, such as those undertaken in terms of Article 36 of Additional Protocol I (1977) of the Geneva Conventions of 1949, should be a focus of civil society attention in their own right as part of efforts to strengthen standard-setting in relation to emerging military technologies.

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It is widely accepted that humanitarian and moral considerations should constrain the choice of tools with which people can legitimately kill and injure each other. International humanitarian law (IHL) – in the form of treaties and customary international law[1] – codifies this belief in relation to armed conflict by requiring a balance between the need for military necessity and concerns for 'humanity'.[2] This requirement for a balancing is expressed in a number of specific legal rules, such as those regarding superfluous injury and unnecessary suffering, indiscriminate attacks, and proportionality.[3] However, it is an open question whether this framework is sufficient to limit effectively the harm caused by weapons.

The starting point for this article is that determining the acceptability or otherwise of weapon technologies presents numerous challenges and difficulties. As a matter of principle, defining what is illegitimate is inextricably tied to affirming what means and methods for killing and injuring are legitimate. As a result, attempts to restrict particular technologies may be seen as unintentionally sanctioning other forms of violence or even providing tacit acceptance of wider patterns of conflict.[4] Such risks cannot be easily dismissed. Just how expert technical

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1   See Jean-Marie Henckaerts and Louise Doswald-Beck, *Customary International Humanitarian Law*, Cambridge University Press, Cambridge, 2005.

2   See Theodor Meron, 'The Martens Clause, principles of humanity, and dictates of public conscience', in *The American Journal of International Law*, Vol. 94, No. 1, 2000, pp. 78–89.

3   See, for example, Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 June 1977, Article 35(2) (superfluous injury or unnecessary suffering), Article 51(4) (indiscriminate attacks) and Article 51(5)(b) (proportionality); see also, International Committee of the Red Cross (ICRC), *Existing Principles and Rules of International Humanitarian Law Applicable to Munitions that May Become Explosive Remnants of War*, Paper Submitted to the Convention on Prohibitions or Restrictions on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious or to Have Indiscriminate Effects, CCW/GGE/XI/WG.1/WP.7, 28 July 2005.

4   For a discussion of this point, see Richard Falk, 'The challenges of biological weaponry', in Susan Wright (ed.), *Biological Warfare and Disarmament*, Rowman & Littlefield, London, 2001; Yves Sandoz, 'Preface', in Eric Prokosch, *The Technology of Killing: A Military and Political History of Antipersonnel Weapons*, Zed, London, 1995; Thomas W. Smith, 'The new law of war: legitimizing hi-tech and infrastructural violence', in *International Studies Quarterly*, Vol. 46, 2002, pp. 355–374.

analysis, appeals to morality, pragmatism, and political power ought to mix together in defining the bounds of legitimacy has no simple solution.

As a matter of practice, doubts can be raised about how humanity and military necessity were balanced in the past. The continuing level of casualties inflicted on non-combatants during and after armed conflict testifies to the limitations of IHL. Historically, where weapon types have already been developed and widely deployed, it has taken a considerable effort to put in place any such constraints subsequently, and in some cases controls have not been devised despite high-level statements that they are necessary.[5]

The process of setting moral standards to limit the means and methods of warfare faces many of the problems that confound decision-making about technology more widely. The high and irreversible costs of damage to humans and the environment, the complexity of operational situations, and the potential lag between harm and attempts to correct it all challenge efforts to minimize negative consequences.[6] Authors such as Morone and Woodhouse have offered a number of suggestions for coping with the difficulties of technology in general.[7] These include putting in place so-called precautionary measures[8] (such as initially limiting use, protecting against severe risks, testing concerns) and building in flexibility (by reducing major uncertainties and learning from experience). In relation to weapons technologies, as elsewhere, such efforts often prove difficult to undertake as careers of individuals, strategies of institutions, organizational structures, and beliefs become moulded around the technologies in question. The desire of states to achieve military advantage, and of companies to achieve commercial gain, all bear against flexibility and transparency.

The pace of weapons development and deployment, driven by technological changes, also challenges the assessment of the implications of new weapons, means, or methods of violence as a matter of public policy. As new mechanisms of applying force become available – whether in the form of autonomous military

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5 For example, nuclear weapons are not subject to an explicit legal prohibition against their use despite widespread recognition that such weapons should be abolished. In December 1994, the UN General Assembly requested the International Court of Justice to offer an advisory opinion on the question: 'Is the threat or use of nuclear weapons in any circumstance permitted under international law?' To the central issue of permissibility of nuclear weapons, by a vote of seven to seven decided through the second vote of the President of the Court, the judges ruled that: 'The threat or use of nuclear weapons would generally be contrary to the rules of international law applicable in armed conflict, and in particular the principles and rules of humanitarian law. However, in view of the current state of international law, and of the elements of fact at its disposal, the Court cannot conclude definitively whether the threat or use of nuclear weapons would be lawful or unlawful in an extreme circumstance of self-defence, in which the very survival of a State would be at stake. So while the threat or use of nuclear weapons was *generally* held to be against international law, the judges could not determine that it *always* would be. Just as what would constitute "the very survival of a State" was not defined. In many respects, the decision could be characterized as a decision not to decide, at least not to determine once-and-for-all the matter of legality'. See International Court of Justice (ICJ), *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion of 8 July 1996, ICJ Reports 1996, p. 266.

6 Edward J. Woodhouse, 'Is large-scale military R&D defensible theoretically?', in *Science, Technology, and Human Values*, Vol. 15, No. 4, 1990, pp. 442–460.

7 Joseph Morone and Edward Woodhouse, *Averting Catastrophe*, University of California, Berkeley, 1986.

8 Precaution in this usage being aligned with forms of general risk reduction, rather than relating to precaution as specified under the provisions of IHL.

robots, software capable of disabling infrastructure relied on by society, or directed energy weapons – it is unclear that there are either formal or informal mechanisms in place to ensure that the technologies adopted accord with widespread conceptions of what is right or wrong. This may be further complicated where technological changes occur incrementally, making it more difficult to identify or construct categorical 'boundaries'. If concerns about new technologies gain traction in public discourse, efforts will need to be made to ensure that such concerns do not, at the same time, serve to further normalize means and methods of warfare that are currently employed, but in urgent need of further controls.

The purpose of this article is to assess the possible contribution of civil society, as a diverse body of international and national non-governmental actors, in the development of normative standards around new weapons and technologies of warfare and to raise questions about that role in the context of the obligations and duties of states. The first section surveys important functions that can be fulfilled by civil society organizations. By drawing on past and prospective controversies associated with specific weapons, it sets out the need for, potential for, and challenges with civil society contributions. The second section then examines one area in detail: the formal national review of weapons required by Article 36 of Additional Protocol I to the Geneva Conventions of 1949. The final section offers closing reflections.

The roles of civil society

Setting standards about weapons and other technologies of warfare is both demanding and open to question. The general practice of states has been to limit decision-making about such standards to a tight coterie of government, military, and commercial officials, who engage in wider international discussion where such a forum is provided. While this approach favours military and commercial secrecy it is likely to seriously limit the capacities, competences, and concerns informing the setting policy. Nonetheless, in recent years, civil society working in partnership with like-minded states and international organizations has had a prominent role in developing stronger legal controls over certain types of weapons.[9] This has been most notable in the development of prohibitions on anti-personnel landmines (1997)[10] and cluster munitions (2008).[11] Such achievements are formal manifestations of wider ongoing work by civil society in relation to weapons and violence. That said, moving from the identification of concerns to influential action typically requires a substantial investment of time and energy. But non-governmental organizations and others in civil society often have limited capacities in terms of

9   This article does not analyse the concept of 'civil society' in detail, but we use the term primarily to refer to non-governmental organizations, working together or in coalitions, to promote reductions in harm through reforms in practice, policy, or law.
10   Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction, 18 September 1997.
11   Convention on Cluster Munitions, 30 May 2008.

people and funding, and even more so in low-income countries. While civil society has functioned as a part of an informal international system of standard-setting on certain weapons the fact that civil society needed to play this role raises questions about how effectively states and others execute their duties to constrain conflict and violence.

Civil society's engagement in the development of standards governing specific weapons is not uniform. In the cases of anti-personnel mines and cluster munitions, civil society engagement was characterized by participation of a broad coalition of coordinated non-governmental organization (NGO) partners from different countries.[12] On other weapon issues, such as in the development of legal responses to blinding lasers and explosive remnants of war, civil society engagement was more limited. Those issues were addressed primarily through expert policy engagement in established fora for legal discussion. On nuclear weapon disarmament, by comparison, there has been wide-ranging civil society engagement in different ways and in different fora, but these engagements have not yet resulted in an international agreement to prohibit nuclear weapons. Thus, while controlling weapons is an area where civil society has played an important role, engagement has taken different forms and has achieved different sorts of results.

While different civil society organizations will have different approaches and ethoses, which include views on the proper role of civil society, this article focuses on five key interrelated and broad roles that members of civil society have played with regard to the development of humanitarian standards:

- information gathering
- analysing
- framing
- redefining
- communicating and representing.

The aim of this section is not simply to extol the virtue of such functions, but to critically assess the prospects for what civil society can offer. There are a number of factors, beyond those raised in the introduction section, that can inhibit meaningful engagement.

Information gathering

Data on human and environmental consequences is often central to debates about the legality or wider appropriateness of weapons. By demanding access to state-held information or compiling field data of their own, groups within civil society can identify problems hitherto ignored or they can develop a deeper understanding of problems already identified. Therefore, information gathering can be vital

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12 During the process to develop the treaty banning cluster munitions, the Cluster Munition Coalition, for example, was made up of around 400 member organizations in some 100 countries. For a discussion on the role of civil society in this process, see Matthew Bolton and Thomas Nash, 'The role of middle power-NGO coalitions in global policy: the case of the cluster munitions ban', in *Global Policy*, Vol. 1, Issue 2, May 2010.

to initiating consideration of a particular issue, or for the development of arguments around an issue that has already been established.

Even the most basic forms of information relevant to weapons' effects can be contested and problematic. The topic of deaths from armed violence illustrates the importance of information gathering by members of civil society, and the relatively weak practice of states. For example, deaths resulting from the 2003 Iraq War have been a prominent topic of international public concern. With the absence of efforts by parties to the conflict, including the US, the UK, and others, to produce figures on the numbers of civilians killed (indeed with active efforts to remain ignorant about this matter[13]) it has fallen on those in civil society to produce figures. Largely based on the systematic evidence of media accounts, the NGO Iraq Body Count not only produced an accessible listing of direct civilian deaths inflicted since the intervention, but also has been able to break them down by perpetrator and weapons type.[14] During 2011, many of these dynamics of accountability were repeated when NATO initially denied deaths from its aerial campaign in Libya.[15] NGOs monitoring media reports have been able to offer provisional figures about casualties related to weapon types, although recognizing limitations in the sources they have access to.[16]

Such data can be very valuable for making further assertions regarding the role played by certain weapons in the production of civilian harm and often stand in contrast to states' own abilities or willingness to provide such data. Despite decades of public concerns regarding cluster munitions, and repeated assurances that such weapons were acceptable given a 'careful weighing' of military benefits and civilian risks, the UK was unable in 2005 to point to any data that it had gathered on their humanitarian impact.[17]

Given such weaknesses in state practice, a group of NGOs have endorsed a Charter for the Recognition of Every Casualty of Armed Violence, and are initiating an 'Every Casualty Campaign' calling on states to recognize that they have a responsibility to record, identify, and acknowledge all casualties of violence.[18] This initiative builds on recognition that developing controls on deployed weapons is likely to require data regarding harms caused, but that the parties responsible both for using the weapons and establishing such controls rarely produce such data.

However, information gathering raises many questions. 'Information about what?' being one. In relation to civilian harms, the question of which deaths should

13   Brian Rappert, 'States of ignorance: the unmaking and remaking of death tolls', in *Economy and Society*, Vol. 41, No. 1, 2012, pp. 42–63.

14   Madelyn Hsiao-Rei Hicks, *et al.*, 'Violent deaths of Iraqi civilians, 2003–2008: analysis by perpetrator, weapon, time, and location', in *PLoS Medicine*, Vol. 8, No. 2, 2011, pp. 1–15.

15   C. J. Chivers and Eric Schmitt, 'In strikes on Libya by NATO, an unspoken civilian toll', in *New York Times*, 17 December 2011, p. A1.

16   Action On Armed Violence, *Explosive Violence Update: Libya*, AOAV, London, 23 June 2011. Madelyn Hsiao-Rei Hicks, Hamit Dardagan, *et al.*, 'The weapons that kill civilians – deaths of children and non-combatants in Iraq, 2003–2008', in *The New England Journal of Medicine*, 2009, No. 360, pp. 1585–1588.

17   Brian Rappert, *Out of Balance: The UK Government's Efforts to Understand Cluster Munitions and International Humanitarian Law*, Landmine Action, November 2005, available at: http://www.land-mineaction.org/resources/Out%20of%20Balance.pdf (last visited 24 April 2012).

18   See, for example: www.oxfordresearchgroup.org.uk/rcac (last visited 21 May 2012).

be counted is of critical significance. Should that include only those killings directly resulting from violence or should the numbers also include indirect deaths stemming from a loss of public infrastructure and access to medical facilities, which may be a major element of the overall harm?[19] Much of the public controversy about the real number of civilian deaths stemming from the Iraq War stemmed from alternative assumptions about what should be measured and misconceptions about what was being measured.[20] Decisions about what information should be gathered are likely to be affected by how a problem is depicted, and those decisions may also serve to shape what arguments can subsequently be made. For new weapons technologies, different types of data may be needed at different stages of a weapon's development.

'Information with what assurance?' is another question. Ruge recounted how the definition of humanitarian problems related to arms control and disarmament – such as the previously prominent claim there were '110 million mines in the ground' – resulted from limited data being extrapolated into fact.[21] Elsewhere, in arguments about the perceived acceptability of certain weapons it has not been unusual for states to challenge methodologies and data produced by NGOs while offering no data of their own.[22] Issues of methodology and rigour may also shape practices and debates that follow.

'Information when?' is a further question of particular significance for assessment of new weapon technologies. In so far as prohibitions on anti-personnel mines and cluster munitions were driven by information gathered on the humanitarian impact of these weapons, it is important to note that this information only became effective after substantial international use of the weapons and high levels of resulting civilian harm. With respect to emerging technologies, data on harm may not be available and so other types of information may be required. For example, while there is little data on the civilian harms caused by new 'sensor fuzed' weapon systems, NGOs such as Landmine Action (now Action on Armed Violence), Austcare (now ActionAid Australia), and Handicap International have called for technical information regarding these weapons so as to better understand the civilian risk.[23] At the other end of the process, civil society organizations also

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19 For example, a 2008 report on the Global Burden of Armed Violence noted that indirect conflict deaths, such as from elevated levels of malnutrition, dysentery, or other easily preventable diseases, was substantially greater than conflict deaths directly attributable to violence. See Geneva Declaration Secretariat, *Global Burden of Armed Violence*, 2008, Geneva, executive summary, available at: http://www.genevadeclaration.org/fileadmin/docs/GBAV/GBAV2008-Ex-Summary-English.pdf (last visited 1 May 2012).

20 Brian Rappert, *How to Look Good in a War*, Pluto Press, London, 2012, Chapter 5.

21 Christian H. Ruge, 'Mitigating the effects of armed violence through disarmament: counting the human cost', in J. Borrie and V. Randin (eds), *Disarmament as Humanitarian Action*, UNIDIR, Geneva, 2006, pp. 23–50.

22 B. Rappert, above note 17.

23 Richard Moyes, 'A sensor fuzed solution?', in Landmine Action, *Campaign Newsletter*, issue 13, Autumn 2007. Austcare and Handicap International, 'Sensor-fuzing and SMArt submunitions: An unproven technology?', February 2008, available at: http://www.handicap-international.fr/uploads/tx_basm08experts/Sensor_fuzed_and_SMArt_submunitions_an_unproven_technology_1_.doc (last visited 20 May 2012).

take on substantial information-gathering functions in order to monitor the implementation of agreements adopted to control certain weapons.[24]

Finally, it should be recognized that information does not on its own generate meaning. Whether the effects or technical characteristics being documented show a weapon that causes disproportionate harm or kills and wounds in some unacceptable way is a question that cannot be resolved simply by comparison of data. Some previous efforts to strengthen the international regime for controlling new weapons, such as the ICRC's SIrUS project, have arguably fallen foul of too great an emphasis on the decision-making power of data.[25]

Analysing

Building on the final point above, civil society organizations generally go beyond simply providing data, and seek to forward assessments about the scale and nature of the problems being documented, the links between those problems and the technology of specific weapon types, and what needs to be done in response.[26] However, there are limits to the role of analysis in developing new standards.

Ideally, it might be imagined that choices about the adoption and deployment of weaponry, as with other technologies, might follow a rational set of stages. Operational objectives would be established first; alternative options to meet those objectives would be scrutinized in detail (including with regard to their humanitarian implications); weapons would be deployed; their performance would be systematically monitored and evaluated; and this experience would feed back into a new cycle of examining objectives, options, and performance. However, political theorists examining how choices are made about technology have long questioned whether such rational models are accurate or even desirable as ideals.[27] A central problem is that they place a great weight on analysis, and do not adequately recognize the extent to which information can be ambiguous and may produce divergent views when approached with different preconceptions or motivations.

Even if data regarding the effects of weapons are relatively undisputed the legal framework governing armed conflict alone provides ample opportunities for analyses to diverge. The meaning of the principles and rules of IHL are uncertain and subject to disagreement in major respects. Phrases such as 'incidental loss of life

24 See, *Landmine Monitor* and *Cluster Munition Monitor*, available at: http://www.the-monitor.org/ (last visited 9 May 2012). For a discussion on the role of the Landmine Monitor in reinforcing the international standard against landmines, see Mary Wareham, 'Evidence-based advocacy: civil society monitoring of the Mine Ban Treaty', in Jody Williams, Stephen D. Goose and Mary Wareham (eds), *Banning Landmines: Disarmament, Citizen Diplomacy, and Human Security*, Rowman & Littlefield, Lanham M.D., 2008.

25 See ICRC, *The SIrUS Project: Towards a Determination of Which Weapons Cause 'Superfluous Injury or Unnecessary Suffering'*, Geneva, 1997; for an example of the criticism directed at the SIrUS project, see Major Donna Marie Verchio, 'Just say no! The SIrUS project: well-intentioned, but unnecessary and superfluous', in *The Air Force Law Review*, Vol. 51, 2001, pp. 183–228.

26 As advocated in Robin Coupland, 'The effects of weapons and the Solferino cycle', in *British Medical Journal*, Vol. 319, No. 7214, 1999, pp. 864–865.

27 See Charles Lindblom, 'Still muddling, not yet through', in *Public Administration Review*, Vol. 39, 1979, pp. 517–526; and Arie Rip, Thomas Misa and Johan Schot, *Managing Technology in Society*, Routledge, London, 1995.

or injury to civilians' and 'concrete and direct overall military advantage', for instance, are subject to significantly different interpretations by government officials and legal scholars.[28] Given these differences, the notion that analysis alone could resolve disputes about legality – let alone wider questions about acceptability – is questionable.

Further, the identification of humanitarian implications that need redress is not done through an exhaustive process of analysing the objective harms of all weapons and then agreeing priority topics for action. Officials, NGOs, and others work with assumptions about what concerns matter. For example, the idea of a weapon that kills or injures by blasting pieces of flesh off the victim is generally not considered problematic, because blasting pieces of flesh off people is seen as common in armed conflict. By contrast, horrific injuries from an 'unusual' type of weapon technology (for instance, biological weapons or white phosphorus) may attract far greater attention even if there is a much more extensive pattern of civilian death and injury associated with technologies considered 'normal' or the use of which is somehow seen as 'inevitable'.[29]

The preceding paragraphs are not meant to suggest analysis has no, or only a highly limited, role to play in setting standards. They are intended to indicate that analysis is most likely to be most meaningful when it contributes to ongoing political processes and dialogues. In such circumstances, the 'framing' of the issue in question can perhaps be narrowed down sufficiently to limit divergence of opinion regarding the underpinning terms of the debate. A good example is that of the 2007 report by Norwegian People's Aid in collaboration with the Norwegian Defence Research Establishment regarding the in-field reliability of the M-85 submunition.[30] By directly challenging one of the proposals being debated at the time as part of the Oslo Process on cluster munitions – namely that submunitions with a self-destruct mechanism could sufficiently address humanitarian concerns – the report helped policymakers resolve a choice that was being posed to them.[31]

Framing

Claims about the causes of the problems associated with weapons and what needs to be done about them also speak to issues of framing. Gamson and Modigliani referred to frames as the central ideas for structuring our sense of events and the issues at stake.[32] Frames shape our understanding of what is going on, why, what (if anything) needs to be done, and who needs to do it. This may involve setting the terms of the argument, for example in relation to existing law or other policy

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28   See J.-M. Henckaerts and L. Doswald-Beck, above note 1, Chapter 4; and B. Rappert, above note 17.
29   See the section on 'framing' below.
30   Collin King, Ove Dullum and Grethe Østern, *M85: An Analysis of Reliability*, Norwegian People's Aid, Oslo, 2007.
31   See John Borrie, *Unacceptable Harm*, United Nations, Geneva, 2009.
32   William A. Gamson and André Modigliani, 'Media discourse and public opinion on nuclear power: a constructionist approach', in *American Journal of Sociology*, Vol. 95, No. 1, 1989, pp. 1–37.

commitments; and it may include stipulating which fora are most appropriate. Without the latter, issues might be widely regarded as problems, but not tackled anywhere. Thus, while framing itself requires communication, it is primarily a process of setting the terms for the communication that is to follow.

It is worth noting the different grounds on which civil society and others have raised concerns about particular weapons technologies in the past. There are various subtleties to how concerns have been framed in different contexts. However, some of the grounds for calling for controls on specific weapons could be summarized as follows:

- The weapons, due to the way in which they function, have a tendency to kill or injure the wrong people (e.g., biological, chemical, nuclear weapons, cluster munitions, anti-personnel mines, incendiary weapons).
- The weapons have presented a historical pattern of killing and injuring the wrong people (e.g., anti-personnel mines, cluster munitions).
- The weapons, due to the way in which they function, have a tendency to kill or injure even the intended people in the wrong way (e.g., blinding laser weapons, 'dum-dum' bullets, anti-personnel mines, biological, chemical, and incendiary weapons, cluster munitions in the 1970s).
- The weapons may have wider negative effects on the environment, infrastructure, economic life, etcetera, that last far beyond the period of conflict (e.g., chemical, biological, and nuclear weapons, uranium weapons, landmines and unexploded ordnance).
- The weapons end up in the hands of the wrong people (e.g., in relation to the transfer of 'dual use' technologies and small arms).

In making these arguments, different individuals and organizations may take different orientations to existing law. Some groups tend to urge that, on the basis of one or other of the arguments above, the weapon in question falls foul of existing law by being indiscriminate, causing unnecessary suffering, etcetera. Others might press that, while not straightforwardly disallowed by existing law, one or other of the arguments above provides grounds for new rules to be put in place. Legal, extra-legal, and non-legal arguments run in tandem with assessments about whether new formal rules and restrictions are required and/or whether the delegitimization and stigmatization of weapons within the international community can address identified problems. Such varied orientations are not necessarily mutually incompatible, and within civil society coalitions those with different orientations may still work effectively together.[33]

A key element of civil society responses to new weapon technologies will be to frame the concerns associated with a particular technology. It should be

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33 For a discussion on some of the ways in which the Cluster Munition Coalition worked together despite the differing approaches of some of its NGO members, see Thomas Nash, 'Civil society and cluster munitions: building blocks of a global campaign', in M. Kaldor, S. Selchow and H. L. Moore (eds), *Global Civil Society 2012: Ten Years of Critical Reflection*, Palgrave Macmillan, London, 2012, pp. 124–143.

noted that how a weapon is portrayed as a problem can change over time. As is illustrated in the list above, diplomatic proposals in the 1970s to control cluster munitions were framed around concerns regarding unnecessary suffering and superfluous injury (due to the fragmentation effects of the cluster munitions),[34] yet this 'problem' barely featured in the development of an international ban on cluster munitions in 2008.[35] It is not yet clear what framings will predominate with respect to weapon technologies now emerging, but some suggested possibilities are:

- cyber warfare – due to the type of target that may be attacked (e.g., public infrastructure), is likely to harm the wrong people; may cause unforeseeable longer-term harms; and may end up in the hands of the wrong people;
- autonomous weapons – due to the way in which they function (e.g., by sensor/algorithm decisions to attack), will be prone to killing and injuring the wrong people; may lack adequate human accountability; and may offend against an assumption of human control over lethal decisions;
- directed energy weapons – due to the way in which they function (e.g., invisibility of microwaves, unknown longer-term effects, incomprehension of the victims), will cause death and injury in the wrong way, including intended targets.

In all such framings, consideration needs to be given not only to the basic moral problem being attributed to the weapons, but also to the causal link between the technology and the harm. Is the problem that an unacceptable outcome will occur in all circumstances, most circumstances, some circumstances, etcetera? Furthermore, it is possible that new technologies will bring to the fore problem framings that have not been used for weapons previously or that relate back to controls over the methods of warfare rather than weapons as types of technologies. For example, drones have raised concerns about a lack of accountability for attacks with such systems.[36] Both in cyber warfare and the proliferation of drones, the problem might not be framed so much in the permissibility of the weapon technology itself, but in the types of attacks that this technology now facilitates. In any case, the way in which a problem is framed will have a great bearing on the type of solution that follows.

Redefining

'Redefining' means providing an overarching mode of analysis that goes beyond the question of how issues with individual weapon types are framed. Past efforts, spearheaded by international civil society, to shift from traditional national security-indebted arms control approaches to 'human security' or 'humanitarian action'

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34 See Eric Prokosch, *The Technology of Killing: A Military and Political History of Anti-Personnel Weapons*, Zed Books, London, 1995, pp. 149–150.
35 See J. Borrie, above note 31.
36 See Philip Alston, 'The CIA and targeted killings beyond borders', in *Harvard National Security Journal*, Vol. 2, 2011, pp. 283–446.

represent instances of redefinition.[37] By linking discussion about the rights and wrongs in the conduct of conflict to these overarching notions of human security and humanitarian action, a goal of the redefinition was to open up novel possibilities for collaboration and paths for intervention.[38] Similarly to 'framing' discussed above, the work of redefining modes of analysis is about setting the terms of technical, political, or public arguments that will subsequently be worked through.

Redefinitions might be more or less explicit or acknowledged. By shifting from a negotiation process structured around establishing what should be restricted to instead demanding argument for what should be allowed, Rappert and Moyes argued that the Oslo Process leading to the Convention on Cluster Munitions shared important dimensions with 'precautionary' approaches to environmental risk.[39] Borrie has noted that 'shifting the burden of proof' was a key (though not often remarked upon) element in the development of the case against cluster munitions.[40] Yet, while some in this process recognized the significance of this shift, many others may not have done.[41] As a result, the precautionary precedents set by the Oslo Process may, or may not, inform a wider redefinition in how future negotiation processes are structured.

As an approach that is wider than armed conflict, conceptualizing violence as a health problem is an approach that can both complement and challenge legal and security-related agendas. Shared starting points among health approaches include conceptualizing violence as a substantial and preventable cause of physical and psychological harm.[42] Public health approaches have been advanced in relation to armed conflict in general,[43] and small arms in particular.[44] Bound up with such redefinitions has been the expansion of what kinds of expertise are required; specifically, an extension of expertise beyond that associated with military operations and legal rules.

Aligned with health definitions, the argument has been advanced that some classes of weapons need to be scrutinized as if they were drugs. This is most evident today in relation to biochemical agents alternatively known as

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37 J. Borrie and V. Randin (eds), *Disarmament as Humanitarian Action*, UNIDIR, Geneva, 2006, pp. 23–50.

38 Such an approach is currently gaining greater prominence in discussions on nuclear weapons. In May 2012, sixteen states led by Switzerland delivered a statement on the humanitarian dimension of nuclear disarmament during a meeting of the Nuclear Non-Proliferation Treaty. See Rebecca Johnson, 'Non-Proliferation Treaty: the ground is shifting', Open Democracy, 4 May 2012, available at: http://www.opendemocracy.net/5050/rebecca-johnson/non-proliferation-treaty-ground-is-shifting (last visited 10 May 2012).

39 Brian Rappert and Richard Moyes, 'The prohibition of cluster munitions: setting international precedents for defining inhumanity', in *Non-proliferation Review*, Vol. 16, No. 2, 2009, pp. 237–256.

40 J. Borrie, above note 31.

41 *Ibid.*, and Brian Rappert, Richard Moyes and A. N. Other, 'Statecrafting ignorance: strategies for managing burdens, secrecy, and conflict', in S. Maret (ed.), *Government Secrecy (Research in Social Problems and Public Policy, Volume 19)*, Emerald, London, 2011, pp. 301–324.

42 World Health Organization, *Preventing Violence: A Guide to Implementing the Recommendations of the World Report on Violence and Health*, WHO, Geneva, 2004.

43 Maria Valenti, Christin M. Ormhaug, Robert E. Mtonga and John E. Loretz, 'Armed violence: a health problem, a public health approach', in *Journal of Public Health Policy*, Vol. 28, No. 4, 2007, pp. 389–400.

44 Small Arms Survey, *SmallArms Survey 2008*, Oxford University Press, Oxford, 2008, Chapter 7.

'incapacitating', 'non-lethal', and 'less lethal' weapons. The use of a fentanyl derivative during the Moscow theatre siege in October 2002 (with tragic results) is the most high-profile example of such a weapon capability, a capability that may yet be adopted more widely by other governments. In the light of such developments, many have questioned the legality of such options as well as the adequacy of the procedures meant to validate their safety.[45]

The contention that the uncertain or unpredictable effects of chemical agents require a wider appraisal of their acceptability goes back some time. In light of widespread use of CS smoke ('tear gas') grenades in Northern Ireland in the late 1960s, the UK government-appointed Himsworth Committee concluded, among other things, that in the future such chemical agents should be regarded as being more akin to medical drugs than weapons in relation to their operational approval.[46] While the specific meaning of this recommendation is open to question, arguably any such process would need to consist at least of the pre-deployment testing for possible concerns in a manner open to scrutiny and the post-deployment monitoring of operational use. Making public the evidential basis for decisions. as well as the criteria for assessment, would be vital in ensuring the robustness of decisions and the adequacy of attempts to address uncertainties. As with the monitoring of adverse reactions to drugs, rigorous systems for the post-marketing surveillance of weapons' effects would also be vital in ensuring that outcomes match expectations.

Thus, treating weapons as akin to medical drugs for the purpose of their assessment and control is one way civil society could redefine current approaches to these technologies. The next section illustrates the gulf between such an aspiration and state practice, and thereby the sweeping changes possible through such a redefinition.

Communicating and representing

A fifth role for civil society is in the ongoing communication and representation of this information, analysis, and problem framings to different audiences. The work of communication is seen in NGO publications, placing of media stories, interventions in meetings, mobilization of parliamentarians, and direct lobbying of diplomats and government officials. Such communications may be setting the agenda, framing arguments, pushing for decisions, supporting negotiations, or monitoring instruments already in place. However, underpinning this representational role there is a wider question about how affected populations have their voices heard in discussions regarding the acceptability or appropriateness of certain weapons.

Weapons of armed conflict are often developed and brought into service with assumption that the population amongst whom they may be used will be foreign rather than domestic. As a result, the links of accountability between those

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45 British Medical Association, *The Use of Drugs as Weapons*, BMA, London, 2007.
46 Himsworth Committee, *Report of the enquiry into the medical and toxicological aspects of CS*. Part 2, Cmnd 4775, HMSO, London, 1971.

introducing the technology and those likely to experience negative effects are very limited. By representing the experiences of that population, civil society organizations can work to reduce this deficit in accountability. The development of global civil society coalitions, where many NGOs in different countries share resources and coordinate their research and advocacy work under a common banner, can help to increase the space for often-marginalized perspectives to be heard.[47] However, capacity in that area is arguably significantly short of what might be required to sustain a systematic scrutiny of weapon effects and implications across the range of relevant theatres and technologies.

A representational role also brings with it challenges. Civil society often presents itself as 'speaking on behalf of' populations, but the basis for such a mandate is often unclear. Cluster munition survivors, as activists against cluster munitions, had a strong and active role in the process of banning these weapons, but in any such process there are dangers that 'victims' are used as representational figureheads and are without the authority to manage representation directly. Making assertions about what affected communities need and about where any particular issue stands amongst those communities' priorities is fraught with difficulties for those in civil society. Civil society organizations often face pressure to synthesize diverse experience into a sense of the problem that can fit into the political debate at hand. However, this might downplay or exclude some of the experiences of those in affected communities. For instance, in the case of cluster munitions much of the focus was on civilian populations. This differs significantly from the attention given to these weapons in the 1970s when effects on military personnel were the centre of attention. Despite these concerns about who is represented, such a representational role will likely remain a key one for civil society as state willingness to bring affected populations directly into discussions regarding the acceptability of certain weapons remains very limited.

Strengthening the review of new weapons, means, and methods of warfare

The sections above have considered some of the key roles that civil society currently undertakes in the development of standards regarding weapon technologies. It can be seen that civil society has a major role in such processes, yet this role is almost wholly informal (i.e., it is not mandated by any particular instrument). The capacity of civil society in relation to this work is also limited. In many respects, civil society can be seen as informally taking on broad roles that the state might be expected to carry out; that is, processes to assess the acceptability of technologies that are not currently being undertaken effectively by states and other actors who are primarily responsible for the development and deployment of such technologies. In light of

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47 For a discussion on global civil society coalitions, see Richard Moyes and Thomas Nash, *Global Coalitions: An Introduction to Working in International Civil Society Partnerships*, Action on Armed Violence, London, 2011, available at: www.globalcoalitions.org (last visited 20 May 2012).

the above sections, we briefly examine below the current status of formal processes used by states for assessing weapons, which focus principally on concerns regarding such weapons' legality under existing obligations.

International law provides a framework for applying legal standards in the development of new technologies of warfare: Article 36 of Additional Protocol I to the Geneva Conventions of 1949. Article 36 requires that state parties assess new weapons, means, or methods of warfare for compliance with Additional Protocol I and international law more broadly.[48] As the ICRC has said:

> The aim of Article 36 is to prevent the use of weapons that would violate international law in all circumstances and to impose restrictions on the use of weapons that would violate international law in some circumstances, by determining their lawfulness before they are developed, acquired or otherwise incorporated into a State's arsenal.[49]

The importance of the Article 36 obligation should not be understated: states are bound to undertake legal reviews of new technologies of warfare and they must consider whether the use of these new technologies would be contrary to international law in some or all circumstances. A failure to do so renders a state internationally responsible for a breach of its obligations vis-à-vis the other parties to Additional Protocol I.[50] For those states that are not party to Additional Protocol I, review should arguably be undertaken as a corollary to other international obligations, or as a matter of best practice.[51] The United States of America is one notable example of a state that is not party to Additional Protocol I, but which nonetheless carries out legal reviews of new weapons. In an effort to strengthen international implementation of this rule States Parties to the UN Convention on Certain Conventional Weapons (CCW) have also recognized the importance of weapons reviews. For example, the Final Declaration of the 4th CCW Review Conference highlights the determination of States Parties 'to urge States which do not already do so to conduct reviews to determine whether any new weapon, means or methods of warfare would be prohibited under international humanitarian law or other rules of international law applicable to them'.[52]

The ICRC has made efforts to promote compliance with Article 36. Successive international conferences of the Red Cross and Red Crescent have urged

48 Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 June 1977.

49 ICRC, *A Guide to the Legal Review of New Weapons, Means and Methods of Warfare: Measures to Implement Article 36 of Additional Protocol I of 1977*, Geneva, 2006, p. 4.

50 Yves Sandoz, Christophe Swinarski and Bruno Zimmermann (eds), *Commentary on the Additional Protocols of 8 June 1977 to the Geneva Conventions of 12 August 1949*, Martinus Nijhoff Publishers, Geneva, 1987, p. 423.

51 ICRC, *Guide*, above note 49, p. 4; Isabelle Daoust, Robin Coupland and Rikke Ishoey 'New wars, new weapons? The obligation of states to assess the legality of means and methods of warfare', in *International Review of the Red Cross*, Vol. 84, No. 846, June 2002, p. 348; Darren Stewart, 'New technology and the law of armed conflict', in Raul A. 'Pete' Pedrozo and Daria P. Wollschlaeger (eds), *International Law and the Changing Character of War*, Naval War College, Newport, Rhode Island, 2011, p. 283.

52 UN Convention on Certain Conventional Weapons, UN Doc. CCW/CONF.IV/4/Add.1, p. 4.

states to engage in legal reviews of weapons. Notably, the 2003 conference adopted a Declaration and Agenda for Humanitarian Action, which included as a goal:[53]

> In light of the rapid development of weapons technology and in order to protect civilians from the indiscriminate effects of weapons and combatants from unnecessary suffering and prohibited weapons, all new weapons, means and methods of warfare should be subject to rigorous and multidisciplinary review.

To this end, the ICRC has provided significant guidance on weapons reviews in the form of its 2006 publication *A Guide to the Legal Review of New Weapons, Means and Methods of Warfare*.[54] The *Guide* outlines the types of weapons subject to review, the rules to be applied to new weapons, means, and methods of warfare, and the data that reviewers should consider (including health- and environment-related considerations). Drawing on existing practice, it makes suggestions as to the legal status and location of the review body within government, and its structure and composition. It also describes how the review process may operate and provides examples of possible rules and structures for decision-making.

The challenges of reviews

Before offering an evaluation of the implementation of Article 36 – and thereby illustrating the scope for civil society engagement – it is worth noting some of the general difficulties associated with the type of reviews that might be envisioned based on an analysis of such processes in relation to technologies more broadly. Collingridge[55] identified a fundamental dilemma in trying to manage technology. Controls are relatively easy to introduce in the early stages of development, yet at such an early stage they often prove difficult to justify because negative effects have not materialized. However, when the need for controls is apparent because of negative effects they are often more expensive and troublesome to put in place. The way technologies become entrenched within organization practice, the investment costs already committed, the formation of beliefs and career structures, etcetera, can all work against the adoption of control measures.

Collingridge's key recommendation is to maintain flexibility in the adoption of a technology. The customary response to the 'dilemma of control' is to focus on finding better ways of forecasting technology's effects. This approach has limitations given the fallibilities of analysis. In the case of weaponry, the fallibility of analysis is particularly acute because of the scope for uncertainty and disagreement about costs and benefits (including how such costs and benefits are characterized) and the substantial and irreversible nature of the harms that might be inflicted. In

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53   See 28th International Conference of the International Red Cross and Red Crescent Movement, Geneva, Switzerland, 2–6 December 2003, final goal 2.5. *Resolution 1: Adoption of the Declaration and Agenda for Humanitarian Action.* Review of new weapons was also urged in the Final Document of the Fourth Review Conference of the Convention on Certain Conventional Weapons, November 2011, CCW/CONF.IV/4/Add.1, para. 16.
54   ICRC, *Guide*, above note 49.
55   David Collingridge, *The Social Control of Technology*, St. Martin's, New York, 1980.

these circumstances, it is vital that processes are established for learning from experience. This underscores the need for openness to scrutiny, involvement of those with expertise and relevant backgrounds, ongoing review of operational use, and the open sharing of experiences.

The challenges of existing practice

However, current implementation of Article 36 seems to fall far short of the type of regime suggested in the paragraph above. While progressive in its intent, Article 36 is reactionary in its terms, which do not prescribe any particular mode of compliance. Instead it is left to states to determine their own processes without international oversight. Consequently, it is difficult to gain a complete picture of whether, or to what extent, states are abiding by the obligation to review. In the context of national defence and security interests there is a dearth of publicly available information on weapons review programmes and their outputs. As Cassese noted shortly after the adoption of Additional Protocol I, Article 36 does not require states to make public their weapons reviews and, consequently, 'other contracting States have no possibility of verifying whether the obligation laid down [in Article 36] is complied with'.[56] Such secrecy presents particular challenges for civil society organizations that seek to enhance state accountability and promote transparency.

Further, Article 36 is quite evidently not self-executing. Despite the scope afforded to national authorities in determining the mode of compliance with its terms, more than three decades after Protocol I's adoption the number of states known to have formal review processes remains very small. While a limited number of states appear to be actively abiding by the terms of Article 36, it is clear that a much larger number of states are not undertaking weapons reviews.[57] It also appears that some states rely on the review processes of larger military powers when they acquire or develop new weapons, failing to abide by their independent obligation to review.[58]

While states are entitled to calibrate their review processes differently, many interpret the Article 36 obligation very narrowly. This tendency can manifest

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56 Antonio Cassese, 'Means of warfare: the traditional and the new law', in A. Cassese (ed.), *The New Humanitarian Law of Armed Conflict (Vol. 1)*, Editoriale scientifica, Naples, 1979, p. 179.

57 Seven states appear to have formal review processes, the details of which are publicly available: Australia, Belgium, the Netherlands, Norway, Sweden, the United Kingdom, and the United States of America. A further three states, Denmark, France, and Germany, are thought to have formal review processes, but information about these processes does not appear to be publicly available. There are another thirteen states that have indicated that they may have informal or formal review processes, but have not made sufficient information available to determine whether this is the case (formal: Canada, Czech Republic, New Zealand, Russian Federation, Switzerland; informal: Austria, Brazil, Croatia, Finland, Mexico, Poland, Portugal, and South Africa). See, ICRC, *Reaffirming and Implementing International Humanitarian Law* (Follow-up to Resolution 3 of the 30th International Conference), October 2011 : 'Despite pledges made by some States at the 2007 International Conference, the ICRC is not aware of the establishment of any procedures to review the legality of new weapons in a State that did not already have such a mechanism.'

58 ICRC, *Follow-up to the 28th International Conference: Report prepared for the 30th International Conference of the Red Cross and Red Crescent*, ICRC, Geneva, 2007, p. 25.

itself in at least four different ways: first, through a primary focus on ensuring technologies in development will not fall into existing categories of explicitly banned weapons, neglecting, or downplaying the applicability of a broader range of general rules that are more difficult to interpret; second, the phrase 'weapons, means or methods of warfare' may be interpreted to refer only to physical weapons and their normal or intended use, with the meaning of 'means or methods of warfare' poorly understood and not extending to the ways in which certain weapons are used;[59] third, while some states take on board the multidisciplinary approach urged by the ICRC, involving experts from a variety of disciplines in the evaluation process, others leave the determination to military lawyers or 'experts' who need not draw on outside inputs despite their obvious relevance to the question of legality;[60] and, finally, most states fail to review existing technologies on an ongoing basis, in light of actual battlefield use and effects. In addition, this analysis is generally done in secret with little or no public information being produced to facilitate learning lessons from the past or from other contexts. As a result, even where they are followed, such processes will tend to produce narrow legal interpretations and thus are unlikely to provide a substantial barrier to the uptake of new weapon systems that present unknown risks. In some cases, states have asserted reservations under Additional Protocol I that seek to exempt whole categories of weapons from falling under those rules. For example, the UK government's reservation to Additional Protocol I states, inter alia, that 'the rules so introduced do not have any effect on and do not regulate or prohibit the use of nuclear weapons'.[61]

Engendering a culture of review

Many of the known review processes appear to be ill-suited to assessing certain new technologies of warfare for compliance with international law. First, the acquisition or development of some new technologies will simply not be subject to review at all: either that technology will fall outside the narrow definition generally accorded to 'weapons, means or methods of warfare' (as may be the case with many cyber capabilities[62]) or its development will occur outside normal military processes and

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59 The Commentary to Article 36 endorses a conservative approach regarding which uses of weapon should be considered, confining the analysis to 'normal or expected use'. Fry takes the view that the Commentary (and, by extension, the *Guide*, which endorses this aspect of the Commentary) takes an unnecessarily narrow view on this point. James D. Fry, 'Contextualized legal reviews for the methods and means of warfare: cave combat and international humanitarian law', in *Columbia Journal of Transnational Law*, Vol. 44, 2006, p. 453: 'The phrase "in some or all circumstances" [in Article 36] does not unreasonably oblige states to foresee absolutely all uses of a weapon or method of warfare. However, it does indicate that the commentators are far too passive in interpreting Article 36. Indeed, "in some or all circumstances" suggests that these legal reviews must consider anticipated uses of weapons beyond those that are considered "normal." . . . Moreover, . . . significant changes in anticipated use or use itself calls for repeated review of legality to ensure continued compliance with international law, even after initial deployment of a weapon or method'.

60 ICRC, *Follow-up to the 28th International Conference*, above note 58, p. 25.

61 UK Government, The Geneva Conventional Act (First Protocol) Order 1998, Schedule (a), available at: http://www.legislation.gov.uk/uksi/1998/1754/schedule (last visited 20 May 2012).

62 The US Air Force, however, explicitly includes cyber capabilities within the scope of review: *Legal Reviews of Weapons and Cyber Capabilities*, Air Force Instruction 51-402, 27 July 2011.

so fail to come to the attention of the bureaucratic apparatus charged with undertaking review. Second, if review does occur, there may be insufficient expertise or capacity within the review body, or those it seeks input from, to adequately understand the operation and effects of the technology. Third, the frame for assessing legality often incorporates the narrow interpretations described above, where only 'normal' or expected uses of the technology are considered (with little by way of a boundary established to prevent use outside of such parameters) and no reassessment is made on the basis of actual use and actual effects post-review. Finally, even if a broad approach is taken, existing international law, with its open terms and focus on 'balances', may be reasonably interpreted as not addressing the technology or allowing the technology, despite concerns about its humanitarian or environmental impact. These inadequacies should be cause for significant concern: democratic states have a duty to justify the deployment of new technologies that may inappropriately kill, injure, or cause wider harms in both moral and legal terms – even if some form of harm is part of the designed purpose of the technology.

The military application of nanotechnology provides a concrete example of the inadequacies of the current framework. Nasu and Faunce observe that:

> the practical value [of principles of international humanitarian law] in regulating nano-weapons is significantly hampered by indeterminacy, diverse interpretations, and scientific uncertainty that become obvious when the principles are applied to a specific new weapon.[63]

As they note, '[t]echnological advancement all too often entails adverse effects on the environment or human health that may not immediately be so obvious after its full import into battlefields is experienced'.[64] Further, where significant investment and time have been devoted to a new technology, the pressure on military lawyers to defend its legality may be very great, even if unstated; for example, in the absence of clear evidence of adverse long-term effects, the confidently claimed military advantages of the technology may allow reviewers to strike the balance between military considerations and possible harm in favour of legality.[65] In such a case the standards of proof required of the different elements being balanced may be quite different.

While the creation of an international body charged with scrutinizing new technologies is politically implausible right now, some mechanism for strengthening international capacity and coordination is required.[66] The role of civil society aside, formalized coordination between states in shaping standards around new technologies could be a significant part of the solution. The responsibility for

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63 Hitoshi Nasu and Thomas A. Faunce, 'Nanotechnology and the international law of weaponry: towards international regulation of nano-weapons', in *Journal of Law, Information and Technology*, Vol. 20, 2010, p. 53.
64 *Ibid.*, p. 47.
65 *Ibid.*, p. 48.
66 See Marie Jacobsson, 'Modern weaponry and warfare: the application of Article 36 of Additional Protocol I by governments', in Anthony M. Helm (ed.), *The Law of War in the 21st Century, Weaponry and the Use of Force*, Naval War College, Newport R.I., 2006, p. 184.

carefully considering each new technology and its relationship to legality and broader considerations of humanity should be a shared one, including during the conceptualization, design, and manufacture of weapons. However, it is not clear from current practice that states are undertaking their responsibilities in a way that adequately assesses the humanitarian and moral problems that weapons technologies can pose. Without greater transparency and sharing of information it is hard to see that the national-level processes currently in place can provide the basis for more progressive efforts to set standards regarding weapons. There are few if any examples of weapons that have been found to be problematic through a national review mechanism and where the state has then gone on to promote a new international standard with respect to the particular technology. Similarly, there are few if any examples of states revisiting their reviews of weapon legality in the wake of evidence that existing weapons are causing unacceptable humanitarian or environmental harm.

Conclusion

The picture outlined in this article is of civil society undertaking a range of broad informal roles with respect to setting new moral and legal standards regarding weapons, contrasted with formal national-level mechanisms that are narrowly defined and opaque. Civil society's roles are 'informal' in so far as they are not generally mandated by any official body. They tend to be ad hoc and gradual and develop momentum on particular issues due to the convergence of a wide range of factors relating to the problems and opportunities presented. However, across all of these functions civil society is working with limitations on available resources, with the funding that goes into the development of new technologies far outstripping the money that goes into documenting harm, analysing that data, and mobilizing political consideration of the issues. A particular challenge for civil society with respect to weapons will be the prioritization of resources for specific issues in a context where a range of new technologies raise moral or humanitarian concerns for the future. Bound up with this is the risk that attention to such new technologies, which may spark public and media engagement, may draw focus and resources away from existing weapon technologies that are already creating patterns of distinct and severe humanitarian harm. In such a context, giving critical attention to the mechanisms by which new weapon technologies are assessed may provide an efficient entry point for critiquing a range of emerging technologies.

While critical engagement in weapon review processes may be developed at a national level this would be substantially augmented by the presence of international fora where weapons can be discussed in some detail. At present it is only the UN Convention on CCW that can provide space for consideration of various weapon technologies under its existing mandate, yet this mechanism has spent much of the last decade focused on explosive remnants of war, anti-vehicle mines, and cluster munitions (despite cluster munitions already being subject to international legal prohibition). While the UN Convention on CCW provides

relatively good access to civil society to present data and engage in debate, and has in the past given attention to areas of new technology (for example, blinding laser weapons), the consensus-based process for establishing the agenda might limit consideration of weapons where certain states are strongly opposed to greater transparency about those weapons. The same consensus-based approach is also likely to severely limit the extent to which any new prohibitions or restrictions can be adopted within that framework. In order to strengthen standard-setting in such a context in the short-term, civil society is likely to have to focus on framing concerns around certain weapons in the public discourse in the hope that such a process will eventually precipitate development of a forum where formalized discussions can be undertaken.