
A Viable Future for the BTWC

Challenges posed by scientific and technological advancements

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Factors that shaped BW threat perceptions in the 1990s

- n Conclusion CWC negotiations, exposing even more the BTWC as a disarmament treaty with limited tools for verification and enforcing compliance
- n Significant new details of the Soviet BW programme, including evidence that it was still ongoing (despite Russia being one of the BTWC Depositary States) and that it involved the genetic manipulation of pathogens; intense campaign by one of the more visible Soviet defectors
- n Discovery of Iraq's BW programme
- n Truth and Reconciliation Committee hearings on South Africa's CBW activities
- n Aum Shinrikyo's CW attacks in 1994 & 1995; as well as discovery of BW efforts
- n Sensationalist fiction influencing top-level decision-makers in the USA

Factors that enhanced BW threat perception

- n Rapid advances in biology and biotechnology leading to speculation about new possibilities for misuse
- n The rapid natural diffusion of biotechnology, enabling even some developing countries to undertake and commercialise cutting-edge biotechnology
- n The dominance of the non-proliferation discourse, making virtually any technology dual-use (and thus part of the threat to be countered)
- n Failure of the BTWC AHG negotiations, prompted by claims that the BTWC is inherently unverifiable (which supported the non-proliferation discourse)
- n 9/11 and the anthrax letters, the resulting fear-mongering and information manipulation with respect to Iraq
- n The shift from preventing proliferation to countering and ultimately reversing proliferation, which supported doctrines of pre-emptive military strikes

Factors the sustain the BW threat perceptions

- n Large-scale government investments in bio-defence programmes
- n Emergence and sustenance of private-sector interests in maintaining elevated threat levels; interest stove-piping in the UN
- n The equation of laboratory safety levels with threat agents
- n Propagation of view by scientists that any new discovery or technique elevates the BW risk in an effort to generate urgency
 - n Single dimension: often ignores the societal preconditions and social dimensions of the armament dynamic
- n Emerging and re-emerging diseases

Seeking a balance in threat perspectives

- n The higher the threat level is placed, the more difficult it becomes for the BTWC to provide a meaningful answer
 - n In case of threat inflation, unnecessary burden placed on the BTWC and feeds argument of futility of enhancing the convention
- n All progress is not just on the offensive side; there are also improvements in detection, protection, prevention and prophylaxis
 - n Key for the BTWC is to determine the balance between offence and defence

General issues for concern

- n **Commercially-driven imperatives**
 - n Determines type of research and development
 - n Standardisation of DNA strands offers huge commercial incentive
 - n Companies are already being created
 - n Allows for niche research and development based on different imperatives
 - n Within own society
 - n In other countries (some of whom may be of potential concern)

- n **Accessibility is increasing**
 - n Broadening basis for biology & biotechnology
 - n Research, production & commercialisation of standardised gene sequences
 - n Access for individual 'hobbyists'

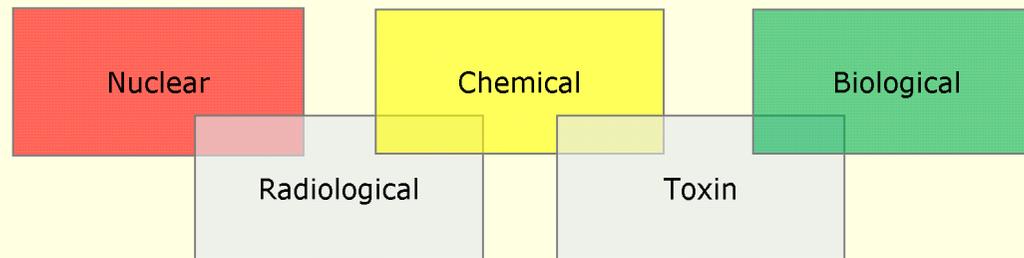
- n **Hobbyists ('bio-hackers')**
 - n Literally work from home (compare with chemistry kits)
 - n Laboratory equipment available from sites such as eBay
 - n Dedicated 'bio-hacker' forums
 - n Standardised DNA strands easily available via Internet
 - n Synthetic biology gave big boost to the movement
 - n Currently known work is harmless, but at least in USA oversight responsibility is unclear

Specific issues of concern

- n Proliferation of high-containment laboratories since 2001
 - n Widening base of people with knowledge & skills
 - n Certain pathogens are being artificially recreated (e.g., polio and H1N1 influenza (1918) viruses)
 - n Accidents (infections, releases) do happen
 - n Terrorism concerns: decreasing transparency and public accountability; reduced peer review opportunities
- n Bio-defence: science-based analysis of the BW threat
 - n Genetic properties of pathogens are being altered to study infectivity, virulence, etc., thus creating modified life forms
 - n Government-run programmes
 - n Insights from bio-defence programmes are useful for offensive BW development
 - n Limited transparency
 - n Questions about adequacy of vetting procedures for researchers
 - n Anthrax letters (2001) came from a government bio-defence laboratory
- n Limited knowledge among scientists about norms against BW
 - n Potential contribution to future BW development rejected out of hand
 - n Governments have provided scientists with special incentives to overcome concerns and participate in BW programmes
 - n Development of enabling technologies: future tangibles or end products not yet known
 - n Situation probably even worse among 'hobbyists'

Science and terrorist use of non-conventional agents

n Non-conventional weapon categories



- n Most incidents are in the grey areas
- n Agents in grey areas are easier to acquire
 - n Enable incidents involving individuals; small groupings
 - n Opportunity may play a significant role in those incidents
- n Incidents with biological / toxin agents since 1970 produced fewer than 100 fatalities, despite biotechnology revolution

Assessing the terrorist/criminal threat

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

General considerations

- n The time is still available for a balanced and comprehensive policy
 - n Terrorist threat from new biology/biotechnology presently low
 - n Largest threats potentially from state-run bio-defence programmes, the proliferation of high containment laboratories, and the limited transparency concerning those activities
 - n Spread of skills and materials
 - n Rogue individuals
 - n Accidents
- n Insert challenges into overall policies on BW prevention (inside or outside BTWC?)
 - n Multi-level stakeholdership (government, companies & institutes, individuals)
 - n Raise issue awareness (e.g., stimulate debates on professional codes) and build stakeholdership among relevant constituencies
 - n Development of transparency-enhancing in cooperation with industry and scientific community to promote early detection of deviance and malfeasance
 - n Licensing requirements for private and legal entities (possession; transfers)
 - n Gives overview of activities and their location (+ tracking of changes in location)
 - n Gives degree of control over access to technologies
 - n May bring hobbyist activities into the picture
 - n Identifies and establishes responsibilities for oversight and enforcement of regulations
- n For EU-funded research projects:
 - n Standardised criteria for assessment of different types of bio-risk
 - n Commitment to transparency and peer review
 - n Monitoring mechanism for subsequent application of funded research
- n Maximise transparency and public accountability regarding relevant activities and promote common standards among EU Member States

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