12 December 2011

Civil society preparations for the Seventh BWC Review Conference

("BWPP Online Discussions")

Verification for the 21st Century

Summary of the BWPP online discussion on "Do we need verification for the BWC and how could it look like?" (Margaret E. Kosal, Johannes Rath, Amy E. Smithson, VERTIC), available at http://www.bwpp.org/revcon-verification.html, prepared by Margaret E. Kosal.

While the mere word "verification" carries with it a stigma in some circles, verification remains a missing component for a robust international prohibition on the development, production, acquisition, transfer, stockpiling, and use of biological weapons. Scope and structural aspects remain critical challenges to creating, implementing, and executing effective verification of biological weapons nonproliferation for the 21st century. In an atmosphere in which compliance mechanisms seem far away and where some commentators consider the previous attempt at a BWC protocol text to be fundamentally flawed, it is necessary to consider the options anew. This includes both the role of industry and the scope and structure of possible verification.

While verification is essentially a technical undertaking that can involve remote monitoring and on-site activities, it is inextricably linked to the political process of assessing whether the facts gathered through verification activities constitute a treaty violation, which leads into an even more heated political decision about how to respond or to enforce treaty obligations. A theoretical wall exists between these technical and political exercises, but in the BWC arena that wall has crumbled and politics have overtaken virtually every facet of the verification discussion.

The basic function of a verification system is to detect instances of non-compliance. An effective system also serves other important roles: the risk of detection may deter a state from engaging in non-compliant behavior. Very low detection probabilities have been observed to act as a deterrent, if verification activities are carried out regularly. It is also important to keep in mind that verification regimes help build confidence that other parties are behaving in a compliant fashion.

Verification of the BWC has come to be seen by some as something impossible, almost unachievable. Those on that side of the debate argue that compliance cannot be verified with absolute certainty and therefore, any system put in place would only serve to lull the member states into a false sense of security. The same can be said about almost every verification regime in place today, however. Yet they contribute to increasing international stability as part of larger nonproliferation efforts.

Political challenges include overcoming the view that monitoring compliance through a verification protocol would lack value without excessive intrusion risking commercial and national secrets and interests or that a verification regime would undermine passive defensive programmes against offensive biological agents. To the contrary, industry experts have argued that BWC compliance inspections of pharmaceutical facilities will be viable – that a facility engaged in legitimate peaceful commercial activities can be distinguished from one that is masking a biological weapons programme – and that the inspection process will not compromise trade secrets.[1] Buy-in from the private sector is crucial politically and for the design and implementation of a robust inspection protocol.

The scope of BWC verification needs to be address: is it to be constrained to mid-twentieth century technology, biological weapons, and weaponization techniques? Some would look to the BWC text and assert that a verification regime unequivocally could not be limited in any such way. At the same time, the most intrusive verification regime agreed upon by the international community is based on a delineation of inspection targets. The Chemical Weapons Convention (CWC) has its Schedules of Chemicals as an integral part of its inspection and verification regime. That argument can only go so far, however. From a realist perspective, the stronger counter-argument against articulation of CWC-like schedules of biological agents, materials, and equipment is that it would effectively provide a list of what to avoid if one wanted to cheat to potential proliferators.

In light of new technologies, renewed consideration should be given to what actually constitutes an agent that should be monitored or to define adequate thresholds as in the context of pathogen production. The focus on large and sophisticated fermentation units might not be sufficient any longer. The potential synergies between biotechnology and emerging technologies, like nanotechnology, not only suggest tremendous potential promise for advancement in technology but also raise new concerns.[2] Other developments, such as encapsulation technologies, i.e., improvised weaponization methods that can be dated to the 1960s, for example, are currently not subject to export controls or international arms control regimes. Biological weapons are inherently exploitive of more dual-use technologies.

Globalization and the information revolution have made new technological developments accessible and relatively inexpensive to many nations and within the grasp of non-state actors. Advanced technology is no longer the domain of the few. In the 21st century, both nation-states and non-state actors may have access to new and potentially devastating dual-use technology. Advances in biotechnology and information technology have been driven by needs for improved biomedical products, public health, or industrial applications. The Internet and other communication leaps have led to much greater visibility into the availability and potential for

1 Amy E. Smithson (2001) House of Cards, chapters 4 and 5, http://www.stimson.org/books-reports/house-of-cards/; Amy E. Smithson (2002) Compliance Through Science, http://www.stimson.org/books-reports/compliance-through-science/; Amy E. Smithson (2004) Resuscitating the Bioweapons Ban, http://csis.org/files/media/csis/pubs/041117_bioweapons.pdf.

2 Margaret E. Kosal (2009) Nanotechnology for Chemical and Biological Defense, Springer Academic Publishers: New York, http://www.springer.com/materials/nanotechnology/book/978-1-4419-0061-6.

technology. Either intentionally or not, these advances have fostered the proliferation of knowledge as well, and spurred interest in the creation of novel non-traditional offensive uses of advanced technology. Without a Scientific Advisory Board (SAB) or institutionalized means to provide advice on truly emerging technologies with implications for biological proliferation, a verification protocol risks becoming an artifact of, at best, mid to late 20th century microbiology and engineering.

The structure to take on the potential full scope of biotechnology has to be able to absorb and respond to uncertainties to be most effective, particularly if it is to have a deterrent effect on potential proliferators. For verification to be strategically significant a priori, efforts to address and resolve technical and political uncertainties must be addressed, otherwise states will remain likely to hedge on the side of uncertainty. Such a determination likely depends on not only degrees of confidence but also degrees of acceptable uncertainty combined with degrees of deterrence achieved. Verification is not a goal unto itself; stopping proliferation and reducing the threat of attacks that are the goals. Verification can be an integral or complementary part of a strategic deterrence posture aimed at reducing the overall threat (motivation, capability, and vulnerability) of biological weapons proliferation. Further interactions between nations and between government and industry can only help bring a consensus closer. The real work is ultimately in the details of resolving the scope and structure and will involve work among many parties.

Recommendations

Leveraging the ideas of the four participatory scholars as well as others, we strongly recommend that a number of steps to strengthen the treaty should be undertaken:

- Renew the mandate of the BWC Implementation Support Unit (ISU);
- Increase BWC ISU funding;
- Create a dedicated Industry Advisory Panel to address challenges of designing and implementing effective inspection protocols in the private sector;
- Create a Scientific Advisory Panel, which includes representatives of academia and industry, to address technical advances in biology, biotechnology, and related fields; and
- Pursue inter-sessional discussions to reconsider, in light of advances in the life sciences, among other pertinent factors, what measures could help detect and deter violations.