

A1. World Health Organization, 2004

- *Toxins Annex*, page 216
- “In the sense of the Biological and Toxin Weapons Convention, ‘toxin’ includes substances to which scientists would not normally apply the term. For example, there are chemicals that occur naturally in the human body that would have toxic effects if administered in large quantity. **Where a scientist might see a bioregulator say, the treaty would see a poisonous substance produced by a living organism** – nor is this unreasonable...” [Wasp venom/histamine].

A2. The CBW Threat Spectrum

- Chemical Weapons
 - ▣ Classical Chemical Agents (Nerve Agents)
 - ▣ Industrial Chemicals (Chlorine)
- Mid-Spectrum Agents
 - ▣ **Toxins, Bioregulators (SEB, Substance P)**
- Biological Weapons
 - ▣ Traditional Biological Agents (Anthrax, VEE)
 - ▣ Genetically Modified Agents

A3. The Biological and Toxin Weapons Convention (BTWC)


Article I of the Biological Weapons Convention:

- “Each State Party to this Convention undertakes never in any circumstances to develop, produce, stockpile or otherwise acquire or retain:
 1. Microbial or other biological agents, **or toxins whatever their origin or method of production**, of types or in quantities that have no justification for prophylactic, protective or other peaceful purposes;
 2. Weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict.”

A4. Article II.9 of the CWC

- "Purposes Not Prohibited Under this Convention" means:
 - (a) Industrial, agricultural, research, medical, pharmaceutical or other peaceful purposes;
 - (b) Protective purposes, namely those purposes directly related to protection against toxic chemicals and to protection against chemical weapons;
 - (c) Military purposes not connected with the use of chemical weapons and not dependent on the use of the toxic properties of chemicals as a method of warfare;
 - (d) **Law enforcement including domestic riot control purposes."**

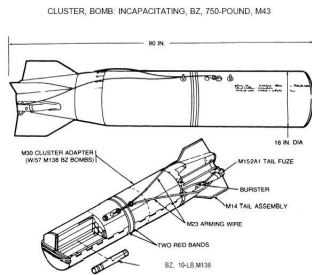
Section B: The Past



B5. Moscow Theatre Siege in 2002

- UK (Porton Down) Analysis of Two British Survivors:
 - "From first spotting the aerosol to being overcome by it took '10 to 30 seconds' for Casualty 1 and 'at least 30 seconds' for Casualty 2. Neither saw the assault team enter the theatre.
 - This case report provides evidence from the analysis of clothing from two British survivors and urine from a third survivor...**that the aerosol comprised a mixture of two fentanyl, carfentanil and remifentanil."**

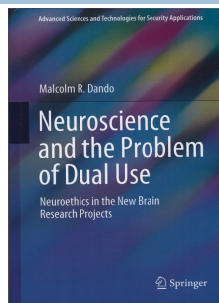
B6.CNS-Acting Chemicals in Warfare?

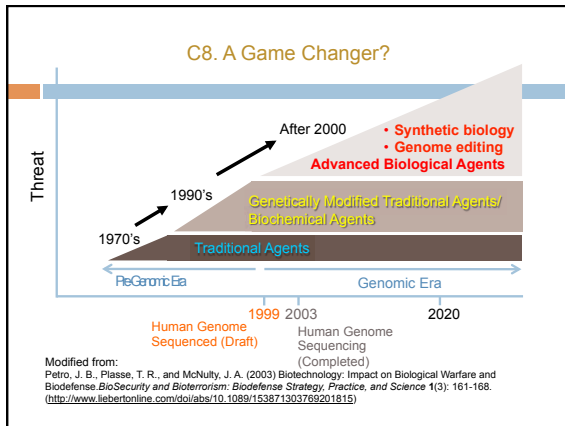


B7. US Incapacitating Agent 'PG' [SEB]

- Ed Regis (1999) *The Biology of Doom*
 - "...The agent proved to be stable and did not deteriorate during storage, aerosolization, or downwind travel. **A single weapon was calculated to have covered 2400 square km [926.5 square miles – about twice the area of Los Angeles], producing 30 per cent casualties for a susceptible population under test conditions.** No insurmountable problems were encountered in the production-to-target sequence."

Section C: The Future





C9. Technology Developments

- Stratified Medicine for Mental Disorders (European Roadmap for Mental Health Research)
 - "...Recent neurobiological techniques involving neuroimaging, neuropsychology, neurobiology, -omics have tremendously advanced our understanding of brain development and function, **including our knowledge of how cognition, affect and behaviour relate to brain circuitry...**"

C10. Dual Use in the Brain Projects

- Research on basic circuits in rodents
 - For example, on the sleep/wake cycle, fear, trust
- Research on higher circuits in Non-Human Primates (NHPs) in the projects in China and Japan
 - "...Overall, advances in the CRISPR/Cas genome editing technique have made it possible to **generate genetically modified NHPs**, which provide a new and exciting way to explore gene functions, disease mechanisms and human therapy strategies in modern translational medical research." (emphasis added)

C11. Problems Solvable by 2050

- How do circuits of neurons compute?
- What is the complete connectome of the mouse brain (70,000,000 neurons)?
- How can we image a live mouse brain at cellular and millisecond resolution?
- **What causes psychiatric and neurological illness?**
- **How do learning and memory work?**
- **Why do we sleep and dream?**
- **How do we make decisions?**
- How does the brain represent abstract ideas?

C12. Julian Perry Robinson, 2008

- *Bringing the CBW Conventions Closer Together*, CBWCB, 80.
- "...Because of this convergence of chemistry and biology, we may eventually be able to manipulate at will the processes of development, inheritance, reproduction, locomotion, sensation, cognition and any other process that keeps us working as normal human beings. Some of the weapons providing such power could carry the identities of both CW (toxic) and BW (infective)..."
- **"...It is the potential for changing human beings and doing so in pursuit of who-knows-what strategy of aggression that makes CBW uniquely menacing: weapons, in the extreme, of dehumanization – a risk, therefore, to the whole human species; an existential risk."**

Section D: The Present



D13. Weaponisation of CNS-Acting Chemicals for Law Enforcement

- Australia, C-19/NAT.1, 14 November, 2014
 - “ 3. The weaponisation of CNS-acting chemicals for law enforcement purposes **is of concern to Australia due to the health and safety risks and the possibility of their deliberate misuse**, both of which have the potential to undermine the global norm against the use of toxic chemicals for purposes prohibited by the Convention.
 - Fentanyl...are probably the best known of the CNS-acting chemicals....However, there are other anaesthetics, sedatives or analgesics...”

D14. US Statement 2017 at the CWC

- 22nd Session of the Conference of the States Parties
 - “The international community is at a critical juncture in the fight to maintain the international norm against chemical weapons use....and **the growing concern that States are deliberately developing central nervous system (CNS)-acting chemicals for warfare** or for other harmful purposes, **cloaking these efforts under the guise of non-prohibited purposes such as law enforcement or medical research...**”

D15. EC-96/DEC.7, OPCW, 11/3/21(i)

- **“Recognising** that, in accordance with paragraphs 1 and 9 of Article II of the Convention, the types and quantities of toxic chemicals intended for purposes not prohibited under the Convention, including law enforcement, must be consistent with such purposes;
- **Further recognising** developments in the field of chemistry and the importance of preventing the re-emergence of chemical weapons, including new types of potential chemical weapons agents; and
- **Underscoring** that the Executive Council shall consider any issue or matter within its competence affecting the Convention and its implementation, and, as appropriate, bring the issue or matter to the attention of the Conference of the States Parties (hereinafter “the Conference”);
- Hereby:
- **1. Recommends that the Conference at its Twenty-Sixth Session decide 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;”**

D16. EC-96/DEC.7, OPCW,
11/3/21(ii)

- "2. **Recommends further** that in such decision the Conference should:
- (b) request, pursuant to paragraph 21(h) of Article VIII, in light of the fact that the understanding in paragraph 1 is based upon the current state of scientific and technological progress and further to the Conference's obligation to review such developments that could affect the operation of the Convention, *that the Director-General task the SAB to continue to review relevant developments in science and technology related to CNS-acting chemicals and provide updates to the Conference as appropriate, but at a minimum as part of its report on developments in science and technology for future Special Sessions of the Conference of the States Parties to Review the Operation of the Chemical Weapons Convention;*"
