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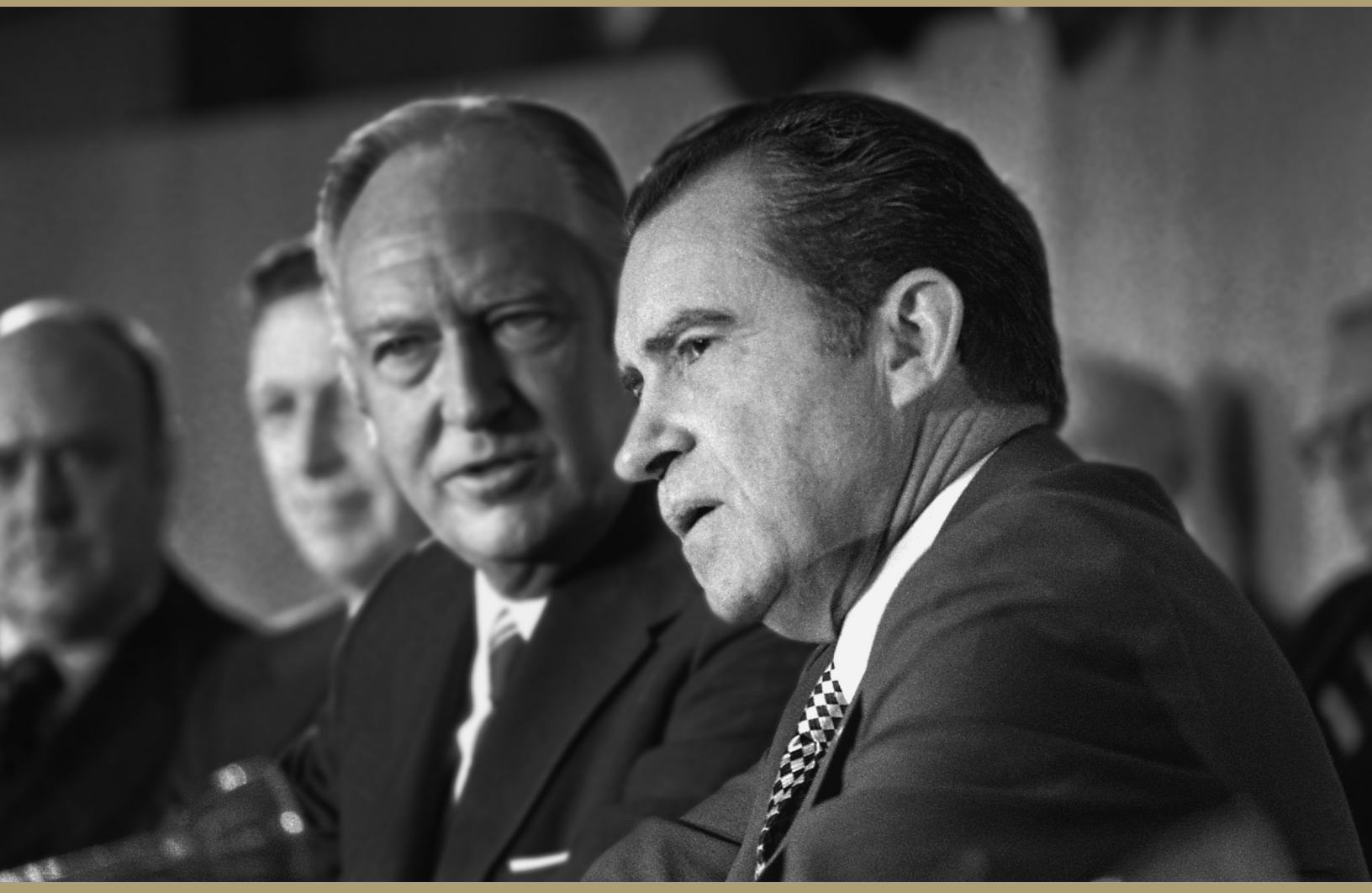
President Nixon's Decision to Renounce the U.S. Offensive Biological Weapons Program

Jonathan B. Tucker and Erin R. Mahan



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Cover: President Richard Nixon and Secretary of State William Rogers at the signing of the Biological Weapons Convention, April 10, 1972.
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by Jonathan B. Tucker and Erin R. Mahan

Center for the Study of Weapons of Mass Destruction
Case Study 1

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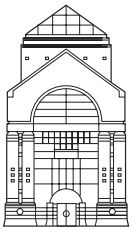

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The nuclear arms race between the United States and the Soviet Union was a prominent feature of the Cold War. A lesser known but equally dangerous element of the superpower competition involved biological weapons (BW), living microorganisms that cause fatal or incapacitating diseases in humans, animals, or plants. By the late 1960s, the United States and the Soviet Union had both acquired advanced BW capabilities. The U.S. biological weapons complex, operated by the U.S. Army Chemical Corps, consisted of a research and development laboratory at Fort Detrick in Maryland, an open-air testing site at Dugway Proving Ground in Utah, and a production facility at Pine Bluff Arsenal in Arkansas that manufactured biological warfare agents and loaded them into bomblets, bombs, and spray tanks.

The U.S. BW arsenal comprised two types of lethal antipersonnel agents (the bacteria that cause anthrax and tularemia); three types of incapacitating agents (the bacteria that cause brucellosis and Q-fever and the virus that causes Venezuelan equine encephalitis); and two types of anticrop weapons (the fungi that cause wheat rust and rice blast). The Army also developed two toxins, highly poisonous chemicals produced by bacteria and other living organisms, including a lethal agent (botulinum toxin) and an incapacitating agent (*Staphylococcus* enterotoxin B).[1] Because microbial and toxin agents had a limited shelf life, they were replenished on an annual basis. According to U.S. military doctrine at the time, the stockpile of lethal biological weapons served as an in-kind deterrent against enemy biological attack and, if deterrence were to fail, provided a retaliatory capability when authorized by the President. The United States also reserved the option of first use of incapacitating biological weapons and anticrop agents, again with Presidential authorization, although U.S. policy in this area was uncertain and poorly defined.[2]

The Decision to Launch a Policy Review

Soon after President Richard M. Nixon took office in January 1969, Members of Congress pressured the administration to clarify U.S. policies on the use of chemical and biological weapons (CBW), as there had been no comprehensive review of this issue area in more than 15 years. A series of highly publicized events had sparked controversy over chemical weapons (CW), which were closely associated with biological weapons in the public mind. In March 1968, an open-air test of the nerve agent VX at Dugway Proving Ground had gone awry, causing the toxic cloud to drift off the test range and kill or injure more than 6,000 sheep in an adjacent grazing area. Although the U.S. Army eventually agreed to pay monetary damages to the affected farmers, it refused to accept responsibility for the deaths. This incident generated a great deal of negative publicity and prompted concern in Congress over the open-air testing

of chemical weapons. During the spring and summer of 1969, it was revealed that the Army had been secretly disposing of obsolete, leaking chemical weapons by transporting them across the country by train and loading them onto surplus ships, which were then scuttled at sea. This program, known as Project CHASE (an acronym for "Cut Holes and Sink 'Em") also provoked congressional ire. [3]

Finally, the U.S. Government faced international condemnation for its widespread use of nonlethal chemical agents (tear gas and chemical herbicides) to augment conventional military operations during the Vietnam War. American forces employed the defoliant Agent Orange to deprive North Vietnamese forces of jungle cover and to destroy crops, and used tear gas to flush Viet Cong guerrillas out of tunnels and bunkers. Beginning in 1964, the Soviet Union and its Warsaw Pact allies charged that the U.S. combat use of herbicides and tear gas violated the ban on chemical and biological warfare in the 1925 Geneva Protocol, which the United States had signed but not yet ratified. In 1967, the administration of President Lyndon Johnson considered halting its use of tear gas and defoliants in Vietnam and ratifying the Geneva Protocol, but strong opposition from the U.S. Army Chemical Corps and the Joint Chiefs of Staff caused the administration to abandon any change in policy.[4]

In the early months of the Nixon administration, Secretary of Defense Melvin R. Laird decided to address the series of controversies that had been swirling around the Army's CBW programs. A cigar-chomping former congressman known for his maverick tendencies, Laird had stated repeatedly that he would serve only 4 years as defense secretary, giving him free rein to follow his natural inclination to confront controversial issues head on. On April 30, 1969, Laird asked the National Security Council (NSC) staff to initiate an immediate interagency review of U.S. CBW policies and programs. "I am increasingly concerned about the structure of our chemical and biological warfare programs, our national policy relating to such programs, and our public posture vis-à-vis chemical and biological warfare activities," he wrote. Laird expressed the well-founded fear that "the Administration is going to be under increasing fire as a result of numerous inquiries."[5]

The National Security Study Memorandum Process

On May 28, 1969, President Nixon initiated a multi-agency review of CBW policies by signing National Security Study Memorandum (NSSM) 59. The NSSM process, which dominated the early months of the Nixon administration, involved a comprehensive examination of all key areas of U.S. national security policy. Each study resulted in a paper, prepared by the major national security agencies and coordinated by the NSC staff, that provided a broad set of options in an issue area and identified the pros and cons of each. The NSC principals—the

Secretaries of State and Defense, the director of the Arms Control and Disarmament Agency (ACDA)[6], the Chairman of the Joint Chiefs of Staff (JCS), and the Director of Central Intelligence (DCI)—typically met in weekly sessions to discuss the various issues under review. During these meetings, each principal orally defended his agency's preferred policies for the President's consideration.

In the case of NSSM–59, officials from the State and Defense Departments, under the direction of the NSC staff, jointly developed the terms of reference for the CBW study directive. The scope of the policy review included the entire range of military and diplomatic issues relating to chemical and biological warfare. (The portion of the review devoted to chemical weapons is beyond the scope of this case study.) With respect to BW, the main question was whether the U.S. BW stockpile added significantly to the Nation's nuclear arsenal for deterring and retaliating against enemy BW attacks.[7] Longstanding differences between State and Defense over a number of CBW issues made both agencies eager to get a new hearing during the policy review.

The task of drafting and vetting the papers for NSSM–59 was assigned to the Interdepartmental Political-Military Group (IPMG), a standing interagency committee comprised of representatives from nine agencies, including the Department of State, Office of the Secretary of Defense (OSD), JCS, ACDA, and the Intelligence Community. To address the various questions posed in the study memorandum, the IPMG divided the analytical work among three subcommittees called interdepartmental groups (IGs). The first subcommittee assessed intelligence on foreign CBW capabilities, the second analyzed military options for employing CBW, and the third explored diplomatic options open to the United States with respect to the ratification of the 1925 Geneva Protocol and the negotiation of additional CBW arms control agreements.[8] Once the three IG papers had been drafted, the IPMG would combine them into a summary report that would be submitted to the NSC Review Group, a committee chaired by National Security Advisor Henry Kissinger and made up of officials at the deputy secretary level. The review group prepared the meetings of NSC principals and made sure that the President was presented with genuine choices among well-defined policy options and not with prepackaged decisions.

Because CBW issues were highly technical, the NSC staff also sought advice from nongovernment scientific experts. At Kissinger's request, the White House Office of Science and Technology convened a panel of members from the President's Science Advisory Committee (PSAC) to prepare a separate report on chemical and biological weapons.[9] As the three IGs and the PSAC prepared their papers, breaking news stories raised public and congressional awareness of CBW issues and put U.S. Government policies in this area on the political defensive. On July 8, 1969, the *Wall Street Journal* reported that 23 American Soldiers and a U.S. civilian

had been exposed to low levels of nerve gas after an accident in Okinawa involving sarin-filled bombs.[10] The revelation that the U.S. Army had secretly deployed chemical weapons on the Japanese island triggered a storm of protest in Okinawa and Japan. On July 18, 10 days after the incident, Defense Secretary Laird made a statement endorsing the retention of U.S. offensive CBW capabilities for deterrence purposes. But on July 22, in the face of continued protests, the Pentagon announced that it would speed up the previously planned removal of chemical weapons from Okinawa.[11]

Events in the international diplomatic arena also gave added impetus to the need for the Nixon administration to define a clear policy on BW. At a meeting on July 10 of the Eighteen-Nation Disarmament Committee, a United Nations (UN) arms control negotiating forum based in Geneva, the United Kingdom tabled a draft treaty banning the production, possession, and use of biological weapons. In contrast to the 1925 Geneva Protocol, which prohibited the use in war of biological and chemical weapons, the UK draft convention proposed a comprehensive ban on BW but not CW. The rationale was that the time was ripe to outlaw biological weapons, which were perceived to have little military utility, but that negotiating a prohibition on chemical weapons, which had been used extensively in warfare, would be far more difficult. This British diplomatic initiative made it all the more urgent for the United States to develop a national policy on CBW.[12]

Divergent Agency Positions

In early August 1969, the NSC Review Group began to assess the PSAC report on chemical and biological weapons. The scientific experts had concluded that biological weapons had serious drawbacks from a military standpoint. Although lethal BW agents were more potent and cheaper to manufacture than lethal CW agents such as sarin and VX, biological pathogens were slower acting, less reliable in the field, and unpredictable in their effects, and had a shorter shelf life in storage. Because biological weapons caused acute symptoms only after an incubation period of several days, they had little utility on the battlefield and were best suited for attacks against population centers. Yet the effectiveness of BW for strategic deterrence and retaliation was limited because retaliatory use would entail lengthy delays to detect an enemy attack and deliver a counterattack to sicken the target population. Moreover, biological weapons would presumably be redundant in a nuclear exchange.[13]

The PSAC also worried that microbial pathogens released into the environment could create hazards that would remain long after a conflict ended: an infectious agent might mutate into a more deadly strain, or it could infect wild animals, creating persistent foci of infection that

would pose a serious threat to public health. Given these liabilities, the PSAC recommended halting the U.S. production and stockpiling of biological weapons, while retaining a strictly defensive research and development (R&D) program as a hedge against "technological surprise," meaning the possibility that an enemy might develop a new BW agent against which the United States had no medical countermeasures, such as vaccines or antibiotics. At the same time, the PSAC favored keeping BW production facilities in a standby state of readiness and continuing research on the chemical synthesis of toxins.

Meanwhile, two papers on CBW policy prepared by different offices at the Pentagon came to diametrically opposite conclusions. The first paper, written by the Office of Systems Analysis within OSD, was critical of BW agents as combat weapons and questioned their politico-military utility as instruments of deterrence and coercive diplomacy. In contrast, the military options paper, prepared by officials from JCS and the State Department's Bureau of Politico-Military Affairs, concluded that biological weapons were reliable and controllable in the field and that U.S. offensive BW capabilities should be preserved and even expanded. Deputy Defense Secretary David Packard showed the two contradictory papers to Secretary Laird, who expressed concern that the output of the NSSM process simply reflected the prejudices and parochial interests of the bureaucrats involved.

In response, Laird withdrew the military options paper and tasked the office of the Assistant Secretary of Defense for International Security Affairs with coordinating a new and more balanced document that reflected the views of the JCS, the individual military Services, and civilian offices within OSD such as the Office of Systems Analysis and the Office of Defense Development, Research, and Evaluation.[14] The Army Staff, which as the parent Service of the Chemical Corps had an institutional interest in retaining biological weapons, was not represented on the IPMG and remained largely shut out of the interagency deliberations. On August 15, Laird ordered the Army to halt all production of BW agents until the NSSM–59 review had been completed.[15]

Meanwhile, CBW issues were becoming politically more salient in the international arena. On September 19, 1969, Soviet Foreign Minister Andrei Gromyko gave a major speech on CBW policy to the UN General Assembly in which he proposed a multilateral treaty banning the development, production, and use of both chemical and biological weapons and the destruction of all existing stockpiles. Gromyko argued that chemical and biological weapons should be prohibited together because a separate ban on BW could delay indefinitely a solution to the problem of chemical warfare and might even exacerbate the U.S.-Soviet chemical arms race. The General Assembly First Committee, which deals with disarmament issues, was

scheduled to discuss CBW matters in early November. In the meantime, national delegations began informal consultations, increasing the pressure on the U.S. Government to develop a negotiating position.

The Pentagon Divided

On October 1, the revised military options paper coordinated by the office of the Assistant Secretary of Defense for International Security Affairs arrived on Defense Secretary Laird's desk for his review and approval. The paper still adhered to the JCS view that the United States should maintain balanced offensive and defensive BW programs. Laird, however, believed that the military drawbacks of biological warfare outweighed the benefits, and that "politically, it had become a tar baby."[16] The Defense Secretary was also aware that biological weapons did not have any powerful constituencies inside or outside the Pentagon apart from the Army Chemical Corps and the Army Chief of Staff, General William C. Westmoreland, to whom Laird felt no "downward loyalty." At the same time, Laird was convinced that chemical weapons had battlefield utility and remained critically important as a deterrent against the first use of CW by the Soviet Union and its Warsaw Pact allies.

The IPMG had scheduled a meeting on October 8 to review the agency papers prepared for NSSM–59. To the surprise of the other agency representatives, OSD submitted a paper with a new set of recommendations that differed from those in the military options paper and that the JCS had neither seen nor approved—and was therefore expected to oppose. Because of this unanticipated development, the IPMG devoted the meeting to reviewing the OSD paper. With respect to biological weapons, it called for abandoning an offensive capability and retaining only a defensive R&D program to safeguard against technological surprise. The OSD paper did not, however, specify what such a defensive capability would entail.[17]

After the IPMG met twice in mid-October to discuss and revise the summary options paper for NSSM–59, the NSC Review Group met on October 30 to refine the policy options. The members of the group agreed that the NSC principals should focus their discussion of U.S. biological warfare policy on three options. The first was to retain a full offensive BW capability (both lethal and incapacitating) for deterrence and retaliation, with an option for first use; the second was to retain a capability for the use of incapacitating biological weapons only; and the third was to retain an R&D capability for both offensive and defensive biological warfare, or for defensive purposes only. Kissinger explained that limiting BW research to defense would permit the development of warning devices and vaccines, but would not allow work on munitions or delivery systems designed for the conduct of biological warfare.[18]

The final version of the IPMG "Issues for Decision" paper, which was submitted to the NSC principals on November 10, included arguments for and against maintaining a lethal BW capability. Arguments in favor were that:

- maintenance of such a capability could contribute to deterring the use of such agents by others
- without any production capability and delivery means for lethal agents, the United States would not be able to reconstitute such a capability within likely warning times
- the United States would retain an option at very little additional cost as a hedge against possible technological surprise or as a strategic option.

Arguments against the maintenance of the capability were that:

- control of the area of effect of known BW agents is uncertain
- a lethal BW capability does not appear necessary to deter strategic use of lethal BW
- flexibility in supporting arms control agreements is limited.[19]

External Political Pressures

International developments continued to generate outside political pressures on the U.S. Government that influenced the internal deliberations over CBW policy. In the fall of 1969, in response to a call from UN Secretary-General U Thant, 12 nonaligned countries drafted a resolution affirming that the 1925 Geneva Protocol banned the use in war of tear gas, herbicides, and other nonlethal harassing agents. The United States, which was still employing tear gas and herbicides in Vietnam, was in the small minority of dissenting states. Around the same time, the United Nations released two scientific studies on chemical and biological weapons, one by the Secretary-General's Committee of Experts and the other by a group of consultants to the World Health Organization. Both reports described the devastating and indiscriminate effects that biological weapons could have on unprotected civilian populations.

The NSC principals were scheduled to meet on November 18 to consider the policy options generated by NSSM–59. On the evening before the meeting, Defense Secretary Laird called Kissinger and told him that a major flaw of the IPMG summary paper was that it had "completely overlooked" the public affairs dimension of the various options and, in particular, the moral repugnance with which biological warfare was almost universally regarded. Laird noted, "Biological research is something that can be supported, but biological warfare cannot be supported by anyone."[20]

Kissinger was dissatisfied with the policy options and arguments in the NSSM–59 summary. On November 17, the day before the NSC meeting, he had his staff prepare a separate "Issues for Decision" paper containing his personal recommendations. Significantly, this memo dropped the arguments that had been included in the IPMG summary paper in favor of a biological R&D program with an offensive component. Kissinger also personally recommended the option for a purely defensive BW research program, claiming that all agencies except the JCS supported it.[21]

The NSC Principals Meeting

On November 18, the members of the NSC convened in the Cabinet Room of the White House. After an intelligence briefing by DCI Richard Helms, Chairman of the Joint Chiefs of Staff General Earle Wheeler presented the JCS position, which continued to call for maintaining a full, offensive CBW capability. "With regard to our biological warfare program," Wheeler said, "its major value is deterrence. If this fails, then we have a modest ability to retaliate. . . . The JCS believes that, on balance, it has a low cost, that it would be a catastrophe if we can't respond, and there is a difficulty in verifying enemy capabilities. Therefore, the JCS believes that we must retain our present stockpile and the option of production if needed."[22] Wheeler argued that if the United States renounced its offensive BW capability, then in the event of an enemy biological attack, it would take a considerable amount of time to reconstitute the U.S. stockpile and delivery systems for retaliation. The Joint Chiefs also believed that the first use of biological incapacitants might be militarily effective under certain contingencies, such as an amphibious invasion.[23]

General Wheeler was isolated among the other NSC principals, however. All of the other agencies opposed the JCS position and endorsed the option to confine the BW program to defensive R&D. They believed that U.S. nuclear weapons could deter the enemy use of lethal biological agents, and that the controllability and effectiveness of such weapons were uncertain. Moreover, although biological incapacitating agents might possibly have some military utility in a first-use situation, employing them would risk escalation and would be condemned by most nations as a violation of international law (the 1925 Geneva Protocol). Presidential Science Advisor Lee DuBridge noted, for example, that the value of BW for strategic deterrence and retaliation was limited because an incubation period of up to 2 weeks would follow retaliation with a bacterial or viral agent before the effects of the attack became evident. For this reason, it would be more effective to retaliate against an enemy's use of biological weapons with either chemical or nuclear weapons.[24]

Secretary Laird, for his part, argued persuasively that CW and BW should not be lumped together because they were two "entirely different subjects." He stressed that although chemical weapons were essential for military deterrence and should be retained and eventually modernized, "BW does not have a deterrent quality." Accordingly, Laird believed that the United States should renounce offensive biological warfare, while retaining a strictly defensive R&D program to develop vaccines and other medical countermeasures, possibly under the auspices of civilian public health agencies.[25] Secretary of State William Rogers and ACDA director Gerard Smith also favored renouncing offensive BW for deterrence and retaliation, while maintaining a defensive biological R&D program and a robust CW capability.

General Wheeler realized that he was isolated and would have to back down. As a result, he joined the interagency consensus in favor of eliminating the offensive BW program. "We don't feel as strongly about BW as about CW," he explained. "We would like to see a minimal RDT&E [research, development, testing, and evaluation] program pointed to defense, guarding against offensive actions by the enemy."[26] At the same time, Wheeler took a hard line with respect to retaining U.S. offensive CW capabilities for deterrence and retaliation, as well as the continued combat use of tear gas and herbicides in Vietnam.

The President's Decision

Once the NSC principals had reached a consensus in favor of the option to confine the BW program to defensive R&D only, President Nixon also expressed support for that position. Several considerations factored into his decision to renounce biological weapons, which he viewed as a military and political calculation and not a moral issue. First, the Strategic Arms Limitation Talks with the Soviet Union were Nixon's primary arms control concern. In that realm, he faced fractious interagency squabbles, and he wished to avoid the same internal battles over the BW decision.

Second, the PSAC and other critics had convinced him that biological weapons had limited tactical utility on the battlefield and did not constitute a reliable or effective strategic deterrent. The lack of institutional support for an offensive BW capability from within the uniformed military—with the sole exception of the Army, which defended the interests of the Chemical Corps—eased the decision to give up what was widely viewed as a marginal capability. At the same time, Nixon was aware that biological weapons in the hands of hostile countries posed a potential strategic threat to the United States. The U.S. Army had secretly conducted large-scale field trials with BW stimulants released from aircraft that had demonstrated that biological weapons could pose a mass-casualty threat to American cities. Accordingly, it was desirable to discourage the acquisition of these weapons by additional states

and to maintain strategic deterrence on the basis of other weapons systems. Unilateral U.S. renunciation of its own BW capability would send the message that biological weapons were ineffective, thereby discouraging hostile states from acquiring a "poor man's atomic bomb" that could serve as a military equalizer.

Third, public relations considerations played a major role in the President's decision. During the NSC deliberations, Nixon observed that the public perception of the BW issue was "very important." In particular, it was essential to separate BW from CW because the general public tended to view both categories of weapon as a single issue, despite the fact that there was no significant international pressure to eliminate CW stockpiles. By renouncing BW, a category of armament that was widely considered to be morally repugnant, the United States would have an easier time retaining its CW capability, which was far more important to the Pentagon. The BW decision would also dampen criticism of the ongoing U.S. combat use of tear gas and herbicides in Vietnam, which the JCS believed should continue as long as U.S. troops remained on the ground. Finally, the President wanted to be seen as a "man of peace" at a time when the Vietnam War was provoking strong opposition at home and abroad, while reassuring his supporters that he was safeguarding the Nation's security. To this end, Nixon told the NSC principals that he wanted "a positive public statement. It should emphasize that this is an example of the right leadership, but which has the national security in mind."[27] The President added that the statement should be released on a Sunday to ensure prominent coverage in the Monday morning newspapers.[28]

Although the Chemical Corps was not pleased with the President's decision to renounce the U.S. offensive biological warfare capability, the Army leadership did not attempt to block or circumvent the new policy. One reason was that in contrast to his predecessor, Robert McNamara, Defense Secretary Laird had a fairly harmonious relationship with the Services. In addition, by 1969, the Services had ceded much of their authority to the civilian leaders in OSD and had been sidelined in the policymaking process.[29]

Nixon announced his new policy on biological warfare at a press conference in the Roosevelt Room of the White House on November 25, 1969. "Biological weapons have massive, unpredictable, and potentially uncontrollable consequences," he declared. "They may produce global epidemics and impair the health of future generations." In recognition of these dangers, he continued, the United States had decided to destroy its entire stockpile of biological agents and confine its future biological research program to defensive measures, such as vaccines and field detectors. The President stated his intent to resubmit the 1925 Geneva Protocol to the U.S. Senate for its consent to ratification, and he also expressed support for the "principles and objectives" of the

British draft convention calling for a global ban on the development, production, stockpiling, and transfer of biological weapons. "These important decisions," Nixon intoned, "have been taken as an initiative toward peace. Mankind already carries in its own hands too many of the seeds of its own destruction. By the example we set today, we hope to contribute to an atmosphere of peace and understanding between nations and among men."[30]

The President's statement was widely praised, both domestically and internationally. A top secret document, National Security Decision Memorandum (NSDM) 35, also issued on November 25, contained the formal decision to renounce an offensive BW capability. The classified memo differed from Nixon's public remarks, however, by providing a good deal of flexibility for the U.S. biodefense program. In particular, NSDM–35 included a provision authorizing research into "those offensive aspects of bacteriological/biological agents necessary to determine what defensive measures are required."[31] By declining to provide a precise definition or guidelines for what constituted defensive R&D, the decision memorandum left such determinations to the individual agencies doing the work.[32]

Toxins: A Major Loose End

President Nixon's November 25 statement did not mention toxins. Existing in a gray area between biological and chemical agents, toxins are produced by living organisms but are themselves nonliving. These characteristics caused some to claim that toxins were biological agents, while others considered them chemical. By 1969, the United States had developed and stockpiled small quantities of two toxin weapons: botulinum toxin, a lethal agent, and *Staphylococcus* enterotoxin B (SEB), an incapacitating agent. From the military's point of view, toxins were potentially more effective than classical chemical weapons because of their greater potency per unit weight, which made them capable of covering a larger area with a smaller quantity of agent. Based on promising results in field trials, the U.S. Army planned to standardize and mass-produce SEB as an incapacitating agent that could put enemy troops out of action for a few days. Nevertheless, the tactical advantages of toxins were offset by several drawbacks: they were not as stable as manmade chemicals, tended to deteriorate rapidly in sunlight, could not penetrate the skin (unlike chemical nerve agents), and had an incubation period of 1 to 6 hours before symptoms developed, making them faster acting than microbial pathogens but much slower acting than nerve agents.

Although the discussions by the IPMG and the NSC staff had touched on toxins, the topic was considered too arcane to include in the final "Issues for Decision" package for NSC principals. As a result, the question was not raised during the key NSC meeting on November 18.

Several months later, during a background briefing for the press, Kissinger admitted that the exclusion of toxins from the decision process had been a "slip up."[33] Now that NSDM–35 had been issued, the ambiguity over the extent to which toxins were covered by Nixon's decision created a sharp divergence of views within the U.S. Government. Secretary Laird and most of the other offices within the Defense Department believed that toxin agents were properly defined as chemicals and could therefore be used in retaliation against an attacker that employed chemical weapons first. For their part, the U.S. Army BW scientists at Fort Detrick saw the omission of toxins from the President's speech as a loophole through which they could continue their work, and they rewrote their research proposals to focus on toxins rather than microbial pathogens.[34]

The State Department and ACDA, in contrast, believed that toxins were more properly classified as biological weapons for the purposes of the President's new policy. In December 1970, an article in the *New York Times* reported that State and ACDA strongly opposed the Army's plan to resume the production of toxins at Pine Bluff Arsenal.[35] In a telephone conversation with Kissinger on December 16, Secretary Laird angrily accused ACDA officials of leaking the story to the *Times* and remarked, "We've got to shut ACDA people up on the toxin thing. They are saying we don't consider toxins as chemicals. Everyone agrees they are chemicals. We aren't manufacturing them and we haven't manufactured them, but I don't want to come out and announce that. . . . We don't want to give away our negotiating position in advance."[36]

Kissinger asked Michael Guhin of the NSC staff to prepare a memorandum setting out the pros and cons of retaining a complete toxin weapons program versus confining it to research for defensive purposes only. Two days after his telephone conversation with Laird, Kissinger received a memo from Guhin that argued:

> We should avoid the semantic problem and affirm the definition of toxins as chemicals. (No agency disagrees with the definition.) The question of the extent of the U.S. toxin program should then be decided on the basis of their relative utility as chemical weapons and whether or not their stockpiling contributes to national security. . . . Whatever the decisions on this matter, I believe that the primary objective should be to avoid any unnecessary erosion of the President's announced decisions on chemical warfare and biological research.[37]

Policy Review on Toxins

The growing confusion both inside and outside the Federal Government over the U.S. policy on toxins led Kissinger to ask President Nixon to authorize an expedited interagency review of the issue. To that end, NSSM–85, "Review of Toxins Policy," was issued on December 31, 1969.[38] The NSC staff believed that allocating only 2 weeks for the study was justified by the narrow scope of the topic, the fact that State, Defense, and the JCS were already preparing an options paper on toxins, and the growing concern that the controversy was sowing doubts about the President's earlier BW decision.[39]

The IPMG was tasked with coordinating the policy review and met twice, on January 7 and 10, to discuss the draft options paper. During the interagency debate, Laird sided this time with the uniformed military in defining toxins as CW agents. State Department officials countered that most toxins of military interest (such as botulinum toxin and SEB) were produced by bacteria, which were grown in large fermentation tanks that were identical to those used to produce microbial agents such as anthrax spores. Thus, maintaining the toxin production facilities at Pine Bluff Arsenal would seriously undermine the credibility of the U.S. renunciation of BW and might forfeit the international goodwill that the President had reaped from his decision. Indeed, a rather sardonic editorial in the *Washington Post* observed, "The revulsion generally felt against biological warfare arises from the conviction that disease should not be used as a weapon of war. Surely the President did not mean that, while a disease induced by living bacteria is out of bounds, a disease induced by a toxin is acceptable. He can scarcely have renounced typhoid only to embrace botulism."[40]

On January 21, the IPMG submitted to the NSC Review Group a 30-page summary paper laying out the various policy options relating to toxin weapons.[41] The three main options were as follows:

- Option I: Keep entirely open the option to produce and employ toxin warfare agents
- Option II: Do not produce toxins now, but keep open the possibility of stockpiling them if a method is devised to manufacture them by chemical synthesis, without the need for production in bacteria
- Option III: Give up toxin weapons entirely, whether produced by biological fermentation or by chemical synthesis, and permit work only on defensive measures against them, such as vaccines and more effective gas masks.

On January 29, the NSC Review Group met to discuss the IPMG options paper.[42] The State Department and ACDA representatives supported Option III on the grounds that a capability

to retaliate with toxins was not essential to U.S. national security. Because most toxins could not penetrate the skin, they were easier to defend against than chemical nerve agents and would not add any significant capability to the existing and planned U.S. chemical arsenal. Moreover, the military benefits of toxin weapons were outweighed by the domestic and international political costs: diluting the favorable impact of the President's BW decision, undercutting international support for the British draft convention, complicating efforts to obtain Senate consent to ratification of the 1925 Geneva Protocol, and making it harder to limit toxin warfare programs by other states.[43] ACDA director Smith also expressed concern that an indication of U.S. military interest in toxins might stimulate their acquisition by other countries.[44] Although renouncing an offensive toxin warfare capability involved some risk of raising questions about the continued U.S. retention of chemical weapons, inasmuch as toxins were classified as chemical agents, the State Department regarded this risk as low.[45]

The Department of Defense was divided on the toxins issue. The JCS favored Option I, under which the United States would develop and stockpile toxins produced either by biological processes or by chemical synthesis, thereby retaining maximum flexibility. Arguments for Option I were that it provided an enhanced CW deterrent capability, was consistent with the President's declared policy on chemical warfare, created a bargaining chip should the United States decide later to renounce toxin weapons, and avoided a premature decision while giving sufficient time to assess the military potential of toxins.

The Pentagon's civilian leadership—Secretary Laird and Deputy Secretary Packard—supported Option II, which called for banning toxins produced by bacterial fermentation but permitting those made by chemical means, even though the large-scale synthesis of toxins would not be technically feasible for another 5 years.[46] Retaining the right to conduct offensive R&D on toxins would enable the United States to experiment with delivery systems and production technologies, whereas strictly defensive R&D would not. Science advisor DuBridge also endorsed Option II as "the soundest way to implement the policy the President has already enunciated and at the same time permit the Department of Defense to develop additional capabilities with toxins when they are synthesized as ordinary chemicals."[47]

After the NSC Review Group meeting, the IPMG options paper was revised one more time to permit a significant modification: adding public affairs pros and cons for each policy option. Frank Shakespeare, the director of the U.S. Information Agency (USIA), cautioned in a memorandum to Kissinger that toxins were a "sleeper issue" that could potentially damage the President's reputation at home and abroad. He explained, "The repugnance with which the public regards such agents—whether they are classified as chemical or biological—is so great

that technical explanations and attempts to justify rationally their possible military use would fall mainly upon deaf ears." For this reason, USIA endorsed Option III (defensive research only) because it "would raise no issue of duplicity and would carry here and abroad a forthright ring of honest follow-through on the President's announcement."[48]

In a decision memo to the President that summarized the various agency positions on toxins, Kissinger recommended that Nixon approve Option II, which called for continuing offensive and defensive research on toxins produced by chemical synthesis, and defensive-only research on those produced by biological fermentation. Kissinger favored this position for two reasons: it would buy time to explore the military utility of toxins and not "unilaterally foreclose development of what may be a useful weapons system," and it would avoid exposing the U.S. chemical weapons program to possible political attack. Kissinger discounted Shakespeare's argument about the repugnance with which the general public viewed toxin weapons. In his view, the greater public relations concern was the public's tendency to lump toxins together with classical chemical weapons. Thus, if the United States abandoned the former outright, critics at home and abroad would call into question the continued existence of the latter. "If we are willing to renounce one chemical weapon produced by chemical means, the argument will run, why should we not renounce all chemical weapons," the national security advisor wrote. "I do not believe that we should run this risk."[49]

Kissinger brought the decision memo along when he accompanied Nixon to Key Biscayne, Florida, on February 10. While there, he reportedly changed his mind and wrote a new memo for the President in which he endorsed a defensive R&D program for toxins (whether produced by bacterial fermentation or chemical synthesis) that could also protect against technological surprise.[50]

The President Decides

Instead of convening a formal meeting of NSC principals to discuss the options paper on toxins, President Nixon simply read the paper and made a final decision. Despite Laird's expressed preference for Option II, the President wrote on the decision memo in capital letters, "OPTION III," meaning that he wished to confine the U.S. toxins program to defensive R&D. Nixon's political instincts told him that any retention of toxin weapons would be hard to reconcile with his earlier decision to renounce biological weapons because the technical distinction between toxins produced by biological or chemical means was simply too fine a point for the general public to grasp. Another possible factor in the decision was Nixon's desire to reduce tensions with the Soviet Union to facilitate progress in the Strategic Arms Limitation Talks, which had begun in November 1969.[51]

On February 14, 1970, the White House press secretary released a statement in Key Biscayne that clarified the President's earlier decision to renounce biological weapons by declaring that the United States would henceforth abandon "offensive preparations for and the use of toxins as a method of warfare." All existing U.S. stocks of toxin agents would be destroyed, except for small amounts needed for defensive research. The White House statement explained that although toxins were properly classified as chemical substances:

> the production of toxins in any significant quantity would require facilities similar to those needed for the production of biological agents. If the United States continued to operate such facilities, it would be difficult for others to know whether they were being used to produce only toxins but not biological agents. Moreover, though toxins of the type useful for military purposes could conceivably be produced by chemical synthesis in the future, the end product would be the same and their effects would be indistinguishable from toxins produced by bacteriological and other biological processes. . . . The United States hopes that other nations will follow our example with respect to both biological and toxin weapons.[52]

A National Security Decision Memorandum on toxins, NSDM–44, was issued on February 20, 1970.[53] By extending the unilateral ban on biological weapons to cover all toxins, regardless of their means of production, Nixon's decision closed the potential loophole that would have been created by the future chemical synthesis of toxin agents and resulted in a U.S. policy that was cleaner and less ambiguous.

Consequences and Legacy

President Nixon's decision to renounce biological and toxin weapons marked the end of three assumptions that had long provided the foundation of U.S. CBW policy: that chemical and biological weapons were inextricably linked, that the United States needed to maintain an offensive BW capability to deter the use of such weapons by others, and that the United States must be prepared to retaliate in kind to a biological attack. Moreover, by establishing for the first time a clear distinction between chemical and biological weapons, the President's decision made it easier for the United States to support the United Kingdom's draft convention to ban biological and toxin weapons while resisting diplomatic pressures from the Soviet Union and its allies to expand the prohibition to cover CW.

Between May 1971 and May 1972, the Army destroyed the stockpile of antipersonnel biological agents stored at Pine Bluff Arsenal, including dried preparations of anthrax bacteria, tularemia bacteria, and Venezuelan equine encephalitis virus; liquid suspensions of Venezuelan equine encephalitis virus and Q-fever rickettsia; and tens of thousands of munitions filled with biological and toxin agents and stimulants. The two anticrop agents stored at Rocky Mountain Arsenal in Colorado were destroyed over the same period. Authorized biodefense research was thenceforth limited to the development of diagnostic tools, therapeutic drugs, protective vaccines, and detection and warning systems, as well as vulnerability studies and field tests of defensive equipment.[54]

The U.S. renunciation of biological and toxin weapons was the first time that a major power unilaterally abandoned an entire category of armament. This step opened the way for the rapid negotiation of the 1972 Biological and Toxin Weapons Convention (BWC) banning development, production, stockpiling, and transfer. In 1974, President Gerald R. Ford, who had assumed power after Nixon's resignation, submitted the BWC and the 1925 Geneva Protocol simultaneously to the U.S. Senate for its advice and consent to ratification. Consent was duly granted on December 16, 1974, and the BWC entered into force on March 26, 1975.[55] At the same time that the United States ratified the Geneva Protocol, however, President Ford issued Executive Order 11850 permitting the use in war with Presidential authorization of riot-control agents "in defensive military modes to save lives," such as rescuing downed pilots behind enemy lines or when civilians are used to mask or screen attacks.[56]

Despite the wisdom of President Nixon's decision, which has been confirmed over the ensuing decades, the fact that the United States had unilaterally renounced biological warfare reduced the incentive for U.S. negotiators of the BWC to demand effective mechanisms for verification and compliance. (The Soviet Union also strongly resisted intrusive onsite inspections, which it viewed as tantamount to espionage.) As a result, the sole enforcement measure included in the treaty—the option to refer compliance concerns to the UN Security Council—was exceedingly weak because any of the five permanent members of the council, including the Soviet Union, could block an investigation. Indeed, no sooner was the ink dry on the BWC than the United States began to suspect that the Soviet Union was continuing its offensive BW program in secret, which later turned out to be the case. (The Soviets, for their part, believed that President Nixon's renunciation of BW was a hoax designed to conceal a covert offensive program.[57]) Throughout the remainder of the Cold War, the United States alleged on several occasions that the Soviet Union was violating the BWC. Yet Nixon's decision was

never revisited, primarily because concerns about Soviet cheating were regarded as irrelevant to the larger strategic rationale behind the U.S. unilateral renunciation.

Long after President Nixon's decision to renounce biological and toxin weapons, the United States retained an offensive CW program. During the 1980s, President Ronald Reagan persuaded Congress to modernize the U.S. chemical arsenal by funding the manufacture of "binary" sarin artillery shells from 1987 until 1990, when Washington and Moscow signed the Bilateral Destruction Agreement banning further CW agent production. President George H.W. Bush took a different view of chemical weapons and, like Nixon two decades earlier, sought to eliminate this category of armaments. Despite resistance from the Pentagon, President Bush ultimately prevailed and in January 1993, in one of the last official acts of his administration, the United States abandoned its offensive CW program by signing the Chemical Weapons Convention (CWC).[58] U.S. ratification of the treaty followed 4 years later during the administration of President Bill Clinton, shortly before the CWC entered into force in April 1997.[59]

Notes

[1] Ed Regis, *The Biology of Doom: The History of America's Secret Germ Warfare Project* (New York: Henry Holt, 1990), 210–211.

[2] Ibid.

[3] Jeffrey K. Smart, "History of Chemical and Biological Warfare: An American Perspective," in *Textbook of Military Medicine*, part. 1: *Warfare, Weaponry, and the Casualty: Medical Aspects of Chemical and Biological Weapons*, ed. Frederick R. Sidell, Ernest T. Takafuji, and David R. Franz (Washington, DC: Borden Institute, Walter Reed Army Medical Center, 1997), 62.

[4] Morton Halperin in Ivo H. Daalder and I.M. Destler, moderators, "Arms Control Policy and the National Security Council," *The National Security Council Project: Oral History Roundtables* (Washington, DC: Center for International and Security Studies at Maryland and Brookings Institution, March 23, 2000), 9–10.

[5] Memorandum from Melvin Laird to the President's Assistant for National Security Affairs (Kissinger), Washington, DC, April 30, 1969, in *Foreign Relations of the United States*, vol. E–2, *Documents on Arms Control and Nonproliferation, 1969–1972* (hereafter FRUS), document 139, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83567.htm>.

[6] The U.S. Arms Control and Disarmament Agency (ACDA) was established as an independent agency of the U.S. Government in 1961 with the mission to strengthen national security by "formulating, advocating, negotiating, implementing, and verifying effective arms control, nonproliferation, and disarmament policies, strategies, and agreements." In 1997, the Clinton administration announced the integration of the ACDA with the State Department, and by April 1999, the agency had been merged with State by creating the Bureau of Arms Control and the Bureau of Nonproliferation. In 2000, a Bureau for Verification, Compliance, and Implementation was added by statute. All three bureaus reported to the Secretary of State through the Under Secretary of State for Arms Control and International Security Affairs. A further reorganization of the State Department's arms control bureaucracy took place during the administration of George W. Bush.

[7] National Security Study Memorandum 59, May 28, 1969, in FRUS, document 141, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83569.htm>.

[8] Because of opposition from the U.S. Chemical Warfare Service (later the U.S. Army Chemical Corps) and the chemical industry, the United States had signed but never ratified the 1925 Geneva Protocol. The treaty had languished for years in the U.S. Senate and was finally withdrawn by President Harry Truman in 1948.

[9] Ivan Bennett, dean of the New York University School of Medicine, chaired the panel, which included Harvard molecular biologist Matthew Meselson, Harvard chemistry professor Paul Doty, IBM physicist Richard Garwin, and others.

[10] Smart, 63.

[11] Ibid.

[12] U.S. Arms Control and Disarmament Agency, "U.K. Draft Convention on Biological Warfare, July 10, 1969," *Documents on Disarmament, 1969* (Washington, DC: U.S. Government Printing Office, 1970), 324–326. The UK draft convention did not include on-site verification measures, although it did contain procedures for the investigation of treaty violations under United Nations auspices.

[13] Forrest Russell Frank, "U.S. Arms Control Policymaking: The 1972 Biological Weapons Convention Case," Ph.D. dissertation, Stanford University, November 1974, 114.

[14] Memorandum from Secretary of Defense Laird to the Assistant Secretary of Defense for International Security Affairs (Nutter), Washington, DC, August 6, 1969, in FRUS, document 143, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83571.htm>.

[15] David I. Goldman, "The Generals and the Germs: The Army Leadership's Response to Nixon's Review of Chemical and Biological Warfare Policies in 1969," *Journal of Military History* 73 (April 2009), 551.

[16] Michael Guhin in Ivo H. Daalder and I.M. Destler, moderators, "The Nixon Administration National Security Council," *The National Security Council Project: Oral History Roundtables* (Washington, DC: Center for International and Security Studies at Maryland and Brookings Institution, December 8, 1999), 37.

[17] Goldman, 551.

[18] Minutes of National Security Council Review Group Meeting, Washington, DC, October 30, 1969, 2:25–3:55 p.m., in FRUS, document 155, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83585.htm>.

[19] Report prepared by the Interdepartmental Political-Military Group, "U.S. Policy on Chemical and Biological Warfare and Agents," submitted in response to NSSM–59, Washington, DC, November 10, 1969, 24–25, in FRUS, document 158, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83588.htm>.

[20] Notes of telephone conversation between the President's Assistant for National Security Affairs (Kissinger) and Secretary of Defense Laird, Washington, DC, November 17, 1969, 7:00 p.m., in FRUS, document 159, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83589.htm>.

[21] Memorandum from the President's Assistant for National Security Affairs (Kissinger) to President Nixon, with attached "Issues for Decision" paper, Washington, DC, November 17, 1969, in FRUS, document 158, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83588.htm>.

[22] Minutes of National Security Council Meeting, Washington, DC, November 18, 1969, 2–3, in FRUS, document 161, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83592.htm>. In attendance were President Nixon, Vice President Spiro Agnew, National Security Advisor Kissinger, Secretary of State William Rogers, Secretary of Defense Laird, Chairman of the Joint Chiefs of Staff General Wheeler, U.S. Arms Control and Disarmament Agency Director Gerard Smith, Director of Central Intelligence Helms, and Presidential Science Advisor DuBridge.

[23] Memorandum from the President's Assistant for National Security Affairs (Kissinger) to President Nixon, Washington, DC, November 17, 1969, Attachment: Issues for Decision, 1, in National Archives, Nixon Presidential Materials, NSC Files, NSC Institutional Files, Box H–25, NSC Meeting, 11/18/69, CBW, NSSM 59, National Archives and Records Administration II (hereafter NARA II), College Park, Maryland.

[24] Minutes of National Security Council Meeting, Washington, DC, November 18, 1969, 4.

[25] Ibid., 5–6.

[26] Ibid., 4.

[27] Ibid., 7.

[28] Ibid.

[29] Goldman, 568.

[30] President Richard Nixon, "Statement on Chemical and Biological Defense Policies and Programs, November 25, 1969," *Public Papers of the Presidents* (Washington, DC: U.S. Government Printing Office, 2004), 968–969.

[31] National Security Decision Memorandum 35, Washington, DC, November 25, 1969, in FRUS, document 165, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83596.htm>.

[32] In 2001, *The New York Times* revealed that the U.S. Intelligence Community had secretly pursued biodefense research projects that critics believed crossed the line of what was permitted under the 1972 Biological and Toxin Weapons Convention, such as the recreation of a Soviet bomblet designed to disperse biological agents. See Judith Miller, Stephen Engelberg, and William J. Broad, "U.S. Germ Warfare Research Pushes Treaty Limits," *The New York Times*, September 4, 2001, A1, A6.

[33] Transcript of background briefing, "Administration Policy Concerning Toxins," with Presidential Press Secretary Ronald Ziegler and National Security Advisor Henry A. Kissinger, Key Biscayne, Florida, February 14, 1970, in FRUS, document 189.

[34] William C. Patrick III, "A History of Biological and Toxin Warfare," in *Director's Series on Proliferation*, no. 4, ed. Kathleen C. Bailey (Livermore, CA: Lawrence Livermore National Laboratory, May 23, 1994, UCRL–LR–114070–4), 19.

[35] Robert M. Smith, "Two Agencies Clash Over Toxins," *The New York Times*, December 16, 1969.

[36] Notes of telephone conversation between the President's Assistant for National Security Affairs (Kissinger) and Secretary of Defense Laird, Washington, DC, December 16, 1969, 12:30 p.m., in FRUS, document 169, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83600.htm>.

[37] Memorandum from Michael Guhin of the National Security Council Staff to the Assistant to the President for National Security Affairs (Kissinger), Washington, DC, December 18, 1969, in FRUS, document 170, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83601.htm>.

[38] National Security Study Memorandum 85, Washington, DC, December 31, 1969, in FRUS, document 173, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83604.htm>.

[39] Memorandum from Michael Guhin of the National Security Council Staff to the President's Assistant for National Security Affairs (Kissinger), Washington, DC, December 30, 1969, in FRUS, document 172, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83603.htm>.

[40] Editorial, "A Disease by Any Other Name . . .", *The Washington Post*, January 9, 1970, A16.

[41] Report Prepared by the Interdepartmental Politico-Military Group, Washington, DC, January 21, 1970, in National Archives, Nixon Presidential Materials, NSC Files, NSC Institutional Files, Box H–26, NSC Meeting 2/11/70, Policy on Toxins, NARA II.

[42] Minutes of the National Security Council Review Group Meeting, Washington, DC, January 29, 1970, 2:37–4:00 p.m., 3–4, in FRUS, document 176, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83607.htm>.

[43] Memorandum from Acting Secretary of State Elliott Richardson to President Nixon, Washington, DC, February 10, 1970, in FRUS, document 185, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83622.htm>.

[44] Memorandum from the Director of the Arms Control and Disarmament Agency (Smith) to the President's Assistant for National Security Affairs (Kissinger), Washington, DC, February 9, 1970,

in National Archives, Nixon Presidential Materials, NSC Files, NSC Institutional Files, Box H–26, NSC Meeting 2/11/70, Policy on Toxins.

[45] Memorandum from Acting Secretary of State Richardson to President Nixon, Washington, DC, February 10, 1970, in National Archives, RG 58, Central Files 1970–1973, POL 27–10, NARA II.

[46] Memorandum from the Deputy Secretary of Defense (Packard) to the President's Assistant for National Security Affairs (Kissinger), Washington, DC, February 12, 1970, in FRUS, document 187, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83625.htm>.

[47] Memorandum from the President's Science Advisor (DuBridge) to the President's Assistant for National Security Affairs (Kissinger), Washington, DC, February 10, 1970, in FRUS, document 184, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83621.htm>.

[48] Memorandum from the Director of the U.S. Information Agency (Shakespeare) to the President's Assistant for National Security Affairs (Kissinger), Washington, DC, undated, in FRUS, document 182, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83619.htm>.

[49] Memorandum from the President's Advisor for National Security Affairs (Kissinger) to President Nixon, Washington, DC, undated, in FRUS, document 188, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83626.htm>.

[50] Goldman, 564, note 123.

[51] Author (Tucker) interview with Michael Guhin, Washington, DC, August 6, 2001.

[52] Office of the White House Press Secretary (Key Biscayne, FL), Statement on Toxins, February 14, 1970, in FRUS, document 189, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83627.htm>.

[53] National Security Decision Memorandum 44, Washington, DC, February 20, 1970, in FRUS, document 190, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83628.htm>.

[54] Memorandum from Secretary of Defense Laird to President Nixon, Washington, DC, July 6, 1970, in FRUS, document 199, available at <www.state.gov/r/pa/ho/frus/nixon/e2/83638.htm>.

[55] U.S. Arms Control and Disarmament Agency, *Arms Control and Disarmament Agreements: Texts and Histories of the Negotiations* (Washington, DC: Arms Control and Disarmament Agency, 1990), 131.

[56] President Gerald R. Ford, "Executive Order 11850—Renunciation of Certain Uses in War of Chemical Herbicides and Riot-Control Agents," April 8, 1975, available at <www.archives.gov/federal-register/codification/executive-order/11850.html>.

[57] Ken Alibek with Stephen Handleman, *Biohazard: The Chilling True Story of the Largest Covert Biological Weapons Program in the World—Told from Inside by the Man Who Ran It* (New York: Random House, 1999), 234.

[58] President George H.W. Bush,"Statement on the Completion of the Chemical Weapons Convention, 13 January 1993," *Public Papers of the Presidents* (Washington, DC: U.S. Government Printing Office, 2005).

[59] On April 24, 1997, the U.S. Senate gave its consent to ratification of the Chemical Weapons Convention (CWC) with a long list of conditions, including Condition 26, which requires the President to certify to Congress that the United States is not restricted by the CWC in the use of riot-control agents. See U.S. Senate, Resolution of Ratification of the Chemical Weapons Convention, S. Res. 75, 105th Congress, April 24, 1997.

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