

Institution: University of Sussex

Unit of Assessment: UoA 21 Politics and International Studies

Title of case study: Countering the Spread of Chemical and Biological Weapons

1. Summary of the impact

This case study documents the research and impact of Sussex members of the Harvard Sussex Program (HSP) on chemical and biological weapons (CBW). Since 2008, HSP has provided a wide range of benefits to CBW expert and policy communities, through information gathering and dissemination, advisory work, outreach events, and briefings and reviews, as well as single-issue advocacy and policy innovation. At the same time, HSP has contributed to changes in national and international CBW policies through its research on such issues as yellow rain, incapacitating agents, and processes of Science and Technology review.

2. Underpinning research

The Harvard Sussex Program (HSP) was established in 1990 by Julian Perry Robinson, Sussex, and Matthew Meselson, Harvard. Its mission is to bring scholarship to bear on the formation of public policy on chemical and biological weapons, in order to maintain and strengthen constraints on their development and use. HSP is widely recognised as the leading centre worldwide for research on CBW control. This case study documents the work of Sussex members of the program, specifically that of Julian Perry Robinson (founding HSP Co-Director, now Emeritus Professor), Caitríona McLeish (current Co-Director, at Sussex since 2002), and James Revill (Research Fellow, at Sussex since 2010), as well as former HSP researchers Daniel Feakes (2000-2009) and Catherine Jefferson (2009-2010).

While HSP research has addressed a broad range of issues related to CBW, this case study pays particular attention to impacts arising from three areas of research:

(1) **Yellow rain:** In 1981, the US government accused the Soviet-backed Laotian and Vietnamese forces of conducting toxin warfare against Hmong villagers who had sided with the United States during the Vietnam War and also against anti-Vietnamese forces in Cambodia. HSP research showed, however, that the 'yellow rain' was actually a result of honeybee defecation. This research began prior to 1993 but continued throughout the 1990s and remains on-going [see Section 3, R1] due to its paradigmatic significance for assessing allegations of CBW use.

(2) **Incapacitating agents:** These agents are intended to disable people and put them out of action for extended periods of time without causing death or permanent harm and are prohibited under the 1993 Chemical Weapons Convention (CWC), except when intended for the loosely specified purposes that the Convention does not prohibit. Thus far, the technology involved has lagged behind the hopes of their advocates – as was shown by the 129 hostage deaths resulting from their use during the operation to end the 2002 'Dubrovka' theatre siege in Moscow. Yet since then, there has been a creeping legitimisation of their use in counter-terrorism operations – a move that threatens the integrity of the CWC. HSP researchers have written extensively on this issue, challenging the creeping legitimisation of incapacitating agents [R2].

(3) **Science and Technology (S&T) reviews:** Recent HSP research on this issue has shown that the S&T review processes within the Biological Weapons Convention (BWC) are not only under-utilised but also based on outmoded models of scientific and technological change. Using bibliometric analysis, case studies, interviews and questionnaires, HSP identified various possible alternative review procedures, and analysed them for their strengths and weaknesses [R3, R4].

Since 1993, HSP research has been supported by grants from the ESRC, the EC's Sixth Framework and CBRN Action Plan, the MacArthur Foundation, the Carnegie Corporation, the Sloan Foundation, and the foreign ministries of Japan, the Netherlands, Portugal and the UK. All of the above research has involved HSP-Sussex participation.

3. References to the research

Impact case study (REF3b)

- R1 Meselson, M.S. and Robinson, J.P. (2008) 'The Yellow Rain Affair: Lessons from a Discredited Allegation' in *Terrorism, War, or Disease? Unravelling the Use of Biological Weapons*, Stanford, CA: Stanford University Press.
- R2 Robinson, (2008) 'Difficulties facing the Chemical Weapons Convention', *International Affairs*, Vol. 84(2): 223–39.
- R3 McLeish, C. (2006) 'Science and censorship in an age of bio-weapons threat', *Science as Culture*, 15(3): 215-26.
- R4 McLeish, C. and Trapp, R. (2013) 'The Life Sciences Revolution and the BWC: Reconsidering the Science and Technology Review Process in a Post-Proliferation World', *Non Proliferation Review*, 18(3): 37–41.

R2, R3 and R4 were subject to double blind peer review. Outputs can be supplied on request.

4. Details of the impact

As summarised in section 1, HSP research has had two types of impact:

Benefits to CBW expert and policy communities:

HSP researchers work continually with governments, international organisations and NGOs in the CBW field, providing wide-ranging benefits to CBW debates and policy. This work 'has provided solid evidence-based information and argument that has helped sustain UK work in negotiating and implementing the CWC, maintaining the effectiveness of the BWC and sustaining the overall efficacy of the international regime against the misuse of biology and chemistry. HSP's work over the last twenty years and more has helped shape UK perceptions of the issues in hand, the challenges faced and possible steps that could be taken to address them' [C1]. This work includes:

- Information gathering and dissemination, including: maintaining the Sussex Harvard Information Bank, considered the world's largest open archive of published and unpublished material on CBW, which is used regularly by CBW researchers and policymakers; maintaining a CBW events database, recording 15,000 CBW events since 1987; and editing the CBW Convention's *Bulletin*, the journal of record in the field from 1993-2011.
- Advisory work, including with actors involved in the CBW Conventions, the UN, the G8 Global Partnership, the WHO, the ICRC, the UK National Authority for the Chemical Weapons Convention, the European Commission, Human Rights Watch, the Bioweapons Prevention Project, the UK Royal Society and committees of the US National Academies, and most recently an *amicus curia* brief for the US Supreme Court in the *Bond* case [C2].
- Outreach events, including the organisation or hosting of more than 30 expert seminars (many of which have been in coordination with other institutions, including governments).
- Direct support for policy processes via briefings and reviews, including several hundred page guides for the CWC and BWC Review Conferences, commissioned and funded by state parties including the UK [C3]. Illustrative of the value of these documents, HSP's 2011 Briefing Book for the BWC was publicly commended by the US State Department's Deputy Director of Chemical/Biological Weapons Policy as 'a survival guide for delegates and interested parties' [C4]. This Briefing Book was presented to the President of the Review Conference by the UK's Parliamentary Under-Secretary of State, and orally commended by him.
- Sustained single-issue advocacy and/or policy innovation, including: on-going development and promotion of HSP's draft treaty on international criminalisation of individuals' involvement in CBW development and use, including through evidence presented to the UK Foreign Affairs Select Committee [C5]; and proposals for building Dual Use education into higher education curricula, referenced by, inter alia, the WHO and the US National Academies of Science [C6].

Issue-specific impacts:

In addition, HSP research has had issue-specific impacts, illustrated here in relation to the three areas of research discussed in section 2:

(1) **Yellow rain:** The yellow rain controversy continues to this day. The US government maintains its initial case, but most other governments and experts support HSP's bee defecation explanation

[C7]. Critical lessons for the practice of investigating alleged use have been widely drawn from this research. For example, a 2008 article co-authored by Sir David Omand, former UK Security and Intelligence Coordinator, and published in a CIA journal, describes this as ‘a well-documented case that illustrates the pitfalls’ of verifying allegations of CBW use, specifically acknowledging the role of HSP research [C8]. Partly as a result of the yellow rain controversy, improved methods have now been introduced for dealing with such allegations: a senior governmental representative has stated that HSP’s work ‘on yellow rain helped underscore the need for effective international mechanisms for investigating allegations of CBW use, which has been a long-term UK objective’ [C1]. Indeed, the yellow rain incident has become viewed as paradigmatic of the complexities involved in attributing responsibility for (real or alleged) chemical weapons use. For example, it has been widely revisited in expert and public discussions over the August 2013 use of chemical weapons in Syria [C9].

(2) **Incapacitating agents:** HSP has collaborated widely with civil society organisations and scientific communities in developing recommendations and pressuring governments on this issue. Robinson served, for example, on the committee of the Royal Society’s influential Brain Waves project, and is extensively cited in its final report [C10], and HSP has also worked on the issue through Pugwash and the ICRC. A major HSP objective has been to strengthen the position of those in government who argue for constraints and are in a position to inhibit backsliding from existing policies. Traces of impact can be gleaned from the contributions of HSP to the UK Foreign Affairs Committee’s 2009 Report on non-proliferation [C5]; and from instructions provided to the US delegation to the CWC, published by Wikileaks: these state that ‘a growing interest among British NGOs in discussing’ incapacitating agents may place the UK ‘under considerably more pressure to demonstrate increased flexibility in entertaining discussions and possibly even report language’ [C11]. A senior government official has stated that HSPs work on incapacitating agents ‘has contributed to UK policy formulation and led indirectly to the statement made by Alastair Burt at the Third CWC Review Conference in 2013’, where he clarified UK policy on the issue [C1]. Civil society pressure has resulted in the UK, US, Germany and Switzerland all clarifying or amending their positions on this issue since 2008 [C12].

(3) **Science and Technology reviews:** This research has fed directly into international policy discussions. A range of policy options for reform of review procedures were developed by HSP researchers, and were communicated via, inter alia, a series of specially designed policy briefing papers; tailored presentations to government officials; and presentations at the UN including one that led a senior Indian diplomat to call the project a ‘model means of engaging policy makers’ [C13]. The research has been extensively cited, including by the UK National Academies of Science, and in US government-authored national papers submitted to the BWC [C14]. Building in part upon the reform options identified by HSP, the process by which Science and Technology is reviewed under the BWC was changed at the Seventh Review Conference [C15]. HSP research on this issue continues to have impact, being raised two years later in discussions about how best to accommodate and review Science and Technology advances relevant to the CWC [C16].

5. Sources to corroborate the impact

- C1** [REDACTED]
- C2** US Supreme Court (2013) ‘Brief Of Amici Curiae - Chemical Weapons Convention Negotiators And Experts In Support Of Respondent Carol Ann Bond, Petitioner, V. United States Of America,’ at: http://www.law.indiana.edu/front/media_bits/12-158_bsac_chemical_weapons_convention_negotiators_and_experts.pdf
- C3** Feakes and McLeish, ‘Resource Guide for the Second CWC Review Conference 2008’ (HSP, with TMC Asser Press, 2008), at: <http://www.sussex.ac.uk/Units/spru/hsp/Draft%20Convention%20supporting%20docs/HSP%20papers/HSP%20CWCRC-2%20Resource%20Guide.pdf>; McLeish, Richard Guthrie and Revill, ‘Resource Guide for the Third CWC Review Conference 2013’ (CBW events and HSP, 2013), at: <http://www.cwc2013.info/index.html>; McLeish and Guthrie, ‘Briefing Book for the Seventh BWC Review Conference’ (CBW events and HSP, 2011), at: <http://www.bwc2011.info/>
- C4** Jennie P. Gromoll (2011) Comment on the linked-in page ‘BWC Seventh Review Conference’, at: <http://www.linkedin.com/groupItem?view=&gid=4182290&type=member&>

item=81265306&qid=35675333-b68a-40dd-b023-b5d9ea990d30&trk=groups_most_popular-0-b_cmr&goback=%2Egmp_4182290

- C5** UK Foreign Affairs Select Committee, Fourth Report of Session 2008-09, Global Security: Non-Proliferation, Papers (Session 2008-09) HC 222, published 14 June 2009, paras 36 & 214, at: <http://www.publications.parliament.uk/pa/cm200809/cmselect/cmcaff/222/222.pdf>; Hansard (2008) 'Examination of Witnesses (Questions 80-87) Daniel Feakes, Dr. Brian Jones and Nicholas Sims', 19 November 2008. <http://www.publications.parliament.uk/pa/cm200809/cmselect/cmcaff/222/8111904.htm>; Hansard (2008) 'GS(NP)77 Further submission from Daniel Feakes', <http://www.publications.parliament.uk/pa/cm200809/cmselect/cmcaff/memo/1176/uc7702.htm>
- C6** WHO, 'Responsible life sciences research for global health security: a guidance document' (2010), at: http://www.who.int/csr/bioriskreduction/lifesciences_research/en/; and National Academies of Science 'Challenges and Opportunities for Education About Dual Use Issues in the Life Sciences' (Washington, DC: National Research Council, 2010), at: <http://www.interacademies.net/File.aspx?id=15715>
- C7** Anne L. Clunan, Peter R. Lavoy, and Susan B. Martin, Terrorism, War, or Disease? Unravelling the Use of Biological Weapons (Stanford, CA: Stanford University Press, 2008). Editorial, 'Still Secret After 30 Years?', The New York Times (11 February 2012).
- C8** Michael S Goodman and David Omand 'Teaching Intelligence Analysts in the UK What Analysts Need to Understand: The King's Intelligence Studies Program', Studies in Intelligence, (CIA) December 2008. <https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/csi-studies/studies/vol-52-no-4/teaching-intelligence-analysts-in-the-uk.html>
- C9** See e.g. Charles P. Blair, 'Lessons unlearned', Bulletin of the Atomic Scientists (22 July 2013); Michael Eisenstadt, 'Investigating Alleged Chemical Weapons Use in Syria: Technical and Political Challenges' (Washington Institute, 26 April 2013); Simeon Bennett, 'Chemical-Attack Scientists Seek Evidence in Blood: Health', Bloomberg News (27 August 2013).
- C10** The Royal Society, Brain Waves Module 1: Neuroscience, Society and Policy (The Royal Society, 2013).
- C11** US, 'CWDEL ideas for the Second Review Conference – Issues and Strategy' (5 December 2007), available from Wikileaks: http://www.wikileaks.org/plusd/cables/07THEHAGUE2034_a.html. The Second Review Conference meeting was held in 2008, hence the inclusion of this 2007 cable.
- C12** See for example: 'Statement by Mr Alistair Burt', Third Review Conference of the CWC (2 April 2013), at: http://www.opcw.org/index.php?eID=dam_frontend_push&docID=16326; 'Statement by Ambassador Markus Borlin of Switzerland', Third Review Conference of the CWC (2 April 2013), at: http://www.opcw.org/index.php?eID=dam_frontend_push&docID=16325; 'Statement by Mr Philippe Brandt Deputy Permanent Representative of Switzerland', OPCW Seventy-Third Session EC-73/NAT.28 (18 July 2013), at: http://www.opcw.org/index.php?eID=dam_frontend_push&docID=16798
- C13** The briefing papers by Kai Ilchmann, Revill, Mcleish, and Paul Nightingale can be found at: <http://hsp.sussex.ac.uk/sandreviews/results>. Commendation at the 2011 Prep Com during an HSP side event in the UN organised by the Harvard Sussex Program: 'Options and Proposals for BWC Science and Technology Reviews', 16.30 to 18.00, Room XXIV, Palais de Nations, Geneva.
- C14** See: UK (2011) 'New scientific and technological developments relevant to the Convention', BWC/CONF.VII/INF.2/Add.1; and USA National Research Council, 'Life Sciences and Related Fields: Trends Relevant to the Biological Weapons Convention' (2011). At: <http://www.ncbi.nlm.nih.gov/books/NBK91467/pdf/TOC.pdf>.
- C15** BWC (2012) 'Final Document of the Seventh Review Conference', BWC/CONF.VII/7, 13 January 2012, para. 22 & 23.
- C16** [REDACTED]