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## Chemical Warfare: past, present, and future

*The Long Shadow of 1918 for Contemporary Security Politics*

*Conference on Christian Approaches to Defence and Disarmament*

*Ghent, 3 September 2018*

Good evening ladies and gentlemen, colleagues and friends,

I would like to thank the conveners of this conference to invite me to speak to you about chemical weapons disarmament and present and future challenges to the Chemical Weapons Convention.

I take the floor of this evening as centenary commemorations for the final stages of the First World War commence. These will end with the final ceremonies on 11 November, the day on which the guns fell silent after more than four years of unprecedented carnage. Unfortunately, for many months and years after the Armistice many people would still be wounded, maimed or killed by both explosive and poisonous remnants of war. Many others would die prematurely over the ensuing years from one's injuries – both physical and mental – or tissue damage caused by chemical weapons. Let us bear them in mind too. Because there will be no commemorations for them. Indeed, historical records show that “survivors” were not eligible for war pensions for themselves or their loved ones because they did not formally qualify as a war casualty. They counted many gas victims among their ranks.

The final offensives starting in the late summer of 1918 featured chemical warfare on an unprecedented scale. Even for my own country, Belgium, King Albert I made French deliveries of mustard agent shells a precondition for participation in the forthcoming battles. Until that year Belgium had been very reluctant chemical warrior. After the war it constructed for itself a neatened image of chemical warfare victim, which shaped national consciousness for decades and informed strong public and political opposition to any possible deployment of chemical weapons on Belgian territory during the Cold War period. However, back then the Belgian demand would not have raised many eyebrows. Chemical weapons had become so conventionalised – by that word I mean that the highest political and military authorities had had delegated their decisions on chemical weapon use to battlefield commanders – that belligerents generally expected chemical weapon consumption to exceed explosive munitions had the war continued into 1919.

On 22 April 2015 the world commemorated the centenary of the first large-scale chemical weapon attack near Ieper. It was a rude awakening for the global community that 100 years

later chlorine had again become a toxic agent of choice, this time in the Syrian civil war. The first reports of Syrian chlorine use date back to 2014, the year following its accession to the Chemical Weapons Convention. Under the terms of the disarmament treaty Damascus had to eliminate its chemical weapons arsenal and destroy any infrastructure, including production, filling and storage installations under international supervision. The country also had to forswear the use of any toxic chemical as an instrument of warfare. Syria's accession to the Chemical Weapons Convention and its subsequent violations of the Convention have accelerated treaty regime building like no other issue before.

The Chemical Weapons Convention is a disarmament treaty. This means that states parties must eliminate all existing chemical weapon holdings as well as any related equipment and infrastructure. This is the backward-looking dimension of disarmament. States parties, however, must also undertake all necessary steps to prevent the re-emergence of chemical weapons. This is the forward-looking dimension of disarmament: it does not suffice that the arms category is proscribed; active measures must be undertaken on the international and national levels to preclude inadvertent and deliberate actions that may contribute to the reconstitution of this chemical weapon holdings, by state and non-state actors alike.

The Chemical Weapons Convention is the most successful weapon control treaty negotiated. With the accession of the state of Palestine last June, the number of parties to the convention reached 193, a figure second only to the membership of the United Nations. The Nuclear Non-Proliferation Treaty comes in second with 191 parties and the Biological and Toxin Weapons Convention third with 181. Only four countries now remain outside the Chemical Weapons Convention: Egypt, Israel, North Korea, and South Sudan.

Parties to the Chemical Weapons Convention declared 72.3 thousand metric tonnes of agent in 8.6 million munitions and containers. Today, over 96% of these have been destroyed, the United States being the sole country not having completed all demilitarisation requirements. Russian destruction operations were formally declared over in October 2017, even though the country still faces the environmentally safe disposal of effluents and other offal resulting from its chosen demilitarisation processes. This includes large volumes of arsenic following neutralisation of the vesicant Lewisite.

The Organisation for the Prohibition of Chemical Weapons or OPCW also runs an elaborate verification regime, checking the accuracy of national declarations and conducting on-site inspections in the civilian chemical industry and other facilities according to treaty-specified requirements. All in all, a technical task and wholly unsensational string of activities for which the OPCW deservedly received the Nobel Peace Prize in 2013.

In the meantime, the Technical Secretariat of the OPCW prepared for unexpected contingencies, such as a terrorist attack with chemical weapons or investigations of alleged use. What few expected was the big role that so-called unscheduled chemicals have come to play in the wake of its receipt of the Nobel Peace Prize. Unscheduled chemicals are toxic substances not included in any of the three lists, known as schedules, in the annex to the Chemical Weapons Convention. It is important to bear in mind, however, that unscheduled chemicals remain covered by the prohibition on chemical weapons. They fall under the so-

called "general purpose criterion", which states that no toxic chemicals can be developed, produced, stockpiled, or used for purposes prohibited under the convention.

Chlorine is one such example. As a warfare agent, all belligerents during the First World War already deemed it as obsolete. Since then nobody, including the negotiators of the Chemical Weapons Convention, thought that it would become a weapon of choice once more. Despite its history as a warfare agent, the chemical was not listed simply because verification would prove to be as good as impossible. Today, global annual production of chlorine exceeds 60 million metric tonnes. No verification or inspection regime of a weapon control treaty can monitor the consumption and trade in such volumes. (I should add that in the meantime the OPCW also confirmed the renewed use of sarin, strongly suggesting that Syria had not declared the full stock of the nerve agent or had kept some of the precursor chemicals from the inspectors.)

Another unscheduled class of chemicals are the so-called Novichoks, or newcomers. They belong to the family of organophosphorus nerve agents, which also includes sarin or VX. Novichoks were developed by the Soviet Union in the late 1980s and early 1990s. They comprised a new generation of nerve agents with a toxicity that was believed to exceed 3 to 4 times that of VX. Russia, as successor state to the Soviet Union, never admitted to the development and testing of Novichok agents. Consequently, it did not declare the new family of agents to the OPCW after becoming a party to the Chemical Weapons Convention in December 1997. Many Western states had acquired a good sense of the physiological impact of exposure to the agent from some Russian defectors and laboratory efforts to synthesise the chemicals, all the while bearing in mind that over 100 chemical structures belong to the family. In the early years of the Chemical Weapons Convention, the West, while seeking official clarifications, did not insist on including the class of nerve agents under the most dangerous toxic chemicals and their precursors in Schedule 1. At the time only around 130 states had joined the convention and several of the countries on the outside were thought of as proliferators. Publishing the chemical formulae of the Novichok agents was then seen as too great a proliferation risk. Great was the surprise in March of this year to find that a Novichok agent had been used as an instrument of assassination in the United Kingdom. Here is another scenario that the negotiators of the Chemical Weapons Convention had not, perhaps could not envisage.

Both the use of chemical weapons in Syria and the assassination attempts in the United Kingdom have triggered developments in the treaty regime whose full impact we may only come to appreciate in full over the next years.

Let me first stop briefly at the investigations of alleged use of chemical weapons in Syria. The Chemical Weapons Convention foresees in such activities. Both under articles IX and X investigations of alleged use are foreseen. Part XI of the verification annex stipulates the conditions for launching such an investigation and the procedures governing the collection of evidence and their analysis in OPCW-designated laboratories. The Chemical Weapons Convention was built on the presumption of interstate conflict with big use of chemical weapons. Only four years before the conclusion of the negotiations, the eight-year war between Iraq and Iran had ended during which Iraq had conducted large-scale chemical operations against Iranian forces and its own Kurdish population. Syria's war, in contrast, is

internal, involves a variety of nonstate actors occupying territory not under government control, and chemical weapon use has been relatively small-scale.

This has had major implications for launching investigations. First, only states can be party to the convention. Only they can therefore file a complaint and request an investigation. The question thus arose how claims of chemical weapon use by insurgent groups could be investigated, let alone verified. Furthermore, it is legally impossible for OPCW investigators to visit incident sites on territory occupied by rebel troops (or for that matter, by troops from a foreign country) without governmental permission. This situation led to further complications. OPCW investigators are supposed to maintain a full chain of custody of all evidence collected. This means that they are supposed to retrieve their samples and other evidence themselves, package the samples adequately so that they cannot be tampered with, and retain full control and oversight over such evidence until it is handed over to the OPCW laboratory in Rijswijk, The Netherlands. Officials from the government, in this case Syria, would also be present during the collection and transfer of evidence. So, the question arose how evidence could be retrieved from areas not under government control. This has evolved into a situation whereby alleged victims of exposure to warfare agents were transported to medical facilities in neighbouring countries, or non-governmental organisations, such as medical helpers, would collect soil samples and munition remnants. This has led to accusations by the Syrian government and its backers, primarily Russia and Iran, of manipulation of the investigative process. The Technical Secretariat has made great strides in training people to collect samples in such a way that the greatest degree of confidence in the collection methodology can be retained. This includes photographing each step, including easily identifiable landmarks in the picture, and supplying video footage of the activities.

Second, the investigators had to develop a methodology to assess the veracity of the allegations before launching an investigation. Here they have started to use open-source information, videos and other evidence of alleged attacks, and so-called digital verification of visual evidence. This reliance on open-source evidence and involvement of non-governmental entities has become another bone of contention with Syria and its allies.

Finally, OPCW analysis of samples has had to make great strides in terms of chemical forensics. For example, until today nobody knows exactly what the biomarkers of chlorine are. Nobody knows how chlorine exerts its poisonous effects on the body. Both pose major challenges to the investigative process, especially with regards to drawing firm conclusions from the samples taken from the soil or the blood from alleged victims. While reports are being prepared, the research into chlorine and the traces it leaves after use as a chemical weapon was accelerated and great progress has already been achieved. Thus, for example, the investigation into the use of chlorine in the Syrian town of Douma last March has produced a provisional report in which the OPCW declares high probability of chemical weapon use. Provisional, because its investigative procedures and analytical methods are being challenged. In the meantime, investigators are using and refining new methodologies to assess the relevancy of minute quantities of chlorine molecules in soil samples with a view of achieving even greater certainty about its findings.

Murder with military types of toxic agents is of relative recent origin. In the early 1990s, the Japanese extremist cult Aum Shinrikyo had used the nerve agent VX in five attempts to murder opponents. Only one assassination succeeded. North Korea murdered Kim Jong Nam in Malaysia in February 2017. The agent used was VX. Malaysia conducted its own investigation and only requested some technical assistance from the technical Secretariat under article VIII of the Chemical Weapons Convention. The technical Secretariat provided reference samples of VX so that the Malaysians investigators could verify the nature of the agents used. In March of this year, following the murder attempts against the Skripals, the United Kingdom requested the technical Secretariat to collect samples with a view of confirming its own findings regarding the Novichok agent used. This request was a rather big interpretative expansion of the paragraph in Article VIII, which says:

*Provide technical assistance and technical evaluation to States Parties in the implementation of the provisions of this Convention, including evaluation of scheduled and unscheduled chemicals.*

Novichok is of course an unscheduled chemical.

The OPCW subsequently confirmed the Novichok agent, stating that *"the toxic chemical was of high purity. The latter is concluded from the almost complete absence of impurities."* It did not comment on the identity of the perpetrator.

Novichok is closely associated with Russia; the UK accused it for being responsible for the attack, which then led to acrimonious exchanges and diplomatic retaliation.

CONCLUDE HERE

IF STILL TIME:

- SPECIAL SESSION OF THE CONFERENCE OF STATES PARTIES
- PREVENTION OF RE-EMERGENCE OF CW