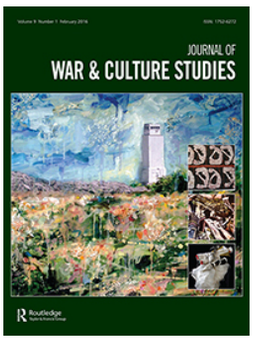

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Preventing 'A Virological Hiroshima': Cold War Press Coverage of Biological Weapons Disarmament

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This article examines representations of biological weapons during a crucial period in the recent history of this form of warfare. The study draws on a corpus of newspaper articles from the US *New York Times* and the UK *Times* and *Guardian* written around the time of the negotiation period of the 1972 Biological Weapons Convention, the international treaty banning this form of warfare. We argue that a conventional discourse can be found wherein biological weapons are portrayed as morally offensive, yet highly effective and militarily attractive. Interwoven with this discourse, however, is a secondary register which depicts biological weapons as ineffective, unpredictable and of questionable value for the military. We finish with a somewhat more speculative consideration of the significance of these discourses by asking what might have been at stake when journalists and other writers deployed such differing representations of biological warfare.

KEYWORDS biological warfare, biological weapons, germ warfare, media, newspaper, disarmament, Cold War

Cold War politics and Cold War science were no strangers to each other.[1] So, when on 5 April 1971, the *New York Times* published a letter of complaint to the editor from Nobel Prize winning professor of genetics, Joshua Lederberg, it was little surprise to find him addressing the politics of biology. Lederberg's complaint was that an earlier editorial, 'Sideshow at Geneva', had trivialized both the danger of

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biological warfare (BW) – the use of disease as a weapon – and the on-going diplomatic negotiations in Geneva aimed at an international treaty to outlaw such weapons, the Biological Weapons Convention (BWC). The editorial had suggested that these were 'weapons nobody expects to use anyway'. On the contrary, argued Lederberg, 'if the Geneva conference can reach accords that will help prevent a virological Hiroshima, this would indeed be a substantive and meaningful accomplishment'. Faced with conveying to his audience a sense of the destructiveness of the unfamiliar world of BW, Lederberg anchored his description in the more familiar world of the first atomic bomb. It is this and other imagery invoked around BW that preoccupies us in this article.

Significantly, for Lederberg, international diplomacy could not be regarded as hermetically sealed, and therefore the tone of press coverage mattered. He wrote: 'The public perception of the importance of BW may now have a practical bearing on the pace of further progress towards firm international agreement' (*NYT* 5/4/71: 280).[2] Lederberg may have been overstating the power of public opinion, but this should not detract from the fact that during the negotiations and up until the entry into force of the BWC (1967–1975), the topic received attention from the news media. While overshadowed by press coverage of nuclear arms control issues, particularly the negotiations leading up to the Strategic Arms Limitation Treaty (SALT I), biological weapons coverage was not insignificant.[3] Moreover, while some coverage of biological weapons issues was short and prosaic, there were sufficient editorials, commentaries, feature articles, and other coverage published that contained lengthier discussion and description. These richer sources provide the opportunity to examine how biological weapons were represented in the print media, and this article aims to undertake such an analysis of broadsheet articles from the USA (*New York Times*), and UK (*The Guardian* and *The Times*) between 1967 and 1975. The focus is on biological weapons and we do not intend to cover representation of all types of so-called weapons of mass destruction: atomic, chemical, and biological.[4] We will discuss the reasons behind our choices and other methodological issues in due course. Our main argument is that 'what biological weapons are' – their nature, moral status, and capabilities – was portrayed in two distinct ways. The predominant press discourse represented biological weapons as highly dangerous and highly effective, therefore in need of banning under international law. Intertwined with this discourse of fear and effectiveness, perhaps more surprisingly, we found a counter-discourse that envisaged an unpredictable, ineffective, or militarily unattractive weapon, suggesting that any international agreement to ban such a weapon was merely cosmetic.

[2]In this article primary sources from the *New York Times* are abbreviated (*NYT*) and dates for primary sources are DD/MM/YY.

[3]As a rough indicator, we searched the Proquest newspaper database for mentions of 'biological weapons' and 'strategic arms limitation' in the *New York Times* (USA) and *Guardian* (UK) between 1967 and 1975. 307 articles mentioned 'biological weapons'; 987 articles mentioned 'strategic arms limitation'.

[4]Biological or bacteriological weapons refer to the use of living organisms (disease), whereas chemical weapons are inert toxic materials (for example, chlorine and mustard gas used in the First World War).

There exists a small, but rich, historiography of twentieth-century BW programmes.[5] The literature on the UK traces biological weapons research and policy from inter-war concerns about spies testing potential BW agents on the London Underground, through clandestine attempts to produce anti-personnel and anti-livestock agents in the Second World War, followed by a massive expansion of effort in the Cold War (Carter, 2000; Balmer, 2001, 2012; Hammond and Carter, 2001; Schmidt, 2015). At this time, the Chiefs of Staff prioritized biological weapons research on a par with atomic research (Balmer, 2001: 62), but this priority was short-lived. Defence cuts in the wake of the Korean War and the rise of Britain's independent nuclear deterrent meant that by the late 1950s Britain had abandoned its offensive programme, although research continued on ways of defending the UK, which was regarded as a particularly vulnerable – as an island – to a large-scale biological attack. For the USA, historians have charted the rise of its biological weapons programme in the Second World War and its varying fortunes ranging from periods with little support, to periods – such as during the Korean War – where the programme was taken more seriously (Moon, 1999, 2006, forthcoming; Guillemin, 2005). In 1956, US policy was secretly revised from one of retaliation in kind to use at the discretion of the President. Then, in 1969, President Nixon unilaterally renounced offensive biological weapons (Tucker and Mahan, 2009), by which time the US military had – again in secret – created a stockpile of lethal and incapacitating agents and weapons and, during the early 1960s, carried out Project 112, a massive series of tests in the Pacific to disperse agents over large areas.

It is not the intention of this article to re-tell this detailed history through press sources. Much of this literature focuses on charting the development of research and policy, and where press sources are used they generally are used to supplement archival sources in telling this historical narrative.[6] Instead, we have a narrower focus on how biological weapons were represented in the press. Put another way, what would someone reading newspapers in the late 1960s and early 1970s have been told about what a biological weapon can do? As such, this article is a preliminary attempt to understand the cultural history of disease as a weapon. Within the history of science there exist cultural histories of nuclear weapons, and the notion that we can understand Cold War paranoia and fear through the lens of 'nuclear cultures' has gained some traction (e.g. Weart, 1989; Boyer, 1994; Hogg and Laucht, 2012). By stark contrast other unconventional weapons, including biological weapons, have received scant historical attention as cultural artefacts, or more specifically as sources or mediators of Cold War anxieties. Corcos (2003) provides a short discussion of science fiction and biological weapons in film, noting the

[5]As well as the UK and USA see Wheelis *et al.* (2006) for Canada, France, USSR, Non-Soviet Warsaw Pact Countries, Iraq, South Africa; Avery (2013) for Canada; Gould *et al.* (2002) on South Africa; Leitenberg and Zilinskas (2012) on the former Soviet Union.

[6]Hammond and Carter (2001: 211–35 (chapter 15)) and Balmer (2012: 91–114 (chapter 6)) each have a whole chapter on press coverage, using it to analyse particular episodes where the Microbiological Research Establishment in the UK became the focus of media coverage. As such, they concentrate on what was reported rather than, as here, the imagery used.

recurrent motif of official failure to respond to attacks. Mayor's exploration of chemical and BW in the ancient world does draw attention to the wider cultural significance of peculiar fears attached to both disease and poison – for example, through her discussion of the historical association often made between women and poison (Mayor, 2003). Within history of medicine, wider attention has been paid to cultural histories of disease following seminal works on how disease can be 'framed' differently across societies or over time (Rosenberg and Golden, 1992), and on the power of metaphors used to describe disease (Sontag, 1979). Yet, there has been little connection made to how such approaches can inform our understanding of the deliberate use of disease as a weapon of war (although see Cooter, 2003 for a more general discussion of the association between war and epidemics). More contemporary social studies of science have analysed how the media have represented such diverse phenomena as 'mad cow disease', genes, and hospital 'super-bugs' (Nelkin and Lindee, 2004; Washer, 2006; Washer and Joffe, 2006). Within this context, our wider aim is to explore how the print media have constructed multiple and apparently contradictory framings of disease as a weapon.

Our corpus of newspaper articles was obtained through a search of the Proquest and Times Online newspaper databases. Searches were made for articles between 1967 and 1975 in the *New York Times, The Guardian*, and *The Times*. The three were picked partly because of their wide readership, and partly on the pragmatic grounds that they have been digitized. Using the search term 'biological weapons' yielded 427 articles, and 'biological weapons OR biological warfare' yielded 851 articles. Many mentions were peripheral or, when directly on topic, were in short, information-provision articles. Therefore, we manually sifted our corpus down to 168 articles of direct relevance to the BWC, with the majority of coverage between 1968 and 1971.[7] Historians have developed a variety of approaches to understanding the relationship between war and media (e.g. Connelly and Welch, 2004). And, as Bingham notes, newspaper databases yield searches that can be more rigorous and sensitive than conventional searching (Bingham, 2010). Bingham also points out that, although the increasing number of digitized archives offers a rich source for historians, there are several methodological caveats that limit, though do not eliminate, their usefulness. In particular, we need to be aware of a bias towards digitizing broadsheet reporting, which is not necessarily representative of all press opinion. Search results also remove immediate context (e.g. what else was on the page, whether the article was front page or buried in the newspaper); they also ignore the contexts of production and reception by readers. Readers should be sensitive to all of these problems as they read this article. That said, we would add a number of points. First, our discussion is confined to three widely-read broadsheet newspapers, but also deliberately confined to the language used to portray what constitutes a biological weapon. Had we been trying to make systematic

[7]The breakdown was *New York Times* (65), *The Guardian* (55), and *The Times* (48).

comparisons (e.g. UK vs. USA) or generalize about areas where one would expect obvious differences across newspapers (e.g. political opinion, commentary on specific events such as protests) then we would have less confidence that our choice of newspapers could yield useful information. Moreover, even had we abandoned databases to include a greater selection of newspapers, the question would remain of just how many and whether or not other media sources (radio and television) were needed. As such we remain confident that, within the constraints outlined here, we provide a credible account of the depiction of biological weapons in the press.

Disarmament and the BWC

The idea that international treaties and law should codify the ancient custom, that weapons employing poison of either chemical or biological origins are not permissible as weapons of war, dates to the mid-1800s. The phrasing of codification efforts was shaped by external factors, such as events prompting the initiation of negotiations, but also reflected contemporary technical-scientific understanding. Consequently, early codification efforts focused on forestalling the military development of chemical weapons or, after the experience of gas warfare in the First World War, ensuring that never again could gas be used on a battlefield, and such efforts used terms such as 'poison' or 'poisoned weapons' and in the 1925 Geneva Protocol 'bacteriological methods of warfare'.[8] The 1925 Geneva Protocol was adopted by several nations as essentially a 'no first use' agreement with respect to chemical and biological weapons (CBW) (signatories could still make preparations for their use).

The experiences of the First World War also gave impetus to the idea of the need for an international convention to achieve universal reduction and limitation of armaments.[9] In the end, geopolitics scuppered the potential of this draft convention and the withdrawal of Germany, and German rearmament, brought about the breakdown of the Disarmament Conference. By the time international diplomatic attention returned to the idea of extending the 'no first use' prohibition on CBW contained within the 1925 Geneva Protocol, the Cold War had started. During this period efforts to ban CBW were overshadowed by the pursuit of nuclear weapons disarmament.

Discussions about CBW would momentarily become animated in response to external events, such as in the 1950s when the USA was alleged to have used

[8]See, for example, Article 70 of the 1863 Lieber Code; Article 13(a) of the 1874 Brussels Convention on the Law and Customs of War; Article 23(a) of the 1899 and 1907 Hague Regulations

[9]A UK draft convention was submitted in 1933 and proposed extending the already agreed upon no first use prohibition with an absolute prohibition of the use of biological weapons even for retaliation; a ban on preparations for both chemical and biological weapons in time of peace as well as in time of war; and a complaints procedure for investigation breaches of the prohibition. UK (1933) 'Draft Convention Submitted By The United Kingdom Delegation', Conf. D. 157. Geneva, 16th March 1933. http://digital.library.northwestern.edu/league/le000050.pdf. For a review of the potential of this Draft Convention see Goldblatt (1971).

bacteriological and chemical weapons in Korea and China, or the allegation that Egypt used chemical weapons in Yemen in 1967. During these moments, just as in the pre-cold war days, the two categories of weaponry were taken together as one issue to be resolved using the same approach. This situation changed in the late 1960s (Wright, 2002; Chevrier, 2006; Spelling *et al.*, 2015). Discussions by the UN-sponsored Eighteen Nation Disarmament Committee began to consider two options. First, whether there was a need to revise the Geneva Protocol or, second, to negotiate some additional instrument to clarify and strengthen its provisions while keeping the Protocol itself intact. Distinguishing between, on the one hand, chemical weapons that 'have been used on a large scale in war in the past and … regarded by some states as a weapons they must be prepared to use if necessary in any future war' and, on the other hand, the now termed 'microbiological methods of warfare', the use of which 'has never been established [but] generally regarded with even greater abhorrence than chemical methods', the UK submitted a working paper on 6 August 1968. This noted 'the choice lies between going ahead with the formulation of new obligations or doing nothing at all'.[10] The UK's suggestion, disliked by the Socialist, non-aligned countries, and the USA, was to deal first with the relatively easy issue of biological weapons before tackling the more complicated issue of chemical weapons.

External pressures undoubtedly shaped the level of international political attention given to CBW during 1968–1970. Such pressures included public opinion regarding the nature and dangers of CBW; accidents involving chemical weapons; the continued use of herbicides and tear gas in military operations in Vietnam; protests by scientists against the military use of their work; and appeals to renounce the use of and abolish CBW made by the United Nations and international organizations such as the World Health Organization, and the International Committee of the Red Cross. However, internal blockages required removal if a biological weapons-only treaty was to be successfully concluded. Unilateral actions were crucial in this respect, such as the announcement by US President Nixon on 25 November 1969 that the USA was renouncing its biological weapons capability and intended to ratify the 1925 Geneva Protocol.[11] Regarding biological weapons, his statement proclaimed the renunciation of the use of lethal biological agents and weapons and all other methods of warfare, disposal of existing stocks of weapons and confinement of biological research to defensive measures only.

What would become the *Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction,* also known as the *Biological Weapons Convention*

[10]Disarmament Conference Document ENDC/231

[11]National Security Decision Memorandum 35, Washington, DC, 25 November 1969, in FRUS, document 165, available at www.state.gov/r/pa/ho/frus/nixon/e2/83596.htm On the 14th February 1974 a further announcement was made extending the same provisions to weapons using toxins: Office of the White House Press Secretary (Key Biscayne, FL), Statement on Toxins, 14 February 1970, in FRUS, document 189, available at www.state.gov/r/pa/ho/frus/nixon/e2/83627.htm. See Tucker and Mahan (2009).

came quickly thereafter. In less than 20 months four draft convention texts were tabled, beginning on 18 August 1970 with a draft convention, revised from that which the UK had submitted on 10 July 1969. The text that was eventually agreed emerged from bilateral Soviet and US talks and was opened for signature on 10 April 1972, entering into force on 26 March 1975.

Biological Weapons and Popular Culture

In the context of open press coverage, it is an important reminder that although many states invested in biological weapons research programmes during the Cold War, all were shrouded in tremendous secrecy (Guillemin, 2005; Wheelis *et al.*, 2006, chapters 2–9). By the late 1960s, occasional television or press coverage, and a number of popular science books, had provided some fleeting glimpses behind the closed doors of the British and US research programmes, but much remained hidden (Hammond and Carter, 2001; Balmer, 2012, 2015).

Fictional accounts of disease as a weapon of war formed a more accessible source of imagery and speculation about what constituted biological weapons. To give a few prominent examples, *The Satan Bug* thriller (book 1962, film 1965) and the James Bond spy story *On Her Majesty's Secret Service* (book 1963, film 1969) both involved BW agents. Although not specifically about biological weapons, the theme of contamination and invasion was developed in the book (1969) and film (1970) of *The Andromeda Strain* (1970), with a plot centred on scientists fighting an alien virus, and in *The Omega Man* (1971) set in a world surviving the aftermath of a viral apocalypse. And 3 years later, in *The Crazies*, an American town becomes a scene of carnage after an army plane crashes with its viral payload. Science fiction novels that dealt with biological weapons included Robert C O'Brien's *A Report From Group 17* (1972), William Haggard's *The Bitter Harvest* (1971), and the *Quality of Mercy* (1965) by D.G. Compton (dealing with BW used to combat over-population). At perhaps a more light-hearted level, in 1970 the *New Scientist* magazine launched its 'Grimbledon Down' cartoon series, satirizing the secret work of the UK Microbiological Defence Establishment base at Porton Down, Wiltshire and where 'the battle with an ever-inquisitive press, demonstrations, Official Secrets Act, 'security regs', and an ever-threatened visit from the ministry chiefs from Whitehall were regular fare for the weekly strip' (Tidy, 1994). In short, while glimpses of actual biological defence research were rare, the topic remained visible in popular culture.

Beyond the 'Doomsday Bug'

Much of the press reporting around the BWC negotiations depicted biological weapons as highly effective and morally repugnant. So, in a lengthy *New York Times* feature article entitled 'Dare We Develop Biological Weapons?', journalist

Seymour Hersh, who had also authored the recently published book *Chemical and Biological Warfare: America's Hidden Arsenal*, noted that with current military research on BW: 'man's ingenuity could develop what in effect would be a 'doomsday bug', a disease so uncontrollable it would trigger a pandemic across the world' (*NYT* 28/9/69: 28). The article was illustrated with a picture of the outline of a bomb made from a photograph of bacteria under a microscope. The caption warned

> Doomsday Bugs: This bomb cut-out was made from a photograph of plague germs (*Pasturella pestis*) taken from an infected mouse spleen. The US Army is cultivating such highly infectious organisms – and developing weapons which could deliver them on targets – as a deterrent. One question: Would a plague once loosed become a plague on all our houses? (*NYT* 28/9/69: 28)

Although Hersh noted the extreme secrecy surrounding research into these weapons, he provided some details of work in the US programme, and was in no doubt that the USA 'was fully capable of mounting an effective biological attack'. The feature also discussed disarmament, arguing that an international agreement was long overdue.

Despite painting this picture of an effective and militarily attractive weapon, Hersh's feature article also sowed its own seeds of doubt. By describing laboratory accidents, by quoting an un-named Government official saying 'we've been asking the Army for years to find the Russian biological test facility… and it can't', and by quoting US Defense Secretary Melvin Laird pronouncing that 'the deterrent aspects of biological agents are not as sharply defined [as chemical weapons]', Hersh created a different picture, within the same article, of a less sure weapon with the potential to backfire, whose interest to the Soviets might be exaggerated, and where uncertainties abounded. Indeed, Hersh finished his article with the question: 'Does the United States really need to invest funds in a weapons system that may not work and will not deter?'

Hersh's doubts notwithstanding, the effectiveness of BW is highlighted in many articles that covered the BWC negotiations, often stressing their unique or distinctive features. They could 'kill whole cities' (*NYT* 26/11/69), they are 'biological fire… the most powerful knowledge conceivable' (*NYT* 8/12/69). At the height of the BWC negotiating process, *The Times'* Geneva correspondent summarized Lord Chalfont, the British Minister for Disarmament, warning that an attack of anthrax spores would cause 'millions of men, women and children to die an agonising and revolting death' and then quoted him directly as stressing the unique nature of BW: 'surely no-one can seriously suggest this is not a weapon of an appallingly different kind from any that man has yet imagined for his own destruction' (*Times* 8/4/70).

Beyond this general impression of effectiveness and uniqueness of biological weapons that was conveyed in the press reporting, journalists, and other commentators often cited specific reasons for their effectiveness. These reasons included the

pace with which they were being developed; their scope; the ease of production; the difficulty of defending against them; their 'bio' nature (i.e. that they could disrupt the natural balance of ecosystems, could breed in the body and spread, and similar appeals to their living nature); and the ease with which other nations could acquire them. We will discuss these features in turn, but our main point is that they moved beyond a rather inchoate, albeit palpable, description that represented biological weapons as effective and provided readers with an array of more precise features that marked the weapons out as candidates for international disarmament.

One of the key features ascribed to biological weapons was their pace of development. Indeed, temporality is a recurrent motif in the press coverage: biological weapons are effective *now* or, alternatively, the threat is on the time-horizon and approaching rapidly. For example, *The Times* reported in November 1970 that the Disarmament Conference in Geneva had been warned by scientist Joshua Lederberg of 'possibly sinister scientific advances' and that it was already possible to 'invent new diseases'. An editorial in the same newspaper, published the following March and commenting on how the Russian Draft Treaty had opened up a realistic chance of negotiating the convention, noted that although germ weapons were currently deemed ineffective, 'yet another decade of intensive development could make them dangerous and effective' (*Times* 31/3/71). Lena Jenger, a Labour Member of Parliament, wrote for the *Guardian* on the success of the 1968 Nuclear Non-Proliferation Treaty that we should not overlook that 'our hands are busy preparing cheaper killers' than atomic weapons. Citing an American Association of Scientific Workers report from 1947 and its warning about biological weapons, Jenger continued: 'but after 20 years of rapid development in the biological sciences, we can all, no doubt do much better than this.' (*Guardian* 12/6/68). So, whether their reality was immediate or deferred, all of these reports evoke a sense of imminence and urgency around the problem of biological weapons.

Various articles made reference to the ease with which biological weapons could be produced or used. Laurence Marks writing in the *Observer*, for example, noted that all that the perpetrators would need was a building the size of a lock-up garage (*Observer* 27/7/69).[12] Nigel Calder, writing about his edited book of predictions about future war, *Unless Peace Comes*, depicted biological weapons as 'much easier for any nation to develop than are H-bombs', and echoing the temporality theme just discussed, cautioned that they were 'already reaching the point where they become not only an alarming prospect but a practical threat' (*Guardian* 31/3/68). While also easy to disseminate, Calder added that 'defence against such biological attacks will be correspondingly difficult'. This feature of BW is repeated in several articles. Claims such as 'a principal factor in US reluctance to renounce germ warfare is that there is practically no defence' (*Guardian* 29/9/1969), 'the frightening thing about germ warfare is that the poorest of

[12]*The Observer* is the Sunday edition of *The Guardian*.

nations can indulge in it and there is no comprehensive form of defence' (*Guardian* 27/11/69), and 'no certain defence against them can be planned' (*Times* 3/7/69) are dotted throughout the coverage. News coverage and commentary also pointed to the ability of the weapons to affect huge areas. For example: '100,000 square kilometres, whereas nuclear weapons would be expected to affect only 300 square kilometres' (*Guardian* 10/7/69). In the same edition of the paper, a detailed article with the title 'Why Germ War Must Be Banned' by Hella Pick considered that certain agents were 'potentially unconfined in their effects both in time and space' (*Guardian* 10/7/69).

Pick's article also pointed to the source of the weapons' uniqueness residing in their biology. As such, it was the living nature of the biological weapon that elevated it to a category of weapon that required banning. Writers conveyed this significant 'aliveness' in two senses in their reporting, the first emphasizing the ecological and second the physiological effects of biological weapons. Pick's article illustrated the first sense when she pointed out that, as living components of ecosystems, these weapons might 'have irreversible effects on the balance of nature'. Whereas the second sense emerged in articles such as the *Times* article cited earlier in this section, where Chalfont is reported to have said that 'one significant difference between biological weapons and chemical and nuclear ones was that the germs used in the human body could breed in the body' (*Times* 7/4/70).

Although some press reporting simply left readers to infer that an effective weapon was also a militarily useful weapon, other reporting provided more direct indications of a link. It is worth considering here that the one does not necessarily follow from the other – a crossbow, for example, is effective but not of great use in modern warfare, especially when compared with other available equipment. Reporters and commentators drew the link between effectiveness and utility through frequent reference to the doctrine of retaliation in kind: the opportunity to retaliate against biological weapons with biological weapons. The term had cultural resonance. Although the Cuban missile crisis had shifted policy from massive retaliation to a more flexible response, retaliation in kind with nuclear weapons remained a central tenet of US defence policy at this time. The 'in kind' nature of the retaliation in turn suggests that military or political leaders might be prompted to find a use for BW. Although implied rather than stated, the abnormality of circumstances that would drive a nation to use these weapons resonates with the abnormality of the weapons themselves. After all, retaliation does not necessarily have to amount to retaliation in kind. In a similar vein, a *New York Times* discussion of what followed from Nixon's 1969 unilateral renunciation of biological weapons pointed out that the President had given up the 'remote possibility' of using these weapons. Again, this implied that, while certainly not a weapon of first choice, they still possessed some military value. A number of articles indirectly suggested that biological weapons had military value by reference to their role in military planning. For instance, 'the Russians had always believed that a war in

Europe would involve the use of nuclear weapons and chemical and biological weapons as well, Mr Healey, Secretary for Defence, said yesterday' (*Guardian* 26/7/68); 'The Russians make no secret of their assumption, in public at least, that… these unconventional forms of warfare would be used in any future large-scale conflict in Europe' (*Guardian* 6/8/69).

A variation on this theme of utility was that although these weapons were of no use for 'advanced' countries, they might prove attractive to other nations. So, *Guardian* coverage of a UN experts' report on biological and chemical weapons quoted from the report: 'any developing country could in fact acquire a limited capability of this kind of warfare' (*Guardian* 10/7/69). The *Times* coverage of the same report likewise drew attention to the point that 'particular danger derives from the fact that any country could develop or acquire a capability in this type of warfare' (*Times* 3/7/69).

'Primitive Hatred and Fear': Moral Judgement and the Media

Interwoven with this print media portrayal of disease as an effective weapon, and the reasons why that weapon was particularly deserving of censure, writers frequently pronounced moral judgement on BW.[13] This was sometimes simply expressed as a general, ineffable sense of revulsion and horror. Terms such as 'horror', 'appalling', 'against human instinct', 'abhorrence' were all used to refer to BW. To give specific instances, reporting on the early British government initiative to raise the issue of chemical and biological disarmament in Geneva, *The Guardian* noted 'widely held moral revulsion against these weapons' (*Guardian* 18/7/68). And the *Time*s editorial 'Realism Replaces Propaganda' stated bluntly that 'they arouse primitive hatred and fear in all mankind' (*Times* 31/3/71). Covering the Nixon decision to renounce biological weapons, correspondent Richard Lyons wrote that the ban would 'bar American use of an array of killers whose very names stir thoughts of a chamber of horrors' (*NYT* 26/11/69). Shortly after the first signatures were put to the BWC, Alun Chalfont, writing mainly about attempts to move chemical disarmament forward in the wake of the treaty, claimed that 'even those who regard war as a legitimate instrument of national policy have a natural revulsion against certain categories of weapon – usually, and understandably, the weapons of indiscriminate slaughter' (*Guardian* 26/4/72). Throughout the press reporting, terms such as 'natural' and 'primitive' served to lift condemnation beyond the 'merely' legal or conventional and ground it in a visceral and universally shared moral sense.

Other references to the taboo surrounding BW provided readers with more than this general sense of revulsion. The unique nature of these biological weapons, as discussed in the previous section, was sometimes linked to their moral opprobrium. The implication of stressing uniqueness was that there existed an index of horror, with BW in a category of its own apart from other means of killing. Besides

[13]For philosophical discussion of the ethics of biological warfare see Haldane (1987).

uniqueness, writers in a few articles provided another reason behind the taboo: that BW turned healing upside down. For instance, the *New York Times* reporting on a debate about whether toxins – inert poisons derived from living organisms – counted as biological weapons pointed out that

> The real root of the opposition to the employment of toxins is the horror of using human disease as a weapon. We live in a world where, fortunately, healing the sick is regarded as one of the noblest callings. To turn the knowledge thus gained inside out for military ends is, to many, abhorrent. (*NYT* 4/1/70)

There was also the occasional suggestion that the moral problem resided in the links between academic science and the military. One example is in an article with the headline 'Porton work is troubling scientists' that made the front page of *The Times*, about a series of 21 letters sent to the UK Prime Minister, Harold Wilson, asking for work on chemical and biological defence at the military research establishment at Porton Down in Wiltshire to be made public (*Times* 27/6/68).[14] Just a few days before, and raising similar concerns, the *Guardian* covered a 'stormy' meeting of the American Society of Microbiology which had just dissolved its advisory committee to the US Army.[15] Making the announcement, Professor Salvador Luria from MIT had 'indicated that a sense of moral responsibility lay behind the decision. The implication was that the society… was ethically opposed to a connection with the US Army's biological warfare centre' (*Guardian* 25/6/68). Less directly, in a report on a 1969 meeting about CBW organized by the Women's International Peace Movement, the *Times* science correspondent Pearce Wright quoted one delegate, Professor O. V. Baroyan from the Soviet Academy of Medical Sciences, saying 'I speak for many scientists when I say I do not want to work for the devil, I want to work for mankind' (*Times* 24/7/69).

There was also a suggestion that biological weapons broke the laws of war. The editorial in *The Times* marking the signing of the BWC noted that 'Germ warfare has always held a particularly sinister connotation, conjuring repugnant images and transgressing every rule in the curious code of conduct which governs strife' (*Times* 10/4/72).

A Second Discourse about Effectiveness: 'Questionable Value'

From the foregoing discussion, it can be seen that a fairly cohesive representation of the effectiveness and capabilities of biological weapons was portrayed in the print media during the BWC negotiation period. However, although this dominant representation of a horrendous, powerful, dangerous, and useful weapon ran throughout the press coverage, it is not the only portrayal of BW in the newspapers. A

[14]Porton's negative image at this time is discussed by Balmer (2012: 91–114 (chapter 6) and 2015), and Hammond and Carter (2001: 211–35 (chapter 15)).
[15]Avery (2013: 119–46 (chapter 4)) discusses deep-seated divisions within the Society on this matter.

second register of discourse painted biological weapons as ineffective and of no particular military value. At times this depiction was used to bolster the case for the abolition of biological weapons – an 'after all, who needs them' line of attack. In other writing, commentators used this register to express scepticism about the BWC or the negotiating process.

Before discussing the characteristics of this more sceptical portrayal of biological weapons, it is worth pointing out that many doubts expressed in the press were less with the idea of biological disarmament *per se*, and instead focused more on the pragmatic aspects of the diplomatic process. So, for example, the separation of chemical from biological disarmament, reassurances that stockpiles would be destroyed, that signatories would commit to later chemical disarmament, and whether or not to repeat the Geneva Protocol's ban on use in the BWC became topics for news articles. Arguably, it was easier to make a news story about some hiccup or other in the negotiating process and to express doubt about whether the treaty could ever be successfully negotiated than to report that negotiations were running smoothly.

We have already encountered the sceptical narrative in the dismissive editorial that prompted Lederberg's letter, and that opened the discussion in this article. It also surfaced in our earlier discussion of Seymour Hersh's feature article, 'Dare We Develop Biological Weapons?' (*NYT* 28/9/69). As mentioned, although Hersh's article drew heavily on the notion of biological weapons as effective, towards the later sections Hersh also posited that these were untried, untested weapons that could be unpredictable in both use and during the research process. It is this uncertain picture of biological weapons that Hersh invoked to hammer home his overall message that there should be a ban on BW. Hence, the full quote with which he finished the article read: 'Does the United States really need to invest funds in a weapons system that may not work and will not deter? Unless the military can satisfactorily demonstrate that the CBW threat from the enemy is as real as it thinks it is, the answer seems to be no.' (*NYT* 28/9/69).

Not surprisingly, the *New York Times* ran several articles at the time of Nixon's 1969 announcement to renounce biological weapons. The idea that these weapons were 'probably unusable' (*NYT* 26/11/69) appeared at several points in this coverage. So, 'Germ Warfare: What Nixon Gave Up' opens by saying that Nixon had traded 'a few horrible and probably unusable weapons' for national security and personal prestige. The author, special correspondent Robert Smith, continued by listing why they might be unusable: 'they have never been tested; it is not clear what effect they would have on enemy forces or population'. Difficulties in identifying the attacker, together with the possibility of preventing uncontrollable spread were added to this litany, adding up to a weapon of 'dubious strategic value'. The same edition ran an article – 'Activist Germ War Foe' – profiling the Harvard scientist Matthew Meselson who had briefly worked at the Arms Control and Disarmament Agency and had been working since then to help engineer the renunciation of

biological weapons (*NYT* 26/11/69). Under the sub-heading 'Calls Weapons Useless', Meselson is quoted as saying

> I took the approach of a military planner… I tried to persuade people that these weapons are useless, that they were intended to kill the population and we already had other weapons that could do that. The real hazard of lethal germs is that they can kill whole cities. (*NYT* 26/11/69)

This is a more nuanced version of the sceptical discourse. Here, biological weapons were certainly not portrayed as ineffective – they could destroy cities – but they were redundant for the USA, who already possessed nuclear weapons for such purposes.

At other times the discourse of scepticism is used in a more straightforward, negative light to cast doubt on either the BWC negotiations or the Nixon decision. So, just a few days later, the same Robert Smith, again commenting on the Nixon decision, stated 'But the experts see the pledges not to use biological agents in war… as relatively unimportant. Biological weapons are of questionable military value for a major power they say' (*NYT* 30/11/69). The sub-heading above this quote, 'Questionable Value', therefore signalled something subtly different from the sub-heading 'Calls Weapons Useless' from the Meselson interview. That said, Smith continued to elaborate on less tangible benefits of the decision: sending a signal to give a 'dampening effect' to other nations interested in BW; preventing a biological arms race with the Soviets; and preventing future development of new weapons. Along similar lines, in April 1971 the Foreign Notes section of the *New York Times* contained a short comment on progress in the BWC negotiations suggesting that 'while such a pact would be more cosmetic than real because it would deal with weapons that no one expects to use anyway, it would represent progress in the long disarmament process' (*NYT* 4/4/71).

In the UK press, similar scepticism was expressed from time to time. The combined feeling that these are somehow an effective yet somehow ineffective weapon is captured succinctly in a *Guardian* piece from 1969 that suggests 'the evaluation of their potential effect is mainly theoretical but all the same fearsome' (*Guardian* 10/7/69). Elsewhere, the 1971 *Times* editorial, 'Realism Replaces Propaganda' cited earlier, welcomed break-throughs in the BWC negotiations but added 'biological weapons, on the other hand, are not yet effective. No government is known to be relying on them for their security' (*Times* 31/3/71). Its later editorial, 'One Horror is Put Aside', marking the BWC signing ceremony, acknowledged the 'sinister' nature of biological weapons 'wrapped up in a science fiction image of men in white coats breeding animate beings in Kafkaesque laboratories' and – as discussed earlier – the article generally took the effective, easy to produce line in its depiction of BW. That said, the editorial also noted that 'there are obvious drawbacks to using them', chiefly their unpredictability. It also observed that with CBW the latter were 'much less than half the problem' and that 'biological weapons, in spite of

conflicting reports and accusations have not [been used] – not against personnel at all events'. In contrasting the 'Kafkaesque laboratories' with such weapons' unpredictability and lack of use, the editorial implied that a gap existed between the science fiction inspired imaginary of biological weapons and cold reality.

Conclusion

What is a biological weapon? Journalists writing about nuclear and chemical weapons, the cohabitants of the trinity of so-called 'weapons of mass destruction', have the historical anchors of Hiroshima, Nagasaki, and the trenches of the First World War as reference points. At the time of the BWC negotiations, there had been no proven use of BW in the twentieth century, and the research programmes of the major states were veiled in secrecy. Historical anchors such as the Black Death, and just within living memory at the time, the 1918 Spanish Flu could provide some clues as to what a biological weapons attack might be like, as could the imaginaries of science fiction. Within this context, as we have discussed, the dominant press discourse of biological weapons as morally reprehensible, effective, and militarily attractive prevailed alongside a competing discourse that depicted these weapons as ineffective, unpredictable, and an unappealing military option.

We mentioned earlier that the analysis presented in this article tells us little about how the press accounts were read or the reach of their influence. We do know that the broadsheets we chose were fairly widely read and, moreover, in the UK National Archives we have found files created by civil servants containing press cuttings about CBW issues, including the BWC.[16] Moreover, as social psychologists Bauer *et al.* point out, 'a newspaper represents the world for a group of people otherwise people would not buy it. In this context the newspaper becomes an indicator of their worldview' (Bauer *et al.*, 2000: 6). Assuming, therefore, that the press coverage of biological weapons and their disarmament was not ignored, it makes sense to think about what was at stake in the different depictions of BW. Describing biological weapons as effective and morally repugnant – and particularly as unique – creates a supportive logic of disarmament: who would not want to see these weapons, above and beyond all others, banned in international law? This much is obvious. But the second register of discourse makes the situation more complex – more so as it occurs less frequently in the press reporting and so is harder to place in context. As we have argued, this negative portrayal of biological weapons as unpredictable and ineffective was certainly flagged in the context of downplaying the significance or value of the BWC. But where it was put to more nuanced use, exemplified in the interview with Matthew Meselson in the wake of the Nixon decision to abandon the US offensive programme, biological weapons were

[16]Circulation figures are commercially available but beyond our research budget. Wikipedia – citing the authoritative Audit Bureau of Circulations – gives the 1966 circulation figures for the *Guardian* (281,000) and *Times* (282,000). http://en.wikipedia.org/wiki/List_of_newspapers_in_the_United_Kingdom_by_circulation#Circulation_1950.E2.80.931999 visited 11/07/14.

indeed portrayed as useless, not because they were innocuous but because they were redundant: the USA already had access to the horrific, indiscriminate means to annihilate entire cities.

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