



## Scientific Research and the Dual Use Problem

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„Killer mousepox virus raises bioterror fears” (New Scientist, 10 January 2001). “Five easy mutations to make bird flu a lethal pandemic” (New Scientist, 21 September 2011). „'Home-brew' morphine from brewer's yeast now possible” (Reuters, 18 May 2015). What triggers such worrisome news headlines like these that find their way even into daily press every once in a while?

A closer look reveals that it is neither about rogue states' bio-chemical warfare programs or terrorists' capabilities, nor is it about illegal activities of organized crime. Rather it is about findings from academic research that have been published in scientific journals or presented at scientific meetings. In other words, some novel findings emanating from basic scientific research may not exclusively serve purposes that are beneficial to the advancement of society. In present or enhanced form, such findings may in fact bear the potential of misuse by state or non-state actors in order to harm humans, animals or plants, or their habitats. This duality is nowadays recognized as the dual use problem in research, best coined by the US American expression “Dual Use Research of Concern” (DURC).

On-going discussions in international security-themed fora acknowledge the complexity of the matter: Is a “risk-benefit” analysis in the conventional sense, e.g. as applied to issues of biosafety, feasible? And how best to balance security concerns against academic freedom? In the end it boils down to the fact that “not only the solution is unknown, but the problem itself is initially not well defined, and the values that ought to drive its investigation and the valid methods to do so are unknown, unclear or in dispute, as are the set of applicable theoretical models, the solution set, and the criteria for successful resolution” (doi: 10.3389/fpubh.2014.00074). Hence, this calls for a precautionary principle that starts with fostering a culture of responsible conduct in the sciences and raising awareness among researchers about the dual use problem.