Biological and Chemical Weapons
A Genuine Threat?

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What is chemical warfare?

Intentional application for hostile purposes of toxic substances against humans and their environment

- **Blood agents**: prevention of oxygen transfer to tissues (e.g., phosgene)
- **Choking agents**: interfere with breathing (e.g., chlorine)
- **Nerve agents**: attack the central nervous system (e.g., sarin)
- **Vesicants**: produce blisters (e.g., mustard agents)
- **Incapacitating agents**: induce temporary physical disability or mental disorientation (e.g., LSD, BZ)
- **Irritating agents**: induce temporary irritation (e.g., tear gas)
- **Anti-plant agents**: herbicides, growth inhibitors, etc.
What is biological warfare?

Intentional application against humans, animals or plants for hostile purposes of

- **Disease-causing micro-organisms** (e.g., bacteria);

- **Other entities that can replicate themselves** (e.g., viruses, infectious nucleic acids and prions)

- **Toxins**, poisonous substances produced by living organisms (and their synthetically manufactured counterparts), including
  - micro-organisms (e.g., botulinum toxin),
  - plants (e.g., ricin derived from castor beans), and
  - animals (e.g., snake venom)
Main prohibitions against CBW

1925 Geneva Protocol
- Prohibits the use in armed conflict of CBW

1972 Biological and Toxin Weapons Convention (BTWC)
- Comprehensive ban on development, production and possession of BW

1993 Chemical Weapons Convention (CWC)
- Comprehensive ban on development, production, possession, and use of CW
- International body: Organisation for the Prohibition of Chemical Weapons (OPCW)
The CBW threat spectrum

- War scenarios
- Terrorism
- Criminal acts

Each will consider and have the availability of different CB agents, with different degrees of pathogenicity or toxicity

- Depends on intent
- Depends on availability
- Depends on technical skills and structure of the organisation
Alternative uses of CB agents

**Against humans**
- Potential for mass casualties exists, but not necessarily most likely scenario as agents difficult to acquire
- Incapacitation
  - Wider range of agents available
  - Easier to collect from nature and cultivate
  - Delivery uncomplicated
  - Lower requirements for skills and functional specialization

**Against animals and plants**
- Economic impact
- Agents easier to acquire; less of a risk to perpetrator
- Easy to deploy
  - Many vulnerabilities in the food chain

**Economic and societal disruption**
- Goal is to disrupt functioning of utilities, commercial enterprises, public agencies
- Wider range of CB agents available
  - Several can be commercially obtained
- Exploitation of fear and lack of adequate preparations
- Effectiveness of hoaxes
Opportunistic use of toxic agents

Emerging threat dimension

- Use of any available toxic chemical
  - Stores at industrial plants, water purification facilities, etc.
  - Toxic substances may be used in agriculture (pesticides, insecticides, herbicides & other anti-plant chemicals)
- Core characteristics:
  - No development or production of the agent by the user
  - Attacks will cease after available stores have been depleted
- Only development may be in area of delivery system

Examples:

- Sri Lanka: Tamil Tigers – chlorine from paper mill after munition ran out (1990)
- Iraq: al Qaeda in Iraq (AQI) – chlorine in truck bombing campaign (2006-07)
- Iraq and Syria: Islamic State in Iraq and the Levant (ISIL) – chlorine mortar bombs and improvised explosive devices (IEDs) (2014)
Implications for the CWC

Insurgent use of CW: Awkward problem from a legal perspective

- Use of CW by a non-state actor against another non-state actor on the territory of a State Party that is not in control of that territory

Problems for

- Investigation of allegations
- Attribution of responsibility
- Sanctioning perpetrators (domestic penal law; international criminal law)
- Scope of action for States Parties to CWC; UN Security Council

Near-universality of the CWC

- Risk that States Parties, nationals from States Parties or entities operating from the territory of States Parties play a role in the acquisition of CW and preparations for their use by insurgents is not beyond imagination
  - Already several allegations to that effect related to the Syrian civil war since late 2012
- This problem needs to be characterised, assessed, and if necessary, addressed by OPCW
  - For the future of the treaty regime, clear refutation is as important as confirmation
A genuine threat?

Not really in terms of mass casualties or destruction
- Disarmament has been successful and effective
- States remain actively engaged in BTWC and CWC
- Any remaining weapon arsenals today are much smaller and cruder

Yet, challenges on the horizon
- New actors → psychological dimension of small-scale, opportunistic CBW use
- Challenges to international legal system
  - Situations not really foreseen in international treaties
  - Politicisation of international decision-making: multi-actor conflicts and transnational support bases
- Developments in science and technology create potential for future agents
- Can treaties evolve sufficiently fast to capture new realities?
Recalling where science, industry and military art converged
Challenging entrenched positions

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