



Australian Government
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Defence Science and
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The Biological Weapons Convention, UN Security Council Resolution 1540 and Codes of Conduct

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The views expressed in this presentation are those of the author
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Issues to be discussed in this presentation

- What is the role of codes in context of the BWC and UN SC Res. 1540?
- Why is it important to raise awareness among biological scientists of the BWC?
- Should there be one code or ‘layers’ of codes?
- How should we approach the development of codes?
- How do codes relate to the teaching of biology?

Biological Weapons Convention

Article I: ‘Each State Party to this Convention **undertakes never in any circumstance to develop, produce, stockpile** or otherwise acquire or retain:

- (a) Microbial or other biological agents, or toxins whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes;
- (b) Weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict.’

Fourth Review Conference - **includes prohibition of ‘use’.**

Biological Weapons Convention

Article III: ‘Each State Party to this Convention **undertakes not to transfer to any recipient whatsoever, directly or indirectly**, and not in any way assist, encourage or induce any State, group of States or international organisations to manufacture or otherwise acquire any of the agents, toxins, weapons, equipment or means of delivery specified in Article I of this Convention’.

Fourth Review Conference - **includes prohibition of transfers to terrorist groups.**

Biological Weapons Convention

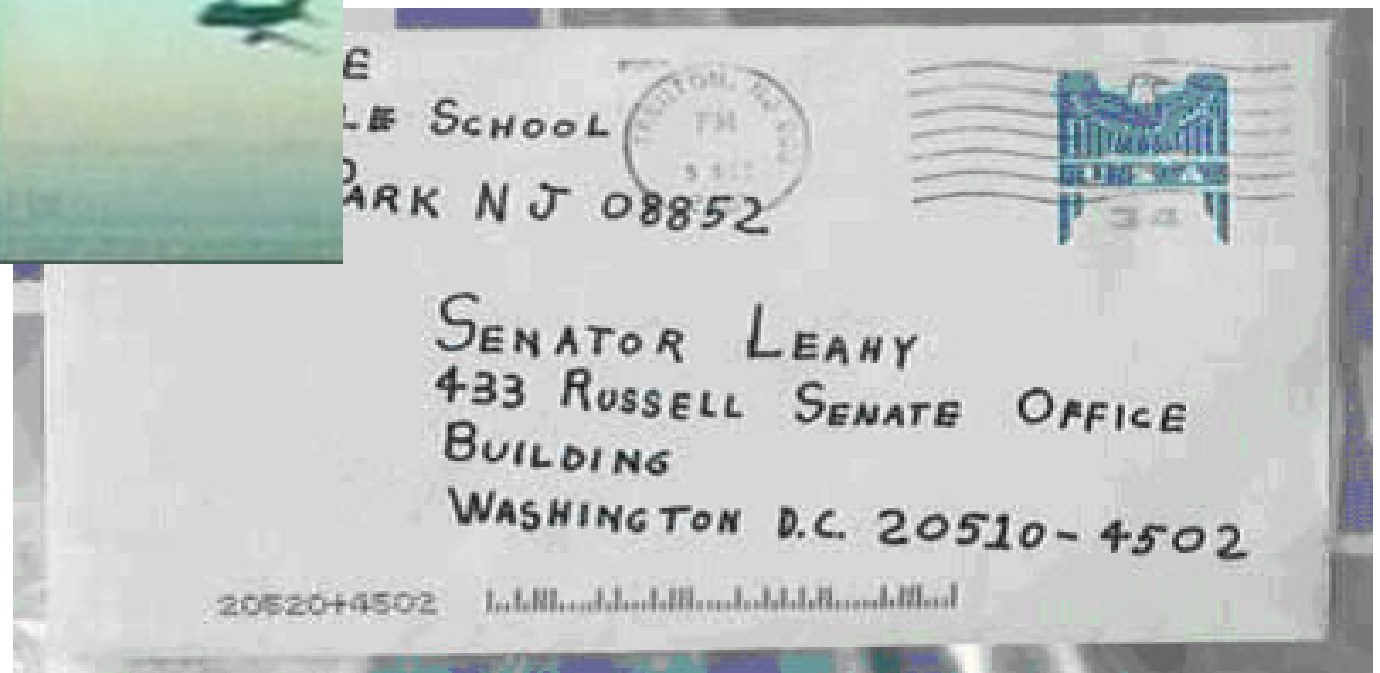
Article IV : ‘Each State Party to this Convention shall, in accordance with its constitutional processes, **take any necessary measures to prohibit and prevent development, production, stockpiling, acquisition or retention** of the agents, toxins, weapons, equipment and means of delivery specified in Article I of the Convention, within the territory of such State, under its jurisdiction or under its control anywhere.’

- **includes enacting national legislation / regulations related to ‘bio-security’:**
 - **measures to prevent the mis-use of pathogens and toxins**

BWC Compliance

- Historically, major compliance concerns have been with State Programs, in particular:
 - Soviet Union / Russia
 - Saddam / Iraq

BWC Post 9/11



BWC - Post 9/11

Increasing focus on domestic compliance with BWC obligations as a means to raise the barriers to bio-terrorism

- Inadvertent support of the biological community to a terrorist group
 - Provision of materials, equipment, ‘know-how’
- ‘Disgruntled insider’
- Theft of pathogens or toxins from biological facility

BWC - Post 9/11

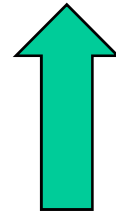
- Domestic compliance with treaty obligations requires various national implementation activities, including:
 - Domestic legislation;
 - Enhanced security of pathogens/equipment, and knowledge;
 - Awareness raising, codes of conduct.

Article III - Transfers

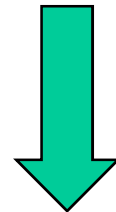
- Major Problem: the dual-use dilemma
- Major Challenge: how to develop control measures /monitoring procedures to avoid assisting BW-proliferation and bio-terrorism in ways that do not hamper the growth and sharing of scientific knowledge and the global spread of beneficial advancing biological sciences and technologies.

Dual-use Dilemma

Public health / pharmaceuticals / agriculture



- Materials - seed cultures of pathogens, toxins
- Equipment - incl. fermenters, centrifuges, freeze dryers
- Technology and knowledge ('know-how')



Biological weapons / Bioterrorism

Advances in biosciences

Globalisation of biotechnology



BW program could be obscured within biotech industry

Inadvertent assistance to bioterrorism

The spread of materials, technologies and 'know how' relevant to the development of biological weapons poses a serious BW-proliferation and bio-terrorist threat.

The Dual-use Dilemma

How to prevent the mis-use of biological sciences for BW or other hostile purposes, without hindering peaceful applications of biological sciences.

Key issues:

- dual-use nature of materials and equipment associated with biological weapons
- the difficulty in recognising when an apparently innocent transaction may have a hostile intent
- the possibility that research being undertaken for beneficial objectives may have hostile applications.

‘Experiments of concern’

According to US National Academy of Science

Includes biological research that:

- Demonstrates how to render vaccines ineffective
- Confers resistance to antibiotics or antiviral agents
- Enhances virulence of pathogen / renders non-pathogen virulent
- Increases transmissibility of pathogen
- Alters host-range of pathogen
- Enables evasion of diagnosis/detection
- Enables weaponization of biological agent or toxin

Needs some form of national oversight.

BWC Article III - Domestic Transfers

BWC Article III requires domestic laws and regulations to ensure that pathogens and toxins, as well as related materials and equipment, as defined in Article I of the BWC, are not transferred for terrorist purposes, and also that such materials have an appropriate level of physical protection and security during both storage and transportation.

UN Security Council Resolution 1540

- Adopted 28 April 2004
- Obligates all UN Member States to refrain from providing any support to non-State actors that attempt to... [obtain] ... biological weapons.
(i.e. ‘captures’ those States not party to BWC)
- All UN Member States must adopt concrete domestic measures
- Report to Committee of the UN Security Council

UN Security Council Resolution 1540

These measures, as they apply to biological weapons and related materials, include, *inter alia*:

- adopt and enforce domestic laws
- establish appropriate controls over biological dual-use related materials;
- effective measures to account for biological dual-use related materials;
- effective border controls; and
- develop national control lists of relevant biological dual-use items.

BWC Article III *vis-a-vis* UNSCR 1540

In our view, the specific ‘biological measures’ listed in UNSCR 1540 are also required for all States Parties under the BWC Article III.

Therefore, comprehensive legislation to fully satisfy BWC Article III obligations will cover all obligations related to biological weapons (and related materials) under UNSCR 1540.

Therefore, Model Legislation drafting elements developed for BWC Article III could also be used by States to satisfy their ‘biological obligations’ under UNSCR 1540.

Codes of Conduct for Scientists

Questions:

Why are Codes of Conduct part of the ongoing BWC intersessional program of work in Geneva?

Why should there be a BWC outreach / education process?

Why should Codes be part of a BWC outreach / education process?

What are the roles of the codes in the context of the BWC & 1540?

Raise awareness of BWC issues, including:

- BWC-International obligations
- BWC-related domestic laws and regulations
- Dual-use dilemma
 - Including ‘experiments of concern’
- Possible inadvertent assistance to BW-proliferation / bio-terrorism

Facilitate development of responsible culture and behaviour in individual scientists and in workplaces, and appropriate workplace regulations and oversight, that minimise the risk of mis-use of biological sciences for hostile purposes.

Code of Conduct – Some issues from the BWC

Suggestions in the BWC context have ranged from focus on:

- full awareness of the scientific community of national laws related to biological activities, and full compliance with all such laws ('code of practice');

to a focus on

- ethical considerations, including scientific responsibility when working on certain research projects that may lead to discoveries that could make BW more effective ('code of ethics'); and
- One 'universal' code or a number of codes?

‘Top Down’ or ‘Bottom up’?

- The various scientific communities are much more likely to accept, and take seriously, non-proliferation regulations and a Code related to BW issues if they fully understand the reason for the Code and if they have a sense of ownership in the Code.
- To win the ‘hearts and minds’ of the relevant scientific communities, the best approach may be to develop a set of elements or themes which the societies and institutions/workplaces can then craft into appropriate language.

Layer of Codes*

It may be useful to think of Codes of Conduct as occurring in a number of layers, including:

- *Guiding Principles (A Universal Code cf. Hippocratic Oath)*
- *Scientific Society Codes (Codes of Ethics)*
- *Institutional or Workplace Codes (Codes of Practice)*

We would see these various codes as complementary and mutually reinforcing, and may be most effective if developed as a package.

* Australia, Working Paper, BWC/MSP/2005/MX.35 (24 June 2005)

* Chair 'Synthesis Paper', BWC/MSP/2005/L.1 (16 November 2005)

Guiding Principles / Universal Code

A short aspirational code, containing general principles and referring to ethical norms, could be the basis of a universal code (compare with Hippocratic Oath).

Implementation of this would effectively be a 'top-down' approach.

Scientific Society Codes (Code of Ethics)

(either national or international societies)

There could be new codes developed by societies, or elements could be added to their existing codes, to include:

- the general principles;
- awareness of the BWC and the obligations under the BWC;
- awareness of the dual-use nature of biological sciences; and
- a commitment not to undertake any activities prohibited by the BWC.

Institutional or Workplace Code *(Code of Practice)*

(more detailed codes applicable to a particular workplace)

The code could either be a new code, or elements added to an existing workplace code. These elements would include:

- full awareness by the scientific community of national laws related to biological activities;
- commitment to full compliance with all such laws; and
- a focus on ethical considerations, including scientific responsibility when working on certain research projects that may lead to discoveries that could make BW more effective.

NB. a 'bottom up' approach. Could become part of a formal workplace agreement.

Agreement from previous BWC Workshops

- Guiding Principles (a short ‘universal’ aspirational Code of Ethics - compare with Hippocratic Oath);
- agreement of elements or themes that may subsequently be drafted into appropriate language by various biological sciences societies and incorporated into existing Society Codes (Codes of Conduct);
- agreement of elements or themes that may subsequently be drafted into appropriate language by various institutions / workplaces and incorporated into existing Workplace Codes (Codes of Practice).

[Name of Institution] Workplace Code [Elements]

The **[Name of Institution]** Workplace Code is the following a set of requirements developed to ensure that scientists employed by **[Name of Institution]** comply with all obligations, legislation, regulations and oversight mechanisms, and to prevent activities by **[Name of Institution]** scientists which would deliberately or inadvertently assist in the development of biological weapons.

- 1) Awareness of international obligations under the Biological Weapons Convention (BWC) (see Annex 1).
- 2) Awareness of national legislation and associated regulations related to Australia's obligations under the BWC (see Annex 2).
- 3) Awareness of the various regulatory and oversight mechanisms applicable to the **[Name of Institution]** research program, including the **[Name of Institution]** Research Oversight process / Advisory Committee, the Institutional Biosafety Committee (IBC), the Office of the Gene Technology Regulator (OGTR) and Australian Quarantine (AQIS) (see Annex 3).
- 4) A personal commitment by all scientists employed by **[Name of Institution]** Workplace Code to fully comply with all international obligations, national legislation and related regulations, and the various regulatory and oversight mechanisms applicable to the **[Name of Institution]** research program.
- 5) Awareness of the dual-use nature of biological materials, equipment and 'know-how', and a personal commitment by all scientists employed by **[Name of Institution]** to not deliberately or inadvertently assist anyone in any BW-proliferation or bio-terrorism activity.
- 6) A personal commitment by all scientists employed by **[Name of Institution]** to report to Senior Manager, **[Name of Institution]** any issue or activity that they consider may be relevant to compliance with BWC obligations, Australia's national legislation and associated regulations, or **[Name of Institution]** regulations and oversight mechanisms.

How do codes relate to teaching of biological sciences?

One possible approach :

- BWC issues taught in 1st year undergraduate level
 - Perhaps part of ‘scientist responsibility/ ethics’ course?
- A refresher course at beginning of postgraduate program.
- Short courses offered by academia/societies and gov’t outreach (e.g. National Authority) to workplaces.

These will be more effectively taught by academics with strong personal commitment to objectives of the BWC.

Hence, need for Workplace Codes in Biology Departments at academic institutions.

New partnerships between academics / National Authorities / senior government scientists.

Additional thoughts ...

- To be effective, development of Codes and the teaching of BWC ethics will require high levels of cooperation between academia, government officials and the broader scientific community, including scientific societies and peak industry groups
 - and a strong sense of responsibility and vigilance within the relevant scientific communities.
- This will need to be a continuing process because of the changing players and changing technologies in the various biological sectors
 - cannot do it once and then put a ‘tick in the box’.