Seminar on Biosecurity on Dual-use risks

Department of Life Sciences and CES
University of Coimbra

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Organized by

Department of Life Sciences and CES, University of Coimbra, Portugal

Landau Network – Centro Volta (LNCV), Italy*

Bradford Disarmament Research Centre, University of Bradford (BDRC), UK*[1]

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MAKING KNOWLEDGE WORK

Morning Session, 9:30 – 12:30

- Introduction: Project Presentation and Outline of the Seminar
    - Background of speakers, of Landau Network-Centro Volta and Bradford Disarmament Research Centre
    - Project and rationale on Biosecurity and Dual Use Education and Awareness Raising
    - Outline of the Seminar
- Questions of security related to the life sciences
- Definitions
    - Biological Weapons
    - Biosecurity
    - Biosafety
    - Dual-Use
- The historical prohibition on poisonous, biological and toxin weapons
- History of Biological Weapons: State Programmes and Bioterrorism
- Legal Aspects
    - The international Prohibition regime
        - The Biological and Toxin Weapons Convention: development, the Intersessional Process, Meetings, the compliance system.
        - Mention of other disarmament agreements including the Chemical Weapons Convention
        - The United Nations Security Council Resolution 1540
    - European Union
        - Dual-use export controls regulations in the EU
        - The EU Institutional Framework: the Common Foreign and Security Policy

* This Seminar is organized under the framework of a LNCV-BDRC project on "*Supporting the norm against the misuse of the biological sciences: Integrating biosecurity considerations into tertiary-level Life Sciences curricula at European Universities*". The project is funded with support from the European Commission. However, the contents in the initiative reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information there contained.

        - The Common Security Strategy
    - National legislation cases

- Dual-use
    - Dual-use risks and the dual-use "dilemma"
    - Possible dual uses of new technologies in the contemporary period including: aspects of Biodefence; Biocontrols; the so called Non Lethal Weapons; anti materiel weapons; delivery capabilities; mass production capabilities.
    - Latest scientific developments from the BTWC perspective.
    - Comparison with nuclear dual-use?
    - Dual-use examples for discussion
        - The "Mousepox experiment"
        - The recreation of the 1918 Spanish flu virus

- The existing policy making processes
        - The UN, EU and national governments
        - WHO, OECD
        - Entities financing research

- Engaging in a cooperative "Web of Prevention"
    - The role of the scientists in raising public awareness and in participating to the policy making.

Afternoon Session, 14:30 – 17:30

Discussion and debate

- History of Biological Weapons
- Potential use of biological science and technologies for hostile purposes
- Discussion of dual-use experiments
- Engagement of scientists

Background

"As researchers discover more agents that alter mental states, the Chemical Weapons Convention needs modification to help ensure that life sciences are not used for hostile purposes", ***Malcom Dando[2],*** *"Biologists napping while work militarized", Nature, 460:950-1,2009*

Why education and awareness raising of life scientists and biotechnologists on biosecurity issues and dual-use risks and debates?

Firstly, because many assessments from international organizations (OECD, WHO, European Commission, the BTWC inter alia), scientific community and NGOs proved that life scientists have little information on these issues;

[2] Malcolm Dando from the BDRC of the University of Bradford is one of the principal investigators of the LNCV-BDRC project.

Secondly, since there is an ongoing policy making process that has little exchanges with the life science scientific community: biologists would be affected by these policies in their professional lives and should be engaged and informed of the discussions;

Thirdly, because instilling concepts related to scientific responsibility during the formative period can contribute to the creation of a "culture of responsibility";

Fourthly, because the international scientific community (the InterAcademy Panel as well as more than 30 scientific journals) is considering introducing oversight of scientific research and has introduced a "biosecurity review" as part of its publication criteria.

The purpose of science is to benefit human life and conditions, and life sciences are hugely contributing to this, and will increasingly in the future. But in some cases, research and public health activities can also have "**biosecurity**" aspects, require "**biosafety**" precautions or present "**dual-use**" risks. Taking vaccine research as example, the study of vaccine design or response systems to disease outbreaks could require to isolate, identify and even enhance the virulence of a pathogen, or to induce mutations in order to test how could technology respond. But it has to be considered that what is described above, beneficial and perfectly legitimate, could be potentially also misused as the path to build and to deliver biological weapons.

In fact, biological weapons existed in history and have been developed in huge military programs as well as used in war; and known (and less known) episodes of bioterrorism have occurred. Biological weapons can be categorized in different "generations", and potential misuse of new technologies could lead to entire novel scenarios.

An International Prohibition Regime against non-peaceful use of life sciences and technologies is in place (with international treaties, and European Union initiatives and national legislative implementations and obligations). Misuse of biological agents and technologies for purposes that are different from the peaceful and beneficial ones for which they are intended, is of course an issue of ethical concern, and bioethics have begun recently to treat it.

"Dual-use" in particular is an issue of which scientists should be aware, and participate on discussions on it; some examples of "dual-use" experiments should be presented.

The creation and the improvement of a "Web of Prevention" policies to support the norm of non-use for hostile purposes seems essential, and should be actively discussed with scientists.

About

About the Landau Network-Centro Volta (LNCV)

The Landau Network-Centro Volta (LNCV) is a non-profit and non-governmental organization operating as a global network of international experts supporting global security, disarmament and scientific cooperation. Its programs cover research on international security and policy issues, worldwide disarmament of Weapons of Mass Destruction, arms control, scientific and technologic cooperation for global peace support, water and energy security. LNCV is also the seat of the Executive Secretariat of the International Working Group (IWG), and informal think-tank of experts and officials participating in their personal capabilities.
http://www.centrovolta.it/landau/

About the Bradford Disarmament Research Centre (BDRC)

The Bradford Disarmament Research Centre is an internationally recognised centre of academic and policy-oriented research on the proliferation and control of nuclear, biological, chemical and conventional weapons and the national, regional and global security contexts in which these issues are salient.
http://www.brad.ac.uk/acad/bdrc/