

Terrorism and Criminal Acts with Chemical & Biological Weapons

Assessing Risks of CBW Acquisition

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Overview

- **Part I:** *The threat*
- **Part II:** *Armament processes of non-state actors*
- **Part III:** *The control regimes*
- **Part IV:** *Conclusions*

Part I

THE THREAT

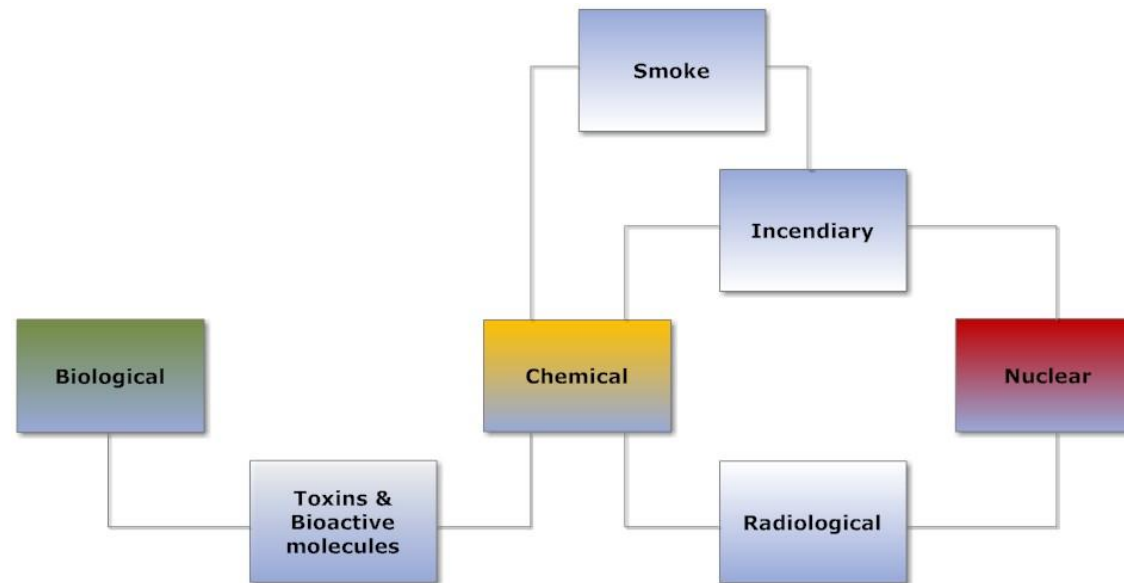
The CBW threat spectrum

- War scenarios
- Terrorism
- Criminal acts

- Each will consider and have the availability of different CB agents, with different degrees of toxicity or pathogenicity
 - Depends on *intent*
 - Depends on *availability*
 - Depends on *technical skills* and *structure* of the organisation

CBRN incidents

- Non-conventional weapon categories



- Most incidents are in the bottom two grey areas
 - Toxins
 - Radiological materials
- Agents in the bottom two grey areas are easier to acquire
 - Enable incidents involving individuals; small groupings
 - Opportunity may play a significant role in those incidents

Perspectives on the CW threat

- Use of chemical weapons has been rare, but recurring
 - Modern chemical warfare began just over a century ago
 - World War 1 (Western and Eastern fronts)
 - Revolutionary war in Russia; Colonials wars in Africa and Asia
 - World War 2 (China)
 - South-East Asia (1960s & 1970s)
 - All other major CW use after World War 2 has taken place in the Middle East
 - Terrorist use of CW has been extremely rare; programmes limited and/or failures
 - Aum Shinrikyo (1994 – 95)
 - Al Qaeda in Iraq (2006 – 07)
 - Islamic State in Iraq and the Levant (ISIL) (2015 – 17)
 - In some instances used for assassination
 - Aum Shinrikyo (1994 – 95)
 - Murder of Kim Jong-nam (Malaysia, February 2017)
 - Assassination attempt on Sergey Skripal and his daughter Yulia (UK, March 2018)
- Concept of 'chemical weapon' is changing fast
 - Until end of Cold War: vast arsenals counted in tens of thousands of metric tonnes
 - Iran – Iraq war (1980 – 88): arsenals counted in thousands of metric tonnes
 - Syria civil war (2011 -): arsenal counted in hundreds of tonnes
 - Terrorist use: kilogramme amounts at most
 - Assassinations: grammes
- Terrorist incidents with CW: less than ¼ of 1% of all recorded terrorist events

Alternative uses of chemical agents

- **Against humans**
 - Potential for mass casualties exists
 - Not necessarily most likely scenario as agents are difficult to acquire
 - Off-the-shelf toxicants
 - Poisons for individual assassination
 - Acid attacks
 - Property damage
 - Exploitation of vulnerabilities in the food chain
- **Economic and societal disruption**
 - Disruption functioning of utilities, enterprises, public agencies
 - Wider range of chemical agents available
 - Several can be commercially obtained (e.g., pepper spray & mace)
 - Environmental pollution with industrial toxic chemicals
 - e.g. during strikes

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 - 17)

Perspectives on the BW threat

- Use of biological and toxin weapons has so far been extremely rare
 - Since 1975, fewer than 100 persons have been killed through deliberate disease
 - Most cases involved toxins
 - Most cases were criminal in nature
 - Major terrorist BTW programmes have been total failures (Rajneesh Cult; Aum Shinrikyo)
 - However, anthrax letters demonstrate the potential for low-casualty — high-impact events
 - Most bioterror events do not involve actual agents (hoaxes)
- Nature poses by far the greatest challenge
 - Infectious diseases are responsible for
 - > 13 million deaths annually (\approx number of fatalities in the Twin Towers attacks on 9/11 every two hours)
 - $\frac{1}{4}$ of all deaths worldwide
 - $\frac{1}{2}$ of all deaths in developing countries
 - 1918: Spanish Flu caused more fatalities worldwide than World War 1
 - Emerging diseases: SARS; West Nile Virus; Avian flu (H5N1 and H7N9), Ebola
 - AIDS in Africa: threat to social fabric of societies
 - Foot and Mouth Disease outbreak in the UK; Swine Fever in Taiwan, etc. (economic impact)

Recent developments and the BW threat

- Since the demonstration of recombinant DNA techniques in early 1970s:
 - Explosion of biological research and biotechnology applications
 - Parallel development of concern about next-generation BW
 - Integration of several scientific disciplines
 - Synthetic biology offers a new dimension to the debate, but not a novel challenge
- From the perspective of terrorism involving biological agents
 - The acquisition process remains complex for the potentially most destructive agents
 - Synthetic biology adds another layer of complexity
 - Presently gravest challenge may come from (rogue) individuals with access to BSL-3/4 labs

Alternative uses of biological 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 specialisation
- **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 agents available (Several can be commercially obtained)
 - Exploitation of fear and lack of adequate preparations
 - Effectiveness of hoaxes

Acuteness of terrorist threat with CBW

- **Proliferation assessments**
 - After 11-09-01: sense of loss of control and manageability of problem
 - Heavy manipulation of public information to serve political and institutional interests (official statements, press, novels, etc.)
- **Vulnerability assessments**
 - Almost exclusive focus on mass destruction and casualties
 - (Military-type) agents with potential of greatest destruction or casualties
 - Access to or availability of agents and equipment is important component of threat equation (e.g., ISIL & Iraq)
 - Single massive attack is usually underlying assumption.
 - Emphasis on own weaknesses (only known factors)
 - Consequence management
 - Intelligence and detection
 - Less debate of other factors in threat equation (many unknowns)
 - E.g. structure of the armament dynamic inside a terrorist organization

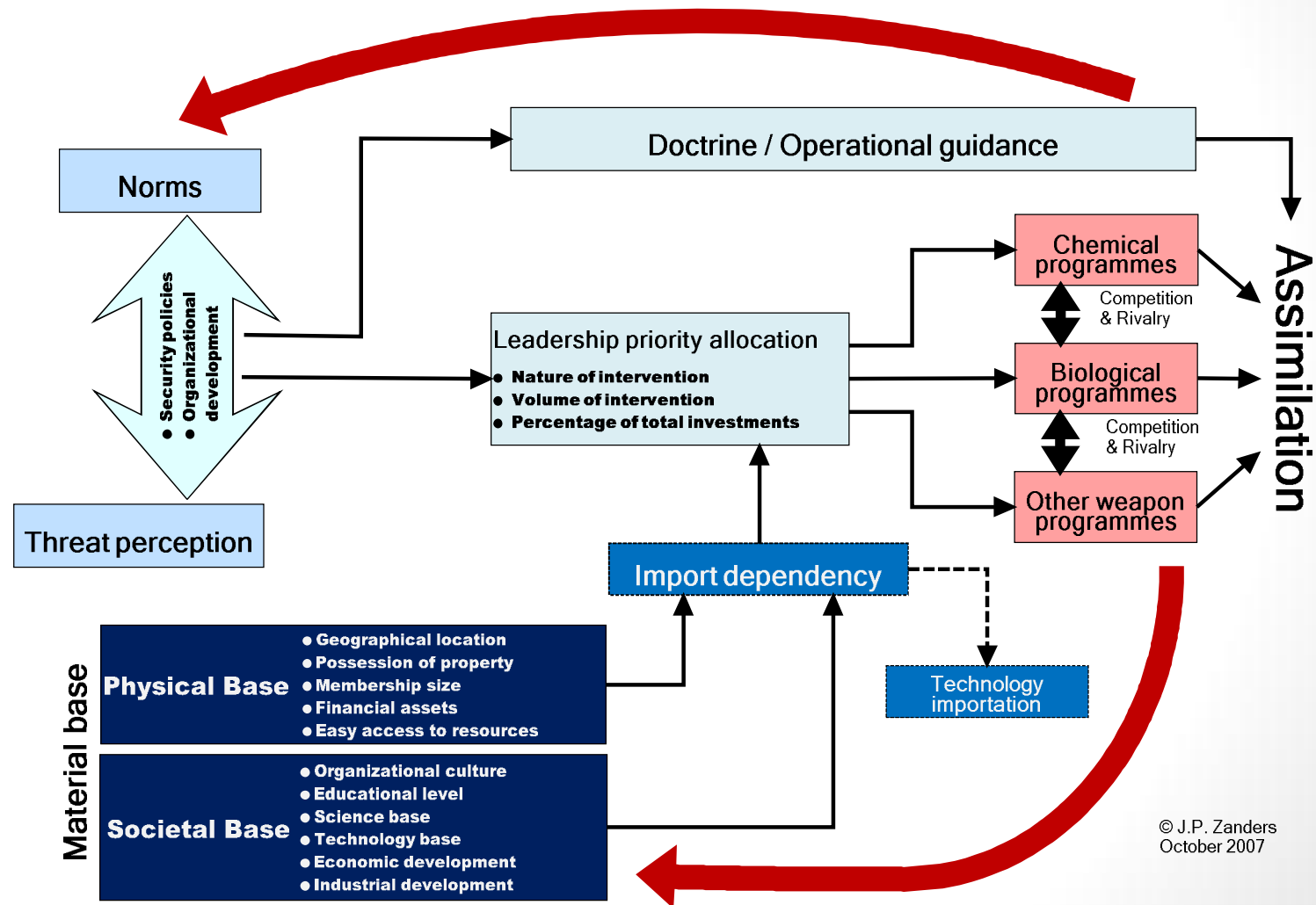
Part II

ARMAMENT PROCESSES OF NON-STATE ACTORS

Organising terrorism with chemical/biological agents for mass casualties

- **Highly (vertically) integrated organisation**
 - Charismatic leadership
- **Skills required within organisation**
 - Cannot be hired
 - Specialists must be convinced of organisation's ideology
- **Functional specialisation**
 - Different steps in armament dynamic each require specific skills
 - Places burden on recruitment of specialists
 - Absence has major impact on armament dynamic and ability to deploy and use weapons
- **Elaborate preparations needed (large footprint)**
 - Research facilities
 - Testing ranges
 - Production units
- **Logistical burden**
 - Technology acquisition (high import dependency)
 - Secure storage facilities
 - Weapon deployment
- **Dissemination may be technologically most challenging**

The armament dynamic



Armament dynamics: Explaining the few incidents

- **Goal—instrument relationship in selection of weaponry**
 - Large ambitions will lead to a selection of a wide variety of weaponry
 - A single type of weaponry is unable to achieve all goals
 - CB agents can only play certain roles
 - For more specific or time-limited ambitions, a single weapon category may suffice
 - Less inclination towards large investments in own development and production of weapons (e.g., complex CB agents)
- **Rivalry and competition**
 - However large the financial assets, resources are always limited
 - There will be competition / rivalry for the share of scarce resources among the people responsible for each of the programmes
 - Chemical and biological programmes are most likely to be run by different individuals
- **Even with nihilistic organisations, the question must be posed about the added value a particular type of weaponry has over another one (particularly in the light of their acquisition difficulties)**

Part III

THE CONTROL REGIMES

Sources of the norm against CBW

- **International treaties**
 - 1925 Geneva Protocol
 - Bans the use of CBW in war
 - 1972 Biological and Toxin Weapons Convention (BTWC)
 - Bans development, production and stockpiling of BW and toxins
 - Ban on use explicitly referred to at 4th Review Conference (1996)
 - 1993 Chemical Weapons Convention (CWC)
 - Bans development, production, stockpiling and use of toxins
- **UN Security Council resolutions**
 - UNSC Resolution 1540 (2004)
- **National laws**
 - To counter terrorism with CBW, emphasis is on national action
 - Demanded by BTWC (Article IV), CWC (Article VII), and UNSC Resolution 1540
- **Professional and scientific codes of ethics and conduct**
- **Industry standards and best practices**

Types of national legislative measures

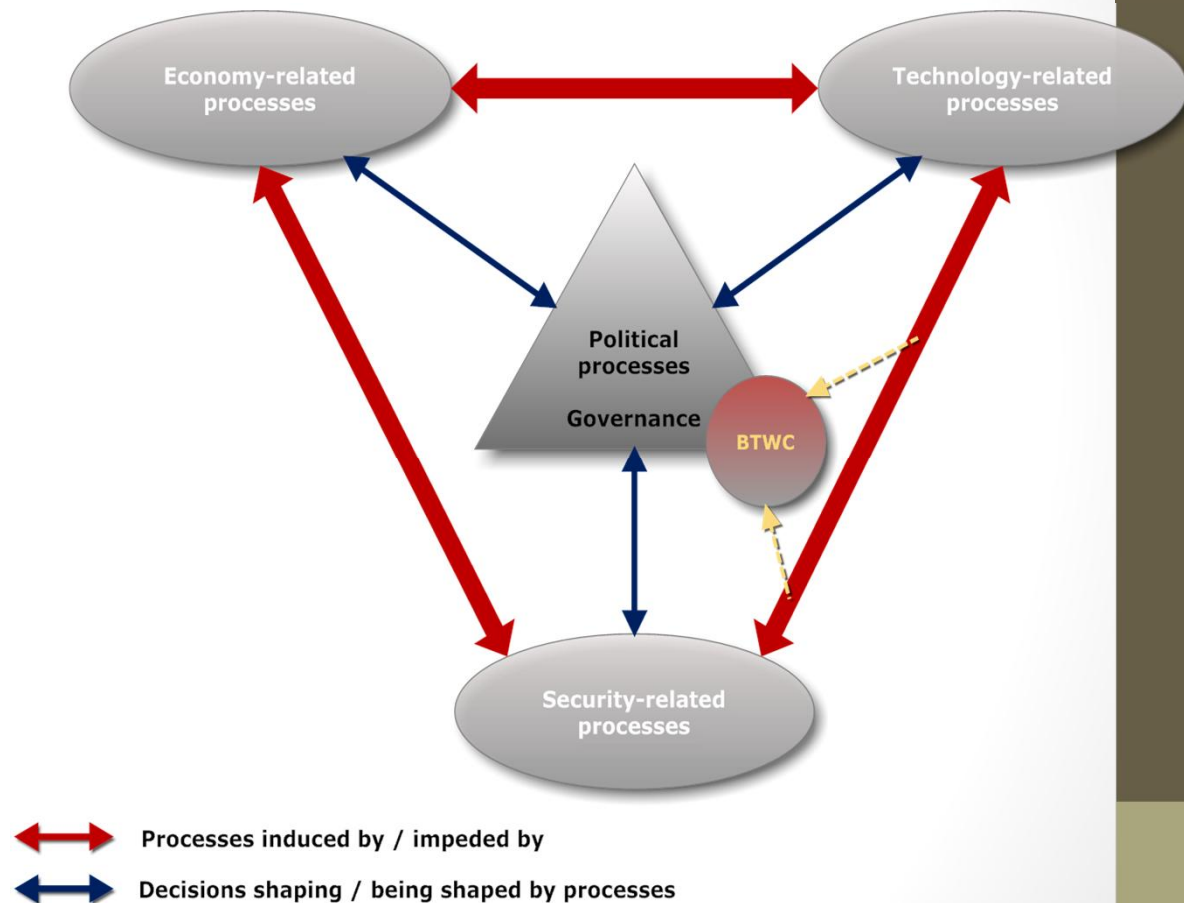
- 'Any necessary measures'
 - Wide range of legislative and regulatory tools available
- Penal legislation
 - Deterrence and prevention
- Criminal procedural legislation
 - Enable investigation and prosecution of CBW-related crimes
 - Before an incident (→ incorporation of the *General Purpose Criterion*)
 - After an incident
- Transfer controls
 - Import and export control legislation
 - Legislation governing domestic transfers of materials
 - Legislation must cover all actors involved in the transfer process
- Authorisation of legitimate chemical and biological activities
 - Registration and licensing of legal and natural persons and certain types of activity
 - Transport regulations
 - Chemical safety/security and biosafety/-security measures

Challenges from opportunistic use 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
- Quasi universality of the CWC (193 States Parties)
 - 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

What future role for disarmament?

- No unified model for governance of weapon control anymore
- New stakeholders and security actors
- Increased role of non-state national & transnational actors
- Shifting relative balances of powers (economy, politics, military) and multiple power centres (polycentrism)
- Geographical decentralisation of business and industry activities
- South-south trade patterns and impact on technology diffusion
- *Declining role of states in shaping developments, but many states reject formal governance responsibilities for non-state actors under CWC/BTWC*



Part IV

CONCLUSIONS

General conclusions

- Future major terrorist strike with CBW cannot be excluded
- However,
 - The acquisition process is complex for most destructive agents
 - CBW are never acquired alone, but form part of a wider armament dynamic/strategy
 - The armament process is not inevitable
 - Promoting factors
 - Counter-acting factors
 - Paradox: some promoting factors may actually contribute to the failure of the CW acquisition process (impact of feedback loops)
 - All entities that have pursued CBW have self-destructed
- The 'lesser' agents in the armament dynamic
 - Economic or environmental terrorism, assassination, and other (time-) limited goals
 - They come within the capabilities of more groups or individuals
 - Lower demands on operational guidance
 - Acquisition also less demanding
 - Lower need for functional specialisation
 - Less destructive (individual threats vs. societal/existential threats)
- Novel agents and processes
 - New applications for hostile purposes

Terrorism with CBW: 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
 - BTWC and CWC are being updated in view of emerging challenges and threats
 - 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?

The Future: Multi-layered & multi-sectorial governance model?

- **Weapon control**
 - Multilateral agreements (Geneva protocol, BTWC, CWC)
 - Proliferation prevention arrangements (Australia Group, PSI, Global Partnership, etc.)
 - UN agencies: UNSC, UNODA, 1540 Committee, UNEP, UNDA, etc.
 - National laws and regulations (criminal, penal, trade, safety, etc.)
- **Disease prevention**
 - WHO, FAO, OIE + their regional organisations/initiatives
- **Crime and terrorism**
 - UNSC Resolutions (1540, terrorism resolutions, etc.)
 - Interpol, Europol, etc.
- **International transfers**
 - WTO, WCO, etc.
- **Economic actors**
 - Companies (national, multinational, transnational)
 - Research institutions
 - Individuals
- **Instruments of collective & individual governance**
 - Codes of conduct; Professional codes; Ethics
 - Awareness-raising & education
 - Whistle-blower protection schemes



THE TRENCH

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