Building a “Web of Prevention”

Lecture No. 21

1. Outline

- The Concept of a Web of Prevention.
  - Slides 2-5
- Component Parts of a Web of Prevention.
  - Slides 6-13
- The Future of the Web of Prevention
  - Slides 14-20

Notes: the objective of this lecture is to inform students that there are many ways in which individuals and groups can take effective action at different levels of web of applied policies against the misuse of life sciences.

2. Why a Web?

- Since 2001 Biosecurity has become increasingly salient.
- A combination of events in 2001 (Anthrax Letters and September the 11th) have ensure biosecurity has been framed through lens of bioterrorism and the objective to prevent unauthorised access to pathogens in labs.
- Bioterrorism is a threat various examples in the past Aum, Rajneeshees as well as Anthrax Letter Attacks.
- Bioterrorism is not the only or exclusive challenge generated by life science research in 21st Century.

Notes: For the consideration of potential implication of rapidly advancing life sciences in the context of global security, please review Lectures 6, 14, and 16.

3. Assimilation theory

- In the future as life sciences advance there is potential for a push and pull process which results in Assimilation of biological weapons in state arsenals.
- Push from life sciences: new technologies and new capabilities which may increase the utility of biological weapons.
- Pull from 'new wars' in the 21st Century that are "radically different from those envisaged in the cold-war era" and encouraging re-equipping.
- Generates potential for assimilation of a new category of weapons in state arsenals.

Notes: For further illustration of assimilation, please review Lecture 6 and Lectures 2-5 as a empirical study of assimilation. Lectures 16 and 17 are for an illustration of potential areas of push and pull process.

Ref:

Robinson, J. P. (2008) 'Difficulties Facing the Chemical Weapons Convention', *International Affairs,* **84** (2), 223–239. Available from http://www.wiley.com/bw/journal.asp?ref=0020-5850

4. Multidimensional Threats

- Summary of threats:
  - Threats posed by terrorism;
  - Threats posed by assimilation/state BW programmes;
  - Potential threat posed by unlimited access to evolutionary life sciences;
- 'No single focal point' of threats
  - Potential actors, material and information, which can be related to dual-use issues, exist at international, regional, national, local and individual levels.

Notes: A Harvard biologist Mathew Meselson concisely summarised potential dangers addressed in this slide as follows:

5. From the Individual to the International

- *The new reality is quite simple. Action is required at all levels; individual, sub-national, national, regional, like minded, and international, public, private, government and intergovernemental levels. Managing the biological weapons problems requires a rubric of measures from the individual to the international.*

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6. What is a “Web of Prevention”

- In response to the challenge of the biological weapons we need to employ a range of measures...operating at a range of levels from individual to international.
- Some, such as Pearson, Dando and the International Committee of the Red Cross have referred to this a “Web of Prevention”.

7. Objective of the Web

In sum, by a integrated set of policies an objective of the web is to "*persuade those contemplating the misuse of modern biology for hostile purposes that the effort and costs are just not worth it … at many different levels*" (Dando, 2006: 129).

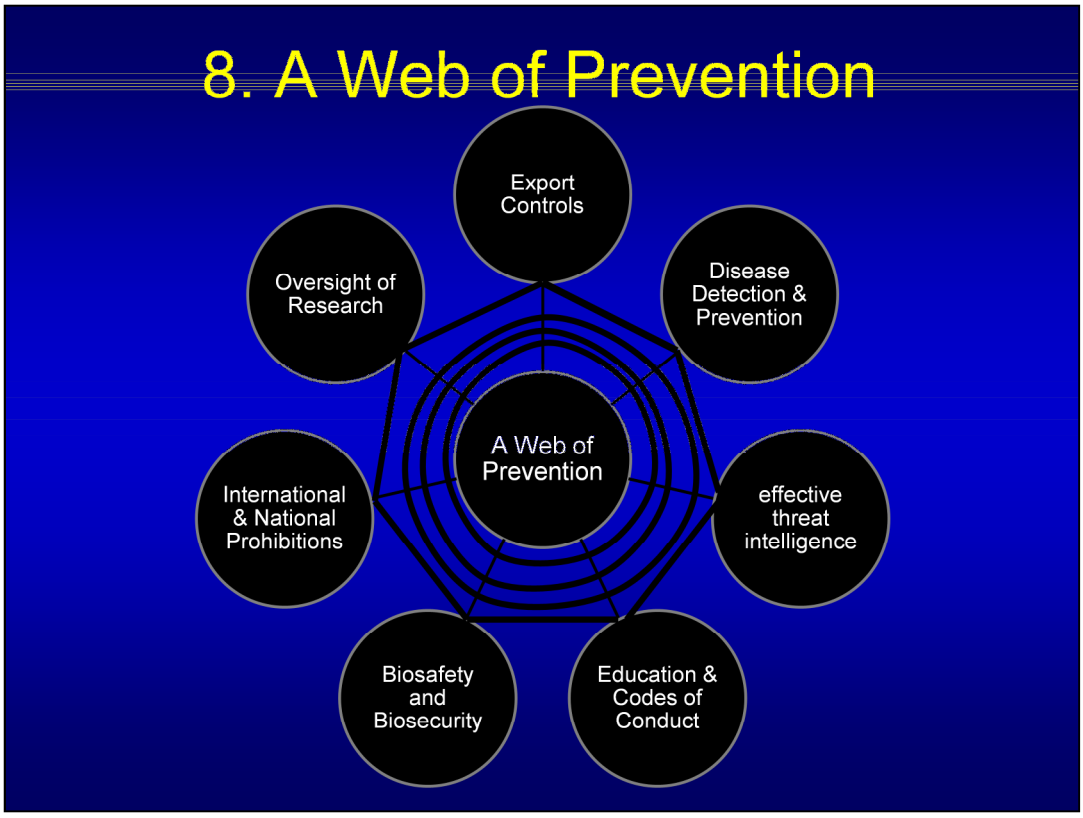
So what can be a specific set of policies through which different actors, as well as *individual scientists*, can take action…?

Ref:

Danado, M. (2006) *Bioterror and BioWarfare: A Beginner's Guide,* Oxford: One World Publications.

Pearson, G. S (1993) Prospects for Chemical and Biological Arms Control: The Web of Deterrence. *Washington Quarterly*, Spring **16**(2), 145-162. Alternatively Pearson, G. S. (1998) *The Vital Importance of the Web of Deterrence* [Online] Department of Peace Studies,

University of Bradford [Cited 15 June 2009]. Available from http://www.brad.ac.uk/acad/sbtwc/other/webdet.htm



Export Controls: Export controls are designed to prevent the transfer of dual use equipment, agents and expertise internationally and "ensure that exports do not contribute to the development of chemical or biological weapons".

Disease Detection & Prevention: Effective mechanisms to detect monitor and respond to disease outbreaks minimise the utility of biological and toxin weapons by enhancing resilience to the effects. This serves the added benefit of improving public health provision for natural outbreaks of disease and public health response remains *the* response for dealing with both deliberate and natural outbreaks.

International & National Prohibitions: International prohibitions such as the Biological and Toxin Weapons Convention (BTWC) and the Geneva Protocol of 1925 as well as national measures function to deter and dissuade individuals from contributing to the construction and development of biological and toxin weapons.

Effective Intelligence: Effective intelligence, wisely interpreted, is essential for founding good policy and ensuring the effective understanding of emerging challenges.

Education & Codes of Conduct: Education and codes function to raise awareness of the Biological weapons Convention amongst the scientific community and deter those with the capacity to contribute to biological weapons.

Biosafety and Biosecurity: these two measures contribute to ensuring scientific research is conducted safely and securely and only for peaceful purposes. Biosecurity normally includes the following physical security, personnel security, material control and accountability, transfer security, information security, and, underlying in many of the above principles, some form of program management.

Oversight of Research: Oversight of dual use research (i.e research which serves both a benign and a malign purpose) is important in minimising the assimilation of Biological and toxin weapons in states military arsenals.

See Lecture 9 and 10 for the evolutionally process of those elements under the BTWC.

For the illustration of national and international control regimes, please review Lectures 18, 19 and 20.

10. Disease Detection & Prevention

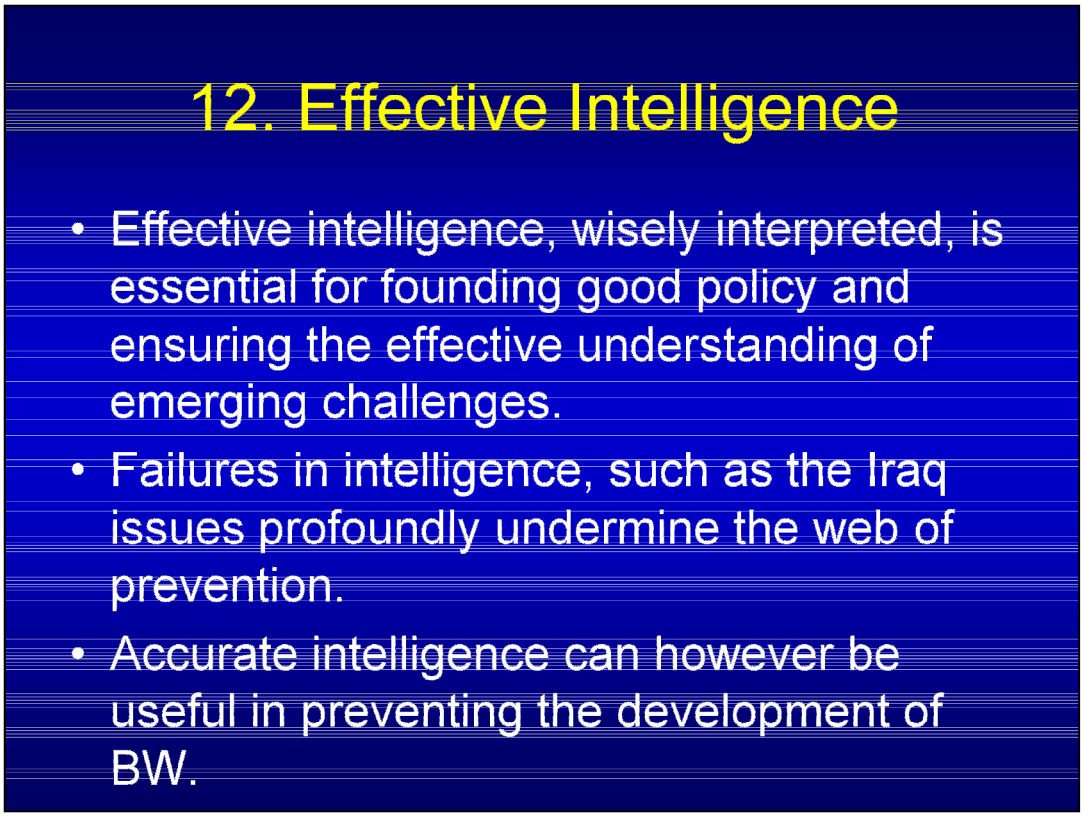
- Not a traditional part of security but nonetheless essential.
- Effective mechanisms to detect monitor and respond to disease outbreaks minimise the utility of biological and toxin weapons by enhancing resilience to the effects.
- International Health Regulations (2005) contribute in some way to this but much more is required in this field.

For the interface between the public health and biosecurity, please review Lectures 9 and 10.

11. International & National Prohibitions

- International prohibitions such as the Biological and Toxin Weapons Convention (BTWC) and the Geneva Protocol of 1925 as well as national measures function to deter and dissuade individuals from contributing to the construction and development of biological and toxin weapons.
- To be effective they need to be broadly implemented and enforced.

Historic review of international and national prohibitions against the biological and toxin weapons were provided at Lectures 7, 8 and 20.



Notes: Intelligence also of scientific and technological developments. See the later recommendations of Fink Report and need for scientific awareness.

Ref:

Petro, J. B., Plasse, T. R., and McNulty, J. A. (2003) 'Biotechnology: Impact on Biological Warfare and Biodefense', *BioSecurity and Bioterrorism: Biodefense Strategy, Practice, and Science* **1**(3), pp. 161-168. Available from http://www.liebertonline.com/doi/abs/10.1089/153871303769201815

13. Education & Codes of Conduct

- Education and codes function to raise awareness of the Biological weapons Convention amongst the scientific community and deter those with the capacity to contribute to biological weapons.
- There are a range of projects focused on education and codes in many countries.

Responsibilities of both governments and individual scientists were considered in Lectures 11, 12, 13 and 20.

14. Biosafety and Biosecurity

- Biosecurity "In the setting of the BWC, it is most commonly used to refer to mechanisms to establish and maintain the security and oversight of pathogenic microorganisms, toxins and relevant resources"
- these two measures contribute to ensuring scientific research is conducted safely and securely and only for peaceful purposes.

Since the conclusion of the Cold War, the rapid advance of biotechnology (as discussed in Lecture No. 7), several high profile accidents and leaks, and "the perceived increased threat of bio-terrorism" appear to have generated renewed political interest in the concept of biosafety, which has been coupled with the relatively new - or at least reconceptualised- notion of biosecurity. At the discussion of what was labelled as 'biosecurity' during the 2003 BWC Meeting of Experts, was for some States 'their first exposure to such a concept' (Tóth 2003: 151). For other states previously exposed to biosecurity, it became clear that there were contrasting framings of the concept within the BWC context. Since then however,

Biosecurity measures (such as Personnel Reliability; Physical Security; Information Technology Security; Material Control and Accountability; Material Transfer Security; Program Management) contribute to ensuring

See also Lectures 9 and 10.

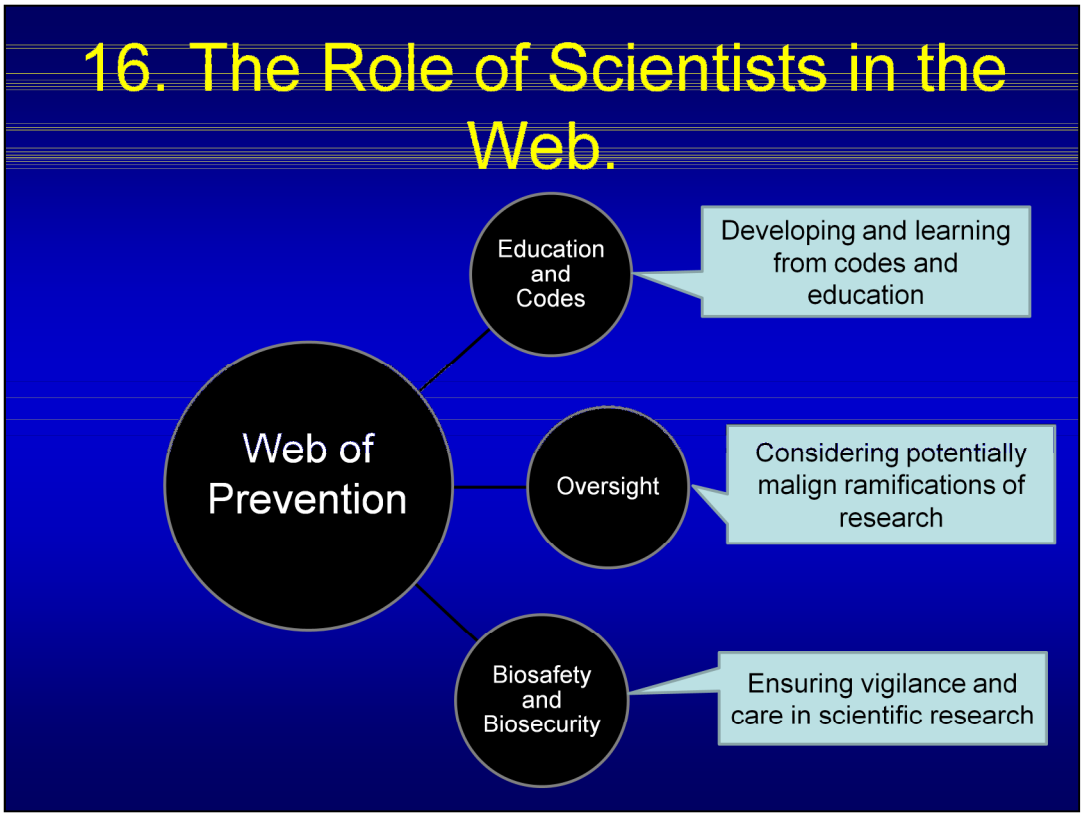
Ref:

Roffey. R., and Kuhlau, F. (2006) 'Appendix 14A. Enhancing bio-security: the need for a global strategy', in *SIPRI yearbook*. Available from http://www.sipri.org/yearbook/2006/14/14A

15. Oversight of Research

- Sometimes difficult to tell where to draw the line between prohibited and permitted research.
- Oversight of dual use research (i.e. research which serves both a benign and a malign purpose)
- This is important in minimising the possibility of assimilation of biological and toxin weapons in states' military arsenals.

Responsibilities of both governments and individual scientists were considered in Lectures 11, 12, 13, 14 and 16.



How to digest internationally envisaged normative principles against biological and toxin weapons into the practice of individual scientists were considered In Lectures 9, 10, 12 and 13.

17. The BTWC Seventh Review Conference 2011

- Article XII states
  - "Five years after the entry into force of this Convention…a conference of States Parties…shall be held at Geneva, Switzerland, to review the operation of the Convention, with a view to assuring that the purposes of the preamble and the provisions of the Convention, including the provisions concerning negotiations on chemical weapons, are being realised…"
- The Article continues
  - "…Such review shall take into account any new scientific and technological developments relevant to the Convention."

18. Agenda for the Seventh Review Conference (i)

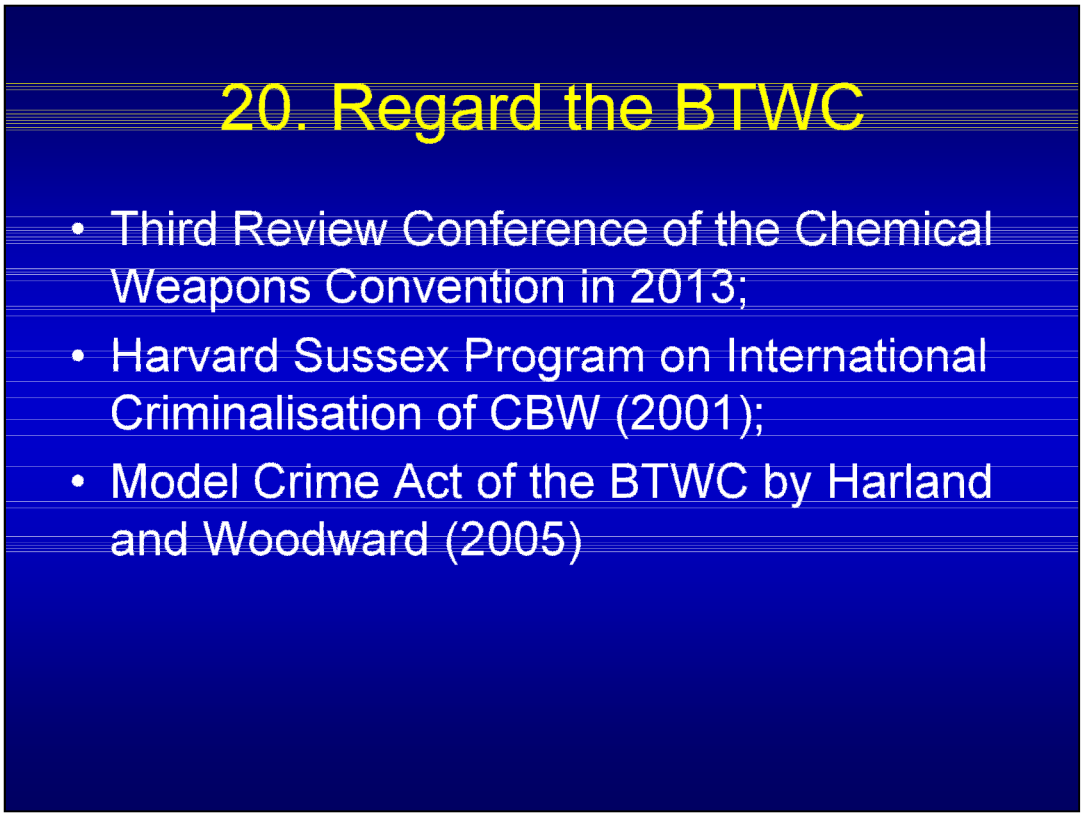
- "…states parties – and civil society – can neither go back to…verification via the BWC Protocol approach, nor continue with more of the same…managed evolution of the Convention and intermittent, or partial, implementation of the obligations under the BWC and the extended understandings that have arisen since 1980."
- "The danger, three years out and with the new US Administration taking office in January [2009], is that certain states parties and some civil society organizations will revert to the BWC agenda of the 1990s. This would be an error."

Notes: The author of the working paper provided an Annex which elucidated a series of questions which need to be overcame in order to return to the verification of the BTWC in light of the Seventh Review Conference in 2011. (See the Further Inf. of the slide).

19. Agenda for the Seventh Review Conference (ii)

- "We conclude that strengthening the Biological and Toxin Weapons Convention should be a priority for the Government in the absence of a verification protocol."

- "We conclude that securing a verification protocol for the Biological and Toxin Weapons Convention should remain a key objective for the Government. We recommend that the Government should work to persuade the new US Administration that such a protocol for the Convention is essential."



Notes: There are number of different ways by which the Web of Prevention could be strengthened. Some are illustrated in the slide.

Sample Questions

1. What do you understand by the concept of a "Web of Prevention"? Why is this considered important to minimise the possible misuse of life sciences?

2. Outline the components of the "Web of Prevention". Discuss one of these components in detail.

3. Is education about biosecurity and dual-use issues a necessary component of the "Web of Prevention"?

4. How do you think the "Web of Prevention" can be best improved at the 2011 Review Conference of the BTWC?

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