Institution: University of Bath

Unit of Assessment: C19 Politics and International Studies

Title of case study: Engaging and informing a wider audience in contemporary Conflict and Security research

Period when the underpinning research was undertaken: 2013 - 2020

Details of staff conducting the underpinning research from the submitting unit:

Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Professor David Galbreath	Dean, Faculty of Humanities and Social Sciences, previously Professor and Reader	September 2010 – present
Dr Brett Edwards	Senior Lecturer, previously Research Associate, Research Assistant and Teaching Fellow	October 2010 - present
Dr Wali Aslam	Associate Professor, previously Lecturer	September 2013 - present

Period when the claimed impact occurred: December 2014 - 2020

Is this case study continued from a case study submitted in 2014? N

1. Summary of the impact

Research undertaken in the Conflict and Security Research Cluster at the University of Bath since 2013 has had:

1. Conceptual impact on **public understanding** and discussions around how to mitigate harm internationally, with articles in *The Conversation* generating 50,000 reads to date.
2. Capacity building impact, promoting **public participation** through MOOCs on changing weapons and warfare with over 12,000 participants. Research also underpinned a course on dual-use innovation at the Science and Technology Centre in Ukraine, the first of its kind.
3. Instrumental impact, generating **public influence** through advice to the Ministry of Defence (MoD) on emerging technological security threats; through events attended by over 100 international practitioners; and through a series of 10 policy briefs, influencing policymaker understanding of, and approach, to these issues.

2. Underpinning research

Technological developments in the security sphere, as well as the changing nature of warfare, pose threats and challenges to governments and militaries worldwide. Researchers at the Conflict and Security Research Cluster at the University of Bath have created a hub of future-focused thinking on these emergent threats and challenges in the areas of biosecurity, unilateral humanitarian interventions, and changes in warfare. The impacts detailed above have been underpinned by these interconnected strands of research.

1. BioChemSec2030 Project and beyond

This 18-month project (PI Galbreath) examined the emergent impacts of advances in biological and chemical science on issues of national security. The project brought together scientists, universities, and security services to facilitate and generate evidence-informed national resilience against the misuse of these scientific developments. The research generated specific recommendations regarding how these biological and chemical weapon prohibition regimes could best be responsive to rapid scientific advances in this domain. Following the initial ESRC project, Bath research in this area has expanded in scope - Galbreath served as the Conflict Theme Leadership Fellow (between 2015 and 2019) for the AHRC-ESRC funded Partnership for Conflict, Crime and Security Research, offering strategic guidance to calls launched as part of this RCUK priority area.

2. Research on international chemical and biological weapon use – Salisbury and Syria

Edwards (3.1) has developed a new framework for understanding how emergent fields of science and technology emerge as security concerns and the key challenges these fields pose from a global security perspective. Together with Bath researcher Cacciatori, Edwards investigated the impact of these cases on international norms and the development and substantive meaning of international humanitarian laws (3.2). Edwards was a Lead Investigator on a US State Department white paper working in collaboration with VERTIC, the Verification Research, Training and Information Centre charity. The project (2018-19) drew lessons from international responses to chemical weapon use in Syria in order to improve future multilateral investigations into suspicious disease outbreaks (3.4).

3. Dual Use and Innovation

Edwards has contributed to cross-disciplinary horizon-scanning efforts in the field of emerging biotechnology (3.3). This work, which focuses on issues that emerge from dual use - the use of existing and emerging technology for prohibited hostile purposes, has appeared both in peer-reviewed and industry press.

4. Technology, Military Preparedness and Emergent Security Threats

Galbreath has focused on the question of how technology can assist militaries, shaped and equipped to fight traditional 'bounded' wars, address the new challenge of unbounded conflict. His research (3.5) offered insight into the identification of potential conflicts between culture and technology and concluded that the techno-science gap will continue to grow as innovations such as robotics, sensors, and networks continue to develop. Further insights from the research include the identification of potential mechanisms that could be used to overcome this conflict between culture and technology.

5. The changing nature of warfare in the 21st century

Aslam's research has contributed theoretical and empirical insights into questions of responsibility with regard to harm brought to civilians by the changing nature of warfare. Aslam (3.6) has devised a theoretical framework that can be used to answer such questions in light of these changes.

3. References to the research

3.1 Edwards, B 2019, *Insecurity and Emerging Biotechnology: Governing Misuse Potential*. Palgrave Pivot. https://doi.org/10.1007/978-3-030-02188-7

3.2 Edwards, B & Cacciatori, M 2018, 'The politics of international chemical weapon justice: The case of Syria, 2011-2017', *Contemporary Security Policy*, vol. 39, no. 2, pp. 280-297. https://doi.org/10.1080/13523260.2017.1410614

3.3 Wintle, BC, Boehm, CR, Rhodes, C, Molloy, JC, Millett, P, Adam, L, Breitling, R, Carlson, R, Casagrande, R, Dando, M, Doubleday, R, Drexler, E, Edwards, B, Ellis, T, Evans, NG, Hammond, R, Haseloff, J, Kahl, L, Kuiken, T, Lichman, BR, Matthewman, CA, Napier, JA, OhEigeartaigh, SS, Patron, NJ, Perello, E, Shapira, P, Tait, J, Takano, E & Sutherland, WJ 2017, 'Point of View: A transatlantic perspective on 20 emerging issues in biological engineering', *eLife*, vol. 6, e30247. https://doi.org/10.7554/eLife.30247

3.4 Edwards, B, Hobson, T & Roessing, A 2019, '*Biosecurity and human health: preparing for emerging infectious diseases and bioweapons*', National Security Committee.

3.5 Galbreath, D 2019, 'Moving the techno-science gap in Security Force Assistance', *Defence Studies*, vol. 19, no. 1, pp. 49-61. https://doi.org/10.1080/14702436.2018.1561183

3.6 Aslam, W 2016, 'Great-power responsibility, side-effect harms and American drone strikes in Pakistan', *Journal of Military Ethics*, vol. 15, no. 2, pp. 143-162. https://doi.org/10.1080/15027570.2016.1211867

4. Details of the impact

1. Conceptual impact through increasing public understanding and awareness

Edwards has undertaken public engagement relating to the issues of biological and chemical weapons and their growing role in modern military conflict, translating his research (3.1) into clear public-facing articles which have improved public understanding of these issues. This public engagement coalesced around the use of chemical weapons in Syria (3.2), during the country's ongoing civil war, and in Salisbury, UK. Edwards communicated research to the press and public in both cases. His articles on these issues for popular media outlet *The Conversation* have garnered more than 50,000 reads to date [5.1]. Edwards was one of three people on a panel on the history and contemporary character of chemical warfare at Cheltenham Science Festival, attended by around 100 people, and was included in national level coverage of the festival.

2. Capacity building impact through promoting public participation

Researchers at Bath's Conflict and Security Research Cluster have drawn on their research to develop 2 MOOCs hosted by FutureLearn that, combined, have had more than 12,000 participants including practitioners such as Armed Forces personnel, scientists, and policymakers in addition to members of the public. Aslam designed and co-ordinated the MOOC "From State Control to Remote Control", which has run 5 times since 2015. The MOOC draws on research conducted by Aslam (3.6) and indirectly on other research being produced within the Research Cluster. So far, the course has had over 9,550 users from around the world [5.2]. 92% of those responding to close-of-course surveys reported new knowledge or skills, with 81% stating that they have shared learnings from the course with others [5.2].

Edwards acted as the academic liaison on an FCO-Bath partnership that led to the establishment of a second MOOC in collaboration with BIOSECURE, a company focused on education, training, and policy advocacy to ensure the safeguarding of the bioeconomy. The MOOC, "Next Generation Biosecurity: Responding to 21st Century Biorisks", drawing directly from Edwards' research (3.1, 3.4), has run 7 times with over 2,700 users, and 97% of respondents to close-of-course surveys report new knowledge or skills [5.2].

Edwards also designed and delivered more technical courses for practitioners and teachers for the Science and Technology Centre in Ukraine in November 2019 and December 2020

(virtually) designed to build local capacity in the area of dual-use good export control and have had over 25 attendees to date. These courses are part of a programme funded by the European Commission, Directorate-General for International Cooperation and Development (DEVCO) in support of the European Union's Global Strategy (2016) and Strategy Against the Proliferation of Weapons of Mass Destruction (2003). As highlighted by the project leader who commissioned Edwards to design and deliver the taught MA module, "*This material was not previously taught in Eastern Europe and as this course is the first in Ukraine to do so, it constitutes a significant institutional and cultural change*" [5.3]. Further mentoring sessions for local professors are planned.

3. Instrumental impact through generating public and practitioner influence

The Conflict and Security Research Cluster has informed journalists, policymakers and the MoD, and led to changes in their practice. Aslam's MOOC "From State Control to Remote Control" has impacted on journalistic practices of participants, as stated by a freelance journalist who writes on these topics for the *Huffington Post* and the *Daily Khabrain* (one of Pakistan's most widely-circulated Urdu language newspapers), shaping their "*commentary and writings on the involvement of the special forces in the Pakistan and Afghanistan scenarios*" noting that their "a*nalysis has indeed been sharpened through this online course offered by Bath*" [5.4]. A further participant stated that "*Lessons learned from the Bath MOOC resonate in my current work as a project officer for the Geneva 2030 Ecosystem, co-convened by the International Institute for Sustainable Development and the SDG [Sustainable Development Goals] Lab at UN Geneva*" [5.5].

Between 2013 and 2015, the ESRC-funded BioChemSec2030 project functioned as a hub for practitioners and policymakers from across Europe. Drawing on their research (3.1, 3.5), Galbreath and Edwards organised 3 events in London, Geneva, and Bath. These were attended by over 100 experts and diplomats, including representatives from research councils, biosafety and biosecurity organisations, the UN1540 committee, and other research laboratories from around the world. As highlighted by one Researcher at the United Nations Institute for Disarmament Research, findings which emerged through this process have fed into expert meetings, including for example "*various meetings of the Biological and Toxin Weapons Convention, an MoD review of UK security impacts of technological advances in the area of biochemical weapons, and cross-Whitehall meetings on issues related to CBW*" [5.6].

The website of the BioChemSec2030 project (www.biochemsec2030.org) (which has had 22,000 hits to date, around 3,000 per year) became, as highlighted by a Professor of Inorganic Chemistry active in the research area, "*a 'go-to' resource for journalists and academics because of its accuracy and the potency of the analysis*" [5.7]. Edwards edited and coordinated a series of 10 peer-reviewed policy briefs as part of the *BioChemSec 2030 Policy Paper Series*, freely available on the project website; the briefs were also circulated via email to over 300 direct recipients including national authorities, as well as State Parties to the Chemical Weapon Convention and key experts.

Bath research also led to changes in practice at the MoD. In 2016, in recognition of his expertise on force transformation (3.5), Galbreath was invited to join the MoD's Force Exploration Cadre and the Joint Services Command Staff College Advisory Panel, the Vice Chief of Defence Staff noting Galbreath's "*academic credentials and proven track record in this field'* [5.8]. The work of the FEC fed directly into the MoD's National Security and Capability Review (NSCR) which then transitioned into the Modernising Defence Programme (MDP).

5. Sources to corroborate the impact

5.1 *The Conversation* analytics 8 April 2015 – 18 July 2017.

5.2 End of course survey data from the two MOOCs for “Next Generation Biosecurity: Responding to 21st Century Biorisks” and “From state control to remote control?” (Data download January 2021)

5.3 Impact statement from Project Leader for the Master’s Course on CBRN-relevant dual-use technology transfer controls at TSNU, 20 November 2020.

5.4 Impact statement from freelance journalist for Huffington Post and the Daily Khabrain, 22 November 2020.

5.5 Impact statement from Project Officer IISD and SDG Lab at UN Geneva, received 7 December 2020

5.6 Impact statement from Researcher at the United Nations Institute for Disarmament Research, 19 November 2020.

5.7 Impact statement from Professor of Inorganic Chemistry, UCL, 22 November 2020.

5.8 Letter from Vice Chief of Defence Staff, Ministry of Defence, 19 December 2016.