



Audit of the Conventional Wisdom

The Audit of Conventional Wisdom

In this series of essays, MIT's Center for International Studies tours the horizon of conventional wisdoms that define U.S. foreign policy, and put them to the test of data and history. By subjecting particularly well-accepted ideas to close scrutiny, our aim is to re-engage policy and opinion leaders on topics that are too easily passing such scrutiny. We hope that this will lead to further debate and inquiries, with a result we can all agree on: better foreign policies that lead to a more peaceful and prosperous world. Authors in this series are available to the press and policy community. Contact: Michelle Nhuch (NHUCH@MIT.EDU, 617.253.1965)

Can Scientific Codes of Conduct Deter Bioweapons?

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At least since the First World War, when the German army sabotaged the Allies' pack animals with anthrax and glanders, worldwide concern about biological weapons has focused on how to improve legal restraints against biological weapons (BW). Over these same years, the major powers have vacillated in their willingness to promote international treaties and laws against BW programs. At the end of the Cold War, hopes were high for a global consensus to strengthen the 1972 Biological and Toxin Weapons Convention (BTWC), making it a standing organization comparable to that of the 1993 Chemical Weapons Convention and an expanded mandate to ensure compliance. Instead, in the name of national security, the United States has recently promoted an emphasis on voluntary measures. One of these, the international adoption of biosecurity codes of conduct, puts the burden on elite scientists to solve a problem of weapons proliferation that can be better addressed by effective legal restraints.

The American promotion of biosecurity codes of conduct has its origins in a diplomatic impasse. In July 2001 in Geneva, then Under Secretary of State John Bolton announced U.S. withdrawal from long-term negotiations to strengthen the BTWC. For seven often difficult years the Ad Hoc Group (AHG) of States Parties to the treaty had been hammering out a protocol to improve verification and treaty compliance.¹ The 1925 Geneva Protocol forbids the use of biological and chemical weapons; the BTWC bans all aspects of state programs, including the development, production, trade, and stockpiling of germ weapons or disease agents. During the Cold War, however, the BTWC's lack

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ANXIETY of the Conventional Wisdom

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citation

Jeanne Guillemin. "Can Scientific Codes of Conduct Deter Biological Weapons?" MIT Center for International Studies Audit of the Conventional Wisdom, 07-06 (April 2007).

of strong compliance measures forced a precarious reliance on trust without verification. In 1992, revelations about biological weapons in the Soviet Union and in Iraq underscored the need for change. In addition, the end of the Cold War prompted new optimism about international arms control. For biological weapons, the optimism proved short-lived.

The July 2001 withdrawal of the United States from AHG negotiations was followed in December 2001 by American pressure to disband the group entirely. Instead, a compromise was reached. For the next five years, until the BTWC's Sixth Review Conference in 2006, AHG discussions of biosecurity measures would focus on voluntary options. One of these, the development of codes of conduct to prevent the misuse of biomedical research, depended directly on input from scientific academies worldwide.²

Encouraged by the U.S. Department of State and the States Parties to the BTWC, the InterAcademy Panel (IAP) on International Issues, a global network of science academies, created a biosecurity working group, consisting of members from the United States, the United Kingdom, the Netherlands, Italy, China, Cuba, and Nigeria. In December 2005, the IAP published its statement of principles regarding scientific codes of conduct.³ Endorsed by 68 national science academies, these principles exhort scientists to foresee and prevent the harmful consequences of their research, meet required laboratory safety standards, educate themselves, their students and the public about the BTWC and relevant domestic law, and inform authorities of any violations they might witness.

Codes of conduct that address biosecurity can be an important step toward raising general consciousness among biomedical researchers. According to preliminary inquiries, very few Western microbiologists have paid attention to the potential for harm in their work.⁴ In this, they lag behind U.S. politicians who, during the 1990s, successfully defined the threat of bioterrorism as a new policy imperative and channeled many millions of biodefense dollars to federal agencies, primarily the Department of Defense.

After the 9/11 attacks and the mysterious appearance of the anthrax letters soon after, there was an enormous growth in American biodefense—to over \$80 billion in open source funding by 2006. This project broadened to include the National Institutes of Health, which, with the creation of National Centers of Excellence at major medical centers and new high-containment laboratories for select agent research, has put microbiology at the center of an unprecedented national security initiative.

Politics, Ethics, and Science

Behavioral guidelines raise fundamental questions about individual conscience versus the impact of the social context on moral choice. Most contemporary microbiologists, although they may feel autonomous in their work, remain susceptible to larger institutional and political pressures. Whether in academic medical centers, pharmaceutical companies, or government facilities, they work in corporately organized settings where norms, professional responsibilities, and missions are bureaucratically defined. In addition to those pressures, these scientific environments react significantly to national norms concerning transparency and public accountability.⁵ Their common characteristic is a reliance on scientific methods with no necessary moral component, although critical scientific inquiry might conflict with political strictures.⁶

The capacity of scientists to set aside moral scruples is abundantly illustrated in the history of biological weapons in the last century, when tens of thousands of microbiologists were employed in secret state programs, in defiance of international norms and laws protecting civilians in war. One major power after another—France, Imperial Japan, the United Kingdom, the United States, and the USSR—pursued biological weapons for strategic use.⁷ Very few of these BW scientists ever recanted their dedication to helping infect masses of civilians with anthrax, tularemia, plague, smallpox and other diseases. None risked the onerous whistle-blower role.

How does one reconcile belief in the moral authority of biomedical scientists, with their knowledge to save lives and prevent suffering, with this dark history? One explanation lies in the power of the closed scientific enclave in weapons research to normalize otherwise conflicting values.⁸ In each of the state biological weapons programs, scientists worked in communities isolated from the wider world and sheltered from criticism or controversy. In times

of war, they identified as loyal patriots and in times of peace they identified as dedicated government employees.

The 1934-1945 Japanese BW program in occupied Manchuria created an extreme version of the secret scientific enclave. Its main center, Unit 731 near Harbin, was for nearly ten years a garrison town, within which scientists from the best Japanese medical schools lived comfortably in close proximity to their laboratories and to prisons that were a continual source of captive Chinese research subjects. Starting in 1939, these scientists began orchestrating the first modern use of germ weapons in war, which, in the summer of 1942, culminated in lethal disease attacks on dozens of Chinese villages and towns. Decades later, in public confessions, some of them described their blind commitment to serving the emperor and revealed they had “no feeling of apology or of doing anything bad,” even when performing human vivisection.⁹

Although the other state BW programs stopped short of war crimes, their scientists had to rationalize their commitment to the goal of mass germ attacks. In the 1920s, the French military used suspicions of German intent to conduct germ warfare to justify their secret BW research. In the Second World War, leaders of the British biological weapons program were dedicated to total war doctrine that made it essential to target enemy civilians in urban and industrial areas. This same doctrine underlies the U.S. development of biological and nuclear weapons during and following the war, and also shaped the later Soviet program.

Biological weapons scientists in secret programs sometimes cognitively divorced their scientific objectives from the broader military mission of mass killing. One example comes from the memoirs of a former Soviet civilian microbiologist, Igor Domarovskij, who worked in the closed city of Obolensk. When his development of a more virulent strain of tularemia was disrupted, he blamed bad management and complained bitterly that his “efforts went for nothing.”¹⁰

The Challenge Today

The twenty-first century thus far appears to offer fewer incentives or opportunities than the last for covert, malevolent exploitation of the life sciences. Wars between major industrial states have ceased, totalitarian regimes have either collapsed or undergone radical transformations, and globalization has increased international communication. Throughout history, though, political entities—whether tribes, kingdoms, or nation-states—have consistently sought new, superior weapons. Sooner or later, the allure of biotechnological advances will inspire visions of military advantage that could, as in the past, be secretly pursued. We can only guess how the international transfer of biotechnology will interact with the dynamics of economic growth and political change. What is certain is that, as in the past, the participation of capable scientists is essential to any programmatic degradation of the life sciences—or their protection.

At first glance, the InterAcademy Panel’s third recommendation—that biomedical scientists should spread information about international laws and policies against biological weapons—appears unrealistic. The institutional rewards for political action, compared with those for scientific discovery, are practically zero. Yet such engagement is crucial. Biomedical scientists in influen-

tial positions are best situated to guard the humanitarian goals of their enterprise, or risk the imposition of other values. In the 1980s, German biologist Benno Müller-Hill, having written about Nazi scientists, was criticized for not characterizing the infamous death camp physician Josef Mengele as a “monster.” Müller-Hill’s reply was, “I said that Mengele learned nothing but science from his teachers and that his teachers never dared to think about reality. I said that science without justice and equal rights led to Auschwitz.”¹¹

The issue of codes of conduct relating to biosecurity has put scientists on the alert to a new category of professional responsibilities. But the problem of biological weapons is too important and complex to leave to voluntary measures alone. The best hope for protection against biological weapons lies in the range of legal restraints that have been gradually building over the last several decades.

Unfortunately, these restraints are by no means as strong or comprehensive as they should be. Many nations have still failed to implement the domestic legislation required by the BTWC. No international treaty yet criminalizes individual complicity in developing, producing, possessing or using biological or chemical weapons. The International Criminal Court in its 1998 statute makes no specific reference to biological weapons, only to “employing poison or poisoned weapons.” Meanwhile, the United States is stuck in the 2001 BTWC diplomatic impasse. The 1993 Chemical Weapons Convention’s Organization for the Prevention of Chemical Weapons and the International Atomic Energy Agency have the resources to aggressively promote arms control for chemical and nuclear weapons, respectively, while the 1972 Biological and Toxin Weapons Convention remains unnecessarily frozen in Cold War limitations.

In other vital policy areas, the Bush administration’s retreat from international leadership and its misguided reliance on unilateralism and secrecy have been recognized as faulty and even disastrous approaches to world politics. The time is right for American biomedical scientists to use their authority to criticize these same approaches to the problem of biological weapons.

article footnotes

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- 2 The other options were national penal legislation against biological weapons, national oversight of dangerous pathogens, measures for investigating and responding to suspicious infectious disease outbreaks, and the surveillance and combating of infectious diseases of humans, animals, and plants. See: United Nations, Fifth Review Conference of the Parties to the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction, Geneva, 19 November-7 December, 2001, and 11-22 November 2002, *Final Document, BWC/CONF.V.17, 2002*. Codes of conduct were later addressed in *The Report of the Meeting of States Parties (BWC/MSP/2005, 14 December)*, 3-4. Available at <http://www.opbw.org>.
- 3 <http://www.interacademies.net/iap>
- 4 Brain Rappert, Marie Chevrier, and Malcolm Dando, “In-depth Implementation of the BTWC: Education and Outreach,” Bradford BTWC Review Conference Paper No.18, November 2006. Department of Peace Studies, Bradford University, <http://www.brad.ac.uk/acad/sbtwc>.
- 5 Sheila Jasanoff, “Three Cultures and the Regulation of Technology,” in Martin Bauer, ed., *Resistance to New Technology: Nuclear Power, Information Technology, and Biotechnology* (Cambridge: Cambridge University Press, 1995), 311-354.
- 6 Robert Merton, “Science and the Social Order,” *Philosophy of Science* 1938, Vol. 5: 321-327.
- 7 Jeanne Guillemin, *Biological Weapons: From the Invention of State-sponsored Programs to Contemporary Bioterrorism* (Columbia University Press, 2005).
- 8 On scientific communities in nuclear weapons research, see Hugh Gusterson, *Nuclear Rites: A Weapons Laboratory at the End of the Cold War* (Los Angeles: University of California Press, 1996).
- 9 Hal Gold, *Unit 731 Testimony: Japan’s Wartime Human Experimentation Program* (Rutland, VT: Tuttle Publishing, 1996), 208.
- 10 Igor V. Domarovskij and Wendy Orent, *Biowarrior: Inside the Soviet/Russian Biological War Machine* (Amherst, NY: Prometheus Books, 2003), 248.
- 11 *Correspondence of Benno Müller-Hill, Vol. I: 1967-1985* (Privatdruck, Köln, May, 2006), 187.



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April 2007

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PSB 07-04-0332



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