

**Addressing misconceptions
about biological and
chemical weapons and
related legal frameworks**

**Addressing misconceptions
about biological and
chemical weapons and
related legal frameworks**

Credits

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical including photocopying, recording or any information storage or retrieval system, without the prior written permission of the copyright holder. Please direct all enquiries to the publishers.

This report was prepared by VERTIC's National Implementation Measures Programme

Design and layout: Rick Jones, StudioExile

First published in January 2023

© VERTIC 2023

VERTIC
The Green House
Cambridge Heath Road
London E2 9DA
United Kingdom

Phone: +44 (0)20 3559 6146

Email: vertic@vertic.org

Website www.vertic.org

Registered company no. 3616935

Registered charity no. 1073051

VERTIC wishes to thank the UK Chemical and Biological Weapons, Counter Proliferation and Arms Control Centre of the Foreign, Commonwealth and Development Office for their financial support for the development of this publication. VERTIC also wishes to thank María Garzón Maceda, Elisande Nexon and Jean Pascal Zanders for their contribution to this project. The views expressed by VERTIC do not necessarily reflect theirs. Although every care has been taken to prepare this report, VERTIC hereby disclaims any liability or responsibility arising from its use in any way. VERTIC would be grateful for any errors or omissions that are brought to our attention.

Contents

List of acronyms	5
Foreword	6
VERTIC and the NIM Programme	7
Executive summary	8
Introduction	9
Misconceptions related to the BWC	11
Misconception 1: The BWC does not cover biological weapons use	11
Misconception 2: The term 'biosafety' only has one meaning, which is protecting biodiversity	13
Misconception 3: Cross-border biological research violates the BWC	15
Misconception 4: Biological weapons are a thing of the past	17
Misconception 5: The BWC is a political commitment only	19
Misconceptions related to the CWC	21
Misconception 6: Any use of a chemical to cause harm is a 'chemical weapon'	21
Misconception 7: Only chemicals on the CWC schedules qualify as chemical weapons	24
Misconception 8: Riot control agents are chemical weapons that can be used during demonstrations in peacetime	26
Misconception 9: The Chemical Weapons Convention only addresses effects on humans	28
Misconception 10: The OPCW is a UN body	30
Misconception 11: Fentanyl and other equivalent highly potent opioids are always considered chemical weapons	32
Misconception 12: Attacks on industrial chemical facilities are not relevant to the CWC regime and is a matter of international humanitarian law only	34
Misconceptions applicable to the BWC and CWC	36
Misconception 13: States without biological or chemical weapons do not need to join the BWC and CWC	36

Misconception 14: The 1925 Geneva Protocol is no longer relevant due to the adoption of the BWC and the CWC	38
Misconception 15: Toxins and toxin weapons only fall within the scope of the BWC, not the CWC	40
Misconception 16: Biological and chemical weapons are always used on a mass scale	43
Misconception 17: Gender has little to do with biological and chemical weapons regimes	45
Misconception 18: Treaties on chemical and biological weapons are being violated and are therefore failing	47
Misconception 19: Signing the BWC or CWC makes a state bound by all of the treaty obligations	49
Misconception 20: States Parties to BWC/CWC face undue burdens	51
Misconception 21: The BWC and CWC are relevant for states only	53
What next?	56
Related resources	58

List of acronyms

BWC	1972 Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction Biological Weapons Convention Also known as the Biological and Toxin Weapons Convention (BTWC)
CBM	Confidence-Building Measures
CBRN	Chemical, Biological, Radiological, Nuclear
CNS	Central Nervous System
CWC	1993 Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction Chemical Weapons Convention
ECHR	European Court of Human Rights
ENMOD	Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques
1925 Geneva Protocol	Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare
ICRC	International Committee of the Red Cross
ISO	International Organization for Standardization
LBM	World Health Organization Laboratory Biosafety Manual
NGO	Non-Governmental Organisation
NIM	National Implementation Measures Programme (VERTIC)
NPT	1968 Treaty on the Non-Proliferation of Nuclear Weapons Nuclear Non-Proliferation Treaty
SAB	OPCW Scientific Advisory Board
TPNW	Treaty on the Prohibition of Nuclear Weapons
OPCW	Organisation for the Prohibition of Chemical Weapons
UN	United Nations
VCLT	1969 Vienna Convention on the Law of Treaties
VERTIC	Verification Research, Training and Information Centre
WHO	World Health Organization
WMD	Weapons of Mass Destruction

Foreword

I have read the study with great interest and applaud VERTIC for its important work in the area of weapons of mass destruction disarmament and non-proliferation.

Addressing misconceptions about biological and chemical weapons and related treaty issues is indeed a critical topic. Such misconceptions are one of the most difficult barriers in the conceptual and practical work in disarmament, inspections, and verification. Such misconceptions are also a great hindrance in activities of international organisations in the WMD area. The resolution of misconceptions is difficult and needs constant attention. In my extensive career in disarmament, arms control, and non-proliferation, I had to face misconceptions and misperceptions and I never lost courage together with my colleagues in trying to overcome them to achieve meaningful results.

The strongest misconception in my career relates to the notion of verification in the biological weapons area. When I assumed the task of Chief Inspector in 1995 in the United Nations Special Commission on Iraq (UNSCOM) to establish monitoring and verification in the biological weapons area I brought with me not only my technical knowledge but also misconceptions originating from political and technical debates on the feasibility of effective biological verification and monitoring. In fact, there was great skepticism if such a goal could ever be achieved. Besides conceptual hurdles I also had to overcome conflicts with my peers on several practical points related to establishing a credible system for biological verification and monitoring. Instead of continuing our endless theoretical discussions, we started to identify ways to address different situations, be it related to a specific biological dual-use activity or certain sites for inspections. Eventually – contrary to the original misconceptions – it turned out that UNSCOM established an effective verification and monitoring mechanism in Iraq. The system not only allowed to uncover a well-hidden biological weapons programme but also prevented Iraq from resuming proscribed activities. Even Iraqi counterparts acknowledged that UNSCOM monitoring was effective.

The doubts and apprehensions towards verification in the biological weapons area are still prominent. Based on my Iraq experience, the focus should not be on purely academic debates about such misconceptions but to find practical ways forward by a step-by-step approach to address specific scenarios of non-compliance concerns.

In front of you is an expert commented and peer reviewed study about the most pertinent misconceptions in the biological and chemical weapons area and an informative guide for all stakeholders. It contains a well-researched set of technical explanations about the implications of misconceptions with examples to disprove the most prevailing ones in the biological and chemical weapons area and related frameworks. It is furthermore a significant contribution in support of the global taboo against biological and chemical weapons. The authors also emphasise that misconceptions, if not tackled, can lead to a dangerous spiral of disinformation.

Dr. Gabriele Kraatz-Wadsack, former weapons inspector with the United Nations Special Commission in Iraq, and Chief of the Weapons of Mass Destruction Branch at the United Nations Office for Disarmament Affairs.

VERTIC and the NIM Programme

VERTIC (the Verification Research, Training and Information Centre) is an independent, non-profit-making charitable organisation based in London, UK. Established in 1986, VERTIC supports the development, implementation, verification of and compliance with international agreements through research and analysis, assistance and training, dissemination of information, and interaction with the governmental, diplomatic, technical, scientific and non-governmental communities. VERTIC works with states, international and inter-governmental organisations, civil society, academia, industry and others and also monitor developments related to the regimes in the wider public realm.

VERTIC's National Implementation Measures (NIM) Programme, established in 2008, provides tailored assistance to states for adherence to and implementation of international instruments, including those on chemical, biological, nuclear and radiological weapons and the security of related materials. The NIM Programme provides cost free assistance through awareness-raising, legal analysis and legislative drafting to interested states. For over a decade, the NIM Programme has been engaged in systematic analysis and drafting of states' implementing legislation for the Biological Weapons Convention and Chemical Weapons Convention. Through our engagement with over 145 states worldwide and our participation in diplomatic and technical processes, we have developed a unique understanding of states' approaches to implementing the Conventions and of what constitutes effective practice.

Executive summary

The Biological Weapons Convention (BWC) and the Chemical Weapons Convention (CWC) strengthen the global security regime by prohibiting and preventing biological and chemical weapons. Joining the treaties and adopting the necessary national implementation measures creates a framework to ensure the non-proliferation and disarmament of biological and chemical weapons. It also ensures the safe, secure and peaceful uses of related materials. However, engagement with these treaties is hampered by misconceptions, which undermine trust in the treaty regimes.

As part of a project funded by the UK Chemical and Biological Weapons, Counter Proliferation and Arms Control Centre of the Foreign, Commonwealth and Development Office, VERTIC has undertaken research on misconceptions about biological and chemical weapons and related legal frameworks that VERTIC staff have identified through interactions with states over 20 years' work on these treaties, and from other sources. This report sets out these misconceptions and lays out factual and legal arguments to disprove them, supported by expert commentary.

Part 1 of the report addresses misconceptions related to the BWC and biological weapons. This analysis highlights the importance of the BWC and the 1925 Geneva Protocol in preventing biological weapons, despite perceived limitations of the instruments. Definitions of key concepts are explored, to explain the scope of the BWC and the materials that it covers. The issue of cross-border biological research is also tackled to establish that work for peaceful purposes is not a violation of the Convention.

Part 2 of the report addresses misconceptions related to the CWC and chemical weapons. The question of what constitutes a chemical weapon under the Convention is addressed from different angles in the analysis of a number of misconceptions, to demonstrate the scope of the CWC. Riot control agents and central nervous system (CNS) acting chemicals, are also explored to provide the reader with a clearer picture of how they fit within the CWC system. The relationship between the CWC and international humanitarian law is further studied in relation to attacks on chemical facilities.

Part 3 of the report addresses cross-cutting misconceptions concerning both biological and chemical weapons. These misconceptions challenge the universalisation of the treaties and their continued relevance in the 21st century. Through the provision of factual information, the report emphasises the importance of the BWC and CWC and why non-States Parties should consider joining the treaties. It further provides explanatory information about how the treaties function in practice, including by articulating the role of the Organisation for the Prohibition of Chemical Weapons (OPCW).

Finally, the report ends with a section describing next steps for stakeholders. It offers conclusions and recommendations on how to disprove misconceptions, in order to stop them from being used in harmful disinformation campaigns. It also lists factual resources on the BWC and CWC to further help to counter disinformation about the regimes they establish.

Introduction

“The international taboo against biological and chemical weapons grew out of the horrors of the First World War. Their use has long been established as contrary to the laws of humanity and the dictates of public conscience.”¹

Biological and chemical weapons present a significant threat to global security and public health. To prevent the weaponisation of biological agents, toxins and toxic chemicals the international community has agreed certain key international instruments that lay down binding obligations on states to ensure the non-proliferation and disarmament of such weapons.

The 1972 Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction has the objective of ensuring that biological agents and toxins are used solely for peaceful purposes. The Convention prohibits engagement with biological weapons and is the key international legal instrument preventing the proliferation of such weapons and the weaponisation of biological agents and toxins. Similarly the 1993 Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (CWC) has the objective of prohibiting and preventing chemical weapons, while facilitating the peaceful uses of toxic chemicals.

Universal adherence to, implementation of and compliance with international instruments addressing biological and chemical weapons is vital to uphold the rules-based international system and to prevent proliferation of such weapons. However, engagement with such instruments is hampered by misconceptions, which undermine trust in treaty regimes.

A misconception can be defined as “a belief or an idea that is not based on correct information, or that is not understood by people.”² The BWC and the CWC contain concepts that can be challenging to understand from a technical, scientific and legal perspective, leading to misconceptions among relevant stakeholders. The misconceptions can hamper implementation of the instruments at the national level as national stakeholders may misunderstand obligations or processes. They can also undermine the work of international organisations such as the OPCW.

Disinformation can be defined as “false information that is given deliberately.”³ Misconceptions can be used by nefarious actors in disinformation campaigns to discredit the international framework that exists to prevent the proliferation of biological and chemical weapons and stymie efforts to strengthen it. For example, state officials may be more prone to believe disinformation if they already have an incorrect understanding about certain aspects of the BWC or CWC. Disinformation can challenge the legitimacy

.....

- 1 United Nations Office for Disarmament Affairs, “Securing our Common Future: An Agenda for Disarmament”, New York, 2018, p24.
- 2 Oxford Learner’s Dictionaries online, “Misconception”, accessed at <https://www.oxfordlearnersdictionaries.com/definition/english/misconception>.
- 3 Oxford Learner’s Dictionaries online, “Disinformation”, accessed at <https://www.oxfordlearnersdictionaries.com/definition/english/disinformation?q=disinformation>.

of the treaties, making non-States Parties less likely to join them and States Parties less likely to comply with them. It is therefore necessary to actively promote technical, accurate information, to improve the quality of the debate and uphold the rules based international system prohibiting such weapons.

The main purpose of this report is to disprove misconceptions about biological and chemical weapons and related international instruments. It addresses misconceptions about biological and chemical weapons and related legal frameworks that VERTIC staff have identified through interactions with states over 20 years' work on these treaties, and from other sources such as the media. Each misconception is broken down into an explanation of the misconception and its implications, and how to address it. The publication then disproves the misconception in question through factual and legal discussions, supported by expert commentary.

It is hoped that this report will be able to provide tangible benefits for a wide range of stakeholders including legislators, policy makers, the diplomatic services, technical experts, civil society and academia, young professionals and students in the field, and also the media and the general public. It will serve as a useful tool that policy makers can use to clarify misunderstandings, help to equip technical experts to tackle misconceptions during training or awareness-raising activities and deepen the understanding of readers who are unfamiliar with the relevant international framework. Overall, by providing factual information to improve the discourse on international instruments concerning biological and chemical weapons, it will further adherence to, implementation of and compliance with such instruments.

Misconceptions related to the BWC

MISCONCEPTION 1

The BWC does not cover biological weapons use

The misconception and its implications

A common misconception is that the Biological Weapons Convention does not address the use of biological weapons. Should the BWC regime be seen to fail to address the use of biological weapons, this would represent a serious gap that could arguably undermine the relevance of the Convention. Belief in this misconception could lead a State Party to misunderstand the extent of its legal obligations under the BWC.

Addressing the misconception

Under Article I of the BWC each State Party “undertakes never in any circumstances to develop, produce, stockpile, or otherwise acquire or retain” biological weapons. Notably, an undertaking never to use biological weapons is absent. During the negotiations for a treaty on biological weapons an explicit ban was proposed, however certain states felt that this was unsuitable for a number of reasons and as such the term was not included in later proposals.⁴ Yet, in the CWC, a similar treaty outlawing a class of weapons, use of a chemical weapon is expressly prohibited under Article I(1)(b). Nevertheless, despite the omission of the word “use” from the text of the treaty, the BWC does implicitly prohibit the use of biological weapons. It achieves this in three ways, namely through (i) the ban on possession, (ii) reference to the Geneva Protocol and (iii) additional understandings reached by BWC Review Conferences.

The ban on possession: As stated above, Article I of the BWC prohibits the possession of biological weapons. In order to use a biological weapon, in most cases the perpetrator must first possess the weapon. As such, the use of a biological weapon would therefore be implicitly prohibited through the prohibition on possession of such a weapon.

Geneva Protocol: The Preamble of the BWC reaffirms the 1925 Geneva Protocol for the Prohibition of the Use of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare (Geneva Protocol) by recognising its importance and contribution to mitigating the horrors of war. The Preamble further notes that States Parties are “determined, for the sake of all mankind, to exclude completely the

4 See for example that some states “considered that the matter was already ‘clearly and unequivocally’ settled by the Geneva Protocol and that a provision banning only biological warfare would detract from the Protocol which prohibited both biological and chemical warfare.” SIPRI, “The Problem of Chemical and Biological Warfare: Volume IV, CB Disarmament Negotiations, 1920-1970” at p316. For further information background to the omission of the term “use” from the text of the BWC, see “BWPP Biological Weapons Reader”, Edited by Kathryn McLaughlin and Kathryn Nixdorff, 2009, Chapter 2. “History of BTW Disarmament” Marie Isabelle Chevrier pp13-19, Jean Pascal Zanders, “The Meaning of ‘Emergency Assistance’: Origins and negotiation of Article VII of the Biological and Toxin Weapons Convention”, Working Paper, The Trench/Fondation pour la Recherche Stratégique, 2018, and Jean Pascal Zanders and Susanna Eckstein, “The Prohibition of ‘Use’ under the BTWC: Backgrounder on relevant developments during the negotiations, 1969-1972”, SIPRI, Revision 2015. Similar discussions occurred during the negotiations for the CWC, however use was included in the final text of the Chemical Weapons Convention.

possibility of bacteriological (biological) agents and toxins being used as weapons". The Geneva Protocol prohibits such use of biological weapons as methods of warfare, when States Parties to the Protocol "agree to extend this prohibition to the use of bacteriological methods of warfare and agree to be bound as between themselves according to the terms of this declaration". Article VIII of the BWC further reinforces the prohibition on use of biological weapons. It states that "nothing in this Convention shall be interpreted as in any way limiting or detracting from the obligations assumed by any State under the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, signed at Geneva on June 17, 1925". The title of the BWC and the text of the treaty expand the understanding of 'bacterial' to 'biological' methods of warfare and also refer to toxins, demonstrating an evolution in the understanding of the weapon category. Therefore, the references in the BWC to the Protocol ensure that use is covered. Misconception 14 in this report discusses in more detail the relevance of the Geneva Protocol and demonstrates how it relates to the BWC and CWC.

Review conferences: Final documents of BWC Review Conferences provide guidance on interpretation of the Convention, and specify States Parties' understanding of their obligations under the Convention. Successive review conferences have reaffirmed that use of a biological weapon by BWC States Parties would be a treaty violation, with the Final Document of the Eighth Review Conference noting "that the use by the States Parties, in any way and under any circumstances of microbial or other biological agents or toxins, that is not consistent with prophylactic, protective or other peaceful purposes, is effectively a violation of Article I."⁵ As such, any use of a biological weapon by a State Party is considered a violation of Article I of the BWC. Adherence to and implementation of the BWC therefore are important in ensuring that biological weapons are not used.

.....
5 See Eighth Review Conference of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, "Final Document of the Eighth Review Conference", BWC/CONF.VIII/4, 11 January 2017, Article 1(3).

MISCONCEPTION 2

The term 'biosafety' only has one meaning, which is protecting biodiversity

The misconception and its implications

This misconception relates to the scope of the term “biosafety” in relation to the Cartagena Protocol on Biosafety to the Convention on Biological Diversity (Cartagena Protocol) and laboratory “biosafety”, as defined by the World Health Organization (WHO), which relates to the safe handling of biological agents and toxins. This seemingly minor misconception can hamper legislative drafting efforts if it creates an erroneous impression that biosafety, as defined by the WHO, is covered by a domestic legal system in cases where the state in question has already created legal instruments to protect biodiversity (or will be, if the state is intending to implement the Cartagena Protocol). When implementing the BWC in line with Article IV of the treaty, the Eighth Review Conference for the Convention noted that States Parties should adopt biosafety and biosecurity measures.⁶ Biosecurity can broadly be understood as measures to help prevent unauthorised access, loss, theft, misuse, diversion or intentional release of biological agents. Examples of biosafety and biosecurity measures that could be adopted include measures to account for and secure production, use, storage and transport of particularly dangerous biological agents and toxins.

Addressing the misconception

As the text of the BWC does not contain the term “biosafety”, it is important to consider other internationally accepted documents that define the term. The WHO Laboratory biosafety manual (LBM), 4th edition is an important and authoritative international guidance document. Revised in 2020, the manual provides a risk-based approach to the topic and serves as “a de facto global standard that presents best practices and sets trends in biosafety.”⁷ It defines biosafety as “containment principles, technologies and practices that are implemented to prevent unintentional exposure to biological agents or their inadvertent release.”⁸ Biosafety in this context therefore, relates to measures to help prevent unintentional exposure or accidental release of biological agents, to ensure that peaceful activities involving such materials are not harmful for those handling them and for the wider public. It is sometimes referred to as “laboratory biosafety”. The International Organization for Standardization (ISO) further defines biosafety similarly in its Standard 35001:2019 Biorisk management for laboratories and other related organisations.⁹

The Cartagena Protocol is “an international agreement which aims to ensure the safe handling, transport and use of living modified organisms (LMOs) resulting from modern biotechnology that may have adverse effects on biological diversity, taking also into account risks to human health.”¹⁰ It was adopted as a supplementary agreement to the Convention on Biological Diversity on 29 January 2000 and currently has 173 States Parties.

Biosafety is not expressly defined in the text of the Cartagena Protocol, however the introduction to the Protocol states that “Biosafety is one of the issues addressed by the Convention. This concept refers to

6 *Ibid*, Article IV 11(c).

7 See WHO, “Laboratory biosafety manual”, 21 December 2020, accessed at <https://www.who.int/publications/i/item/9789240011311>.

8 WHO, “Laboratory biosafety manual: fourth edition”, Glossary of terms, page x.

9 See International Organization for Standardization “ISO 35001:2019 Biorisk management for laboratories and other related organisations”, “biosafety”.

10 Convention on Biological Diversity, “The Cartagena Protocol on Biosafety”, accessed at <https://bch.cbd.int/protocol/>.

the need to protect human health and the environment from the possible adverse effects of the products of modern biotechnology.” Article 20 of the Protocol further creates the Biosafety Clearing House, an international mechanism to facilitate the exchange of scientific, technical, environmental and legal information on, and experience with, living modified organisms and to assist Parties to implement the Protocol.

Therefore, there is an overlap between the understanding of biosafety in relation to the BWC and WHO LBM and under the Cartagena Protocol in that they both address the safety of living modified organisms.¹¹ Nevertheless the scope for biosafety in the context of the BWC and related instruments such as WHO LBM is broader as they relate to all biological agents whatever their origin.

Moreover, the objectives of the two treaties are different. The aim of the Cartagena Protocol can be understood to protect “nature from the potential risks posed by such organisms by establishing procedures countries can use to make informed decisions on the import of such organisms.”¹² The BWC on the other hand prohibits the development, production, acquisition, transfer, stockpiling and use of biological and toxin weapons and seeks to ensure the safe and secure use of biological agents to prevent their misuse.

The aforementioned differences mean that despite some overlap, when implementing the two treaties states will need to create a number of different control measures. As noted above, many states have given legislation implementing the Cartagena Protocol titles such as the “Law on Biosafety”. Due to the difference in scope and emphasis of the two instruments, legislation implementing the Cartagena Protocol would not address the full national implementation requirements of the BWC that relate to biosafety. In order to fully implement the BWC, it is necessary for states to create measures at the national level to prevent unintentional exposure or accidental release of all biological agents.

.....
11 The definition found in Article 1 of the BWC defines biological weapons as “microbial or other biological agents, or toxins whatever their origin or method of production.” As such, living modified organisms fall under the scope of the BWC.

12 Government of Canada, “Biosafety: Cartagena Protocol”, accessed at <https://www.canada.ca/en/environment-climate-change/corporate/international-affairs/partnerships-organizations/biosafety-cartagena-protocol.html>

MISCONCEPTION 3

Cross-border biological research violates the BWC

The misconception and its implications

This misconception relates to the view that international public health collaboration and cross-border biological research is inherently suspicious and that it is a violation of the BWC. States often collaborate in research on biological agents and toxins for peaceful purposes, yet this can be viewed as problematic by certain actors who conflate biological research with research on and development of biological weapons. Research is not covered by the BWC, whereas the development of biological weapons is prohibited under Article I.

It is important to note that this misconception has been used in disinformation campaigns to cast aspersions over legitimate international public health collaboration and to claim that certain states are violating the BWC by developing biological weapons.

Addressing the misconception

Cross-border collaboration on research related to biological agents and toxins is not a violation of the BWC, unless such research is contrary to the Article I (such as research to develop a biological weapon). Indeed, the General Purpose Criterion found under Article I of the Convention rules that whether a biological agent or toxin can be considered a biological weapon depends on the purpose of the material in question. Moreover, the biological weapons are agents and toxins “of types and in quantities that have no justification for *prophylactic, protective or other peaceful purposes*,” demonstrating that activities involving such materials for certain purposes are allowed under the Convention. As such, activities involving biological agents and toxins for prophylactic, protective or other peaceful purposes are not a violation of the BWC.

It is further important to note that such international collaboration on research is specifically understood to be addressed in Article X of the BWC. Under this provision, States Parties “facilitate, and have the right to participate in, the fullest possible exchange of equipment, materials and scientific and technological information” for peaceful purposes. A key component of such exchange is capacity building and research related to infectious diseases. Successive Review Conferences of the BWC have urged:

“States Parties in a position to do so to continue supporting, directly as well as through international organizations, capacity-building in States Parties in need of assistance in the fields of disease surveillance, detection, diagnosis and combating of infectious diseases and related research.”¹³

BWC States Parties with advanced systems often provide assistance in the fields of disease surveillance, detection, diagnosis and combating of infectious diseases and related research to build capacity, recognising the potential cross-border effects of infectious disease outbreaks. Such cooperation has, for example, been critical to the fight against the COVID-19 pandemic and provides clear benefits for humanity.¹⁴ Further, additional understandings in relation to Article VII of the treaty have noted that national preparedness is key to preventing or responding to biological weapons use and that States Parties can cooperate in building such capacities.¹⁵

¹³ See for example, “Final Document of the Eighth Review Conference”, Article X, 64(e).

¹⁴ See Governments of the United States of America, Armenia, Georgia, Iraq, Jordan, Liberia, Philippines, Sierra Leone, Uganda, and Ukraine, “Joint Statement on the Contribution of Cooperative Threat Reduction Partnerships to Global Health Security”, August 29, 2022, accessed at <https://www.state.gov/joint-statement-on-the-contribution-of-cooperative-threat-reduction-partnerships-to-global-health-security>.

¹⁵ See for example, “Final Document of the Eighth Review Conference”, Article VII.

Overall, the position under international law was recently summarised by Dr. Jean-Pascal Zanders, independent expert on chemical and biological weapons, who stated “Biological Weapons are banned; biological research is not”.¹⁶ The BWC prohibits the weaponisation of biological agents and toxins, but facilitates the use of such materials for peaceful purposes. Under the General Purpose Criterion, by virtue of its purpose, the preparation of the production or development of biological weapons is distinct from permitted research.¹⁷ The cross-border aspect of permitted research allows BWC States Parties to enjoy the benefits of peaceful activities involving biological agents and toxins and build capacities at the national level to combat infectious diseases. International collaboration regarding research on biological agents should not be assumed to be suspicious and has helped to save lives across the globe.

.....
16 EU vs Disinfo, “Biological weapons are banned; biological research is not”, 08 April 2022, accessed at <https://euvsdisinfo.eu/biological-weapons-are-banned-biological-research-is-not/>.

17 See Walter Krutzsch, Eric Myjer, Ralf Trapp, “The Chemical Weapons Convention: A Commentary”, Oxford Commentaries on International Law, August 2014, Article 1 for similar discussion on development of a chemical weapons vs permitted research.

MISCONCEPTION 4

Biological weapons are a thing of the past

The misconception and its implications

The misconception is that biological weapons are not militarily or strategically useful and therefore obsolete. The idea that biological weapons are not useful stems from a number of challenges related to their use on the battlefield and the notion that their utility may be limited in relation to the required investment to create a biological weapons programme. Several characteristic properties limit their military utility, such as challenges related to the incubation period, containment, persistence, instability, infectivity and retroactivity.¹⁸ Moreover, examples of biological weapons use in recent history are relatively rare and there have not been confirmed cases of large-scale battlefield use of biological weapons for decades.¹⁹

The implications of this misconception is that biological weapons are not a threat as they are not useful to hostile actors and as such, little attention should be paid to addressing proliferation risks involving such weapons.

Addressing the misconception

Despite the lack of recent widespread use of biological weapons, they continue to present a significant and grave threat to international peace and security. Non-state actors have sought to develop and use biological weapons in recent years. Two individuals affiliated with Da'esh/Islamic State in Iraq and the Levant were prosecuted in Germany for producing a biological weapon.²⁰ The evident risk of potentially high impact bioterrorism and bio crime therefore present a significant challenge to law enforcement officials around the globe.

The 21st century has seen remarkable advances in science and technology, changing the potential of biological weapons. New biotechnologies, including artificial intelligence, synthetic biology and genetics, could provide states and other actors with new ways to deliver biological weapons. Katherine Charlet, the inaugural director of Carnegie's Technology and International Affairs Program noted in 2018 that new technologies could lower the barriers to engagement with biological weapons programmes, stating that the "combined factors of lower cost, easier access, and greater effectiveness . . . may incentivize rogue and small states to reconsider the marginal utility of investing in biological weapons."²¹ The lack of use of biological weapons in recent history is welcome, yet it should not be taken as an indicator that such weapons will never be used again.

Finally, it is crucial to consider the devastating impact that a biological weapons attack could have in an interconnected global world. The COVID-19 pandemic, while not the result of a biological weapon, has demonstrated the danger of the spread of dangerous biological agents. As noted by Ms. Izumi Nakamitsu, United Nations (UN) Under-Secretary-General and High Representative for Disarmament Affairs:

"We have witnessed the catastrophic economic and humanitarian cost of the COVID-19 pandemic, which still lingers today. The life-changing impact of the pandemic clearly shows how devastating it could be if similar biological agents were to be intentionally used for malicious purposes."²²

18 "BWPP Biological Weapons Reader", p10.

19 See W. Seth Carus, "Defining 'Weapons of Mass Destruction'", Center for the Study of Weapons of Mass Destruction Occasional Paper, No. 8, January 2012, p44.

20 Thomas Brown, "Judicial Enforcement of BWC and CWC implementing legislation" VERTIC Brief No. 34, February 2022, pp3-4.

21 Katherine Charlet, "The New Killer Pathogens: Countering the Coming Bioweapons Threat", Foreign Affairs, April 17, 2018.

22 Opening Remarks by Ms. Izumi Nakamitsu United Nations Under-Secretary-General and High Representative for Disarmament Affairs, Open Consultations on the Comprehensive Review of the Status of Implementation of Resolution 1540 (2004), 31 May 2022.

The deadly potential of biological agents demonstrated throughout the pandemic has led to increased focus on the security of such agents, and it is crucial that nefarious actors are not able to access the necessary materials to develop biological weapons. The effect of a biological weapon that is not on a global pandemic level could still have devastating consequences and destabilising repercussions. Overall, despite the adoption of the BWC and limited use of biological weapons in recent history, the weaponisation of biological agents continues to pose a significant threat to humanity. It is therefore critical to ensure adequate biosafety and biosecurity measures worldwide and strengthen the BWC and norm against biological weapons.

MISCONCEPTION 5

The BWC is a political commitment only

The misconception and its implications

The misconception is that the BWC is unenforceable and therefore only a political instrument, due to the lack of a legally binding international verification mechanism.

The implication of this misconception is to undermine the treaty regime and the prohibitions under Articles I and III.²³ This misconception stems from the lack of a verification regime and related mechanisms; the BWC is often contrasted with the CWC regime and the various mechanisms for verifying and monitoring under the latter. The misconception could have disastrous consequences at the international level by weakening the core prohibitions found in the BWC, and not discouraging violations of the treaty.

Addressing the misconception

Firstly, it is important to clarify that there is no legally binding verification mechanism under the BWC as a result of divergent views over what form verification should take and practical challenges related to such activities in this field.²⁴ Notably, “verification of the BWC poses unique and substantial challenges because of the dual-use nature of the materials, equipment and technical know-how required for a BWC programme.”²⁵ The debate on BWC verification has been extensively addressed by expert commentators, and verification discussions continue during and on the margins of international BWC meetings.²⁶

Despite this well-documented lack of a comprehensive verification mechanisms, the BWC is not unenforceable. The BWC is an international treaty which creates binding international obligations on States Parties under international law and, therefore, not a political instrument. A violation of the treaty, the development of a biological weapon by a State for instance, would therefore constitute a breach of international law. Notwithstanding the lack of a binding verification mechanism, BWC States Parties have created initiatives to increase trust and transparency, in order to assure each other that the treaty is not being violated. For example, the Second Review Conference to the BWC introduced Confidence Building Measures (CBMs), which aim “to prevent or reduce the occurrence of ambiguities, doubts and suspicions and to improve international cooperation in the field of peaceful biological activities.”²⁷ These important transparency initiatives help to provide States Parties with confidence about the biological activities of other States Parties. The BWC Implementation Support Unit (ISU) was established within the United Nations in August 2007 to provide administrative support in relation to the BWC, including to receive and distribute CBMs among States Parties.

Each BWC State Party currently must rely on its own resources to assess the compliance of other States Parties. Nevertheless, the text of the BWC does provide for various related mechanisms, under Article V and Article VI. Article V provides an undertaking to consult bilaterally and multilaterally and cooperate in solving any problems which may arise in relation to the objective, or in the application, of the BWC;

23 In Article III of the BWC, States Parties undertake not to transfer, or in any way assist, encourage or induce anyone to manufacture or otherwise acquire biological weapons.

24 See “BWPP Biological Weapons Reader”, Chapter 3.

25 Filippa Lentzos, “Compliance and Enforcement in the Biological Weapons Regime”, UNIDIR WMD Compliance & Enforcement Series, Paper Four, p7.

26 Sonia Drobysz, “Verification and implementation of the Biological and Toxin Weapons Convention”, *The Nonproliferation Review*, 27:4-6, 2020, p493.

27 UNODA, “Confidence Building Measures”, accessed at <https://www.un.org/disarmament/biological-weapons/confidence-building-measures>.

Article VI provides any party which finds any other party acting in breach of its obligations with the right to lodge a complaint with the UN Security Council. These two provisions of the treaty give States Parties mechanisms to deal with perceived breaches of the BWC in a consultative manner.

As such, it is evident that while the BWC does not have an advanced verification system akin to that of the CWC, it is not just a political instrument. A violation of the treaty would breach international law, and States Parties to the BWC consult on issues related to transparency and compliance with the Convention to assure each other that the instrument is not being violated. Nevertheless, the dual-use nature, and other complicating characteristics, of biological materials have meant that verification in the context of the BWC has proven challenging. It is important therefore, for States Parties to continue to seek avenues to strengthen the BWC, to ensure that the treaty is not being violated.

Misconceptions related to the CWC

MISCONCEPTION 6

Any use of a chemical to cause harm is a ‘chemical weapon’

The misconception and its implications

There is a notion that any use of any chemical with the intention to cause harm makes it a “chemical weapon” as defined by the CWC. This misconception stems from a misunderstanding of the definitions of “chemical weapon” and “toxic chemical” under the CWC. It has surfaced in media coverage of instances where military use of hazardous chemicals have resulted in civilian casualties, with a notable example being the use of white phosphorus,²⁸ and use of riot control agents for domestic law enforcement purposes.²⁹

This misconception expands the scope of what is perceived as a chemical weapon beyond the scope of the CWC. This has several implications. Firstly, it can undermine and erode public trust in the OPCW when there is an (incorrect) perception of chemical weapons use that the OPCW then does not investigate. Furthermore, it can create pressure on the OPCW to investigate incidents that fall outside the scope of chemical weapon use, which is beyond their remit under the CWC.

A second implication of this misconception is that it clouds the applicability of other avenues of international law to incidents that, despite not being instances of chemical weapons use, are nevertheless crimes under international law. A focus on whether the weapon used was a chemical weapon, rather than how a weapon was used, risks circumventing adequate scrutiny of breaches of international law. This could potentially make war crimes more difficult to define and prosecute.³⁰

Addressing the misconception

Toxic chemicals: The key aspect of the CWC definition of a chemical weapon in relation to this misconception is found in Article II, paragraph 1(a), which defines chemical weapons as “toxic chemicals and their precursors, except where intended for purposes not prohibited under this Convention”. Toxic chemicals are then defined in paragraph 2 as “any chemical which *through its chemical action on life processes* can cause death, temporary incapacitation or permanent harm to humans or animals”. It is important to note that the definitions of “toxic chemicals” and “chemical weapons” in the CWC are seen as authoritative and replicated in other international treaties such as the 2010 Convention on the Suppression of Unlawful Acts Relating to International Civil Aviation.

28 See, for example, Lara Seligman, “Turkish Proxies Appear to be Using White Phosphorus in Syria”, Foreign Policy, 17 October 2019, accessed at <https://foreignpolicy.com/2019/10/17/turkish-proxies-chemical-weapons-syria-kurds/>.

29 For more information on riot control agents, see Misconception 8.

30 Matthew J. Aiesi, “The Jus in Bello of White Phosphorus: Getting the Law Correct”, Lawfare, 26 November 2019, accessed at <https://www.lawfareblog.com/jus-bello-white-phosphorus-getting-law-correct>.

White Phosphorus

White phosphorus is a toxic substance that is manufactured from phosphate rocks. It catches fire when exposed to air, producing thick white smoke and reaching extremely high temperatures of over 800 degrees centigrade. It can be used by militaries for obscuring movement of forces or illuminating military targets³¹, as well as for its incendiary effect. White phosphorus was found to have been used during the conflict in the Syrian Arab Republic in 2019 and to have caused civilian deaths.³² This prompted equivocations of the use of white phosphorus as use of a chemical weapon and, consequently, calls for the OPCW to investigate. The use of white phosphorus is subject to restrictions under various regimes under international law, including international humanitarian law and, in certain circumstances, the Protocol III of the Convention on Certain Conventional Weapons. It can cause severe burns and horrific injuries to humans.

However, white phosphorus does not fit the definition of a chemical weapon as the harm it causes does not result from its effects as a toxic chemical on life processes, as described above. It would not fall under the CWC “unless [it] was used specifically for its toxic effects, say by deliberately burning WP [white phosphorus] in a tunnel in the hope of suffocating its occupants.”³³

In the case of the allegations of white phosphorus use in the Syrian Arab Republic in 2019, a spokesperson for the OPCW was quoted by several media outlets as saying that the OPCW was “collating information at OPCW headquarters with regard to the alleged use of chemical weapons” but that “it has no indication so far of the use of any specific toxic chemical as a weapon.”³⁴ The use of white phosphorus for the military purposes explained above falls outside the remit of the CWC, and as such, the OPCW would have been unable to investigate the incident further.

The OPCW nevertheless came under international scrutiny for its decision not to investigate the incident and raised speculation that the decision was politically motivated. Such allegations detract from the fact that the use of white phosphorus in this way, and the civilian casualties it incurred (including children), should be investigated by the appropriate authorities and may amount to a breach of the foundational principles of international humanitarian law.³⁵

The OPCW lists certain chemical agents, including blistering agents, asphyxiating gases, blood agents and nerve agents, as examples of toxic chemicals that would be classified as chemical weapons if used for purposes prohibited under the CWC. As explained in a discussion on the Lawfare blog, “these weapons rely on the toxic properties their base agents have when they interact with human physiology—that is, ‘life processes.’”³⁶ Other types of chemicals, such as corrosive or flammable chemicals, while harmful to humans and animals, do not cause harm in the same way as toxic chemicals. As such, these chemicals fall outside the scope of the CWC.

The CWC Commentary further expands upon this, noting that “weapons using effects of chemicals other than toxicity are not covered [by the CWC], even in case of toxic side effects when such weapons are used.

.....
31 Centres for Disease Control and Prevention, “White Phosphorus: Systemic Agent”, accessed at https://www.cdc.gov/niosh/ershdb/emergencyresponsecard_29750025.html.

32 Bel Trev, “Turkey faces scrutiny over alleged use of white phosphorus on children in northern Syria”, the Independent, 19 October 2019, accessed at <https://www.independent.co.uk/news/world/middle-east/syria-turkey-ceasefire-war-crimes-middle-east-a9161586.html>.

33 Bellingcat Investigation Team, “White Phosphorous Use in Northern Syria – Should The OPCW Investigate?”, Bellingcat, 6 November 2019, accessed at <https://www.bellingcat.com/news/mena/2019/11/06/white-phosphorous-use-in-northern-syria-should-the-opcw-investigate/>.

34 Bel Trev, “Turkey faces scrutiny over alleged use of white phosphorus on children in northern Syria”, the Independent, 19 October 2019, accessed at <https://www.independent.co.uk/news/world/middle-east/syria-turkey-ceasefire-war-crimes-middle-east-a9161586.html>.

35 ICRC, “Rule 1. The Principle of Distinction between Civilians and Combatants”, ICRC IHL Database: Customary IHL, accessed at https://ihl-databases.icrc.org/customary-ihl/eng/docs/v1_rul_rule1.

36 *Ibid.*

An example for that are flame or smoke weapons which produce toxic side effects yet are not under the Convention considered to be chemical weapons.³⁷

Purposes not prohibited by the Convention: A further point to consider when addressing this misconception is that the CWC classifies chemical weapons as toxic chemicals that are used “except for purposes not prohibited under [the] Convention”. These purposes are listed in Article II, paragraph 9 and include the following:

- “(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”.

In both these instances, it is possible that the use of chemicals may cause harm to humans: such as the ability of riot control agents to “produce rapidly in humans sensory irritation or disabling physical effects which disappear within a short time following termination of exposure”.³⁸

Ultimately, however, the definition of a chemical weapon is significantly narrower than simply using a chemical to cause harm. As summarised in the CWC Commentary, “most if not all weapons [utilise chemicals]: a high-explosive such as dynamite, an incendiary such as napalm, a smoke generating mixture, missile fuel and gun-powder are all chemicals. Even such an old-fashioned weapon as a sword is made of chemicals (in that case iron or iron alloys)”.³⁹ In order to ensure that the mandate of the OPCW and scope of the CWC are respected, and that international crimes are investigated through the correct avenues, it is important to avoid over-generalisations of what constitutes a chemical weapon.

.....
37 “CWC Commentary”, Article II, paragraph 1.
38 CWC Article II, paragraph 7.
39 “CWC Commentary”, Article II, paragraph 1.

MISCONCEPTION 7

Only chemicals on the CWC schedules qualify as chemical weapons

The misconception and its implications

There is a misconception only toxic chemicals listed in Schedules 1,2 or 3 of the CWC can be considered chemical weapons under the Convention. It arguably stems from a technical misunderstanding of the Schedules to the CWC, and the role they play in the Convention regime.

This misconception implies that toxic chemicals not found on the Schedules to the CWC would not qualify as a chemical weapon even if they were used for non-peaceful purposes. If true, this would represent a serious gap in the Convention, especially in light of advances in science and technology which could lead to the weaponisation of new toxic chemicals. Also, national authorities may fail to adequately address unscheduled toxic chemicals as a result of the mistaken view that it would not qualify as a chemical weapon.

Addressing the misconception

Under Article II, paragraph 1 of the CWC, chemical weapons are defined on the basis of purpose. See Misconceptions 8 and 9 for further details. Such a definition focuses on the purpose behind the use of the chemical, rather than its origin. As such, it ensures that the prohibition can withstand future advances in science and technology and the discovery of new toxic chemicals. The CWC Commentary notes that “under this concept all toxic or precursor chemicals are regarded as chemical weapons unless they have been developed, produced, stockpiled, or used for purposes not prohibited.” This definition must be read in conjunction with other terms that must be defined to implement the convention, such as “toxic chemical”, “precursor” and “purposes not prohibited under the Convention”.

Any toxic chemical can be a chemical weapon, but the chemicals listed in the Schedules found in the CWC Annex on Chemicals are those toxic chemicals that are subject to declarations by States Parties and *verification* by the OPCW. Listing chemicals in the different Schedules prescribes different control measures under the CWC. For example, the verification through on-site inspections by the OPCW occurs at sites which produced during the previous calendar year or are anticipated to produce in the next calendar year in excess of 200 tonnes aggregate of any Schedule 3 chemical above the declaration threshold of 30 tonnes. However, the threshold for the amount of production that makes a site subject to such inspections is lower for Schedule 2 chemicals.

Despite the control framework found in the treaty, some toxic chemicals that can be used for chemical weapons purposes are not found in the Schedules to the CWC. An example of a toxic chemical not found in the Schedules is chlorine gas. Widespread use of chlorine at Ypres in the First World War is one of the most infamous uses of chemical weapons in history and recently chlorine was used as a weapon in the conflict in the Syrian Arab Republic.⁴⁰ Nevertheless, it is not found on Schedules to the CWC for a number of reasons. Chlorine is widely used worldwide for a number of peaceful purposes and the sheer volume of chlorine being produced, traded and used would make verification and inspection logistically extremely challenging.⁴¹ It was also believed at the time of negotiations that chlorine would not be used as a chemical weapon again, due to the lack of use since the First World War.⁴²

40 For example, see Report of the OPCW Fact-Finding Mission in Syria Regarding an alleged incident in Saraqib, Syrian Arab Republic, on 4 February 2018 S/1626/2018, 15 May 2018, paragraph 7.4: “chlorine, released from cylinders through mechanical impact, was likely used as a chemical weapon on 4 February 2018 in the Al Talil neighbourhood of Saraqib.”

41 Jean-Pascal Zanders, “What is a chemical weapon? When is chlorine a chemical weapon?”, the Trench, 18 April 2018, accessed at <https://www.the-trench.org/what-is-a-cw>.

42 *Ibid.*

CWC schedules at a glance

- Schedule 1 chemicals **pose a high risk** to the object and purpose of the CWC and have **little or no use** for purposes not prohibited under the Convention
- Schedule 2 chemicals **pose significant risk** to the object and purpose of the Convention and are **not produced** in large commercial quantities for purposes not prohibited under this Convention
- Schedule 3 chemicals **pose a risk** to the object and purpose of the Convention and **may be produced** in large commercial quantities for purposes not prohibited under the CWC

Furthermore, it is important to note that CWC Schedules have recently been updated to include novichok agents. This amendment to the Annex on Chemicals occurred after the use of a novichok nerve agent against the Skripal family in Salisbury, UK, and a second exposure in Amesbury, UK in 2018.⁴³ At the time, novichok agents did not appear in the Annex on Chemicals, but this is not relevant to the question of whether their use constituted chemical weapon use. The 2018 use is still considered use of a chemical weapon, because novichok agents are toxic chemicals and were used to cause harm, thereby meeting the definition of a chemical weapon in the CWC. Suspects were charged with violations of the Chemical Weapons Act,⁴⁴ the UK's primary piece of legislation implementing the CWC at the national level. Later in 2019 the 24th Session of the Conference of the States Parties (CSP) to the CWC adopted two decisions⁴⁵ to amend the Annex on Chemicals to the Convention. As stated above, this means that novichok agents are now subject to national declarations and OPCW verification. Notably, in relation to an incident involving the alleged use of a chemical weapon against Mr Alexei Navalny in 2020 (see Misconception 16) the OPCW stated that "the biomarkers of the cholinesterase inhibitor found in Mr Navalny's blood and urine samples have similar structural characteristics to the toxic chemicals belonging to schedules 1.A.14 and 1.A.15, which were added to the Annex on Chemicals to the Convention at the Twenty-Fourth Session of the Conference of the States Parties in November 2019. This cholinesterase inhibitor is not listed in the Annex on Chemicals to the Convention."⁴⁶ Regardless of whether the toxic chemicals used were listed in the Annex on Chemicals, they could still be considered chemical weapons on the basis of their purpose.

The examples of chlorine and novichok demonstrate the importance of the General Purpose Criterion in the CWC regime. The CWC was specifically drafted to ensure that any use of a toxic chemical as a weapon is covered by the definition of a chemical weapon, making intent the key characteristic. States must ensure that the criterion is faithfully transposed into national legislation, to guarantee that chemical weapons are adequately prohibited at the domestic level. The Schedules found in the Annex of Chemicals provide a list of chemical substances that are subject to various controls under the CWC. If a toxic chemical is not found on any of the Schedules, it can nevertheless be used in a way that meets the definition of chemical weapon under the CWC.

43 See Thomas Brown, "CWC Annex on Chemicals changed for the first time", *Trust & Verify No.165*, VERTIC, February 2020.

44 Crown Prosecution Service, "CPS Statement – Salisbury", 05 September 2018, accessed at <https://www.cps.gov.uk/cps/news/cps-statement-salisbury>.

45 OPCW, "Decision: Changes to Schedule 1 of the Annex on Chemicals to the Chemical Weapons Convention," C-24/DEC.5, November 27, 2019; OPCW, "Decision: Technical Change to Schedule 1(A) of the Annex on Chemicals to the Chemical Weapons Convention," C-24/DEC.4, November 27, 2019.

46 OPCW, "Note by the Technical Secretariat: Summary of the Report on Activities Carried Out In Support of a Request for Technical Assistance by Germany (Technical Assistance Visit – TAV/01/20)", S/1906/2020, 6 October 2020.

MISCONCEPTION 8

Riot control agents are chemical weapons that can be used during demonstrations in peacetime

The misconception and its implications

The misconception is that riot control agents, such as tear gas, are chemical weapons which the CWC prohibits the use of during warfare but permits the use of domestically during peacetime for law enforcement purposes. The misconception stems from a misunderstanding of how the terms “chemical weapon”, “toxic chemical” and “riot control agent” are defined under the CWC. It is further compounded by a misunderstanding of how the various relevant provisions of the CWC are read together to prohibit the use of riot control agents as a method of warfare, and more widely to prohibit the use of chemical weapons under any circumstances. Media reporting⁴⁷ and public discussion of law enforcement responses to various instances of civil unrest have condemned the use of riot control agents as a chemical weapon without clarifying that while the CWC classifies riot control agents as toxic chemicals, it does not permit the use of chemical weapons under any circumstances.

The implication of this misconception is a misunderstanding that the CWC permits States Parties to use chemical weapons that are banned in international and non-international armed conflicts against their own populations during peacetime, effectively legitimising the use of chemical weapons in certain circumstances. This in turn risks undermining the legitimacy of the CWC and eroding public support for it within States Parties. It also leads to confusion over the definition of a chemical weapon, which could ultimately result in States incorrectly defining chemical weapons in their national legislation and consequently not fully implementing the Convention. Furthermore, focusing on whether riot control agents are themselves chemical weapons distracts from analysis on whether the quantity, dissemination of and reason for use of riot control agents in the instances in question was lawful.

Addressing the misconception

Under Article I, paragraph 5 of the CWC “each State Party undertakes not to use riot control agents as a method of warfare”. The CWC goes on to define riot control agents in Article II, paragraph 7 as “any chemical not listed in a Schedule, which can produce rapidly in humans sensory irritation or disabling physical effects which disappear within a short time following termination of exposure”.

The definition of a chemical weapon under the CWC must also be considered when addressing the definition of riot control agents. The CWC only defines toxic chemicals (and their precursors) as chemical weapons depending on their intended purpose: this is known as the General Purpose Criterion.⁴⁸ Article II, paragraph 1(a) defines chemical weapons as “toxic chemicals and their precursors, except where intended for purposes not prohibited under this Convention, as long as the types and quantities are consistent with such purposes”. Following from this, Article II, paragraph 9 includes “law enforcement including domestic riot control purposes” as one of the purposes not prohibited under the Convention.

Commonly used riot control agents, such as tear gas (CS) and pepper spray (OC) fall within the CWC definition of toxic chemicals as chemicals that “through [their] chemical action on life processes can cause death,

47 See for example: Shireen Daft, “Tear gas and pepper spray are chemical weapons. So, why can police use them?”, *The Conversation*, 11 June 2020, accessed at <https://theconversation.com/tear-gas-and-pepper-spray-are-chemical-weapons-so-why-can-police-use-them-140364>.

48 OPCW, “What is a Chemical Weapon”, accessed at <https://www.opcw.org/our-work/what-chemical-weapon#:~:text=General%20Purpose%20Criterion%20%E2%80%93%20Intent&text=Any%20chemical%20intended%20for%20chemical,%20chemical%20weapons%20purposes'%20are>.

temporary incapacitation or permanent harm to humans or animals”.⁴⁹ It should be noted that States Parties are limited to riot control agents that do not appear on the CWC Schedules of listed chemicals, as outlined under Article II, paragraph 7. Moreover, the General Purpose Criterion adds further restrictions to the use of riot control agents as toxic chemicals: where they are used in types and quantities that are not consistent with the purposes not prohibited under the Convention,⁵⁰ they would fall under the definition of a chemical weapon and as such would be prohibited under the CWC.

Read together, these provisions provide a conclusion that riot control agents, while toxic chemicals, are not chemical weapons if they are not used as methods of warfare or for purposes prohibited under the convention. This conclusion was summarised by Dr. Jean-Pascal Zanders, as follows: “the CWC does not authorise or legitimise CW use under specific circumstances. It says that if a toxic chemical is used and only used for one of the non-prohibited purposes, then that toxic chemical is not considered a CW. In other words, an RCA (riot control agent) deployed for domestic riot control purposes is not a CW and such use falls outside the scope of the CWC.”⁵¹

The focus on whether domestic law enforcement use of riot control agents constitutes chemical weapons use may distract from the discussion on appropriate law enforcement in line with international human rights standards. The European Court of Human Rights (ECHR) has addressed the question of riot control agents a number of times, finding that certain instances of their use against protestors have violated the right to life⁵² and amounted to cruel and degrading treatment.⁵³ Misuse of such agents could also violate certain human rights instruments such as the Basic Principles on the Use of Force and Firearms by Law Enforcement Officials,⁵⁴ amongst others. Ultimately, it is important that investigation of misuse of such agents takes place through the correct channels of national and international law.

.....

49 CWC Article II, paragraph 2

50 CWC Article II, paragraph 1

51 Jean-Pascal Zanders, “Tear-gas: authorised at home, banned in war? Not so for the USA”, The Trench, 13 June 2020, accessed at <https://www.the-trench.org/tear-gas-usa>.

52 See ECHR, *Abdullah Yasa v. Turkey*, 16 July 2013. See further, Lam Sze Hong, “Is there any limitation on the use of tear gas as a Riot Control Agent?”, Leiden Law Blog, 2 April 2020, accessed at <https://www.leidenlawblog.nl/articles/is-there-any-limitation-on-the-use-of-tear-gas-as-a-riot-control-agent>.

53 ECHR, *Ali Güneş V. Turkey*, Judgment 10 April 2012.

54 See Basic Principles on the Use of Force and Firearms by Law Enforcement Officials Adopted by the Eighth United Nations Congress on the Prevention of Crime and the Treatment of Offenders, Havana, Cuba, 27 August to 7 September 1990, accessed at <https://www.ohchr.org/en/instruments-mechanisms/instruments/basic-principles-use-force-and-firearms-law-enforcement>.

MISCONCEPTION 9

The Chemical Weapons Convention only addresses effects on humans

The misconception and its implications

There is a misunderstanding that the CWC only covers uses of toxic chemicals on humans. The misconception, similarly to others, stems from a misinterpretation of the terms “chemical weapon” and “toxic chemical” as defined in the CWC. A common understanding of a chemical weapon relates to military use of toxic chemicals for battlefield purposes against humans, whereas the scope of the CWC is wider.

This misconception can have serious implications for how States Parties to the CWC use toxic chemicals. The concept of a chemical weapon and the scope of substances and actions that it covers goes to the very heart of the CWC, and misconceptions around what the Convention addresses could lead to involuntary violations. Misconceptions about what a chemical weapon is can lead to misunderstanding the use of toxic chemicals and the role of the OPCW in responding to incidents (as evidenced in Misconception 6); leading to challenges to the Organisation’s authority. Additionally, if States fail to define chemical weapons correctly in national legislation then legal instruments implementing the CWC may not fully transpose the Convention. Overall, misunderstandings about the nature of toxic chemicals and chemical weapons can hamper national implementation of the CWC.

Addressing the misconception

As noted above under Article II, paragraph 1 of the Convention, toxic chemicals⁵⁵ are considered chemical weapons on the basis of their purpose (the General Purpose Criterion) similarly to biological agents and toxins⁵⁶ under the BWC. Article II(2) of the CWC defines a toxic chemical as “[a]ny chemical which through its chemical action on life processes can cause death, temporary incapacitation or permanent harm to *humans or animals*.” As such, toxic chemicals causing harm to animals are addressed by the Convention. However, it is notable that the chemicals which – through their chemical action on life processes – cause harm to plants, are not included.⁵⁷ This position differs from that under the BWC, whereby Review Conferences have stated that biological weapons affecting plants are prohibited under the Convention.⁵⁸ The CWC Commentary considers that the exclusion of toxic chemicals used with the intent to destroy plants is the result of political considerations due to prior use of herbicides in war (and the view that there are legitimate civilian and military uses for such chemicals), verification challenges, and the large herbicide industry in certain states.⁵⁹

In relation to the use of chemicals that affect the life processes of plants, it is important to note the existence of the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD). States Parties to this treaty undertake not to engage in military or any other hostile use of environmental modification techniques having widespread, long-lasting or severe effects as the

55 See Article II paragraph 1 CWC, under which separately or together, toxic chemicals and their precursors as well as munitions and devices specifically designed to cause death or other harm through the toxic properties of those toxic chemicals, and any equipment designed for use directly in connection with the employment of those munitions and devices, are considered chemical weapons.

56 See Article 1, also “weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict”.

57 “CWC commentary”, Article II.

58 See Final Document of the Eighth Review Conference, Article I, 1.

59 “CWC commentary”, Article II.

means of destruction, damage or injury to another State Party under Article I(1). The term “environmental modification techniques” is defined by Article II. The Final Document of the Second Review Conference for ENMOD held that:

“The Conference confirms that the military or any other hostile use of herbicides as an environmental modification technique in the meaning of Article II is a method of warfare prohibited by Article I if such use of herbicides upsets the ecological balance of a region, thus causing widespread, long-lasting or severe effects as the means of destruction, damage or injury to any other State Party.”⁶⁰

As such, in some circumstances the use of chemicals that through their chemical action on life processes cause harm to plants is prohibited for ENMOD States Parties under international law.

In summary, examination of the text of the CWC and related commentary demonstrates that the CWC addresses not only effects on humans, but also on animals. Notably, however, effects on plants are not covered, in contrast to the position under the BWC. Political considerations appear to have kept the toxic chemicals used with the intent to destroy plants out of the text of the Convention, however, the Preamble to the CWC does recognise “the prohibition, embodied in the pertinent agreements and relevant principles of international law, of the use of herbicides as a method of warfare”. Understanding the definition of a toxic chemical is key to implementing the CWC at the national level. Previous Misconceptions describe well the limits of what is considered a chemical weapon and the implications of misunderstandings around chemical weapons use. It is crucial therefore, that stakeholders such as legislators, policy makers and enforcement agents understand the definitions of a toxic chemical and a chemical weapon in the CWC regime, in order to implement the treaty correctly.

.....
60 Second Review Conference of the Parties to the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, ENMOD/CONF.11/12, pp11-12.

MISCONCEPTION 10

The OPCW is a UN body

The misconception and its implications

Media reports have sometimes referred to the OPCW as the “the UN chemical weapons body” or “the UN Organisation for the Prohibition of Chemical Weapons.”⁶¹ The OPCW does interact with a number of stakeholders including UN entities such as the UN Secretary General and the UN Security Council. However, the OPCW’s existence is distinct from that of the UN, which is another intergovernmental organisation. Misunderstandings of the nature of the OPCW may create confusion over the respective status, roles, and the relationships between them the organisation and others, such as the UN.

The status of the OPCW, as that of any international organisation, has implications on its functions, powers and processes. Referring to the OPCW as a UN entity may give the impression that it has the same legal attributes as those of the UN, and share the same strengths and limitations. It may consequently lead to a wrong analysis of the OPCW’s successes and failures, and inappropriate suggestions to support, expand or limit its activities.

Addressing the misconception

The OPCW is an intergovernmental organisation of which the founding convention is the CWC. As noted above, the OPCW’s existence is distinct from that of the UN, which is another intergovernmental organisation. That said, the OPCW is considered part of the UN system as a ‘related organisation,’⁶² and the UN Secretary-General is the depositary for the CWC (on the role of depositaries, see Misconception 19).

According to Article VIII(A)(1) of the Convention, the States Parties established the OPCW to achieve the object and purpose of the convention, to ensure the implementation of its provisions, including those for international verification of compliance with it, and to provide a forum for consultation and cooperation among States Parties. All States that are party to the CWC are members of the OPCW. The OPCW’s seat is in the city of The Hague in The Netherlands. The CWC establishes the organs of the OPCW, namely the Conference of the States Parties, the Executive Council, and the Technical Secretariat (including its head, the Director General), and details their functions and powers. Those organs are distinct from those of the United Nations, for example the UN Secretary-General, the General Assembly and the Security Council.

The latter, however, are involved in the application of the CWC. A separate agreement was therefore approved in 2001 by the two organisations to detail the modalities of their cooperation.⁶³ According to the agreement, the United Nations recognises that the OPCW shall function as an independent, autonomous international organisation. An important aspect of the cooperation between the UN and the OPCW relates to alleged or confirmed cases of non-compliance with the Convention and use of chemical weapons. The OPCW’s Executive Council and Conference of States Parties are required to bring issues of non-compliance in cases of particular gravity and urgency to the attention of the UN General Assembly and the UN Security Council, through the UN Secretary-General.⁶⁴ In cases of alleged use of chemical

61 See for example, “UN chemical weapons body slam Syrian regime for lack of cooperation”, The New Arab, 01 October 2022, accessed at <https://english.alaraby.co.uk/news/un-chemical-weapons-body-slam-syria-lack-cooperation>.

62 See United Nations, “UN system”, accessed at <https://www.un.org/en/about-us/un-system>.

63 An Agreement Concerning the Relationship between the United Nations and the Organisation for the Prohibition of Chemical Weapons was drafted in 2000 (“Relationship agreement”); approved by the OPCW Conference of the States Parties in decision C-VI/DEC.5 of 17 May 2001 and by the United Nations General Assembly in resolution A/RES/55/283 of 24 September 2001.

64 See the Convention’s Article VIII.C. 36 regarding the Executive Council and article XII. 4 regarding the Conference of States Parties; and Article II.2, a) and b) of the Relationship agreement.

weapons involving a State not party to the Convention or in a territory not controlled by a State Party to the Convention, the OPCW is obliged to closely cooperate with the UN Secretary-General.⁶⁵

Both organisations also need to explore possibilities for cooperation in the provision of assistance to States concerned in cases of the use or serious threat of use of chemical weapons.⁶⁶ The UN will act according to its own processes under the UN Charter, the founding treaty of the UN. For example, the UN Secretary-General should cooperate with the OPCW in its investigations on alleged use in non-States Parties in accordance with the Guidelines and Procedures for the UN Secretary-General Mechanism for the Investigation of Alleged Use of Chemical and Biological Weapons.⁶⁷ The UN Security Council may decide to take measures under Chapter VII of the Charter on action with respect to threats to the peace, breaches of the peace, and acts of aggression.

.....

65 See the Convention's para. 27, Part XI of the Verification Annex, and Article II.2, c) of the Relationship agreement.

66 See the Convention's Article X para.10, and article II.2, d) of the Relationship agreement.

67 For more information on the UNSGM, see "United Nations, Secretary-General's Mechanism for Investigation of Alleged Use of Chemical and Biological Weapons (UNSGM)" accessed at <https://www.un.org/disarmament/wmd/secretary-general-mechanism/>.

MISCONCEPTION 11

Fentanyl and other equivalent highly potent opioids are always considered chemical weapons

The misconception and its implications

This misconception often cites both its use as a narcotic, which is linked to increased risk of overdose, and its lethal use in aerosol form. The misconception stems from multiple sources. Firstly, fentanyl and its analogues are part of a larger category of chemicals known as Central Nervous System-acting (CNS) chemicals which have toxic effects on humans. Use of fentanyl as a narcotic has become widespread and is linked to high numbers of overdoses and fatalities, prompting discussion over whether countries should classify it as a weapon of mass destruction.⁶⁸ Secondly, a mixture containing at least two derivatives of fentanyl was released during the deadly Moscow Dubrovka Theatre hostage crisis in 2002, which has been tied to arguments about the use of fentanyl as a narcotic constituting a chemical weapon.

The implication that fentanyl and analogous chemicals are chemical weapons creates confusion and fear surrounding use of these chemicals in contexts which are peaceful and legitimate under the CWC, for example their medical use for pain relief.

Addressing the misconception

This misconception can be addressed in two parts: firstly, regarding fentanyl's use as a narcotic and the use of fentanyl and its analogues in pharmaceutical contexts. Secondly, it is necessary to address the use of CNS-acting chemicals in aerosolised form and the actions taken by States Parties to the CWC to prohibit their use for law enforcement purposes.

Narcotic and pharmaceutical use of synthetic opioids: The fentanyl family of opioids are among the strongest known pain relievers.⁶⁹ Fentanyl is significantly more potent than heroine or morphine and has been linked to increased rates of overdose and death.⁷⁰ However, like morphine, it has significant medical utility as an anaesthetic and analgesic. As outlined in a 2019 study by the Center for the Study of Weapons of Mass Destruction, "fentanyl pharmaceutical products include lozenges, lollipops, tablets, sprays, transdermal patches, and injectable formulations"⁷¹, and the OPCW's Scientific Advisory Board (SAB) has noted that fentanyl and its analogues "are considered to be safe when used under controlled medical conditions".⁷²

Fentanyl and analogous chemicals act to depress CNS function in the body and are classified as toxic chemicals under the CWC, which defines toxic chemicals in Article II, paragraph 2 as "any chemical which through its chemical action on life processes can cause death, temporary incapacitation or permanent harm to humans or animals". However, unless a toxic chemical is used for purposes that are prohibited under the Convention (CWC Article II, paragraph 1(a)), it is not a chemical weapon. The CWC employs a negative

68 See, for example, Office of Attorney General Ashley Moody, "Attorney General Moody Urges President Biden to Classify Illicit Fentanyl a Weapon of Mass Destruction", 18 Jul 2022, accessed at <http://www.myfloridalegal.com/newsrel.nsf/newsreleases/63B8F1A56E1BE00A85258883006CE82C>.

69 Robert J. Mathews, "Central Nervous System-acting chemicals and the Chemical Weapons Convention: A former Scientific Adviser's perspective" *Pure and Applied Chemistry*, vol. 90, no. 10, 2018, p1559.

70 John P. Caves Jr., "Fentanyl as a Chemical Weapon", Centre for the Study of Weapons of Mass Destruction: Proceedings, December 2019, accessed at: <https://wmdcenter.ndu.edu/Portals/97/CSWMD%20Proceedings%20Dec%202019.pdf>.

71 *Ibid.*

72 OPCW, "Report of the Scientific Advisory Board on Developments in Science and Technology for The Fourth Special Session of the Conference of the States Parties to Review the operation of the Chemical Weapons Convention", RC-4/DG.1, 30 April 2018.

definition of these purposes, outlining purposes that are *not* prohibited under Article II, paragraph 9 which includes “industrial, agricultural, research, medical, pharmaceutical or other peaceful purposes”.

Aerosolised CNS-acting chemicals: Fentanyl and its analogues have a history of military development and use as incapacitating agents.⁷³ The example of the 2002 Moscow Dubrovka Theatre hostage crisis is one example of use of such chemicals for law enforcement purposes.

In December 2021, at the 26th Conference of States Parties to the CWC, the Conference adopted a Decision, “Understanding Regarding the Aerosolised Use of Central Nervous System-Acting Chemicals for Law Enforcement Purposes.”⁷⁴ It was decided that “the aerosolised use of CNS-acting chemicals is understood to be inconsistent with law enforcement purposes as a “purpose not prohibited” under the Convention”.

While “law enforcement including domestic riot control” is another purpose listed as not prohibited under the Convention (under Article II, paragraph 9), the Scientific Advisory Board (SAB) of the OPCW clarified that CNS-acting chemicals do not fit the definition of “riot control agents” found in Article II, paragraph 7: “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”. In the report of the OPCW’s SAB in preparation for the 4th Conference of States Parties in 2018, the SAB distinguished CNS-acting chemicals from riot control agents, noting that “CNS-acting chemicals differ from Riot Control Agents (RCAs) as they act primarily on the central nervous system and their effects are not usually confined to sensory irritation of a temporary nature”⁷⁵. They have “a very low safety margin when delivered as an aerosol”⁷⁶ and “do not meet criteria specified in Article II paragraph 7”.

Overall, the 26th CSP Decision clarified that the use of CNS-acting chemicals in aerosolised form for law enforcement purposes is prohibited under the CWC. However, the Decision does not address the use of CNS-acting chemicals for other purposes that are not prohibited under the convention. Ultimately, while the use of CNS-acting chemicals in aerosolised form for law enforcement would amount to chemical weapons use, they are not classified as chemical weapons if used for other non-prohibited purposes as long as the types and quantities are consistent with such purposes. It is important to bear in mind that such chemicals are dual-use in nature and have important peaceful uses.

73 John P. Caves Jr., “Fentanyl as a Chemical Weapon”, Centre for the Study of Weapons of Mass Destruction: Proceedings, December 2019, accessed at: <https://wmdcenter.ndu.edu/Portals/97/CSWMD%20Proceedings%20Dec%202019.pdf>.

74 Decision: Understanding Regarding the Aerosolised Use of Central Nervous System-Acting Chemicals for Law Enforcement Purposes , 1 December 2021, C-26/DEC.10.

75 OPCW News, “Decision on aerosolised use of Central Nervous System-acting chemicals adopted by OPCW Conference of States Parties”, 1 December 2021, accessed at <https://www.opcw.org/media-centre/news/2021/12/decision-aerosolised-use-central-nervous-system-acting-chemicals-adopted>.

76 Report of the Scientific Advisory Board on developments in science and technology for the Fourth Special Session of the Conference of the States Parties to review the operation of the Chemical Weapons Convention, 20 April 2018, RC-4/DG.1.

MISCONCEPTION 12

Attacks on industrial chemical facilities are not relevant to the CWC regime and are a matter of international humanitarian law only

The misconception and its implications

That attacks on chemical facilities do not fit within the definition of chemical weapons use, even where they result in harm to humans or animals as a result of the toxic chemicals released.

This misconception may come from a narrow perception of chemical weapons as weapons that were manufactured or designed specifically for use as chemical weapons. The release of toxic chemicals may be perceived as only an incidental effect of an attack on a chemical facility. Furthermore, attacks on chemical facilities, particularly military attacks during war, are governed by international humanitarian law. This may result in a misconception that such attacks are a matter for humanitarian law only.

While the circumstances in which an attack on a chemical facility would qualify as chemical weapons use are narrow, excluding the CWC from analysis and investigation of such attacks eliminates a potential avenue of accountability and protection against the use of toxic chemicals in this way. Furthermore, as over 99% of the world's stockpile of chemical weapons have now been destroyed under the verification of the OPWC, the chemical warfare capacity of States may no longer exist in the traditional sense.

Addressing the misconception

Under Article II, paragraph 1(a) of the CWC, chemical weapons are defined as “toxic chemicals and their precursors, except where intended for purposes not prohibited under this Convention. Toxic chemicals used with the intention of causing death or harm to humans or animals are therefore chemical weapons.

The question of whether attacks on industrial chemical facilities are relevant to the CWC has been raised in relation to the recent attacks on chemical facilities in Ukraine. The OPCW acknowledged media reports of “shelling targeted at chemical plants located in Ukraine”, including the Sumykhimprom chemical factory on 21 March 2022, which required residents of a nearby town to take shelter from a resulting ammonia leak.⁷⁷

In the instance of the Sumykhimprom chemical factory attack, the release of ammonia did not cause widespread or severe harm to humans, as the chemical properties of ammonia do not make it an effective chemical warfare agent. However, the level of toxicity of a chemical is not relevant to its classification as a chemical weapon.⁷⁸ As noted in the CWC Commentary, “toxicity (not lethality) is a pre-requisite for a chemical . . . for qualifying as a chemical weapon”.⁷⁹ As such, this would include chemicals released during attacks on chemical facilities which were not highly toxic or did not cause mass casualties, if the attack was nevertheless done with the intention of exploiting the toxic qualities of that chemical to cause harm, bringing such attacks within the remit of the CWC.⁸⁰

77 See Suzanna Khoshabi, “Security of nuclear and chemical facilities in Ukraine: applicability of international law”, *VERTIC Trust and Verify* 170, Summer 2022, p6, accessed at <https://www.vertic.org/wp-content/uploads/2022/06/TV170-REV1-WEB-2.pdf#page=6>.

78 Jean-Pascal Zanders, “Prelude to chemical weapons use?”, *The Trench*, 12 April 2022, accessed at <https://www.the-trench.org/prelude-to-chemical-weapons-use>.

79 “CWC Commentary”, Article II, paragraph 1, p25.

80 Jean-Pascal Zanders, “Prelude to chemical weapons use?”, *The Trench*, 12 April 2022, accessed at <https://www.the-trench.org/prelude-to-chemical-weapons-use>.

Applicability of international law to military attacks on chemical facilities during war

Other areas of international law may also be relevant to military attacks on chemical facilities during war, however, *this does not preclude the applicability of the CWC in specific circumstances*. In some instances, the applicability of the CWC may help to cover gaps in international law. For example, while Article 56 of the Additional Protocol I (AP I) to the Geneva Conventions prohibits attacks on “works or installations containing dangerous forces”, this may be limited to “dams, dykes and nuclear electrical engineering stations” and as such would not extend to chemical facilities.

A similar prohibition may also exist under customary international law, a source of international law that exists independent of treaty law, which binds only the States that have expressed their consent to be bound by certain treaties. The International Committee of the Red Cross (the ICRC) defines customary international law as “rules that come from ‘a general practice accepted as law’” that are binding on all states. Importantly, as the ICRC notes, customary international law serves an important purpose towards armed conflict as it “fills gaps left by treaty law and so strengthens the protection offered to victims”.⁸¹

With regard to attacks on chemical facilities, the ICRC have identified a rule under customary international law that States must take “particular care” if works or installations containing dangerous forces are attacked. The ICRC have suggested, in their commentary on the rule, that similar care should be taken with installations such as chemical plants.⁸²

81 ICRC, “Customary Law”, accessed at <https://www.icrc.org/en/war-and-law/treaties-customary-law/customary-law>.

82 ICRC IHL Database, “Rule 42. Works and Installations Containing Dangerous Forces”, accessed at https://ihl-databases.icrc.org/customary-ihl/eng/docs/v1_cha_chapter13_rule42.

Misconceptions applicable to the BWC and CWC

MISCONCEPTION 13

States without biological or chemical weapons do not need to join the BWC and CWC

The misconception and its implications

A simple misconception, yet one that may have a significant impact on the universalisation and full implementation of the BWC and CWC, is that States without biological or chemical weapons do not need to join those conventions. The latter would only be relevant to states willing to give up existing biological or chemical weapons. The BWC and CWC begin with the prohibition of biological and chemical weapons respectively and continue with requiring new States Parties to destroy their existing stocks of such weapons. One may question the relevance of this obligation to States that do not possess biological or chemical weapons and consequently quickly assume that they would not be concerned with the BWC or CWC at all.

In addition, those conventions usually make the headlines in suspected or confirmed cases of weapons development, possession, or use. The accession of the Syrian Arab Republic to the CWC in 2013, after confirming in 2012 that it possessed chemical weapons, was widely publicised – as were the decisions and processes to verify their destruction and investigate their use. The elimination of Iraq's chemical and biological weapons under international supervision was also widely covered in the news, following the adoption on 3 April 1991 of UN Security Council Resolution 687 inviting Iraq to ratify the BWC, which took place on 19 June 1991.

This misconception may cause states that do not possess biological and chemical weapons to not join the conventions or to not prioritise doing so, thereby hampering universalisation efforts and ultimately weakening support for the norm against those weapons. For states that have joined the conventions but do not think they are actually relevant for them, the misconception may cause a lack of progress on implementation, or incomplete implementation with gaps in national laws to prohibit and prevent biological and chemical weapons. Thinking that the BWC and CWC only matter to States that possess or have possessed those weapons may also result in focusing attention on the activities of those States, while minimising efforts of the States that do not possess them to uphold their obligations under the conventions.

Addressing the misconception

The BWC and CWC are relevant to all States. Those that did possess biological or chemical weapons undertake to destroy them and never develop, produce, stockpile, acquire, retain, transfer and use them in the future, while the States that never had those weapons undertake the ongoing commitment to renounce them. The norm against biological and chemical weapons can only be upheld if both categories of

Status of the BWC, as at November 2022

- 184 States Parties
- 4 Signatory States: Egypt, Haiti, Somalia, Syrian Arab Republic
- 9 Non-Signatory States: Chad, Comoros, Djibouti, Eritrea, Israel, Kiribati, Federated States of Micronesia, South Sudan, Tuvalu

Status of the CWC, as at November 2022

- 193 States Parties
- 1 Signatory State: Israel
- 3 Non-Signatory States: Egypt, North Korea, South Sudan

States support it. Furthermore, the Conventions help to prevent future armament or rearmament in relation to biological and chemical weapons. As noted in Misconception 4, biological weapons (and similarly chemical weapons) are not a “thing of the past”. Due to developments in science and technology and new threats from different actors, the BWC and CWC will remain relevant to all States in the future.

Moreover, the conventions are not only about prohibitions. They also promote – including through the exchange of material and equipment – peaceful activities with toxic chemicals, biological agents and toxins conducted in a safe and secure manner to prevent their misuse. They further provide, to varying extents, for cooperation, investigation and assistance mechanisms in case of potential and confirmed cases of violation. Being a State Party therefore comes not only with obligations but also rights and benefits that are of interest to all States. Access to the mechanisms, initiatives, activities, and expertise developed under the BWC and CWC can have a number of advantages for States Parties. The comprehensive and effective implementation of the conventions through appropriate national measures can help strengthen national security, public health, animal and plant health at the national level. It also helps prevent the proliferation of biological and chemical weapons by non-States actors, as discussed in Misconception 21.

MISCONCEPTION 14

The 1925 Geneva Protocol is no longer relevant due to the adoption of the BWC and the CWC

The misconception and its implications

Certain states that have joined the BWC or the CWC, or both, but have not yet joined the 1925 Geneva Protocol, question the importance of joining the Protocol due to the adoption of the BWC and the CWC. The implication of this misconception is that states perceive that the 1925 Geneva Protocol is not relevant to them, especially if they have already adhered to the BWC, or the CWC, or both, and so they decide not to adhere to it.

Addressing the misconception

This section links to Misconception 1 on the prohibition of the use of biological weapon in the BWC. Under the 1925 Geneva Protocol, High Contracting Parties undertake never to use bacteriological or asphyxiating, poisonous or other gases, and of all analogous liquids materials or devices as a method of warfare. However a number of states included reservations when joining the Protocol,⁸³ stating for example that they were only bound in relation to other states that had ratified the Protocol and that they would not be bound against states who violate the Protocol, through the first use of biological or chemical weapons. As such, in practice the Protocol provided a no-first use prohibition against the use of biological and chemical weapons between States Parties. UN General Assembly Resolution 2603 (XXIV) of 1969 reaffirmed that the prohibitions in the Protocol were generally recognised rules of international law. Overall, the no-first-use prohibition, and arguably the prohibition against use,⁸⁴ can be considered part of customary international law, and as such binding on all states.

As seen above, Resolutions of the UN General Assembly and Final Documents of the BWC Review Conferences all note the links between the BWC and the Geneva Protocol. The Final Document of the 7th Review Conference acknowledged that:

“... the 1925 Geneva Protocol ... and the Convention complement each other. The Conference reaffirms that nothing contained in the Convention shall be interpreted as in any way limiting or detracting from the obligations assumed by any state under the 1925 Geneva Protocol”⁸⁵

This demonstrates the continued relevance of the Geneva Protocol and how the two treaties are mutually reinforcing. Similarly, the preamble of the CWC expressly refers to the Geneva Protocol three times in the preamble. Furthermore, under Article XIII of the CWC, nothing in the treaty “shall be interpreted as in any way limiting or detracting from the obligations assumed by any State” under the Geneva Protocol (and the BWC).

Therefore, it is evident that the BWC and CWC build upon the foundation set out by the Geneva Protocol. The Protocol is a key instrument and “remains a crucial anchor for the international-legal architecture

83 For examples see, UNODA, “Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare”, accessed at <https://treaties.unoda.org/t/1925>.

84 ICRC IHL Database, “United States of America, Practice relating to Rule 74. Chemical Weapons”, accessed at https://ihl-databases.icrc.org/customary-ihl/eng/docs/v2_cou_us_rule74.

85 Seventh Review Conference of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, “Final Document of the Seventh Review Conference”, 13 January 2021, BWC/CONF.VII/7, Article VIII, 42.

Universalisation of the Geneva Protocol

As at November 2022, the Geneva Protocol has 146 States Parties. Over 1/3 of this number joined the Protocol after the BWC opened for signature in 1972 with the most recent new State Party adhering to the Geneva Protocol in 2020. This development indicates that many States see the Protocol as relevant, even those that are yet to join the BWC and the CWC.

and whose principles require diligent adherence.”⁸⁶ Due to the limited scope of the Geneva Protocol (only addressing use but not other activities such as development, possession etc.) and the widespread reservations to it (limiting the prohibition to “no first use”) it was necessary for the international community to create new international legal instruments to counter the threat of biological and chemical weapons.

Despite the creation and entry into force of the BWC and CWC, efforts have continued to emphasise the importance of the 1925 Geneva Protocol. For example, in Resolution 75/46⁸⁷ from 7 December 2020, the United Nations General Assembly:

“2. Renews its previous call to all States to observe strictly the principles and objectives of the Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or Other Gases, and of Bacteriological Methods of Warfare, and reaffirms the vital necessity of upholding its provisions.

3. Calls upon those States that continue to maintain reservations to the 1925 Geneva Protocol to withdraw them [. . .];”

The 1925 Geneva Protocol and the principles found within it are therefore still considered highly relevant. The Protocol forms the foundation of the UN Secretary-General’s Mechanism for Investigation of Alleged Use of Chemical and Biological Weapons⁸⁸ and the criminalisation of biological and chemical weapons in the Rome Statute.⁸⁹ Adherence to the Protocol is considered best practice at the international level and non-States Parties are encouraged to join the Protocol as soon as possible.

86 Alex Spelling, Brian Balmer and Caitriona McLeish, “The Geneva Protocol at 90: An Anchor for Arms Control?”, the Guardian, 17 June 2015, accessed at <https://www.theguardian.com/science/the-h-word/2015/jun/17/the-geneva-protocol-at-90-anchor-for-arms-control>.

87 United Nations General Assembly Resolution, “Measures to uphold the authority of the 1925 Geneva Protocol”, A/RES/75/46, 7 December 2020.

88 See United Nations General Assembly Resolution, “Chemical and bacteriological (biological) weapons”, A/RES/42/37, 30 November 1987.

89 See 1998 Rome Statute of the International Criminal Court Article 8(2)(b)(xvii) and (xviii), 2010 Amendment to the Rome Statute (RC/Res.5) Article 8(2)(e)(xiii) and (xiv), 2017 Amendment to the Rome Statute (ICC-ASP/16/Res.4) Article 8(2)(b)(xxvii), and 2017 Amendment to the Rome Statute (ICC-ASP/16/Res.4) Article 8(2)(e)(xvi).

MISCONCEPTION 15

Toxins and toxin weapons only fall within the scope of the BWC, not the CWC

The misconception and its implications

There is a misconception that toxins and toxin weapons only fall within the scope of the BWC, not the CWC, or that only toxins such as ricin and toxin weapons are prohibited under the CWC. A confusion on the scope of the BWC and CWC may weaken the norm against toxin weapons if it suggests that those are not or only partially prohibited.

Further, it may lead to confusion on the scope of implementing legislation for those Conventions, potentially resulting in inadequate and incomplete laws and regulations to prohibit and prevent illegal activities with toxins and toxin weapons effectively and comprehensively. This would be contrary to the Conventions and create a real risk of unpunished misuse. Appropriate legislation should enable prosecution and punishment of acts such as the unlawful purchase and selling of toxins as well as the production of a toxin weapon to harm people. Unfortunately, such incidents have occurred in recent years.⁹⁰ Ricin, abrin or other dangerous toxins need to be included in national lists of substances subject to control and prohibitions. Omitting to do so may lead to the absence of or dropping of criminal charges for activities that should have been prosecuted.⁹¹ This may weaken the deterring effect that criminal legislation may have to help prevent such illegal acts from happening.

The simplest cause of the misconception may be the full name of the BWC, which is the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and *Toxin* Weapons and on their Destruction. The express inclusion of toxins in the title of the treaty may lead some policymakers, legal drafters and technical experts to believe that the Convention is the only dedicated convention addressing the prohibition and prevention of toxin weapons, and the control of activities with toxins. However, the commonly used acronym for the Biological and Toxin Weapons Convention, leaves out the “Toxin” component as it reads “BWC.” As such, despite this misconception, toxins are at times not considered in debates on biological weapons, adding another layer of confusion about the role of toxins in the BWC.

A more technical reason may also explain the misconception or confusions about the scope of the BWC and CWC with regards to toxin and toxin weapons. In that regard, the 2004 WHO guidance on Public Health Response to Biological and Chemical Weapons notes: “toxin” is a word that has no commonly accepted meaning in the scientific literature.⁹² There may therefore be a misunderstanding about what toxins are, how they are produced, and how they should be defined. This makes it more difficult to adopt an adequate definition and capture BWC and CWC requirements comprehensively in legislation.

Addressing the misconception

There is no definition of the word “toxins” in either the BWC or the CWC. The BWC in its Article I explicitly prohibits “microbial or other biological agents, or *toxins whatever their origin or method of production, of types and quantities that have no justification for prophylactic, protective or other peaceful purposes.*”

90 See Russell Moul and Yasemin Balci, “First conviction under UK’s BWC Act,” *VERTIC Trust and Verify Issue 147*, pp7-8; Russell Moul and Yasemin Balci, “Sentencing of toxin salesman from the dark web,” *VERTIC Trust and Verify Issue 148*, p7; and Thomas Brown, “Couple charged with BW offence in Germany,” *VERTIC Trust and Verify Issue 164*, p13.

91 See Yasemin Balci, “Error in US biological weapons law leads to dropping of criminal charges,” *Trust & Verify Issue 162*, p13.

92 WHO “Public Health Response to Biological and Chemical Weapons”, WHO Guidance, Geneva, 2004, p214.

The States Parties to the BWC clarified the scope of Article I with regard to toxins during successive Review Conferences, but without defining toxins. At the Second Review Conference of the BWC in 1986, they reaffirmed that “the Convention unequivocally applies to *all natural or artificially created* [. . .] toxins whatever their origin or method of production. Consequently, toxins (both proteinaceous and non-proteinaceous) of a *microbial, animal or vegetable nature* and their *synthetically produced* analogues are covered”.⁹³ At the Sixth Review Conference in 2006, they further “declare[d] that the Convention is comprehensive in its scope and that *all naturally or artificially created or altered* [. . .] toxins, as well as their components, regardless of their origin and method of production and *whether they affect humans, animals or plants*, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes, are unequivocally covered by Article I.”⁹⁴ In short, toxins under the BWC are those of a microbial, animal or vegetable nature; they can be natural or artificially created; and they can affect human, animals, or, unlike the CWC as discussed below, plants.

International guidance documents relevant for the implementation of the BWC can provide further clarification. The Seventh and Eighth Review Conference have noted the value of implementing these voluntary guidelines and standards.⁹⁵ With regard to toxins, these documents contribute to the BWC by providing a definition for the term “toxin”. The WHO guidance on Public Health Response to Biological and Chemical Weapons clarifies that “the BWC, where it refers to toxins, means toxic substances produced by any living organism, even when such substances are actually produced by other means, including chemical synthesis.”⁹⁶ The ISO Standard 35001 on biorisk management for laboratories and other related organisations, provides an expanded definition whereby a toxin is a “substance, produced by plants, animals, protists, fungi, bacteria, or viruses, which in small or moderate amounts produces an adverse effect in humans, animals, or plants.”⁹⁷ Toxins that are known to have been weaponised include aflatoxins (produced by fungi), botulinum toxins and staphylococcus aureus toxins (bacterial toxins), and saxitoxin and ricin (plant toxins).⁹⁸ Harmful effects from such toxins include eyes, nose and throat irritation; blurred vision; food poisoning; skeletal muscle paralysis; paraesthesia; and respiratory failure that can lead to death. Toxins, however, can also be used for peaceful legitimate purposes, for example in neuroscience, pharmacology, or medical and beauty treatments.⁹⁹

The CWC prohibits chemical weapons which under Article I (1) (a) include “*toxic chemicals* and their precursors, except where intended for purposes not prohibited under this Convention, as long as the types and quantities are consistent with such purposes.” Toxic chemicals are defined in Article II (2) as “any *chemical* which through its *chemical action* on life processes can cause death, temporary incapacitation or permanent harm to *humans or animals*. This includes all such chemicals, *regardless of their origin or of their method of production*, and regardless of whether they are produced in facilities, kept in munitions or elsewhere. [. . .]” Toxins fall within that definition, since they are both toxic and a chemical.¹⁰⁰ Toxin weapons are therefore prohibited under the CWC. Saxitoxin and ricin are listed in Schedule 1 of the CWC, for the application of verification measures (see Misconception 7 regarding the meaning of scheduled

93 Final Document of the Second Review Conference of the BWC, 1986, BWC/CONF.II/13, p3.

94 BWC/CONF.VI/6, p. 9. See also reiterations at successive Review Conferences, as compiled in Additional understandings and agreements reached by previous Review Conferences relating to each article of the Convention Background information document submitted by the Implementation Support Unit, BWC/CONF.IX/PC/5, 10 January 2022.

95 See most recently Eighth Review Conference of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, Final Document of the Eighth Review Conference, BWC/CONF.VIII/4, 11 January 2017, II.D (13).

96 WHO “Public Health Response to Biological and Chemical Weapons”, WHO Guidance, Geneva, 2004, p6.

97 *Ibid*, Section 3.15.

98 *Ibid*, p. 216 and following.

99 As mentioned in the “Australia Group Common Control List Handbook, vol. II Biological Weapons-related common Control Lists, Revision 6”, January 2021, p2.

100 WHO “Public Health Response to Biological and Chemical Weapons”, WHO Guidance, Geneva, 2004, pp5-6; 215.

chemicals). As emphasised above in Article II (2) of the CWC, however, the Convention does not apply to toxins that cause harm to plants, but only to human and animals (see Misconception 9 for more details). It is therefore important to include all toxins that are harmful to plants in BWC implementing legislation to ensure all toxins are covered in national legislation.

In summary, toxins are toxic chemicals that fall under the scope of both the BWC and CWC. However, the BWC covers all toxins, whereas the CWC does not cover toxins that only affect plants. In national implementing legislation, states should take care to cover all toxins, including those that affect plants, in line with the BWC while taking into account the specific requirements of the CWC with regard to scheduled chemicals such as ricin.

MISCONCEPTION 16

Biological and chemical weapons are always used on a mass scale

The misconception and its implications

There is a misconception that the use of chemical and biological weapons always involves a mass scale. This misconception arguably stems from the idea of chemical and biological weapons as “weapons of mass destruction”. Therefore, in a similar manner to previous Misconceptions, part of the misconception is a result of the idea of chemical and biological warfare as large-scale, indiscriminate battlefield warfare.

This misconception can lead to actions involving biological or chemical weapons being ignored at the international or national level by relevant authorities. Furthermore, at the national level, law enforcement authorities may fail to prosecute biological or chemical weapons related offences properly due to a misunderstanding of the scope of BWC or CWC implementing legislation.

Addressing the misconception

To address this misconception, it is important to clarify that not all chemical and biological weapons are weapons of mass destruction and that they can involve a smaller scale. The term “weapons of mass destruction” (WMD) is often used to describe chemical and biological weapons (alongside other weapons such as nuclear and sometimes radiological). The phrase WMD is found in the Preamble of the CWC¹⁰¹ and UNSCR 1540¹⁰², however no international treaty authoritatively defines the term. States sometimes define the term in their national legislation or other instruments, yet a study¹⁰³ in 2012 found more than 50 WMD definitions issued by a government or international organisation. Some scholars have even argued for the term to be abandoned as it mischaracterises the unique challenges of each weapons type.¹⁰⁴ As such, despite references to chemical and biological weapons as WMDs, such a characterisation does not mean that they necessarily involve a mass scale.

Notably, the provisions of the BWC or CWC do not contain quantity thresholds when it comes to these weapons. As outlined above, the definitions of biological and chemical weapons found in the Conventions involve the General Purpose Criterion, whereby weapons are defined by activities involving certain materials (biological agents, toxins or toxic chemicals) for certain purposes. Therefore, *any* prohibited activity involving a biological agent, toxin or toxic chemical for a purpose that is not permitted under the requisite treaty would be breach of that treaty. For example, the use of a single biological agent, toxin or toxic chemical to cause harm to a single person could still count as use of a biological or chemical weapon for the purposes of the BWC/CWC. Furthermore, in the case of use of a biological or chemical weapon, the text of the Conventions does not refer to the actual harm caused by use of a biological or chemical weapon, therefore the effect of such use does not have to be fatal for it to violate the BWC or CWC.

101 CWC Preamble: “Determined to act with a view to achieving effective progress towards general and complete disarmament under strict and effective international control, including the prohibition and elimination of all types of weapons of mass destruction”.

102 Reaffirming, in this context, the Statement of its President adopted at the Council’s meeting at the level of Heads of State and Government on 31 January 1992 (S/23500), including the need for all Member States to fulfil their obligations in relation to arms control and disarmament and to prevent proliferation in all its aspects of all weapons of mass destruction.

103 W. Seth Carus “Defining ‘Weapons of Mass Destruction’”, Center for the Study of Weapons of Mass Destruction Occasional Paper, No. 8, January 2012.

104 Bryan R. Early, Erika G. Martin, Brian Nussbaum, Kathleen Deloughery. “Should conventional terrorist bombings be considered weapons of mass destruction terrorism?” *Dynamics of Asymmetric Conflict* 10:1, 2017, pp 54-73.

Indeed, both biological and chemical weapons have been used historically on a smaller scale or to attack single targets. “During the 1970s, biological weapons were used for covert assassinations”¹⁰⁵, including the infamous murder of Georgi Markov in London in 1978 who was allegedly injected with the toxin ricin through a specially modified umbrella.¹⁰⁶ Chemical weapons have similarly allegedly been used to target individuals. For example, a recent usage of novichok in the UK (see Misconception 7) led to suspects being charged with “use and possession of Novichok contrary to the Chemical Weapons Act”,¹⁰⁷ demonstrating that national legislation to implement the CWC can be used to provide accountability for the small-scale use of toxic chemicals as a chemical weapon. Similarly in September 2020, Germany requested technical assistance from the OPCW Technical Secretariat, under subparagraph 38(e) of Article VIII of the CWC, in relation to the alleged use of a chemical weapon against Mr Alexei Navalny.¹⁰⁸ Moreover, in 2017, Kim Jong-Nam, the half-brother of North Korean leader Kim Jong-un, was assassinated in Kuala Lumpur’s international airport¹⁰⁹ during an attack said to involve the toxic chemical VX. It has thus been argued that “the term WMD therefore may not be helpful in thinking about the cases of their use in recent decades, in which both state and violent nonstate actors have seemed to favour tactical use of CBRN with tailored effects.”¹¹⁰

It is important therefore that all actors involved in ensuring the prevention of biological and chemical weapons understand what they are, to allow stakeholders to implement the conventions effectively. Any prohibited activity involving a biological agent, toxin or toxic chemical for a purpose that is not permitted under the requisite treaty would be a breach of that treaty and would constitute an offence at the national level if the required prohibitions and penalties have been transposed into national law.

.....
105 Stefan Riedel, “Biological warfare and bioterrorism: a historical review”, *Proceedings* (Baylor University. Medical Center) 2004 October; 17(4): pp 400–406.

106 *Ibid.*

107 Crown Prosecution Service, “CPS Statement – Salisbury”, 05 September 2018, accessed at <https://www.cps.gov.uk/cps/news/cps-statement-salisbury>.

108 OPCW, “Featured Topic Case of Mr Alexei Navalny”, accessed at <https://www.opcw.org/media-centre/featured-topics/case-mr-alexei-navalny>.

109 See, Scott Spence, “The curious case of Kim Jong-nam and Malaysia’s CWC legislation”, *Trust & Verify No.156*, VERTIC, Spring 2017.

110 Natasha E. Bajema, “Beyond Weapons of Mass Destruction: Time for a New Paradigm?”, Council on Strategic Risks, Briefer No.13, 1 February 2021, p1.

MISCONCEPTION 17

Gender has little to do with biological and chemical weapons regimes

The misconception and its implications

Discussions on gender considerations during BWC and CWC multilateral fora are sometimes controversial or only cover limited aspects of the debate. Refusing to consider the gender-related aspects of biological, toxin and chemical weapons issues or partially doing so may be a deliberate choice but this may also be the result of a misunderstanding on the extent to which one aspect relates to the other and could be subject to discussions under the conventions. While societal or other non-legal factors may lead some to think that gender has nothing to do with the biological, toxins and chemical weapons regime, the misconception may also lie in the provisions, or the absence of certain provisions, of the conventions. Contrary to more recent instruments such as Treaty on the Prohibition of Nuclear Weapons (TPNW), the BWC and CWC do not refer to the consequences of biological, toxins and chemical weapons use on women and girls, nor their participation in biological and chemical disarmament. The absence of explicit reference in the conventions may lead some to think that those issues cannot be addressed by States Parties and institutions involved in the conventions' implementation.

The potential, or already established consequences of the lack of gender perspectives when working on BWC and CWC-related issues have been highlighted in a number of studies.¹¹¹ They include:

- Underrepresentation of women as part of States official delegations, key positions within such delegations or within international organisations such as the OPCW or the United Nations;
- As a consequence, the exclusion of perspectives and expertise of an important part of the population;
- The lack of consideration of specific issues such as the impact of biological and chemical weapons use on women and girls as victims or first responders, and how to better tailor the preparation and response to biological and chemical weapons attacks accordingly.¹¹²

In addition, the misconception may have implications on the observance of certain international instruments that now specifically encourage and urge States to adopt measures related to gender issues.

Addressing the misconception

Gender is defined by the United Nations Office of Disarmament Affairs as referring to “the socially constructed attributes and opportunities associated with women, men, girls, and boys as well as non-binary or gender-fluid persons.”¹¹³ As mentioned above, neither the BWC nor the CWC include gender-related provisions, but this does not prevent States Parties from agreeing to support gender equality and perspectives. For example, other issues not explicitly mentioned in the BWC have been subject to

111 See for example UNIDIR, “Gender Equality in the Biological Weapons Regime”, Factsheet: Gender and biological weapons, International Gender Champions Disarmament Impact Group, 4 May 2021, <https://unidir.org/gender-biological-weapons>; UNIDIR “Gender Equality in the Chemical Weapons Regime”, Factsheet: Gender and chemical weapons, 16 November 2021, <https://unidir.org/publication/factsheet-gender-and-chemical-weapons>; Renata Hessmann Dalaqua, Kjølsv Egeland, Torbjørn Graff Hugo, “Still behind the curve. Gender balance in arms control, non-proliferation and disarmament diplomacy”, UNIDIR, 2019, <https://unidir.org/publication/still-behind-curve>; Carol Cohn with Felicity Hill and Sara Ruddick, “The Relevance of Gender for Eliminating Weapons of Mass Destruction”, The Weapons of Mass Destruction Commission, Paper No. 38, 2005.

112 See further Renata Hessmann Dalaqua, James Revill, Alastair Hay, Nancy Connell, “Missing Links: Understanding Sex- and Gender-Related Impacts of Chemical and Biological Weapons”, UNIDIR, 2019, pp 9-20.

113 UNODA “UNODA Gender Policy 2021-2025”, 2021, at <https://www.un.org/disarmament/topics/gender-policy/>; EU Non-proliferation and disarmament eLearning course, M. Zarka, Learning Unit 16 Gender and disarmament, <https://nonproliferation-elearning.eu/>.

Gender-related provisions of the Treaty on the Prohibition of Nuclear Weapons

Preamble:

Cognizant that the catastrophic consequences of nuclear weapons [...] have a disproportionate impact on women and girls, including as a result of ionizing radiation [...]

Recognizing that the equal, full and effective participation of both women and men is an essential factor for the promotion and attainment of sustainable peace and security, and committed to supporting and strengthening the effective participation of women in nuclear disarmament [...]

Article 6 Victim assistance and environmental remediation

1. Each State Party shall, with respect to individuals under its jurisdiction who are affected by the use or testing of nuclear weapons, in accordance with applicable international humanitarian and human rights law, adequately provide age- and gender-sensitive assistance, without discrimination, including medical care, rehabilitation and psychological support, as well as provide for their social and economic inclusion. [...]

additional understandings and agreements of States Parties during Review Conferences, to interpret, define or elaborate the meaning or scope of a provision of the convention; or provide instructions, guidelines or recommendations on how a provision should be implemented.¹¹⁴ There have similarly been proposals to include a standing agenda item for BWC meetings for States Parties to discuss and agree on ways to strengthen gender equality and perspectives in all BWC-related activities.¹¹⁵

At the OPCW, institutional practices can be adapted to take into account gender-related considerations. The Director General committed to being a part of the International Gender Champions Initiative, and the Secretariat undertook a gender and diversity audit in 2020 to “verify the level of institutionalisation of gender equality, diversity, and inclusion within the Secretariat, analysing policies, practices, and programmes.”¹¹⁶ Further work could be done to promote the participation of women in chemistry across the globe.

Gender has also progressively been included in resolutions adopted by UN bodies, including those focusing on disarmament, non-proliferation and arms control. UN Security Council Resolution 1325, adopted on 31 October 2000, was key in recognising the role of women in peace and security and furthering gender perspectives and equality in that context. On 8 December 2010, UN General Assembly adopted resolution 65/69 on women, disarmament, non-proliferation and arms control, which focused equitable representation and effective participation of women in all decision-making processes and institutions related to disarmament, non-proliferation and arms control. Resolutions of the UN General Assembly on the BWC have encouraged, in their preambles, the equitable participation of women and men in the framework of the convention.¹¹⁷ Gender equality and parity, gender analysis and perspectives are therefore now associated with issues related to disarmament, non-proliferation and arms control, including of biological and chemical weapons.

.....

114 “Additional understandings and agreements reached by previous Review Conferences relating to each article of the Convention,” Background information document submitted by the Implementation Support Unit to the Preparatory Committee of the Ninth Review Conference of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, BWC/CONF.IX/PC/5, 10 January 2022.

115 See for example “Enhancing Gender Equality and Women’s Empowerment as an Integral Part of the Institutional Strengthening of the Biological Weapons Convention (BWC),” Working Paper submitted by Panama to the Meeting of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, BWC/MSP/2020/WP.6, 19 November 2021.

116 Draft report of the OPCW on the implementation of the Convention on the Prohibition of the development, production, stockpiling and use of chemical weapons and their destruction 2020, EC-97/2 C-26/CRP.1, 7 July 2021, para. 5.13.

117 See for example Resolution 76/67 on the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, adopted on 6 December 2021.

MISCONCEPTION 18

Treaties on chemical and biological weapons are being violated and are therefore failing

The misconception and its implications

There is a view that recent allegations of the use of chemical weapons and violations of the BWC undermine the instruments and show that they are not working. The misconception stems from allegations of non-compliance with the BWC and CWC in the 21st century. There have been multiple allegations of chemical weapons use across the world since 2010 in particular, with international fact-finding missions confirming their use in a number of instances.¹¹⁸ Indeed, Ms. Izumi Nakamitsu, the United Nations Under-Secretary-General and High Representative for Disarmament Affairs, noted in October 2022 that the “use of chemical weapons or prohibited chemicals in the Syrian Arab Republic, Malaysia, Iraq, the United Kingdom and the Russian Federation has threatened the norms embedded in the Chemical Weapons Convention.”¹¹⁹ In particular, the conflict in the Syrian Arab Republic and the repeated, confirmed use of chemical weapons has tested the CWC regime. Moreover, allegations of violations of the BWC have led to questions over the effectiveness of the treaty. Misconception 3 on cross-border research demonstrates that allegations surrounding non-compliance with the BWC can undermine the treaty.

This misconception can have serious implications for the international legal framework related to biological and chemical weapons. These treaties contain the fundamental prohibitions against such weapons and therefore the implication that the treaties are not working could encourage States to fail to comply with their treaty obligations, or even withdraw from the instruments. Further the misconception could prevent States from using the powers that they do have to respond to any violations. Both treaties contain mechanisms to respond to alleged violations, and a view that the treaty in question is failing could discourage states from engaging with these mechanisms.

Addressing the misconception

This misconception challenges the core of the international legal regime to prevent biological and chemical weapons by questioning the effectiveness of the foundational treaties that prohibit such weapons. When addressing this misconception it is therefore necessary to acknowledge the damage done by violations of the CWC and allegations of non-compliance with the BWC, but also to celebrate the significant successes of both instruments. Both the BWC and CWC regimes have faced a number of institutional challenges when responding to alleged violations. As noted previously in relation to Misconception 5, the BWC does not have a verification mechanism and enforcement of the Convention is further a challenge for States Parties. In relation to the CWC, accountability mechanisms have meant that despite the violations of the treaty highlighted above, it has proven difficult to hold perpetrators accountable.

Nevertheless, it is important to consider the significant successes of both the BWC and CWC as key components of the international-legal architecture to prevent biological and chemical weapons. Indeed, the CWC is arguably one of the most successful disarmament treaties. As of November 2022, over 99% of the world’s stockpile of chemical weapons were destroyed under the verification of the OPCW; a remarkable

118 For example, see Report of the OPCW Fact-Finding Mission in Syria Regarding an alleged incident in Saraqib, Syrian Arab Republic, on 4 February 2018 S/1626/2018, 15 May 2018, paragraph 7.4: “chlorine, released from cylinders through mechanical impact, was likely used as a chemical weapon on 4 February 2018 in the Al Talil neighbourhood of Saraqib.”

119 Keynote Statement at ASEAN Defense Ministers’ Meeting – Plus Chemical, Biological and Radiological (CBR) Conference “A Holistic Approach to Addressing CBR Threats” Statement by Ms. Izumi Nakamitsu High Representative for Disarmament Affairs, 11 October 2022.

achievement which has provided significant benefits to humanity. Disarmament, in terms of weapon elimination and the prevention of future armament or rearmament with chemical weapons, is a key component of the CWC as recognised in the preamble to the convention and an obligation under Article I. Universalisation of the treaty is also a signal of its continuing importance. With 193 States Parties as of 1 December 2022 it is the treaty limiting possession or use of a particular type of weaponry with the most States Parties, ahead of the BWC and the Treaty on the Non-Proliferation of Nuclear Weapons (NPT).

Furthermore, despite the aforementioned challenges presented by the use of chemical weapons in the Syrian Arab Republic, and ongoing verification challenges in relation to certification of the full elimination of Syria's chemical weapons capabilities, the OPCW was able to respond through a number of mechanisms related to verification of the destruction of existing chemical weapons stockpiles and fact-finding and investigation related to alleged use.¹²⁰

The work of the Organisation was commended by many and the OPCW was the recipient of the Nobel Peace prize in 2013 for extensive efforts to eliminate chemical weapons. Overall, it can be argued that "given the complexities of multilateral disarmament diplomacy, the CWC is a success story by any measure."¹²¹

Despite the institutional challenges for the BWC regime mentioned above and in the response to other misconceptions, it is clear that the BWC remains the key instrument to prevent biological weapons. States are continuing to join the BWC, bringing the current total number of Parties at 184. Data from the BWC ISU has also noted increased engagement with various mechanisms under the treaty in recent years including "a significant increase in the number of States Parties, regional and international organizations and other entities seeking assistance with the implementation or other aspects of the Convention."¹²² It also evidences that States are increasingly submitting CBM reports,¹²³ with the amount of reports received in 2021 the highest of any year to date. The continued lack of proven use of biological weapons and the peaceful exchange of exchange of equipment, materials and scientific and technological information related to biological agents and toxins demonstrates that the BWC is meeting its objectives. Ultimately, both the BWC and CWC are key instruments prohibiting dangerous weapons, to which the vast majority of States are Parties. New and ad hoc mechanisms set up to respond to challenges to the treaties have demonstrated that they are living instruments that can adapt to new challenges. It is imperative that States Parties continue to work to implement and strengthen both Conventions, whilst recognising their important role in ensuring the non-proliferation of such weapons, and any step in the opposite direction could lead to grave consequences for global peace and stability.

.....
120 See the OPCW "Syria and the OPCW", <https://www.opcw.org/media-centre/featured-topics/syria-and-opcw>.

121 Jean Pascal Zanders, "The CWC ten years ahead" in "The future of the CWC in the post-destruction phase", European Union Institute for Security Studies, Report No. 15, March 2013, p8.

122 Meeting of States Parties to the Convention on the Prohibition and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, "Annual report of the Implementation Support Unit", (BWC/MSP/2020/4), 27 September 2021, p.4 <https://undocs.org/en/BWC/msp/2020/4>.

123 Biological Weapons Convention Implementation Support Unit, "BWC Electronic Confidence Building Measures Portal", <https://bwc-ecbm.unog.ch/>

MISCONCEPTION 19

Signing the BWC or CWC makes a state bound by all of the treaty obligations

The misconception and its implications

News articles often incorrectly refer to States that have “signed” the BWC and CWC or to “signatory States” when they mean to refer to States that are legally bound by those Conventions. They should technically be collectively referred to as “States Parties” to the treaties.

Further, the role of their depositaries, the OPCW and the BWC ISU is not always accurately described. “Signature” and “signatory” as well as States “parties” are all important legal terms that are defined in international treaty law. They have distinct meanings which are often not accurately reflected in news reports. The institutional aspects of a convention and the regime it establishes may also create confusion and misconceptions on the status and role of entities such as the OPCW or the BWC ISU.

The status of States regarding international instruments such as the BWC and CWC has legal implications; it determines the extent to which they are bound by those instruments, what rights and obligations they have, and consequently if or when they can be in non-compliance with them. Wrongfully categorising a State as a “signatory” to a convention misrepresents the State’s commitments under that convention. Similarly, misrepresenting the institutional aspects of each convention may create false assumptions and expectations on the functions and powers of certain entities, and lead to inaccurate analysis of their successes and failures.

Addressing the misconception

For multilateral treaties, that is, treaties that can be joined by more than two parties, such as the BWC and CWC, signature is usually only the first step for States to take in order to be legally bound by that treaty. Typically, after signing a treaty, States seek approval at the *national* level from their parliament, national assembly or congress, to be legally bound by the treaty. Once such approval is granted, the State then deposits an ‘instrument of ratification’ to the treaty’s depositary, which is the final step that ensures that the State is now considered a party to the treaty.

Signatory States are therefore States that have signed the BWC or CWC, but not yet ratified them. This extra step of depositing their instruments of *ratification* is necessary for them to become legally bound by the conventions and there are a number of significant instances of States being signatories but not States Parties to international treaties. As signatory States, they nevertheless already have the obligation to refrain from acts which would defeat the object and purpose of that treaty.

Note that it is still possible for States that have not signed the conventions during the time they were open for signature to become a party. This is done through a similar procedure, usually referred to as *accession*, which only involves the step of depositing an instrument of accession after approval is gained at the national level for such a deposit.

Instruments of ratification or accession, which are legal documents, are deposited, or in other words sent by the State to the designated *depositaries* of the treaty. A depositary’s role is to administer the treaty. The depositary for the CWC is the UN Secretary-General; the depositaries for the BWC are the governments of the United Kingdom, Russian Federation, and the United States. States that have expressed their consent to be bound by either ratification or accession and for which the treaty is in force are referred to as *States Parties*. “Entry into force” refers to the date on which the conventions become binding on the

States that have expressed their consent to be bound by them. This may be a specific date mentioned in the treaty, or a date on which a specified number of ratifications or accessions have been deposited with the depositary. Once the conventions are in force for a given State, they are binding for that State, as well as for other States Parties, and they must be performed by them in good faith.

The Chemical Weapons Convention establishes the Organisation for the Prohibition of Chemical Weapons, an independent organisation tasked with ensuring the implementation and verification of the convention's provisions. All States Parties to the CWC are also *Member States* of the OPCW, which consists of three organs: the Conference of the States Parties, the Executive Council and the Technical Secretariat (on the OPCW, see also Misconception 10). The term Member States is only applicable if there is a relevant organisation for the States to become members of. The OPCW also provides a forum for consultation and cooperation among CWC States Parties. States Parties gather annually during the Conference of States Parties (CSP), the principal decision-making organ of the OPCW, and once every five years during a special session of the CSP known as a Review Conference.

Unlike the CWC, the BWC does not create an international organisation. However, similar to the CWC, it convenes a Review Conference every five years. Since 2003 following a decision at the Fifth Review Conference, States Parties to the BWC have also gathered on an annual basis during the Meeting of States Parties in between review conferences. During the Sixth Review Conference, the States Parties to the convention established an "Implementation Support Unit" (see above) which now operates within the Geneva Branch of the United Nations Department for Disarmament Affairs (UNODA). The ISU is significantly smaller than the OPCW, with only three permanent staff and a significantly smaller budget (see Misconception 20). The mandate of the ISU has been renewed and expanded over the years to now include providing support and assistance for administrative issues, national implementation, confidence building measures and universality; administering the database for assistance requests and offers and facilitating associated exchanges of information; and supporting States Parties' efforts to implement the decisions and recommendations of the BWC's review conferences.

To go further

See EU Non-proliferation and disarmament eLearning course, Y. Balci and S. Drobysz, Learning Unit 17 Non-proliferation and disarmament law, <https://nonproliferation-elearning.eu/>.

MISCONCEPTION 20

States Parties to BWC/CWC face undue burdens

The misconception and its implications

The misconception is the idea that there are a number of significant and excessive burdens facing States Parties to the BWC and CWC. The industrial verification regime of the CWC is often cited as challenging for new States Parties, as well as the drafting of implementing legislation and fears of financial burdens.

The implication of this misconception is that non-States Parties should not join the BWC and the CWC as a result of the perceived burdens. Therefore, this misconception can hamper universalisation of the treaties by creating the impression for key stakeholders within non-States Parties that joining either the BWC or CWC would be unduly difficult. States often face a number of competing priorities at the national and international level and international instruments related to biological and chemical weapons may not be political priority. The belief that it would be particularly onerous for new States Parties to join either treaty can therefore undermine national efforts to join.

Addressing the misconception

Firstly, it is important to recognise that it is true that there are a number of obligations on States Parties to the Conventions, in particular for States Parties to the CWC. For example, under the CWC regime, States Parties must designate or establish a National Authority to ensure, at a minimum, effective liaison with the OPCW and other States Parties. States Parties further need to make declarations as specified under the CWC. States must submit an initial declaration regarding any scheduled chemicals activities,¹²⁴ as well as possession of any chemical weapons stockpiles or chemical weapons production facilities. Additionally, they must submit annual declarations on certain previous and anticipated activities related to scheduled chemicals¹²⁵ and facilitate international inspection from the OPCW to verify such declarations. Under Article I, States Parties would also need to destroy any chemical weapons and chemical weapons production facilities and other related infrastructure it owns or possesses.

Despite the lack of a formal verification mechanism, States Parties to the BWC still need to undertake a number of measures at the national level. Alongside taking measures at the national level to implement the treaty through legislation and other similar measures, BWC States Parties should designate a National Point of Contact, responsible for coordinating national implementation of the BWC and communicating with other States Parties and relevant international organisations. As detailed in Misconception 5 they must further annually submit information on CBMs to the BWC ISU, which will require information gathering at the national level. Under Article II, States Parties would further need to destroy or divert to peaceful purposes all agents, toxins, weapons, equipment and means of delivery specified in Article I.

There are also a number of financial costs for States Parties to the two conventions at the international level. However, in relation to the BWC assessed contributions billed to States in 2021 totalled less than \$2 million.¹²⁶ Furthermore, contributions are weighted based on the United Nations scale of assessments pro-rated to take into account differences in membership between the Convention and the United Nations.

124 OPCW, "Declaration Requirements for Scheduled Chemicals", accessed at <https://www.opcw.org/resources/declarations/declaration-requirements-scheduled-chemicals>.

125 *Ibid.*

126 Ninth Review Conference of the States Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, "The overall financial status of the Convention and financial implications of proposals for follow-on action after the Ninth Review Conference", BWC/CONF.IX/PC/4, 14 February 2022.

Benefits of joining and implementing the BWC and CWC

- States clearly show their commitment to a world free of biological and chemical weapons;
- States can investigate, prosecute and punish offences related to the misuse of biological agents and toxins, toxic chemicals and their precursors, and related materials;
- States can monitor and supervise any activities with biological agents and toxins, toxic chemicals and their precursors, and related equipment and technology;
- States can better prepare for and respond to biological and chemical incidents;
- States will enhance their national security and public health and safety;
- Economic and technological development as a result of the exchange and use of toxic chemicals and their precursors, biological agents and toxins and related equipment and technology;
- Signal to potential investors that the state is a safe and responsible location for activities involving biological agents and toxins, toxic chemicals and their precursors, and related equipment and technology.

The BWC ISU noted in early 2022, “Based on the scale of assessments for 2021, almost two-thirds (64 per cent) of the current 183 States Parties pay less than USD 1,000 per year towards the Convention.”¹²⁷ A similar process is in place in relation to the CWC, where the OPCW has a significantly larger annual budget of around €68 million due to the number of activities that it undertakes.¹²⁸ Nevertheless, the scale of assessments means that some CWC States Parties pay less than €1000 annually.¹²⁹

Therefore, as demonstrated throughout this publication, joining the BWC and CWC has a number of clear benefits for States which far outweigh the perceived costs or burdens of implementing the treaties in practice.

To alleviate some of the challenges when implementing the two treaties, States Parties can seek support from international organisations, non-governmental organisations and other States Parties. For example, the OPCW has developed a number of capacity building programmes to facilitate national implementation of the CWC under Article VII, provide assistance and protection against chemical weapons as per Article X of the Convention, and promote international cooperation in the field of peaceful chemical activities in line with Article XI.¹³⁰ The BWC ISU also “facilitates activities to promote participation in the CBM process”¹³¹ for BWC States Parties, which can help new States Parties to submit their first CBMs. Civil society actors can also play a helpful role in supporting some of these processes as a result of their technical expertise.

As demonstrated by Misconception 13, States should join the BWC and CWC regardless of their history of engagement with chemical and biological weapons, to ensure that they can receive the peaceful benefits of the exchange and use of toxic chemicals, biological agents and toxins and related materials. Both treaties are increasingly close to universalisation, as new States continue to see that the benefits of joining and implementing the BWC and CWC outweighs the burdens.

.....
127 *Ibid.*

128 Twenty Sixth Session of the Conference of the States Parties to the Chemical Weapons Convention, “Decision: Programme and Budget of the OPCW for 2022-2023”, C-26/DEC.11, 1 December 2021.

129 Twenty Sixth Session of the Conference of the States Parties to the Chemical Weapons Convention, “Decision: Scale of Assessments for 2022”, C-26/DEC. 8, 30 November 2021.

130 OPCW, “Capacity Building”, accessed at <https://www.opcw.org/resources/capacity-building>.

131 UNODA, “Implementation Support Unit”, accessed at <https://www.un.org/disarmament/biological-weapons/implementation-support-unit>.

MISCONCEPTION 21

The BWC and CWC are relevant for states only

The misconception and its implications

This misconception is that as international treaties the BWC and CWC are only relevant for states, not for non-state actors such as industry, non-state groups or individuals. In particular, industrial actors are often unaware of the importance of the two treaties and the international structures in place around them. The lack of participation by industry groups in the CWC for example can lead to such actors missing the possibility of engaging on ideas to update the treaty obligations so as to improve the declaration and verification processes without undue hindrance to their activities on the national and international levels.

The misconception can hamper engagement with the treaties from non-state actors. Such actors may have obligations related to the Convention which they are unaware of. This can lead to inadvertent violations of measures to implement the treaties.

Addressing the misconception

In order to apply to non-state actors, the BWC and CWC need to be implemented through national legislation and other measures. Once a State has ratified or acceded to the BWC or CWC, and obliged to implement its requirements, it must take measures to implement the treaties at the national level. As noted elsewhere, Article IV of the BWC obliges each State Party, in accordance with its constitutional processes, to take any necessary measures to prohibit and prevent the use, development, production, stockpiling, acquisition or retention of biological weapons in its territory and anywhere under its jurisdiction or control. Similarly, Article VII of the CWC requires all States Parties to adopt the necessary measures to fulfil their obligations under the Convention, especially appropriate penal legislation. They must then inform the OPCW of the measures they have taken.

Through the adoption of legislative, regulatory and other measures to implement the Conventions, states can ensure that obligations are binding on non-state actors. To implement the BWC and CWC in a national legislative framework, states should adopt a number of measures including penal measures to criminalise unlawful actions, control measures on activities involving relevant materials, safety and security measures, and enforcement measures to facilitate monitoring, prosecution and punishment. A database containing States Parties legal measures to the BWC can be found on the VERTIC website¹³², and similarly the OPCW's legislation compendium provides examples of legislation enacted by CWC States Parties.¹³³

The CWC regime as implemented in national law imposes a number of obligations on national chemical industrial actors. CWC States Parties in accordance with Article VI undertake to 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. As part of this commitment, CWC States Parties are obliged to collect information and submit declarations regarding certain toxic chemicals, in line with the Verification Annex. On the basis of the information provided by States Parties, OPCW inspectors further inspect facilities where such chemicals are produced, processed, or consumed to verify the declarations. Non-state actors involved in activities involving certain toxic chemicals therefore, should

132 VERTIC, "BWC Legislation Database", accessed at <https://www.vertic.org/programmes/nim/biological-weapons-and-materials/bwc-legislation-database/>.

133 OPCW, "Legislation Compendium", accessed at <https://www.opcw.org/resources/national-implementation/legislation-compendium>.

National legislative implementation of the BWC and CWC at a glance

BWC Article IV:

“Each State Party shall, *in accordance with its constitutional processes, take any necessary measures to prohibit and prevent*” biological weapons.

Final Document of the 8th BWC Review Conference, Article IV, 11:

“The Conference calls upon States Parties to adopt, in accordance with their constitutional processes, *legislative, administrative, judicial and other measures, including penal legislation . . .*”

CWC Article VII National Implementation Measures:

“1. Each State Party shall, *in accordance with its constitutional processes, adopt the necessary measures to implement its obligations* under this Convention. In particular, it shall:

- a) *Prohibit* natural and legal persons anywhere on its territory or in any other place under its jurisdiction as recognized by international law from undertaking *any activity prohibited to a State Party* under this Convention, including enacting penal legislation with respect to such activity; [...].”
- c) *Extend its penal legislation* enacted under subparagraph (a) to any activity prohibited to a State Party under this Convention undertaken anywhere by natural persons, possessing its nationality, in conformity with international law.”

be aware of the CWC and their obligations under the national implementing law. As such legislation seeks to implement the CWC, non-state actors involved in activities with certain toxic chemicals stand to benefit from an understanding the CWC as an international treaty and should follow developments in the international arena.

Another important example of why it is necessary for non-state actors to engage with the BWC and CWC regimes can be demonstrated by a recent settlement between the U.S. Commerce Department, Bureau of Industry and Security (BIS) with Princeton University in connection with 37 alleged violations of the Export Administrations Regulation (EAR).¹³⁴ The EAR help regulate exports in the US and contribute to the creation of transfer controls to implement the BWC at the national level. Princeton University was engaged in peaceful activities; however it exported strains and recombinants of animal pathogens to research institutions in 15 countries without the required BIS export licenses as they had not realised that such activities needed prior licencing. The exported items are included on the US Commerce Control List which catalogues materials subject to export licensing authority of the BIS, over proliferation fears for biological weapons purposes. After the violations came to light, the university was fined and forced to undergo auditing of its internal practices. The case demonstrates the need for non-State actors such as research institutions to be aware of national legislation implementing the BWC and CWC, even when engaging with activities involving biological agents and toxins for peaceful purposes.

Non-State actors can engage with the CWC and BWC in a variety of manners. For example, the OPCW regularly holds dialogues with chemical industrial stakeholders to discuss national implementation of the Convention and raise awareness.¹³⁵ Non-state actors such as civil society groups can further sometimes attend treaty meetings related to the BWC and CWC, such as Review Conferences, and make statements

134 Thomas Brown, “Princeton University fined over exports of pathogens without a licence”, *Trust and Verify* 168, VERTIC, Summer 2021, p10.

135 OPCW News, “chemical industry and National Authority representatives discuss experiences of national implementation”, 15 October 2021, accessed at, <https://www.opcw.org/media-centre/news/2021/10/chemical-industry-and-national-authority-representatives-discuss>.

on particular issues. Engagement at the national level, for instance through collaboration with a National Authority, can further ensure that non-State actors are aware of their obligations. The BWC and CWC are important international instruments for both State and non-State actors, and the engagement of non-State actors with the treaties is critical to ensure toxic chemicals and biological agents and toxins are not used as weapons.

What next?

Promoting technical information and preventing disinformation

This report has addressed 21 misconceptions on biological and chemical weapons and related legal frameworks. It has demonstrated the continuing relevance of both the BWC and CWC to prevent the proliferation of biological and chemical weapons and shown why it is crucial for non-States Parties to join the Conventions. It further has clarified the definitions of key terms for implementation of the two treaties and challenged incorrect understandings of them.

The report was written at an important time for both the BWC and CWC, for which Review Conferences are taking place in 2022 and 2023. Such treaty meetings are opportunities to reinforce the legal instruments and their implementation and provide a platform for knowledge sharing. It is hoped that this study can make a contribution to the debate at these meetings and help to challenge common misconceptions that relevant stakeholders may hold.

Throughout the report, it is evident that seemingly innocuous misconceptions can have nefarious consequences. For example, Misconception 6 demonstrated how a misunderstanding under what constitutes a chemical weapon can undermine trust in the work of the OPCW. The widespread nature of the misconception has had significant consequences for the Organisation, leading to protesters breaking into the OPCW headquarters during the 26th Conference of the States Parties 2021.¹³⁶ The break-in was a response to perceived inaction from the OPCW in relation to allegations of use of white phosphorus, despite the Organisation making a number of comments stating that when white phosphorus is used as smoke, illumination or as an incendiary weapon, the use of the substance does not fall under the purview of the CWC.¹³⁷ As such, even technical misunderstandings can have serious consequences in practice, undermining the security of those working in the field.

The report has further noted that misconceptions can easily be used by nefarious actors to fuel disinformation campaigns, spreading mistrust and destabilising treaty regimes. Misconception 3 on cross-border biological research has been used in disinformation campaigns to cast aspersions over legitimate international public health collaboration and to claim that certain states are violating the BWC by developing biological weapons. The media and political discourse around the origins of the COVID-19 pandemic in this area have further fuelled disinformation, which has led to significant challenges for stakeholders working to ensure the non-proliferation of biological weapons. In the words of United Nations Secretary-General António Guterres: “Disinformation is not just misleading, it is dangerous and potentially deadly.”¹³⁸

Therefore, if we do not tackle misconceptions about biological and chemical weapons and related legal frameworks, they can feed disinformation campaigns. States Parties to the BWC and CWC, as well as other

136 Dr. Ewelina U. Ochab, “We Must Remember The Victims Of Chemical Warfare By Combating Impunity For The Crimes”, *Forbes*, 24 November 2020, accessed at <https://www.forbes.com/sites/ewelinaochab/2020/11/24/we-must-remember-the-victims-of-chemical-warfare-by-combating-impunity-for-the-crimes/?sh=37269b132b5d>.

137 *Ibid.*

138 UN News, “Reliable information ‘a matter of life and death’ UN chief tells Security Council”, 12 July 2022, accessed at <https://news.un.org/en/story/2022/07/1122362>.

relevant actors, are encouraged to tackle misconceptions through the provision of evidence-based technical information to refute them. Technical expertise exists at the national level, and in the BWC and CWC frameworks. Civil society actors can also play a role in this regard as they have significant expertise themselves and can provide alternative viewpoints. The challenging of misconceptions is a continuous process and States will need to devote significant resources to such efforts. The final section therefore outlines 21 examples of resources that can be used to provide factual information on the BWC and CWC and to challenge misconceptions and disinformation.

Related resources

Tools to provide factual information on the BWC and CWC

BWC ISU: eCBM Platform. The page lists BWC States Parties which have submitted Confidence-Building Measure reports in accordance with decisions of BWC Review Conferences. Where States Parties have consented to their CBMs being publicly available, these can be accessed by clicking the country name.

Georgetown University Center for Global Health Science and Security and Talus Analytics, as sponsored by Canada's Weapons Threat Reduction Program: Biosecurity Central. This tool is a publicly available web-based library that helps users find relevant and reliable sources of information for key areas of biosecurity.

OPCW: Education and Outreach materials. This page contains a number of materials aimed at enhancing understanding of the work and mandate of the OPCW through education materials for students, educators, civil society, and policymakers.

Chemical Weapons Convention Coalition: Coalition website. This Coalition is an independent, international civil society network committed to supporting the aims and universalisation of the CWC and supplementing the work of the member states of the OPCW.

Walter Krutzsch, Eric Myjer, Ralf Trapp: Chemical Weapons Convention: A Commentary. This resource offers comprehensive, article-by-article commentary on the text of the CWC.

United Nations Office for Disarmament Affairs (UNODA): Organisation website. The website provides substantive information aimed at furthering the non-proliferation and disarmament of biological and chemical weapons.

UNODA: The Biological Weapons Convention: An Introduction Second Edition March 2022. First published in 2017, the updated publication provides readers with a comprehensive overview of the Biological Weapons Convention. The publication covers the history of the negotiations and the current state of implementation of the Convention. It also explains the significance of the Convention in the modern world.

VERTIC tools to provide factual information on the BWC and CWC

NIM BWC legislation survey template and CWC legislation survey template. Such templates were developed to assist states to comprehensively analyse their legislation implementing the treaties. The legislation survey templates identify distinct measures that are relevant for the implementation of the instruments. In addition, 'survey overview' templates provide a place to summarise the survey's main findings and formulate recommendations to strengthen legislation.

NIM fact sheets about the BWC and the CWC. These short documents contain factual information about implementation of the conventions and can be used to raise awareness among key stakeholders.

NIM legislative drafting tools for the BWC and CWC which are used to support states with the drafting of legislation to implement the treaties.

Trust & Verify. VERTIC's flagship publication, dating back to 1989, provides news and analysis related to the BWC and CWC. The publication provides analysis and news of verification and implementation developments, as well as information on VERTIC's activities, regularly featuring content on the BWC and CWC.

Resources to counter disinformation

King's College London, in collaboration with the Government of Canada: Bioweapons disinformation monitor. This website provides resources to identify and combat the spread of harmful disinformation on biological weapons.

George Mason University Schar School of Policy and Government Biodefense program: The Pandora Report – Combatting Disinformation. This page lists resources and commentary for debunking false COVID-19, CBW, and other related claims.

UK Government: RESIST 2 Counter Disinformation Toolkit. This toolkit helps support governments and communicators to effectively reduce the impact of mis- and disinformation through strategic communications.

United Nations Human Rights Council Resolution A/HRC/49/L.31/Rev.1 on the Role of States in countering the negative impact of disinformation on the enjoyment and realization of human rights. The Resolution emphasises the primary role that governments have, in countering false narratives.

EU DisinfoLab: Organisation website. The Lab is an independent non-profit organisation focused on tackling sophisticated disinformation campaigns targeting the EU, its member states, core institutions, and core values.

CRDF Global: Disinformation and the Evolving Threats of Chemical Weapon Proliferation. On October 4 2021, CRDF Global hosted a Thought Leadership Series event, explaining how mitigating the proliferation risks posed by disinformation campaigns must be a whole-of-society effort that includes non-government organisations, digital and traditional media companies, and educators. A video of the event can be seen on the webpage.

NTI: Fake News, Real Consequences: The Dangers of WMD Disinformation. This report demonstrates the dangers of disinformation through an exploration of real life case studies.

Cover image: Photo by Siora Photography on Unsplash