

Categories of Challenge now facing the Chemical Weapons Convention¹

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The Organization for the Prohibition of Chemical Weapons (OPCW) has now existed for a decade, functioning roughly as it should. So a world free of chemical weapons seems attainable. This paper is about the well-being of the CWC – the 1993 Convention on the Prohibition of Chemical Weapons – as the stockpiles and production facilities finally disappear. It has two themes. One is that, in the absence of effective measures of technology governance, resurgent chemical weapons born out of ‘dual use’ technology will remain a possibility, even a substantial probability. We need to decide now how the CWC should best be implemented so as to provide that governance. The original negotiators of the treaty fortunately did not disregard this key requirement. The second theme is the tension between principle and political expediency that will continue to affect implementation of the CWC. It is a tension that may well increase once the actual disarmament required by the treaty is complete, which in theory will be by 29 April 2012.

People often point to the CWC as showing that the problem of chemical weapons is now solved. It is not. Nor will it be unless the two themes just stated are properly addressed in implementation policy.² Now is the time to act, while the impending Second CWC Review Conference is obliging the OPCW to lift its sights further into the future than the press of day-to-day business has hitherto allowed. Confronting the CWC are serious challenges, in part a consequence of that tension between principle and practice and in part because of wider political and technological change. The present paper characterizes the main challenges and thus points towards possible countermeasures. Its viewpoint is within the academic sector of civil society, where the Convention perhaps has its staunchest friends and where expectations for the Second Review are high. We begin by examining the purpose of the CWC.

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¹ Item 459/Rev.1 of 12 March revised 23 May 2007.

² The present paper is more on the second theme than the first, which is being developed further in a paper based on the author’s presentation at the last Pugwash CBW workshop (Geneva, 18-19 November 2006), “The Governance Regime for Biological and Chemical Weapons, and the Review Conferences of 2006 and 2008”.

Why is the CWC important?

A yardstick for measuring the value of the CWC today is the protection it gives us against particular weapons of mass destruction (WMD), whether they be in the hands of states or of terrorists. That protection is indeed valuable, but to my mind it is not the main reason why the CWC is important. More important is the protection that the CWC, if implemented as its negotiators envisaged, provides against future chemical weapons that will be capable, not of killing us in great numbers, but of *changing* us: weapons that could thereby confer upon aggressors accessible new means for coercion, repression, demoralization or subjugation: weapons that attack, not our lives, but our humanity.

Both chemical and biological weapons (CBW) share a technical characteristic possessed by no other weapon, which is this. CBW can attack life just as other weapons can, being capable of killing their victims no less dead than can bullets or bayonets; but they work by targeting and then disrupting particular processes that contribute to life, which other weapons cannot do save by accident, not design. The nerve gases, for example, target nerve-signal transmission; the blood gases, cellular respiration mediated through the blood. Bacteria and viruses may go for particular organs. Advocates of CBW have long propagated the notion that the effects of CBW might therefore be tailored to suit different tactical or strategic purposes.³ But, beyond ‘tear gas’, the disabling skin burns that mustard gas can cause and the uncertain promise of the early psychotropic ‘incapacitating agents’, this did not begin to become a real option until the pace of change in applicable science and technology (S&T) accelerated during the latter part of the last century, around the time of negotiation of the 1972 Biological Weapons Convention (BWC) and its chemical follow-on. It was becoming increasingly plain then, to those who followed such things, that advances in the life sciences, coupled with technologies that allow the analysis and construction of complex biologically active molecules, could eventually make it possible to design a chemical that would interfere with *any* life process that could be understood in molecular terms. That could extend to the processes of development, inheritance, reproduction, locomotion, sensation, cognition and any other process that keeps us functioning properly as normal human beings.⁴ Microbes that are otherwise non-pathogenic might be modified to function as site-specific carriers for harmful molecules. The potential is there, inasmuch as it is not manifest already, for inducing many different forms of malfunction, maybe even ones that discriminate between ethnic groups. It is this potential for changing human beings – for manipulating at will the determinants of our humanity -- and doing so in pursuit of who-knows-what aggressive strategy that makes CBW uniquely menacing⁵ -- weapons, in the extreme, of living death. The existence of the BWC is testimony to our sense that we need protection against such a threat. The CWC can provide it.

³ See, for example, Brig-Gen J H Rothschild, *Tomorrow's Weapons: Chemical and Biological*, New York: McGraw-Hill, 1964.

⁴ An early statement of this theme is in: J P Perry Robinson, “Chemical, biological and radiological warfare: futures from the past”, invited submission to the Independent Commission on Disarmament and Security Issues [Chair: Olof Palme], September 1981.

⁵ See, further, Matthew Meselson and Julian Perry Robinson, “Chemical warfare and chemical disarmament”, *Scientific American* vol 242 no 4 (April 1980) pp 38-47 at p 47; and Matthew Meselson, “Averting the hostile exploitation of biotechnology”, *The CBW Conventions Bulletin* no 48 (June 2000) pp 16-19.

Science has a way to go yet before the full horrors can be upon us, but the writing is on the wall. For example, the most obvious (though not the only) motivation that can be imputed to Iraq's programme in the 1980s to weaponize aflatoxin⁶ is a desire to harm through latent liver cancer a subsequent generation of anticipated adversaries. As Dutch UNSCOM commissioner Jack Ooms put it, the objective must have been a weapon of delayed genocide.⁷ Artillery shell charged with aflatoxin are said to have been used during the suppression of the Shi'ite uprising in March 1991.⁸ This has not been confirmed.

Others may point to other reasons why the CWC is important. The selectivity of action of chemical weapons that gives them their dehumanizing potential is not their only distinctive feature. Another is that, as destroyers of life on a large scale, some chemical weapons, and biological weapons too, can rightly be called WMD. When first used, on 22 and 23 April 1915, the device that brought chemical warfare out from its prehistory, namely massed cylinders of liquefied chlorine gas that could simultaneously be opened into the wind, reportedly asphyxiated five thousand French and Canadian troops at Ypres in Belgium and harmed a further 15,000.⁹ Similar numbers of people are said to have fallen victim to Iraqi mustard and nerve gas in the Kurdish town of Halabja after chemical air raids during 16-18 March 1988.¹⁰ For biological weapons no comparable experiences have entered the established historical record,¹¹ but during 1964-68 the United States conducted unprecedentedly large field-trials over open sea of aircraft bioweapons, each of which was found capable of laying down a cross-wind line source of pathogenic microbial aerosol tens of kilometres long that infected experimental animals at sea level over a distance of several tens of kilometres downwind.¹² That could translate into an infective hazard

⁶ See the entry for 25 August 1995 in the News Chronology section of *The CBW Conventions Bulletin* no 30 (December 1995) p 17.

⁷ See the entry for 6 May 1997 in the News Chronology section of *The CBW Conventions Bulletin* no 37 (September 1997) p 16.

⁸ See the entries for 7 and 7-20 March 1991 and 12 March 2001 in the News Chronology section of *Chemical Weapons Convention Bulletin* (later *The CBW Conventions Bulletin*) no 12 (June 1991) pp 13-14.

⁹ But the records are poor and these commonly and widely quoted numbers have been described as too large, albeit initially only by German commentators. For a recent account, see Gordon Corrigan, *Mud, Blood and Poppycock: Britain and the First World War* (London: Cassell, 2004) at pp 164-65, whose view is that, in reality, the chlorine casualties probably numbered around 1500, with 200 deaths.

¹⁰ See the entries for 18 March 1988 and 11 July 2002 in the News Chronology sections of *Chemical Weapons Convention Bulletin* (later *The CBW Conventions Bulletin*), no 1 (Summer 1988) p 11, and no 57 (September 2002) p 55.

¹¹ But see, for example, Li Xiaofang (editor), *Qixie Kongsu: Blood-Weeping Accusations: Records of Anthrax Victims*, Beijing: Zhongyang Wenxian Chubanshe (2005), ISBN 7-5073-1862-1. It now seems highly probable that the Japanese Imperial Army conducted acts of large-scale biological warfare in China. There is, in addition, strong evidence of widespread use of biological weapons in Brazil during 1957-63 in order to displace indigenous peoples from areas of the Mato Grosso: see, especially, the 20-volume report of the commission headed by Brazilian Attorney-General Jader Figueiredo to investigate charges of corruption among officials of the Indian Protection Service that was published in March 1968. An account of the Figueiredo Report, which is in Portuguese, can be found in Shelton H Davis, *Victims of the Miracle* (Cambridge University Press, 1977) at pages 10-14. See also: Don McCullin with Lewis Chester, *Unreasonable behaviour: An autobiography* (London: Jonathan Cape, 1990) at pages 150-5, and Seth Garfield, "Brazil and the charges of genocide against its indigenous population", January 1995, www.ciaonet.org/wps/gas01, a Yale University International Security Studies working paper accessed 25 July 2004.

¹² Citing the original field-trial report, Ed Regis, in his *The Biology of Doom* (New York, 1999), writes that in 1964, during Operation Shady Grove off Johnston Atoll in the Pacific, Marine Corps *Skyhawks*

to every person living within an area on the order of thousands, even tens of thousands, of square kilometres. In other words, it appeared from experimental data that some biological weapons would be capable of producing effects comparable in their magnitude to the life-destroying potential of nuclear weapons. Within NATO shortly before then, defence scientists had also been anticipating, correctly, a new generation of *chemical* weapons having similar area-effectiveness.¹³

So, the CWC and the BWC as protection against WMD – that is indeed an alternative frame within which to assess challenges to the treaty. Somehow it has come into common use since the ending of the Cold War, even though it predates it and even though it is a potentially counterproductive and dangerous idea. For advocacy purposes, it has the benefit that there exists widespread concern about WMD in general, and this can be mobilized to propel matters relating to WMD high up the political agenda, even to the point of setting loose war. Not often do CBW attract such priority. Yet the CBW that are most likely to find actual use today are hardly weapons of mass destruction, while those of the future that we fear because they may change us are not mass killers either. It is, to say the least, short-sighted to condone such weapons by implying that WMD are the real priority.

One other common measure of the importance of the CWC is the protection it affords against certain forms of terrorism. This overlaps with the WMD frame. From the USA we have been receiving, very strongly indeed, the idea that it is only a matter of time before terrorists introduce CBW into their campaigns, and that the consequences for society could be catastrophic. So persuaded is the US Congress of this threat that it is currently authorizing and appropriating thousands of millions of dollars annually for countermeasures against CBW terrorism.¹⁴ There is an associated tendency to judge all CBW policy measures, including support for the BWC and the CWC, in terms of their effectiveness against such terrorism. This alarm obscures an important technical reality: that the practical difficulties of achieving catastrophic results from acts of CBW terrorism render such results exceedingly improbable. This is partly why a seven-country study of the vulnerability of EU society to radiological and CBW terrorism has just concluded that any such acts of terrorism today or in the immediate future are unlikely to achieve more than localized nuisance.¹⁵ Yet risk-

laid down demonstrably infective clouds of tularaemia and Q-fever bacteria over a sea-level area of nearly 5000 square kilometres per aircraft.

¹³ North Atlantic Treaty Organization, Standing Group, von Kármán Committee. *Future developments in chemical warfare*, from the report of Working Group X on Chemical, Biological and Radiological Defence, March 1961, as distributed to the UK Ministry of Defence Advisory Council on Scientific Research and Technical Development, paper no SAC 1928, 11 February 1969, in The National Archive, Kew, file WO195/16864. Regis, *op cit*, citing another US field-trial report, writes that in 1968, during sea trials off Eniwetok Atoll, Air Force *Phantoms* discharging dry-agent spraytanks loaded with staphylococcal enterotoxin B over caged monkeys and other animals were estimated to have secured 30 percent casualty rates over 2400 square kilometres per aircraft.

¹⁴ For detailed expenditure figures, see Stephanie Chang and Alan Pearson, *Federal funding for biological weapons prevention and defense, Fiscal Years 2001 to 2007*, Washington, DC: The Center for Arms Control and Non-Proliferation, June 2006.

¹⁵ See the *Interim Report* dated 17 October 2006 from European Commission Framework 6 project 502476, *Assessment of the vulnerabilities of modern societies to terrorist acts employing radiological, biological or chemical agents with the view to assist in developing preventive and suppressive crisis management strategies* (ASSRBCVUL). Some particulars are posted on the European Union website at http://ec.europa.eu/research/fp6/ssp/assrbcvul_en.htm. The Final Report, dated May 2007, has just been submitted but, in contrast to the unclassified Interim Report, it is marked EU-RESTRICTED. The accompanying Executive Summary, however, is freely accessible.

assessment in this area remains very poorly developed indeed, at least in public,¹⁶ and much more research into the matter seems needed, given the magnitude of conceivable consequences. Nevertheless, for the time being there appears to be no good reason for giving an especially high priority to counter-terrorism as a directing influence on CBW policy-making, still less for treating the CWC as though it were meant as protection against terrorism. The CWC does indeed offer some valuable counter-terrorist tools if it is implemented as it was supposed to be; but that is not its primary value.

The contemporary US biosecurity literature gives us insight into the US concern about CBW terrorism. The concern seems to be conditioned by a belief that terrorists have, or could have, ready access to science and scientists, and that terrorists are somehow more likely to look to new technology than to traditional instruments of terror for their weapons of choice. This would explain the tendency common among US writers to consider the biosecurity implications of S&T change chiefly in terms of its exploitability by terrorists.¹⁷ Such literature may increase our awareness of bioterrorism, but its greater value is surely in informing us of the vulnerability of S&T change to malevolent abuse considered more broadly than abuse by terrorists.

A conclusion, then, is this. The main function of the CWC today is to secure elimination of existing stocks of chemical weapons and factories for them. Once that disarmament has been completed, in theory by 2012, the function of protecting against hostile application of dual-use chemicals and chemistry will become paramount. That is why the CWC is and will remain important. Arguably, the hostile application that should head our list of concerns is the sort that aims to exploit the dehumanizing potential of chemical weapons. The mass-killing and terrorization potentials must be up there too, but they are not unique to CBW. In this conclusion we have the makings of an ordering principle that can be applied in ranking the challenges that confront the CWC.

What would be a challenge to the CWC?

When, on 3 September 1992, Ambassador Adolf Ritter von Wagner presented a laboriously negotiated draft CWC for the approval of the Conference on Disarmament (CD) in Geneva, he reiterated a point he had made often during his chairmanship of the negotiating body, the CD Ad Hoc Committee on Chemical Weapons:

There is no precedent for this global, comprehensive and verifiable multilateral disarmament agreement. The draft convention provides for a cooperative, non-discriminatory legal instrument to eliminate the spectre of chemical warfare once and for all. The unique character of its contents is strengthened by the consistent application of two principles: overall balance and adaptability to future needs. Future States parties are offered a balanced legal instrument providing clarity on the fundamental obligations and, at the same time, enough subtlety on matters of implementation so that, with the

¹⁶ See Milton Leitenberg, *Assessing the Biological Weapons and Bioterrorism Threat*, US Army War College Strategic Studies Institute monograph, December 2005.

¹⁷ As, for example, in the so-called 'Fink follow-on' report: Institute of Medicine and National Research Council of the US National Academies, Committee on Advances in Technology and the Prevention of Their Application to Next Generation Biowarfare Threats (Co-Chairs: Stanley M Lemon and David A Relman), *Globalization, Biosecurity, and the Future of the Life Sciences*, Washington, DC: The National Academies Press, 2006.

consent of States parties, the respective provisions may still mature and evolve in the course of future practice.”¹⁸

The draft treaty, he was telling the CD, was a delicate structure in which compromises -- on six central matters: the scope of obligations, verification of compliance, safeguards, disarmament, executive procedures, and international cooperation in chemistry -- were balanced against one another without, however, precluding from their future implementation any adaptation, if all states parties agreed, to a changed environment. Potential parties were, in effect, being invited to decide, through their domestic political processes, whether they would be better off inside that package of compromises than outside it, with an assurance that the terms of their engagement were not necessarily immutable.

One hundred and eighty eight states have since signed up to this deal (as of mid-April 2007), 182 of them as full parties. The most conspicuous holdouts are Egypt, North Korea and Syria, which have not signed the treaty, and Israel, which has signed but not ratified it. The assumption has to be that all four holdouts wish to maintain the option of chemical-warfare armament. Of the 182 states parties, 12 have, as required by the treaty, declared that they possessed factories for making chemical weapons at some time after 1945.¹⁹ Of those 12, five have also declared that they possessed stocks of chemical weapons at the time the CWC entered into force, as has one additional state party that must presumably have imported the weapons rather than making them for itself. The combined declared stocks have amounted to rather more than 70,000 tonnes of CW agent.²⁰

A working principle is this. Any development or change that causes a state to question its continuing allegiance to the CWC would be a challenge to the treaty. If major or many states were to start such questioning, the challenge would be serious, requiring a collective response if the treaty were to remain in good order. For each state party the constant question would be whether benefits flowing from the CWC regime continued to outweigh the attendant costs and to compensate for any penalties there might be to the national interest: are we still better off inside the regime than outside it? In fact, of course, there are few if any countries where the relevant decision-makers would address the matter in such abstract or holistic terms. Decision would as always be driven by bureaucratic and domestic politics, in other words by the competing interests that such politics serve to accommodate. The cost-benefit frame, however, provides those involved with a convenient and respectable language in which to debate and present the decision, and us to assess it. For this reason it is used here as a framing concept with which to specify the more important challenges to the CWC.

¹⁸ CD/PV.635, 3 September 1992, p 8.

¹⁹ The 12 declared possessors of former Chemical Weapons Production Facilities are Bosnia & Hercegovina, China, France, India, Iran, Japan, Libya, Russia, Serbia & Montenegro, South Korea, the UK and the USA.

²⁰ The 6 declared possessors of chemical-weapons stocks are Albania (declaring 16 agent-tonnes to the OPCW), India (1044 agent-tonnes, maybe somewhat more), Libya (24 agent-tonnes), Russia (40,000 agent-tonnes), South Korea (1056 agent-tonnes, maybe somewhat less) and the USA (27,800 agent-tonnes). Like the (China-supplied) Albanian stockpile, the Libyan one appears far too small to have had much military significance, but Libya also declared that it possessed thousands of tons of precursor chemicals – a supply sufficient to provide a stockpile of chemical weapons exceeding those of India and South Korea together. The amount of mustard and nerve gas used by Iraq during its 1980-88 war with Iran is believed to have totalled 2540 agent-tonnes. The UK had destroyed its cold-war stockpile of some 62,000 agent-tonnes well before the CWC had been agreed, as had other erstwhile possessors.

Categories of challenge

One set of challenges can be seen as primarily technological in character, being a consequence, mainly, of S&T change. A second set is more obviously political. All of them have the potential to harm the CWC if special effort is not made to counter them. They are discussed in turn.

NEW UTILITIES FOR CHEMICAL WEAPONS

Disarmament, especially WMD disarmament, is an objective widely seen as beneficial, but armament also can bring benefit, by contributing to security. Under some circumstances that could conceivably include chemical-warfare armament. Military options forgone through renunciation of chemical weapons might then be significant on the cost side of remaining within the CWC regime. Yet the taboo seemingly associated with chemical and other disease weapons appears to mean that most states are content with the disarmament required by the CWC -- except that circumstances may now be creating utilities for chemical weapons not previously considered or accessible.

At least three types of new utility can be discerned, and examples of all three seem evident in recent conflicts or in preparedness for them. The first is a consequence of wider changes in the nature of warfare, rather as the shift from 'massive retaliation' to 'limited war' doctrine towards the end of the 1950s elevated the status of CBW in Western military thinking, causing new utilities to be seen for the weapons, especially in Third World settings. Today, a new type of organized violence is taking the place of, for example, those confrontations between highly disciplined and technologically advanced armed forces that characterized the later Cold War. Conflicts these past two decades in the Balkans, the Caucasus, the horn of Africa, Rwanda, Liberia, Sierra Leone, Angola, Sri Lanka, Afghanistan and post-invasion Iraq have eroded formerly clear distinctions between war, organized crime and large-scale violation of human rights. These new wars are fought by seeking political control through the displacement, or worse, of civilian populations and through the sowing of fear and hatred.²¹ Because chemical weapons can lend themselves particularly effectively to such objectives, they may conceivably have a greater affinity to the new wars than they did to the old, so, notwithstanding the CWC, they may have an expanding future.²² This is reason why the recent chemical warfare allegations, emanating from Sudanese, Israeli, Palestinian, Baluchi, Lebanese and US/Iraqi sources, should not remain uninvestigated and thus uncorroborated. Remaining unresolved, a plethora of allegations could imply treaty failure.

The CWC provides for a compliance-verification system run by an intergovernmental organization (the OPCW) having an international inspectorate that ought in principle to countervail this new-utility challenge. But the routines of that system were designed against Cold-War-period conceptions of utility, meaning that the lists of chemicals and types of industrial facility that the OPCW now has under its immediate surveillance are dictated by the types of chemical weapon that fitted old-war, not new-war, requirements. Basically that meant focussing on toxic chemicals that were so intensely aggressive in their effects that weapons disseminating them would be

²¹ See especially Mary Kaldor, *New & Old Wars: Organized Violence in a Global Era* (second edition, Cambridge: Polity, 2006).

²² This future seems already to have begun. Instances of 'new' chemical warfare include episodes in Iraqi Kurdistan, in southern Africa, in Bosnia and perhaps in Chechnya; see J P Perry Robinson, "The General Purpose Criterion and the new utility of toxicants as weapons", unpublished paper presented at the 15th workshop of the Pugwash Study Group on Implementation of the CBW Conventions, Oegstgeest, the Netherlands, 23-24 June 2001.

competitive, in quantitative casualty-producing terms or other such measures of tactical efficacy, with modern conventional weapons. Not a great many such toxicants exist,²³ so their coverage in the CWC schedules that govern routine OPCW verification allowed people to suppose that the main threats had thereby been brought under control. In the new wars, however, it is not so much relative aggressivity that determines the utility of CW but rather such other factors as accessibility or availability and terrorizing potential. A whole host of toxic industrial chemicals (TICs) and other chemicals not hitherto regarded as CW agents might thus find application in new-war contexts, as, most recently, chlorine – that long-obsolete, by old-war standards, killer gas that was briefly weaponized during the First World War -- has done in Iraq.²⁴ The fact that most of these chemicals are not listed in the CWC control schedules does not mean that their use for CW purposes is permitted, nor that the CWC is unavailing against them. It means only that the routine international verification procedures currently run by the OPCW in regard to industrial activities are not directed at them. In fact, any abuse of a toxic chemical for hostile purposes is totally outlawed by virtue of the comprehensive nature of the CWC's prohibitions as embodied in its so-called 'general purpose criterion' – those words in, for example, Article VI.2 of the treaty that oblige the national authorities of states parties to ensure that no toxic chemical within their territories, or in any other place under their jurisdiction or control, falls within the illegal realm of purposes prohibited by the Convention.²⁵ The challenge to the regime therefore lies in the degree to which such national controls may fail to exert a constraining effect. This, regrettably, is an area in which implementation of the CWC is weak. Only a small minority of CWC states parties have implemented the General Purpose Criterion into their domestic law.

A second major source of new utility for chemical weapons is the propensity of knowledge newly gained in the life sciences for suggesting novel modes of attack that could be the basis for militarily or politically attractive new forms of weapon. For example, if a new molecule is discovered that can exert novel disabling effects on the human body, attempts to weaponize it may well ensue. Albert Hofmann's discovery of LSD in 1943 is a case in point, although half a decade elapsed before weaponeers noticed. Or if a hitherto unknown molecular pathway serving a process of life comes to be identified, chemical agents capable of interfering with that pathway might also become identifiable and thus form the basis for a novel weapon. Of course many considerations other than novelty of effect determine the usefulness of a new weapon, so the new science is not itself the challenge to the regime that is here suggested. But it would be a step towards it; and many such can be envisaged.²⁶ This prospect is not

²³ For discussion of this point, see J P Perry Robinson, "The chemical industry and chemical warfare disarmament: Categorizing chemicals for the purposes of the projected Chemical Weapons Convention", *SIPRI Chemical & Biological Warfare Studies* no 4 (1986) pp 55-104.

²⁴ CNN from Baghdad, "Scores choke in poison gas attack", posted 0940 hrs EST 20 Feb 07 on www.cnn.com; UN Department of Public Information, release SC/8963 and IK/557 dated 22 Feb 07, "Security Council press statement on Iraq"; Organization for the Prohibition of Chemical Weapons, "OPCW condemns chlorine gas attacks in Iraq", *Chemical Disarmament* vol 5 no 1 (March 2007) p 11.

²⁵ CWC Article VI.2 opens thus: "Each State Party shall adopt the necessary measures to ensure that toxic chemicals and their precursors are only developed, produced, otherwise acquired, retained, transferred, or used within its territory or in any other place under its jurisdiction or control for purposes not prohibited under this Convention." Known as the 'Molander chapeau', this obligation prefaces the main provisions of the CWC for its industry control regime. The General Purpose Criterion is also set out in CWC Article II.1(a), which states that all toxic chemicals and their precursors are chemical weapons within the meaning of the CWC's prohibitions "except where intended for purposes not prohibited under this Convention, as long as the types and quantities are consistent with such purposes".

²⁶ A particularly rich recent source of information on advances in technology that may be applicable to CBW is the Lemon-Relman report referenced in footnote 17 above

necessarily remote. We should not, for example, disregard the statement reliably attributed to a “former high-level Defense Department official” commenting on the feasibility of US attack on Iranian underground facilities: “We can do things on the ground, too, but it’s difficult and very dangerous – put bad stuff in ventilator shafts and put them to sleep”.²⁷ Again, it is the General Purpose Criterion as used in the CWC that is the international safeguard against this challenge. But it is a safeguard only if it can be activated, and this requires continual monitoring of scientific and technological change for any new development that might challenge the regime. This is a task, it should be noted here, that cannot reliably be left to security authorities alone, simply because their surveillance of new science will always be insufficient: the scientific community at large must also be involved.²⁸

A third type of novel utility now becoming manifest is the emerging role of chemical weapons, not in the hands of terrorists or other new-war aggressors as in the first novel utility considered above, but for purposes of counter-terrorism. This utility has demonstrably become a stimulus to rich-country questioning of the CWC.²⁹ It is rooted in past counter-insurgency applications of toxic chemicals, which reach back through the Vietnam War to British, French, Italian and Spanish use of toxic chemicals in colonial situations -- a utility that the CWC was intended to suppress. Its re-emergence in counter-terrorist guise is to be seen in the proliferation of weapons based on Agent CR, evident each year in that part of the OPCW Annual Report addressing the declarations of ‘riot control agents’ required under CWC Article III.1(e), for the extreme aggressiveness and other properties of CR have caused it to be widely rejected as suited to civil police use. Police forces in the UK, for example, are equipped either with Agent CS or with PAVA for law-enforcement use, and, although the UK has also declared Agent CR to the OPCW as a ‘riot control agent’, it has issued the agent only to its military forces, for counterterrorism. The growing counterterrorist utility of chemical weapons is further evident in the vigorous advocacy to be heard in some quarters for the arming of counterterrorist forces with more advanced types of ‘non lethal’ CBW. The readiness with which the US Marine Corps has taken to toxin weapons of this type – devices disseminating Agent OC³⁰ – seems indication of a trend. So, perhaps, is the absence of any serious criticism of the Russian government for having authorized use of toxic chemicals other than riot-control agents by the *spetsnaz* forces that, on 26 October 2002, liberated 634 of the people taken hostage by Chechen separatists in a Moscow theatre. The other 129 hostages were killed by the toxicant used, which is said to have been an agent “based on derivatives of fentanyl” that had been developed by USSR special services.³¹

²⁷ Seymour M Hersh, “The Iran plans: would President Bush go to war to stop Tehran from getting the bomb?”, *New Yorker*, 17 April 2006. It is not clear whether it was a literal or a euphemistic ‘sleep’ that was meant.

²⁸ This was a matter explored by the UK CWC National Authority Advisory Committee during the October 2001 Sussex workshop on the General Purpose Criterion. See Julian Perry Robinson, “What should be the scope of the CWC? A workshop report”, *The CBW Conventions Bulletin* no 55 (March 2002) pp 1-4.

²⁹ See, for example, the Foreword by USAF Lt-Gen Robert J Elder, Jr, Commandant of the US Air War College, to N T Whitbred IV [Commander, USN], “Offensive Use of Chemical Technologies by US Special Operations Forces in the Global War on Terrorism: The Nonlethal Option”, *The Maxwell Papers* [Maxwell Air Force Base, AL: Air War College] no 37, July 2006, pp iii-iv.

³⁰ See the entry for 22 March 1996 in the News Chronology section of *The CBW Conventions Bulletin* no 32 (June 1996) p 27.

³¹ See the entry for 26 October 2002 in J P Perry Robinson, “Disabling Chemical Weapons: a Documented Chronology of Events”, 1 November 2003, pp 139-42. A recent publication in the medical literature identifies the agent used – without, however, citing any authority for the information

Comparable in some respects, if very different in others, is a counterterrorist utility for CBW that Israel, for example, has demonstrated in its espousal, following the Munich Olympics outrage in August 1972, of assassination as a major tool in counterterrorism.³²

Perhaps exacerbating the new-utility challenge is the increasing dependence of some countries, not only on state forces for law enforcement including counterterrorism, but also on the private military contractors who have been providing security services at local, national and even global level. The potential value and, therefore, take-up of ‘non lethal’ chemical weapons by such contractors, who may be regulated less stringently than military or police forces, is already starting to become a matter of expressed concern.³³

PROLIFERATION OF CHEMICAL WEAPONS

Nowadays when people speak of the proliferation or non-proliferation of chemical weapons it is not always clear what they are talking about. In its normal usage, the word ‘proliferation’ conveys the sense that the weapons it is referring to continue to exist somewhere. This works for nuclear weapons, which are not wholly illegal, but since chemical weapons are outlawed by the CWC, ‘CW proliferation’ or ‘CW non-proliferation’ implies that the treaty is somehow ineffective or irrelevant. Yet even friends of the CWC use the expression, so it would appear to have a special meaning.

Indeed it does. The special meaning applies ‘proliferation’ or ‘non-proliferation’ to chemical weapons as the CWC defines them not to chemical weapons in the ordinary meaning of the term, which is different. The CWC means chemical weapons not only as tangible objects – special artefacts built for arsenals or military stockpiles -- but also as holdings of “toxic chemicals and their precursors” that do not satisfy the General Purpose Criterion. This means chemicals held for purposes other than “purposes not prohibited under this Convention”, as the CWC puts it, and which are not of “types and quantities that are consistent with such purposes”.³⁴ In other words, it is *intentions* that the CWC also means, not just weapons in the concrete sense. Now that international chemical disarmament is far advanced, thanks to the

– as something called “Kolokol-1 [...] containing carfentanil”; see James Geoghegan and Jeffrey L Tong, “Chemical warfare agents”, *Continuing Education in Anaesthesia, Critical Care & Pain* vol 6 no 6, (December 2006) pp 230-34.

³² See Aaron J Klein, *Striking Back: The 1972 Munich Olympics Massacre and Israel’s Deadly Response* (New York: Random House, 2005) pp 104-11 and, describing the CBW assassination of Wadi Haddad in 1978, pp 205-8. On the attempted CBW assassination of Khalid Mish’al, see the entries for 25 September 1997 and 19 February 1998 in the News Chronology sections of *The CBW Conventions Bulletin* no 38 (December 1997) p 29 and no 40 (June 1998) p 23. The CBW agent used in this latter episode is said to have been fentanyl, administered through the ear.

³³ See, for example, Alan Pearson, “Incapacitating biochemical weapons: science, technology, and policy for the 21st Century”, *Nonproliferation Review* 13(2):151-88, July 2006.

³⁴ This CWC definition of chemical weapons is to be found in Article II.1 (see note 25 above), with Article II.2 stating that by ‘toxic chemical’ is meant “Any chemical which through its chemical action on life processes can cause death, temporary incapacitation or permanent harm to humans or animals”. The “purposes not prohibited under this Convention” that the definition uses in order to exempt some applications of chemicals from the strictures of the CWC are themselves defined later in Article II, in paragraph 9, thus: “(a) Industrial, agricultural, research, medical, pharmaceutical or other peaceful purposes; (b) Protective purposes, namely those purposes directly related to protection against toxic chemicals and to protection against chemical weapons; (c) Military purposes not connected with the use of chemical weapons and not dependent on the use of the toxic properties of chemicals as a method of warfare; (d) Law enforcement including domestic riot control purposes.” The terms used in subparagraph (d) are not themselves defined, but Article II.7 states that ‘riot control agent’ means “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”.

OPCW, the term ‘CW proliferation’ primarily refers to the spread of intangibles, not things; and, above all, it refers to the diffusion of technologies that could be applied to CBW *if their possessors so chose*.

It might well be asserted that anyone who speaks of ‘CW proliferation’ without recognising the significance of the General Purpose Criterion should not expect to be taken seriously; nor, even more so, should the spokespersons of governments that have not implemented the criterion adequately. Regrettably (to repeat), that means the majority of OPCW member states, even including ones in which the idea of ‘dual use’ technology is well known.

The challenge that CW proliferation poses to the CWC can be disaggregated into two main forms. One is failure to understand what constitutes dual-use technology and the drivers of its diffusion around the world. Without such understanding, governance of the technology, including the formulation and implementation of antiproliferation measures, is bound to be inadequate. The second form of challenge resides in the existence of state or non-state entities that are ready to aid the exploitation of dual-use technology for purposes of weaponizing toxic chemicals. Such exploitation assistance might possibly be unwitting. The state entities often considered as proliferators in this sense include states that have been characterized as ‘rogue states’ or as ‘failing states’. They may also include states that have deliberately chosen to maintain chemical-weapons capability. This last, it needs to be observed, is a category that ought to exclude all OPCW member states. Yet, for all most of us can tell, it may not in fact do so. Barring challenge inspection or investigation of alleged use, the OPCW Technical Secretariat is able to see only the chemical weapons that have been declared to it by their possessors; and, even then, the CWC confidentiality regime within which it is obliged to operate may well prove too opaque to furnish adequate assurance to people outside the need-to-know reaches of the Secretariat.

As for proliferators among non-state entities, these could include business corporations heedlessly serving a lucrative marketplace, criminal organizations feeding a black market, and terrorist groups seeking new weapons. This is an especially shadowy area about which even less is known (outside, presumably, the world of policing and security intelligence) than state-level proliferation. Any such greedy business-persons or opportunistic criminals there may be rarely surface. Again, most of us just do not have knowledge enough to accept or to reject the received wisdom. As for proliferation of CBW among terrorists, this is, for the largely technological reasons alluded to earlier, probably myth. While it is known that certain terrorist groups have indeed looked at CBW options, such intent as they have had to acquire CBW does not seem to have been translated into significant capability. Thus far, other means for terrorist violence have generally proved more attractive or more accessible to them and, since the aberration of Aum Shinrikyo in the 1990s, only the most fooling terrorist attempts to acquire CBW have been observed. This is not to say that it could not happen: the chlorine reports from Iraq and, before that, from Chechnya, Bosnia and Sri Lanka, show that it can happen at the non-WMD end of the scale. And the lesson to draw from the still-unresolved ‘anthrax letters’ affair in the USA during late 2001 is that CBW can put potential for great harm into the hands of technically competent and skilled individuals.³⁵

³⁵ See, further, Martin Rees, *Our Final Century: Will the Human Race Survive the Twenty-first Century?* (London: Heinemann, 2003); and Milton Leitenberg, *The Problem of Biological Weapons* (Stockholm: The Swedish National Defence College, 2004), pp 137-55.

In measures that have been taken outside of the CWC, such as the activities of the Australia Group and also UN Security Council resolutions 1540 (2004) and 1673 (2006), parts of the international community have put in place CW antiproliferation mechanisms that complement those of the CWC. But these mechanisms, which are chiefly dependent on import and export controls, have to function within a trade and technology-transfer environment that does not favour them, an environment in which globalization is impelling diffusion of industrial and other technologies around the world at what seems to be an accelerating rate. The capability of individual states to acquire chemical weapons, if they so choose, is thereby enhanced, and, if they still need specialized assistance, clandestine procurement networks have now gained increasingly dense cover within which to operate. That networks of this type can indeed spring up to meet demand was clearly shown by the UNSCOM/UNMOVIC investigation of Iraqi CBW acquisition³⁶ and by the Libyan CW programme. Even states that have no immediate wish to acquire CW may nevertheless move to take advantage of these various possibilities as a hedge against circumstances changing – by, for example, building what could serve as ‘break-out capacity’ into their industrial infrastructure, rather as the USSR created ‘mobilization capability’ for manufacturing bioweapons within its biotech industry during 1973-91. Iran, victim on a terrible scale to Iraqi chemical weapons during 1983-88, very probably falls into this category³⁷ while at the same time being amongst the most vocal supporters of the CWC regime and, especially on the medical side, a proactive participant in its international procedures. Nor is there any clear impropriety in such a position, for all the industrial powers, including ones that menace Iran, have manufacturing industries to which they could turn at short notice for CBW agents (whose full weaponization would, however, be more demanding). The fact nevertheless remains that proliferation of this type is a threat to confidence in the regime and therefore a serious challenge to it for as long as the problem of ‘dual use’ persists.

Nor should it be forgotten that duality exists in a variety of forms. The emphasis here has been on civil-military duality, exemplified by technology that may contribute to production both of pesticides, say, and of nerve gas. This duality has important variants, such as the applicability of law-enforcement technology based on toxic chemicals like Agent CS (an applicability that expressly qualifies as a purpose not prohibited under the CWC) not only to the counterterrorist purposes addressed earlier but also to other military purposes, such as those displayed during the Vietnam War. And beyond that there is the offence-defence duality, exemplified by the ready applicability to CBW of knowledge and other forms of intangible technology that are directly advanced through the study and development of anti-CBW protection. This last form of duality may be especially likely to create dangerous impressions in other countries that it is concealing or dissembling CBW development.

³⁶ On UNSCOM investigations, see especially: Tim Trevan, *Saddam's Secrets: The Hunt for Iraq's Hidden Weapons* (London: HarperCollins, 1999); Graham Pearson, *The UNSCOM Saga: Chemical and Biological Weapons Non-Proliferation* (London: Macmillan, 1999) and *The Search for Iraq's Weapons of Mass Destruction: Inspection, Verification and Non-Proliferation* (Basingstoke and New York: Palgrave Macmillan, 2005); and Scott Ritter, *Iraq Confidential* (New York: Nation Books, 2005)

³⁷ See J P Perry Robinson, “Dual technology and perceptions of Iranian chemical and biological weapons”, draft of 20 July 2005; and International Institute for Strategic Studies, IISS Strategic Dossier. *Iran's Strategic Weapons Programmes: A Net Assessment* (London: Routledge, 2005)

CONVERGENCE OF CHEMISTRY AND BIOLOGY

CW, or BW, and CBW are terms that can often be used interchangeably (as they sometimes have been in this paper). The case for keeping CW and BW together is usually stronger than the case for treating them separately. Toxins that do not satisfy the General Purpose Criterion are both chemical weapons in the sense of the CWC and biological weapons in the sense of the BWC. Aerosolization or other dispersion technology used to disseminate the infective agents of biological warfare can also be used for toxic agents of chemical warfare, and diffusion models used to predict the airborne transport of chemical agents can also be used in estimating the likely effects of airborne biological agents. Respirators can protect against both biological and chemical weapons. Historically, bioweapons development has been an offshoot of CW development, often involving the same institutions and similar research skills. The same instrument of international law, namely the 1925 Geneva Protocol, prohibits both chemical and biological warfare, being rooted in the same taboo against the weaponization of disease as were the Nineteenth Century prohibitions of poison weapons, and on which now rests the present BWC/CWC regime. It is a taboo that these days needs strengthening – not weakening, as by fragmentation. Perhaps it reflects an instinctive fear of disease, whether infectious (transmissible or not) or non-infectious, that may affect us in ways worse even than death.

That said, it is also true that there are major differences between CW and BW. Germ warfare is not chemical warfare. Efforts have persisted in policy circles to move and keep them apart. Such separation has not invariably attracted advocates. An instructive illustration entered the public domain in October 2000 when a letter written nearly 40 years earlier by the US Deputy Under Secretary of State for Political Affairs to his opposite number at the Department of Defense was declassified. The letter had to do with plans for increased forward deployment of US chemical weapons to Europe by creating stockpiles in France and Italy to augment those already in Germany. Its fourth paragraph was as follows:

This immediate policy issue in turn opens up a broader set of policy problems. The question of chemical warfare doctrine and capabilities applies to geographical areas outside Europe. The fact that CW retaliatory materiel is now available to U. S. forces on Okinawa and in Korea clearly gives it practical relevance to the Far East. Furthermore, the relationship between chemical and biological warfare and their association in the minds of many suggest the desirability of their being looked at in relation to one another.³⁸

Within five years, however, the differences between BW and CW had been pressed to the point of the separate arms-control negotiations that eventually brought us the BWC and then the CWC. It was the UK that initiated and promoted the separation. It did so (state papers now suggest) for largely unrelated political reasons, not because its policy-makers were persuaded that separation was inherently better than continued integration of CBW. The political expediency to which the separation was a response – smoothing an awkwardness in UK-US relations during the Vietnam War -- eventually passed, and we have, for better or worse, been left with its legacy ever since.

Science has been moving on, and that legacy may quite soon prove an encumbrance as more and more biology becomes understandable in terms of chemistry and chemicals. Already the convergence is making the BW/CW distinction

³⁸ Letter, U Alexis Johnson to William P Bundy [Deputy Assistant Secretary of Defense for International Security Affairs] dated 14 November 1963, copy in LBJ Library.

less sharp than many claim it to be, meaning that the distinction is shedding practical significance. The Lemon-Relman Committee report from the US National Academies last year dwelt on this point when making its recommendation of active support for the BWC and the CWC:

Such international conventions should not be considered the solution to the issues society confronts today with respect to potential harmful uses of advances in the life sciences, nor should they be cast aside and ignored. Despite their limitations, the Committee appreciates their value in articulating international norms of behaviour and conduct and suggests that these conventions serve as a basis for future international discussions and collaborative efforts to address and respond to the proliferation of biological threats. Important opportunities will arise when states parties conduct their next quinquennial reviews of the operation of the BWC (in 2006) and the CWC (in 2008).

The present report has several times noted that technologies are bringing chemistry and biology closer together. That toxins and synthetic biological agents, including bioregulators, immunoregulators and small interfering RNAs, fall within the scope of both treaties is one such linkable feature. These two review conferences will as always be dominated by political considerations, but, in view of the profound developments now under way in the life sciences, the Committee nevertheless draws attention to the possibilities held out by the 2008 conference for building upon the parallel or linkable features of the BWC and the CWC.³⁹

The 2006 BWC Review Conference, although a success in other ways, passed over the opportunity the Academies were here suggesting for building upon the linkages between the BWC and the CWC. But given the fact that the CWC regime is far the stronger and better endowed, it is the 2008 CWC Review that will provide the richer opportunity.

How exactly that opportunity should be used is a matter that needs urgent attention. In particular, should not the OPCW start acquiring more technical capabilities in the overlap area, given that that is where major new weapons are most likely to be encountered? Should there not, at the very least, be a proven capacity in the Designated Laboratories for detecting and identifying a proper range of toxins and other biomolecules? And is it not time that the OPCW itself, not simply a few member states, showed through its actions that it recognises the comprehensive nature of the CWC -- that it takes the General Purpose Criterion seriously? None of this is necessarily a matter of amending or changing the treaty. If the opportunity is missed, a real challenge to the CWC could develop as people come to realise that the OPCW has failed to keep adequate pace with S&T change. The challenge would be the challenge of ridicule.

ACCOMMODATING NATIONAL INTERESTS

Ambassador von Wagner proposed a treaty whose provisions could “mature and evolve in the course of state practice”.⁴⁰ That is the CWC we now have, room for evolution being established by language that had deliberately contained ‘constructive ambiguities’ or that had simply left some issues to be resolved later. The alternative

³⁹ This IoM/NRC report is referenced in note 17 above. The quotation here comes from the passage in Chapter 4 that explains Recommendation 4a.

⁴⁰ See page 5 above.

model was a legal instrument free of all ambiguity and with its obligations unnuanced, setting out exactly what its states parties were and were not to do. Even if desirable, such a cast-in-stone treaty could not have been negotiated within the deadline that the negotiators finally set themselves. We have instead been given plenty of space for “subtlety on matters of implementation”, and this has been exploited by the policy organs of the OPCW, most notably during their annual negotiations on future programme and budget. Opportunity for augmenting the process is now presented by the Second CWC Review.

At one level this flexibility is much to be welcomed, for the international relationships within which operation of the CWC is embedded are in a constant state of flux, and this is bound to affect the character of the obligations of the treaty. But at another level it may create serious difficulties for the CWC, for it encourages mere political expediency to oppose underlying principles of the treaty. Above all it admits the ineluctable challenge of having to accommodate the interests of the more influential member states even, perhaps, where these may actually degrade the treaty. A pressing new need finally to resolve a ‘constructive ambiguity’ left over from the original CWC negotiations, or else to deal with some unanticipated puzzle about interpretation, can become opportunity to advance an interest. Its accommodation may perhaps make the regime more stable, but it may also make it increasingly unprincipled.

The proposition that the CWC must evolve if it is to survive changes in international relations clearly lends itself to abuse or, if not abuse, then to shortcomings in the way the CWC is implemented. Disturbing examples of this may be drawn from historical experience, responsibility for each one being attributable to the domestic or bureaucratic politics of this or that major state party. Here are just a few for one state party, the USA:

- Chemical weapons abandoned in Panama not declared.
- Production facilities not declared for certain toxic chemicals not satisfying the General Purpose Criterion, including the Agent CS that was filled into tactical (as opposed to ‘riot control’) munitions during the Vietnam War, such as 750-pound aircraft bombs.⁴¹
- Industry declarations submitted to the OPCW so late – some three years after the deadline specified in the CWC – as to distort development of the industry verification regime.
- The ouster of the first Director General, thereby exposing the OPCW to a judgement by the ILO Administrative Tribunal stating that, in “accordance with the established case law of all international administrative tribunals, the Tribunal reaffirms that the independence of international civil servants is an essential guarantee, not only for the civil servants themselves, but also for the proper functioning of international organizations”.⁴²

⁴¹ It is of course likely that, in other respects, the US declarations to the OPCW are as accurate as may be expected. Yet who can now say with certainty whether there were or were not other declarable production facilities for undeclared toxic chemicals that were once authorized as weapon-fills but for which production data are not in the public domain? Agent UC (staphylococcal enterotoxin B) and Agent XR (botulinum toxin type A) come to mind. There had been production of both these agents since 1 January 1946, but data on the scale of their production and on the capacity of the production facilities are unavailable. We are therefore obliged to accept that the capacities did not exceed 2.74 kg per day (one tonne per year) and that, accordingly, these two toxins are rightly absent from the CWC schedules.

⁴² International Labour Organization, Administrative Tribunal, 95th Session, Judgement 2232 in Geneva on 16 July 2003.

- The sustained assertion that riot control agents (RCAs), even ones failing to satisfy the General Purpose Criterion, cannot be ‘chemical weapons’ within the meaning of the CWC.

My point here is not to show that a special finger of blame can be pointed at the USA, for similar lists can be compiled for other influential OPCW member states. My point is simply to exemplify the tension that may arise between principle and practice, the examples being ones of behaviour that clearly runs counter to the spirit of the CWC, if not necessarily to its letter. In aggregate the examples seem to display a powerful member state doing what it wants to do without being wholly mindful of the greater good. Nor should we be surprised by this fact of international life. It is what happens. We may nevertheless point to two challenging consequences for the CWC. One is an OPCW Secretariat that has to be exceedingly circumspect regarding great-power interests before it can take any sort of initiative.⁴³ The second and related consequence is an accumulating list of CWC-implementation issues that are in the too-difficult-to-deal-with category.

These two challenges could ultimately, if worse came to the worst, prove fatal to the CWC regime. Can governments, collectively through the OPCW, be relied upon to address them? No: that is how governments behave, and that is the core of the problem. Does this mean, then, that it is down to civil society to attempt something? But what can NGOs do other than observe, record, analyse and perhaps (it could do the individuals concerned no good at all careerwise) publicize? Insofar as there is any sort of remedy, it resides in the OPCW Technical Secretariat having a Director-General and other senior staff of altogether exceptional ability and probity.

PERNICIOUS IGNORANCE

There is another twist to this dependence of the CWC regime on the whims of the dominant actors. What happens when an influential state party does not care very much about the treaty or when its representatives are inadequately informed about details or about what the treaty is meant to be doing? For example, was President Bush in sufficient possession of the facts when at a press conference on 18 November 2002 he publicly praised President Putin for having authorized the use of an opiate to end the Moscow-theatre siege during the previous month?⁴⁴ This is not to say, of course, that great-power representatives are likely to be any more or less well-informed than other people. In fact it is not at all easy for anyone to grasp CBW, or even just CW, issues adequately without prolonged immersion in the subject, and neither may this always work, given the secrecies and sensitivities that still abound. Maybe the problem is that CBW is a subject that historians have largely ignored, meaning that people wanting or having to know about it have no reliable and readily accessible literature available even for basic chronological information and broad-brush analysis.⁴⁵ Different concepts of the same matter can co-exist among groups

⁴³ It is therefore to the great credit of the Secretariat that it has been able, over the past decade, to take the lead on several matters of implementation. See Ralf Trapp, “The First Ten Years”, in Ian Kenyon and Daniel Feakes (editors), *OPCW: The Creation of the Organisation for the Prohibition of Chemical Weapons: A Case Study in the Birth of an International Organisation*, The Hague: T.M.C.Asser Press, 2007, pp 261-89.

⁴⁴ See the fifth entry for 18 November 2002 in the News Chronology section of *The CBW Conventions Bulletin* no 59 (March 2003) p 16.

⁴⁵ Among English-writing historians the names of Donald Avery of Canada, Barton Bernstein and John van Courtland Moon of the USA, and Edward Spiers of the UK stand out as especially notable exceptions. A few other writers have ventured into the area, most successfully Brian Balmer of the University College London Department of Science & Technology Studies (see especially his *Britain*

even of specialists without their members appreciating that the concepts are different. In the absence of good reference works of sufficient breadth and independence of vested interest, misapprehension and ignorance have thus become common in policy-shaping circles, even including those people who might have advised President Bush ahead of that press conference.

A situation in which ignorance prevails may well take on the appearance of rampant heedlessness. The converse may also be true. Here are some examples of where this has become pernicious, endangering the regime – examples of where ignorance itself (or perhaps just heedlessness) is a challenge to the CWC:

- It has become common over the years for representatives of a curiously large number of CWC states parties to assert that there is no such thing as a ‘general purpose criterion’ in the text of the CWC, and therefore that there is no foundation for the comprehensive nature of the CWC or for arguing that its proscriptions extend to chemicals not included in the Schedules. It is not at all clear how the representatives affecting to believe this have managed to overlook Article II.1(a) and Article VI.2 of the CWC.
- The US imputation that RCAs are not ‘toxic chemicals’ in the sense of CWC Article II.2 (because the USA holds that RCAs can never be chemical weapons) resonates with people who equate ‘toxicity’ with ‘lethality’, regardless of the fact that toxicity may take forms other than life-threatening ones. That the CWC does not limit its concept of toxicity to lethal toxicity is clear from the words used in Article II.2. True, if properly used, RCAs rarely cause “death or permanent harm to humans or animals”; but their whole *raison d’être* requires that they produce “temporary incapacitation”. Ignorance of this point has led a surprising number of people to think that the CWC applies only to lethal chemical weapons. In fact ‘lethal’ and ‘lethality’ are not words that figure in the CWC at all.
- There was even a formal OPCW occasion recently during which a member-state representative expressed disbelief during corridor conversation that the CWC requires states parties to identify, in declarations to the OPCW, “each chemical it holds for riot control purposes”.
- Possibly President Bush was heedless of the fact that the use of chemical opiate authorized by President Putin against Chechen separatists might have violated the CWC. The stance taken by Russian Federation officials was that there was no question of any such violation because, as Health Minister Yuriy Shevchenko

and Biological Warfare: Expert Advice and Science Policy, 1935-1965, Palgrave Macmillan, 2001, and his chapter in Mark Wheelis, Lajos Rozsa and Malcolm Dando (editors), *Deadly Cultures: Biological Weapons since 1945*, Harvard University Press, 2006); likewise Jonathan Tucker, biologist turned political scientist and author of the admired *War of Nerves: Chemical Warfare from World War I to Al-Qaeda* (New York: Pantheon Books, 2006). It was the absence, forty years ago, of reliable basic texts that stimulated the six-volume study produced by a collective of authors at the Stockholm International Peace Research Institute during 1967-72: SIPRI, *The Problem of Chemical and Biological Warfare: A study of the historical, technical, military, legal and political aspects of CBW, and possible disarmament measures* (Stockholm: Almqvist & Wicksell, New York: Humanities Press and London: Paul Elek, 6 vols, 1971-76). The available open-domain source material has, like the CBW governance regime itself, expanded hugely since then, meaning that the big SIPRI study is no longer an adequate substitute for decent CBW historiography. Two other general texts that should be noted here are: Robert Harris and Jeremy Paxman, *A Higher Form of Killing: The Secret Story of Gas and Germ Warfare* (London: Chatto & Windus, 1982); and Eric Croddy, Clarisa Perez-Armandariz and John Hart, *Chemical and Biological Warfare: A Comprehensive Survey for the Concerned Citizen* (New York: Copernicus Books, 2002).

“officially” declared on television, “chemical substances which might have fallen under the jurisdiction of the international convention on banning chemical weapons were not used during the special operation”. Was this yet another instance of high-level ignorance of the General Purpose Criterion -- ignorance of the fact that the CWC bans only purposes not chemicals *per se*? Other Russian officials have been more circumspect. The then director-general of the Munitions Agency, Zinoviy Pak, spoke as follows at a conference in Moscow a fortnight later:

[I]n dealing with this terrorist act Russia did not depart an iota from the Convention. Russia fulfilled that mission in full accordance with the Convention. Namely, the convention allows the use of chemical agents to restore order in a country. These chemicals must be declared by the state to the international organization. Russia has done all that. The chemicals have been declared and Russia uses them. But in this situation we were talking about a law-enforcement action, a unique law-enforcement action that the Convention also allows for [...] So, there are neither legal nor actual grounds of suspecting Russia. Russia has complied with everything scrupulously. And the special services can share with you what this substance was.⁴⁶

In other words it was not because the opiate lay outside the scope of the CWC, as Shevchenko had apparently asserted, but because the action in which it was used constituted ‘law enforcement’ in the exemptive sense of CWC Article II.9(d). There is an interpretation of this provision, which many people believe to be the best interpretation, which holds that the only toxic chemicals that may be used for law-enforcement purposes are RCAs as defined in CWC Article II.7.⁴⁷ Although this interpretation had been adopted by a number of CWC states parties, Russian behaviour in ending the Moscow-theatre siege did not attract their condemnation, some of them resorting, however, to heavy ambiguity in public statements,⁴⁸ this perhaps reflecting the peculiar circumstances prevailing during the preparations for the US-led invasion of Iraq rather than acquiescence in Russian behaviour. The consequences for the CWC of such a political expediency could be long-lasting.

- A surprising number of officials, even in countries that are active in their support for the BWC and the CWC appear to believe that only the former treaty covers toxins, not the latter as well. This is apparently a consequence of the Canada/EU policy of referring to the BWC as the ‘BTWC’.

⁴⁶ See the entry for 11-12 November 2002 in the News Chronology of *The CBW Conventions Bulletin* no 59 (March 2003), pp 13-14.

⁴⁷ See, especially, Adolf von Wagner, “Keynote Address: The handling of toxic chemicals for law enforcement purposes, including domestic riot control purposes within the Chemical Weapons Convention”, *Open Forum on the Chemical Weapons Convention* [The Peace Palace, The Hague, 1 May 2003], www.sussex.ac.uk/Units/spru/hsp/OpenForumCWC.pdf.

⁴⁸ A UK Foreign & Commonwealth Office minister, for example, spoke thus to Parliament: "Following inquiries by the United Kingdom and others, Russian authorities have announced that the gas used was based on Fentanyl, an opium based narcotic. Fentanyl is not a chemical scheduled under the Chemical Weapons Convention. Non-scheduled chemicals are not in themselves prohibited under the Convention for use in law enforcement, including domestic riot control purposes. On 30 October, the Russian Health Minister, Mr. Shevchenko said 'I officially declare that chemical substances of the kind banned under international conventions on chemical weapons were not used'." See the entry for 4 November 2002 in the News Chronology of *The CBW Conventions Bulletin* no 59 (March 2003), p 10.

- The examples just cited all seem to have ready explanations. One other example, however, does not, which makes it all the more important to understand. South Korea insists on its identity as a declared CW-possessor state being withheld from all OPCW publications. The CWC gives it the right to do this, but why does Korea persist in asserting that right even when its officials have made statements to the press about their country's programme for destroying its chemical weapons?⁴⁹ It is hard to believe that this is simply another example of a state party abusing the privacy provisions of the CWC through mere heedlessness or ignorance. Nor, surely, can it be a consequence of US stockpiling of chemical weapons in South Korea.⁵⁰

What this paper is calling the challenge of pernicious ignorance thus takes a variety of forms. Once again the remedy seems to lie with civil society, provided a mechanism can be found for promoting sound and comprehensive historiography in the CBW field. But NGOs would need a lot of help, not just financial help but also practical help – in the form, especially, of enhanced access to some types of information. In this regard, it is important that the OPCW should have workable procedures for reviewing the security-classification of the information its Secretariat holds confidential at the request of the member-states that had submitted it originally; and for releasing declassified information. Now is definitely not the time for the OPCW to perpetuate its culture of opacity – of attenuated transparency – for this conveys a message of disregard for the outside world, including the civil society on which, to a degree, the OPCW will depend for its future well-being.

CREEPING LEGITIMIZATION

Here we return to what, at the outset of this paper, was characterized as the gravest threat of all those that CBW present: potential for changing us. In the ability of CBW agents to target themselves on particular life processes, there is indeed, as the old advocates used to claim, growing scope to 'tailor' the nature or severity of agent effects to a particular combat objective. In that such tailoring could also open the way to weapons suited to hugely malign purpose, an effective governance regime is essential. That same tailoring can, however, provide weapons that, at first glance, appear to be of an altogether more acceptable character, including ones having effects gentler than most other means of violence. Examples include the 'tear gas' of police forces; the psychochemical weapons that, according to past US Army teaching,⁵¹ would cause the enemy to "linger in overpowering reverie"; and the entirely mythical knock-out agents of "war without death" that have figured in science fiction since the Nineteenth Century. Add to these chemicals the various infective agents that can induce highly debilitating diseases of low mortality, and a category of CBW is created whose features seem far distant from those of WMD, whose possession may appear desirable, and whose constraint by treaty may therefore come to seem a liability, notwithstanding the abyss into which the tailoring could also take us.

A rather wide variety of commercial, political and military interests stand to benefit from exclusion of some or all of these non-WMD CBW from the governance regime. *Sub rosa* campaigning to that end has long been under way, most notably

⁴⁹ See, for example, the entries for 8 May, 17 July and 4 August 2000 in the News Chronologies of *The CBW Conventions Bulletin* no 49 (September 2000) pp 26, 41, and no 50 (December 2000) pp 26-27.

⁵⁰ See the 1963 US State Department letter quoted on p 13 above.

⁵¹ US Army Chemical Center and School, Fort McClellan, "New chemical agents and incapacitating agents", Lesson Plan LP6075, undated [ca 1965].

during the final months of the CWC negotiation in mid-1992, when the protagonists of what was then starting to be called ‘Non Lethal Warfare’ (NLW) came up against governmental officials charged with securing consensus on those parts of the CWC text that dealt with RCAs.⁵² The issue turned then on whether RCAs fell within the definition of ‘toxic chemicals’, subject, thereby, to the General Purpose Criterion that would serve to regulate the duality of their application either in warfare (prohibited) or in law-enforcement (permitted). For reasons that remain unclear to this day, the USA favoured exclusion but, finding itself isolated in this position within the Western Group, secured a compromise⁵³ in which the CWC expressly prohibited use of RCAs “as a method of warfare” but remained silent on the toxic character of RCAs, thus perpetuating a semblance of ambiguity on whether the CWC did or did not capture RCAs. The way became open for determined NLW protagonists to argue that, if tear gas was not proscribed by the CWC, then neither should the more modern varieties, for which they coined the category-label ‘Advanced RCA Technology’ (ARCAT). Subsequent ARCAT development projects funded by the US government have included work on the fentanyl and other such intensely toxic chemicals. The process that can be seen here is a surreptitious equation of toxicity with lethal toxicity. In this attempt to loosen the CWC constraint on the weaponization of other forms of toxicity we have started to see a creeping legitimization of non-WMD CBW, which is a most serious challenge to the regime. A situation in which some types of toxic weapon are allowed but not others is certain to be unstable. And it is certain to bring closer a realisation of the dehumanizing potential of CBW.

The instruments of creeping legitimization include, not only ‘public diplomacy’ and other more hidden pressures for exemption, but also national legislation. In the USA the ‘Ensign Amendment’ of the 2006 Defense Authorization Act asserts that “riot control agents are not chemical weapons”.⁵⁴ Fortunately no other state party to the CWC has adopted such a position, nor even commented publicly on what the USA has done. It remains to be seen whether the topic will be kept off the agenda of the Second CWC Review, which is where it clearly ought to be. It should not be supposed that this is a purely state-level problem. Noted earlier in this paper was the possible utilization of ARCAT-type CBW by private military contractors. Any such privatization of CBW is certain to accelerate the creeping legitimization.

Conclusion

⁵² A close account of these and related events is to be found in J P Perry Robinson, “Solving the problem of ‘law enforcement’”, a paper presented at the 19th Workshop of the Pugwash Study Group on Implementation of the CBW Conventions, Oegstgeest, the Netherlands, 26-27 April 2003, especially in the version currently being revised for publication as “Law enforcement, ‘non lethal’ warfare and the norm against biological and chemical armament”, 10 May 2003.

⁵³ Proposed not in fact by the USA but by a group of eleven Neutral and Non-Aligned States looking also, and in sharp contrast to the USA, for a CWC prohibition of herbicide warfare.

⁵⁴ In its section 1232, the US National Defense Authorization Act for Fiscal Year 2006 states: “It is the policy of the United States that riot control agents are not chemical weapons and that the President may authorize their use as legitimate, legal, and non-lethal alternatives to the use of force that, as provided in Executive Order 11850 (40 Fed.Reg.16187) and consistent with the resolution of ratification of the Chemical Weapons Convention, may be employed by members of the Armed Forces in war in defensive military modes to save lives, including the illustrative purposes cited in Executive Order 11850.” On 27 September 2006, in evidence to the Senate Armed Services Subcommittee on Readiness and Management Support, which is chaired by Senator John Ensign, the Defense Department in the person of Joseph Benkert, Acting Principal Deputy Assistant Secretary of Defense for International Security Policy, testified that the “Administration agrees with [this] statement”.

The foregoing categorization of challenges to the CWC has been intended simply as an aid to thought about possible countermeasures. A way of taking it forward, short of actually proposing countermeasures (which is not the purpose of this paper), is to think of complementary categories, first of the damage that the challenges might cause, and second of safeguards against such damage, in terms both of actions and of actors. From the matrices that might then be constructed from the categories, and through application of the ordering principle suggested earlier in the paper,⁵⁵ types of remedy and their respective priorities would stand out. Such an analysis will be presented in a follow-on to the present paper. For the moment, here are some interim conclusions

1. There needs to be wider recognition, especially among CWC supporters in civil society, that, throughout the future of the CWC, there will inevitably be tension between political drivers of decision and principled implementation, between political expediency and the wellbeing of the treaty. It is a tension of which we are all aware but, as a challenge, tend to disregard. Sound stewardship of the CWC must be based on minimizing that tension between practice and principle, even, conceivably, to the point of adapting the terms of the treaty to the prevailing political climate. But that is an extreme option, and any such adaptation must never be permitted to endanger the heart of the CWC.
2. The heart of the CWC is the protection it affords against the primary threat that chemical weapons present to us all. This is not the threat of mass killing that chemical weapons share with other WMD. Nor is it the terrorization potential of chemical weapons. It is their potential for changing human beings, perhaps to the point of dehumanization.
3. The General Purpose Criterion is the primary mechanism whereby the CWC provides protection against this danger, and against others too. The criterion is not being implemented adequately. Reasons for this probably lie in the usual mix of ignorance, lack of understanding, incompetence, heedlessness, short-termism, and conflicting political interests, including those interests that are rooted in NLW technology. Action to improve this situation warrants the very highest priority.
4. The OPCW itself ought to be capable of such action, but evidently it is not. The governments of some of its member states seem to have become an intransigent part of the problem, while the Technical Secretariat has been blighted by the tenure policy and the consequent fading of its institutional memory plus, in certain areas, its technical competence, and by the magnitude of the obstacles it must overcome before it can take an initiative. The initiatives that it has been able to take, however, for example on Action Plans, have much enhanced the overall regime.
5. So several actions must now be contemplated. One is concerted, skilled, properly informed and policy-orientated study of those implementation issues that have disappeared into the too-difficult-to-deal-with category, especially issues that bear upon the General Purpose Criterion (e.g., RCAs, the meaning of “chemical action on life processes”, changing the Schedules, &c &c). Such study should be put out for scapegoat work within civil society if neither the

⁵⁵ On page 5 above, at the close of the section ‘Why is the CWC important?’.

Secretariat of the OPCW nor member states are inclined to attempt it during the Second CWC Review.

6. We in civil society should not lose sight of the fact that the CWC is an engagement of states parties, of which governments are one element. Governments may represent states parties in the fora of the OPCW, but organs of civil society that are also elements of those same states must not disregard their own responsibilities for the proper implementation of the CWC, especially in areas where our governments appear hamstrung, incapable of action; and especially at the present juncture.