CBRN Weapons
Why technology transfer controls are important to you ...

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Why technology transfer controls are important to you ...

• Moving into the post-proliferation security environment

• Implications for the professional environment

• Contribution of education and outreach
Part 1

MOVING INTO THE POST-PROLIFERATION SECURITY ENVIRONMENT
Entrance of the *post-proliferation era*?

**Nuclear:**
- Global warming and growing interest in nuclear energy
- Commercial pressure to access new markets
  - e.g., US-India & US-UAE bilateral agreement; Saudi Arabia forthcoming

**Biological:**
- Biology and biotechnology critical to development & health
- Many developing countries conduct leading-edge research
- Education expanding everywhere: spread of knowledge to manipulate pathogens, including genetics
- Biotechnology is essentially information: no physical goods to cross borders
- Corporate acquisition and sell-offs

**Chemical:**
- Similar to biological
- Many production facilities with potential for CW manufacture now located in developing world
Between the folds of the foreseeable

- **Confluence of trends**
  - Presently trend analyses are mostly linear, allowing for certain unexpected, but as yet unknown developments
  - How to identify the confluence of otherwise independent trends and assess their impact (role as trigger for treaty failure)?
    - e.g., 1st gas attack (22 April 1915): meeting of science, industry and military doctrine
- **Failure by routine**
  - Routine verification / inspections to see what?
    - Set procedures
    - Where is the danger of systemic anomaly blindness or confirmation bias?
    - Risk of limiting processes to technologies specified in treaty → focus increasingly on past weapon programmes, not future challenges
- **Latest developments in science and technology**
  - Do we really expect threats to come from terrorists or criminals?
  - Governments usually create the pull factors [demand] for weapon programmes
    - For CW, the industry would follow only if there is a government request
    - How to sense indicators and assess their relative importance?
- **How to design new treaties and and keep abreast of fast evolving global trends in society, science & technology, economy, and security?**
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*
National implementation = key

- ‘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
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
Part 2

IMPLIEDATIONS FOR THE PROFESSIONAL ENVIRONMENT
Understanding the General Purpose Criterion (GPC)

- The GPC is a critical tool in addressing the ‘dual-use’ issue
  - Under the GPC the BTWC and CWC do not prohibit objects or activities
  - They prohibit certain purposes to which they may be applied (i.e. acquisition, retention and use of the proscribed weapons)

- Functioning of the GPC
  - The default position is that all applications of biological agents, toxins and toxic chemicals are prohibited
  - Only a restricted set of purposes are non-prohibited

- Implications of the GPC
  - It covers any and all pathogens, toxins or toxic chemicals, whatever their origin or production method – past, present, and yet to be discovered
  - Even if control lists are used, unlisted items still fall under the prohibition
  - Any possession or manipulation of agents that cannot be justified under a non-prohibited purpose is a violation of the law
  - Can play a significant role in preventing acquisition or pre-empting use of CBW
2 examples of applying the General Purpose Criterion (GPC)

- **The research scientist**
  - Prof. X researches dangerous pathogens in a BSL-4 laboratory
  - In a professional capacity he/she is licensed or authorised to undertake such activities and to be in possession of highly contagious pathogens
  - In the evening he/she returns home. Prof. X thus takes on the persona of a private citizen and cannot undertake any of the professional activities or be in possession of any of the pathogens. Irrespective of professional qualifications or quality of the home laboratory, he/she would otherwise be unambiguously in violation of the national law based on the GPC.

- **Terrorist preparation of an attack with a CBW**
  - In many instances law enforcement authorities can only act after a crime has been committed.
  - A terrorist in the stage of planning and preparing for a strike with toxic chemicals or a pathogen is already violating the GPC.
  - If the GPC is included in domestic legislation, then law enforcement officials can therefore legally pre-empt the terrorist act before the agent is fully developed, produced or used.
Operationalising the assimilation model

Assimilation

Military doctrine

Government priority allocation
- Nature of intervention
- Volume of intervention
- Percentage of total investments

Offensive chemical / biological weapon programmes

Legitimate developments in chemistry, biology and their industrial applications

Spin on
Spin off?

Import dependency

Technology importation

Material base
- Physical base
  - Geographical location
  - Territorial size
  - Population size
  - Natural resources
  - Easy access to resources
- Societal base
  - Political culture
  - Educational level
  - Science base
  - Technology base
  - Economic development
  - Industrial development

Norms

Security policies
- Societal development
How do these considerations affect your work?

- Consensus may exist about the prohibition of the weapon, but controversy exists about underlying technologies and processes because the final single-purpose phase in the weapon development process may be difficult to establish.
- Different threat perceptions among relevant societal constituencies (military, politicians, scientists, industry, etc.) may lead to different assessments of risks, and therefore of responsibilities.
- Limited awareness about potential contribution of their activities to future weapon development exists among scientists and industry representatives.
Part 3

CONTRIBUTION OF EDUCATION AND OUTREACH
Basic knowledge about CBRN and underlying technologies

- **Basic knowledge is fundamental**
  - For yourself to appreciate risks and threats
  - To be able to appreciate when a risk or threat emerges
  - To communicate your knowledge and insights

- **Awareness of context**
  - What are the international and national regulatory frameworks governing a particular type of technology?
  - Which agencies bear responsibility for technology transfers?
  - Where can I inform myself about my own responsibilities?
Core objectives of CBRN education

• Basic knowledge about CBRN and underlying technologies
• Identification and understanding threats and risks
• Understanding responsibilities
• Knowing relevant international frameworks
• Understanding transfer controls
• Knowing partners and target audiences
• Deploying educational and outreach strategies
Common understandings

• **Education as a strategy**
  - Covers different goals & strategies
  - Formality and goal orientation
  - Builds on prior knowledge, expertise and skills
  - Context and setting will determine best methodology and degree of formality

• **Outreach as a strategy**
  - Supplements policies or activities by official bodies, and may rely on activities by other communities, such as civil society constituencies;
  - Seeks out potential target audiences and then reaches out to them;
  - Often aims to develop and nurture constituencies to sustain an entity’s goals;
  - Informs or assists rather than instructs target audiences.
Who needs to be involved?
Relevancy of education and outreach

• **Importance of having a national focal point (NFP)**
  • Treaty implementation
  • Organisation of outreach to key stakeholders in a State Party

• **Potential educational needs:**
  • Have officials discover *why* it is important *to them* to have maximal treaty implementation?
  • Have officials discover *why* it is important *to them* to engage with stakeholders?
  • Build up knowledge for officials: *Do* they know what is necessary? *How can* they know?

• **Potential benefits from educational strategy:**
  • Enhanced domestic appreciation of importance of full treaty implementation
  • Articulation of expectations by stakeholders
  • Improved 2-way communication about treaty needs and opportunities between capitals and delegations

• **Requires a longer-term strategic approach**
  • Will create an *enabling platform* for international cooperation and treaty implementation (which includes technology transfers for peaceful purposes)
Possible concrete actions through E&O

• Connect NFPs with relevant national and international networks
  • Discover *why* and *how*?
• Link key stakeholder communities to those networks
  • Let them discover *why* and *how*?
• Raise awareness of dual-use risks, regulations, norms and (international) obligations to enhance integration in those networks
• Let stakeholders identify their concrete expectations/requests from international cooperation
  • Promotes international collaboration and technology transfers for peaceful purposes
Education about export controls ...

• Is about changing attitudes of individuals or groups
  • Audiences need to acquire enhanced awareness about the potential implications of their activities and individual actions
  • They must be able to identify and assess short-term and longer-term risks and threats
  • They must acquire situational awareness to maintain standards of responsible behaviour

• Knowledge transfer is insufficient to shape attitudes
  • Audiences need to be engaged
  • They need to discover for themselves *why* the issue area is important / relevant to them
  • They need to discover *how* they can mitigate risks and threats
  • The insights need to become part of the daily professional routine
Why is there a need for education?

- Consensus may exist about the prohibition of the weapon, however
  - Controversy may exist about technologies and processes underlying CBRN weapons
  - The dual-use challenge: the *final, single-purpose phase* in the CBRN weapon development process may be difficult to establish

- Different threat perceptions may exist among relevant societal constituencies
  - Military, government officials, politicians, scientists, industry, etc.
  - These may lead to different assessments of risks, and therefore to different appreciation of responsibilities

- Limited awareness exists among *scientists* and *industry representatives* about potential contribution of their activities to future weapon development
THE TRENCH

Recalling where science, industry and military art converged
Challenging entrenched positions

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