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Résumé de l'article

En 1957, un petit groupe de scientifiques de renommée mondiale se réunit à Pugwash, en Nouvelle-Écosse pour discuter de la menace croissante des armes nucléaires. Financée par l'industriel Cyrus Eaton et dirigée par le philosophe Bertrand Russell et physicien Joseph Rotblat, cette réunion 1957 mène à la fondation d'une organisation de scientifiques croyant qu'ils ont le devoir de s'élever contre l'escalade des essais nucléaires et de ce qu'ils considèrent comme l'utilisation irresponsable de la science. Cependant, pas tous les scientifiques estiment qu'il est approprié de prendre une position publique et politique. Ce document donne un bref historique du mouvement Pugwash et pourquoi sa première réunion s'est tenue en Nouvelle-Écosse. Nous examinons les points de vue des scientifiques impliqués, et contrastons les attitudes des participants à la conférence avec celles des scientifiques qui ont refusé de jouer un rôle public. Cet article explore comment les scientifiques perçoivent leur propre responsabilité pour agir, examinant leur volonté d'utiliser leur identité culturelle en tant que scientifiques pour faire pression pour une position politique particulière.

Taking a Stand : Exploring the Role of the Scientists prior to the First Pugwash Conference on Science and World Affairs, 1957*

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Abstract : In 1957, a small group of world-renown scientists gathered in Pugwash, Nova Scotia to discuss the growing threat of nuclear arms. Funded by industrialist Cyrus Eaton and spearheaded by philosopher Bertrand Russell and physicist Joseph Rotblat, this 1957 meeting founded an organization of scientists that believed they had a duty to speak out against escalating nuclear testing and what they saw as the irresponsible use of science. However, not every scientist felt that it was appropriate to take a public and political stand. This paper gives a brief history of the Pugwash movement and how its first meeting came to be held in Pugwash, Nova Scotia. The perspectives of involved scientists are examined, contrasting the attitudes of participants in the conference with the attitudes of scientists who declined a public role. This paper explores how scientists perceived their own responsibility to act, examining the willingness to use their cultural identity as scientists to lobby for a particular political position.

Résumé : En 1957, un petit groupe de scientifiques de renommée mondiale se réunit à Pugwash, en Nouvelle-Écosse pour discuter de la menace croissante des armes nucléaires. Financée par l'industriel Cyrus Eaton et dirigée par le philosophe Bertrand Russell et physicien Joseph Rotblat, cette réunion 1957 mène à la fondation d'une organisation de scientifiques croyant qu'ils ont le devoir de s'élever contre l'escalade des essais nucléaires et de ce qu'ils considèrent comme l'utilisation irresponsable de la science. Cependant, pas tous les scientifiques estiment qu'il est approprié de prendre une position publique et politique. Ce document donne un bref historique du mouvement Pugwash et pourquoi sa première réunion s'est tenue en Nouvelle-Écosse. Nous examinons les points de vue des scientifiques impliqués, et contrastons les attitudes des

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participants à la conférence avec celles des scientifiques qui ont refusé de jouer un rôle public. Cet article explore comment les scientifiques perçoivent leur propre responsabilité pour agir, examinant leur volonté d'utiliser leur identité culturelle en tant que scientifiques pour faire pression pour une position politique particulière.

On July 7, 1957, twenty-two eminent scientists from across the world convened a meeting in a one-room schoolhouse in Pugwash, Nova Scotia. The purpose of this meeting was to discuss nuclear weapons, their development, testing and stockpiling during the Cold War, and what threat the testing and use of these weapons posed for the future. The movement that lead to this meeting, which came to be known as the first Pugwash Conference on Science and World Affairs, was initiated by a small group of physicists from various nations, including Max Born from Germany, Frédéric Joliot-Curie from France, and Joseph Rotblat, Cecil Powell and Eric Burhop from Britain. The British philosopher and peace activist Bertrand Russell used his public profile to help organize and publicize the event prior to the first conference.

In his speeches and letters from this time, Russell advanced the idea that scientists were particularly well positioned to speak on the topic of nuclear disarmament. Russell describes scientists as having a special moral authority on this issue, in part because their scientific training had developed in them skills of detachment and objectivity. A scientist might contribute to a political debate, Russell suggests, with the same reasoning he applies to a scientific hypothesis. Additionally, Russell felt that scientists were obliged to speak out about the uses and ongoing development of nuclear weapons, as they had played a significant role in unleashing these dangers upon mankind.[1] Furthermore, Russell intoned that the opinions of scientists on the nuclear issue ought to outweigh the opinions of national and military leaders. Russell wrote : “We all have our prejudices in favour of one side or the other, but in view of the common peril it seems to me that men capable of scientific detachment ought to be able to achieve an intellectual neutrality, however little they may be neutral emotionally”.[2] Russell saw the scientist’s quality of intellectual neutrality as especially valuable given the hyperbolic politics

1. Bertrand Russell, “The Choice is Ours,” in *The Collected Papers of Bertrand Russell*, vol. 28, *Man’s Peril, 1954-55*, ed. Andrew G. Bone (London : Routledge, 2003), 294. Also see in the same volume “The Road to Peace,” 286.

2. Bertrand Russell to Joliot-Curie, 4 February 1955, RA 1 *600 x 1/1 file-1 (box 1.36), The Bertrand Russell Archives, McMaster University, Hamilton, Ontario, Canada. Hereafter, references to correspondence in this archive will be cited by the accession number.

complicating the nuclear debate. If eminent scientists from differing ideologies could agree on a public statement about the dangers, this message would carry the reasoned and detached perspective the scientists themselves embodied. A public statement from scientists could thereby gain traction within a polarized political landscape. Because of their collective responsibility as the creators of nuclear weapons science, and because they had the ability to reach detached and politically neutral conclusions, Russell advocated that scientists had a particular responsibility to act.

Joseph Rotblat, one of the other founders of the Pugwash movement, also believed that scientists were uniquely equipped to tackle political issues. He stated : "We knew one another from our scientific work, either personally or from reading each other's research papers, and we had faith in each other's scientific integrity. We were able to build on this confidence by using rational analysis and objective inquiry to discuss problems that were, to a large extent, political in nature."[3] While Joseph Rotbalt and Bertrand Russell believed that scientific training made a person uniquely qualified, and furthermore uniquely responsible, to speak out against the use of nuclear weapons, not all scientists interpreted their role as one that included making declarations about matters that were of deep political significance.

This paper will examine whether scientists themselves shared Russell and Rotblat's views about the social responsibility of the scientist. Did scientists agree that it was appropriate to take a public stand on nuclear weapons within the volatile public debate about their testing and proliferation? Revealed through correspondence prior to the first Pugwash Conference on Science and World Affairs, this paper will look at how the scientists who became members of the Pugwash movement, and those who declined to involve themselves, envisioned their responsibility to speak publicly on these matters.

Two scholars have written works offering similar histories of the movement that lead to Pugwash. Sandra Butcher's 2005 article "The Origins of the Russell-Einstein Manifesto" looks at which scientists decided to sign this statement and why. For her material Butcher has drawn from published sources as well as from Joseph Rotblat's personal reminiscences.[4] The present paper adds another dimension to Butcher's

3. Joseph Rotblat, "The Early Days of Pugwash," *Physics Today* 54, 6 (June 2001), 50-55, 53.

4. Sandra Ionna Butcher, "The Origins of the Russell-Einstein Manifesto," *Pugwash History Series, Council of the Pugwash Conferences on Science and World Affairs*, No. 1 (May 2005), 1-35. Some of Russell's letters relating to the Russell-Einstein Manifesto have been published. See *The Selected Letters of Bertrand Russell : The Public Years,*

history, mainly through examining correspondence in the Bertrand Russell Archives at McMaster University, something that Butcher's article does not do.[5] Butcher in fact concedes that with respect to the relationship between Russell and Max Born specifically, "further research is needed in the archives of Russell and Born to determine exactly what occurred during this time between the two men."[6] While Butcher's article explains why Rotblat, Born, Albert Einstein, and Frederick Joliot-Curie became signatories of the Manifesto while Niels Bohr and Otto Hahn did not, the present article also examines why other scientists demurred, such as Lord Edgar Adrian, Alexander Haddow, Homi J. Bhabha, Wolfgang Pauli, and Manne Siegbahn.

Lastly the scholars associated with McMaster University who work with Russell's archives can scarcely be surpassed on their knowledge of Russell himself or about which opinion Russell held at this or that time.

1914-1970, vol. 2, ed. Nicholas Griffin (New York : Routledge, 2001).

5. The author wishes to thank the William Ready Division of Archives and Research Collections, McMaster University Library, Hamilton, Ontario, Canada, for their helpful assistance.

6. Butcher, 9. Butcher seeks clarification over why Born initiated the idea of a statement of scientists with Russell, but then proceeded to become a major force behind a similar but separate statement, the Mainau Declaration. Born first suggested the idea of a statement of scientists to Russell in January of 1955. But in another letter to Russell just a week later, Born stated he would be unable to complete the task of organizing such a thing due to his poor health, and suggested that the Society for the Social Responsibility of Science (SSRS) might take on the task in his stead. By the 23 of March however, Born wrote to Russell again saying that he had acquired the help of Otto Hahn and dismissed the SSRS as having "proceeded so clumsily that it seemed to me quite impossible to leave them the responsibility for such a step". Born seemed reinvigorated, describing his plan as already "something biggish" but also that "it would be better to coordinate these two actions" i.e., Russell's effort and his (Max Born to Bertrand Russell, 23 March 1955, RA1 *600 x1/1 File-1 (Box 1.36)). Perhaps Russell was already too invested in his own scheme by this time to coordinate with Born, as he did not reply to Born's letter. In April Born received the copy of Russell's draft manifesto that had been sent out. Born's letter of reply comments on the striking similarity between the two statements, but notes that he and Hahn have diverged from Russell on a point of "procedure". While Born had originally intended to produce a statement from men "as neutral and possible" in the East-West conflict, Leopold Infeld's suggestion changed their course. Born says that it was Infeld who told them the Mainau declaration ought to be restricted to non-communist Western scholars. Born goes on to say that since he and Hahn "consider our plan sufficiently different from yours, … we suggest to proceed with both of them." (Max Born to Bertrand Russell, April 1955, RA1 *600 x1/1 File-2 (Box 1.36)). Russell never replied to Born's letters of March or April. Russell had run with Born's idea in a different direction. It is ironic that Russell later forgot to include Born's name on the Russell-Einstein Manifesto when it was released (although Born had agreed to sign it in his April letter). Russell later offered a corrected statement with Born's name included. After the release of the manifesto, Russell offered apologetic letters to Born about this oversight.

Andrew Bone's editorial introductions to volumes twenty-eight and twenty-nine of the Collected Papers (*Man's Peril, 1954-55* and *Détente or Destruction,* respectively) have covered similar ground in question here, as does his paper "Russell and the Communist-Aligned Peace Movement in the mid-1950s", which outlines Russell's approach to building alliances across the Communist-Western divide.[7] I have drawn from this material. In the following I focus specifically on how scientists responded to Russell's invitation to join the Russell-Einstein Manifesto and ultimately the Pugwash movement.

Background to Pugwash : *Man's Peril* and the Russell-Einstein Manifesto

Several events set into motion the organization of the first Pugwash conference.

In April of 1954, Joseph Rotblat and Bertrand Russell met on the set of a BBC television program. They had been invited to speak about the significance of the first test explosion of a deliverable hydrogen bomb, a test orchestrated by the United States military. Upon their meeting, the two bonded over their mutual fear that a thermo-nuclear war had become technologically possible.

Joseph Rotblat was a Polish-born physicist who had worked on the Manhattan Project during the Second World War. Rotblat, a childhood survivor of the Great War, overcame many challenges, including poverty and the lack of a formal education, in order to become a nuclear physicist.[8] At the time of their meeting, Bertrand Russell was a British philosopher and logician with a history of anti-war activism. During World War One, Russell's outspokenness against Britian's role in the war had resulted in his imprisonment for four months. In 1954 Russell was an elderly gentleman at the age of eighty-two, while Rotblat was still relatively young at forty-six.

Although Rotblat was not generally supportive of war, like many scientists during the 1940s, he had agreed to devote his expertise to the creation of an Allied atomic bomb. When it became clear in 1944 that the German atom bomb program had been abandoned, Rotblat left the Manhattan project.[9] Ten years after the Manhattan project, scientists had seen the atomic bomb evolve in two ways. Atomic bombs had exploded Hiroshima and Nagasaki, announcing to the world the existence of these

7. Andrew Bone, "Russell and the Communist-Aligned Peace Movement in the mid-1950s," *Russell : the Journal of Bertrand Russell Studies*, new series, 21 (2001): 31-57.
8. Joseph Rotblat, "Taking Responsibility," *Science* 289, no. 5480 (August 4, 2000), 729.
9. Rotblat, "Taking Responsibility," 729.

new weapons with the death of hundreds of thousands of people. Second, the Cold War arms race lead to the development and testing of the hydrogen bomb, which had been shown to be hundreds of times more destructive than the atom bomb. Both these developments had produced second thoughts in many atomic scientists, including Rotblat, whose work had contributed to the success of the Manhattan project.

In December of 1954, after Rotblat and Russell had met, Russell wrote a speech entitled *Man's Peril*.[10] In the speech, Russell outlined the grave risks created by thermo-nuclear weapons and argued that the scope of these risks demanded a considerable revolution in how nations and people think about war. Russell's speech aired on the BBC the night before Christmas eve, reaching an estimated audience of seven million people.[11] After the broadcast, prominent scientists began writing to Russell, empathizing with the sentiments he had expressed. One of these correspondents was the German physicist Max Born.

As Butcher notes in her history of the Russell-Einstein manifesto, Born inspired Russell to work towards the release of a public statement undersigned by prominent scientists.[12] Before the BBC broadcast brought these men together, both had separately considered what steps might be taken on the nuclear issue, over which they shared similar concerns. In his January 1955 letter to Russell, Born wrote that ever since receiving the Nobel Prize he had wanted to do something for the promotion of peace.[13] Furthermore, in the specific case of nuclear armaments, Born felt that "The present danger of the world is essentially due to the work of physicists and although I have never taken an active part in nuclear physics and its applications I feel responsible for what physics has

10. Russell, "Man's Peril," 86-89.

11. Caroline Moorehead, *Bertrand Russell : A Life* (London : Sinclair-Stevenson, 1992), 471.

12. Butcher, 9.

13. Max Born was awarded the 1954 Nobel Prize in Physics for his contributions to quantum mechanics. In his January letter to Russell, Born wrote "I have received the Nobel Prize 1954 of Physics for work done 28 years ago. Alfred Nobel's intentions expressed in his testament were clearly to encourage and help young research workers, and the prize was therefore to be given for recent discoveries. The Nobel Committee has deviated from this rule in several cases, particularly in theoretical physics, for the obvious reason that the bearing of new ideas can often be seen only after a certain lapse of time. But this period was hardly ever so long as in my case. In consequence of this, I feel that I could not, by working in my special field, make any use of the money which would satisfy Nobel's ideas about "promoting the progress of the human race". But there was another idea foremost in Nobel's mind, the promotion of peace. It struck me right from the beginning when I heard of the prize that I might try to do something in this direction." Max Born to Bertrand Russell, 21 January 1955, RA 1 *600 x 1/1 file-1 (box 1.36).

collectively done."[14] Born suggested that perhaps an international group of Nobel laureates could sign a statement, similar in tone to Russell's BBC broadcast. He suggested the names of Nobel Prize winners who he thought could be approached for support.[15]

One of the outstanding questions Born had identified but not resolved, was what, exactly, to have these scientists agree on. He wrote : "Your article [*Man's Peril*] is only a general warning. The problem for physicists is obviously to make more positive suggestions."[16] Russell, prior to Born's letter, had also been considering how to proceed constructively. His idea had been to get neutral governments to release a statement to both democratic and Communist governments simultaneously, requesting representatives from all countries to attend a meeting in order to negotiate a *détente*.[17] However, after Born's suggestion of a statement of scientists, Russell continued to receive letters from prominent scientific men, such as Frédéric Joliot-Curie (a known Communist), expressing sympathy with his *Man's Peril* speech.[18]

After receiving these letters, Russell began to consider what significance a scientists' pronouncement might have, particularly if the scientists could agree on a statement calling for peace, yet hold divergent political views.[19] For his advice and possibly his support, Russell then wrote to Albert Einstein on the matter, asking for his help in organizing a public letter undersigned by eminent scientists.[20] When Russell asked for Einstein's input, Einstein told Russell he wholeheartedly welcomed the

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14 Ibid.

15. Born suggested Hideki Yukawa from Japan and C.V. Raman from India who were "as I know, [the] only two Asiatic physicists having the [Nobel] prize". He saw these two as being favourably disposed towards signing such a statement. In England, Born suggested Patrick Blackett, Cecil Powell, and James Chadwick. In America he suggested physicists Albert Einstein, James Franck, Arthur Compton, Otto Stern, Percy Bridgeman, Felix Bloch and Max von Laue, Niels Bohr, Louis de Broglie, Erwin Schrödinger, Wolfgang Pauli, Frits Zernike and Manne Siegbahn. All of these men were winners of the Nobel Prize in Physics. Ibid.

16. Ibid.

17. Russell believed a new approach to international relations was demanded by the nuclear era, as the potential destruction from a world war with hydrogen bombs meant that war itself "was no longer a method by which the aims of either East or West can be realized." Bertrand Russell to Max Born, 25 January 1955, RA 1 *600 x 1/1 file-1 (box 1.36).

18. Frédéric Joliot-Curie to Bertrand Russell, 31 January 1955, RA 1 *600 x 1/1 file-1 (box 1.36).

19. Bertrand Russell to Frédéric Joliot-Curie, 4 February 1955, RA 1 *600 x 1/1 file-1 (box 1.36).

20. Bertrand Russell to Albert Einstein, 11 February 1955 and 25 February 1955, RA 1 *600 x 1/1 file-1 (box 1.36).

idea, and that Russell should take the lead in organizing the initiative.[21] The Manifesto was ultimately drafted by Russell and was similar in tone to his *Man's Peril* speech.

This exchange of letters and sense of agreement between Russell and Einstein ultimately lead to the Russell-Einstein Manifesto.[22] Signatories to the Manifesto were in the majority Nobel prize-winning scientists, including Max Born, Percy Bridgman, Leopold Infeld, Frédéric Joliot-Curie, Herman Muller, Linus Pauling, Cecil Powell, Joseph Rotblat, Hideki Yukawa, Albert Einstein and Russell himself (Infeld and Rotblat had not won Nobels). Joliot-Curie and Powell, both Nobel prizewinners, were living in the West and identified as Communist.

Joliot-Curie, in particular, expressed a strong desire to organize a conference of scientists on the nuclear issue. At first Russell was not keen on the idea. It was because of Joliot-Curie that the final statement included a call to convene a conference of scientists. In the end, Joliot-Curie's insistence on a conference addressed Born's concern about what scientists might ultimately do to proceed constructively. Russell's previous plan to approach Neutral governments was abandoned in favour of Joliot-Curie's idea that was included in the final statement of the Manifesto.[23]

The Russell-Einstein Manifesto created a media fanfare when Russell publicly released it in July of 1955. Einstein had passed away on April 18, 1955, just a few days after he put his signature on the statement. This made the Manifesto Einstein's last public pronouncement. Its text was re-printed in major newspapers around the world. The Manifesto had called for scientists to "assemble in conference to appraise the perils that have arisen as a result of the development of weapons of mass destruction."[24] Organizing what would later become the Pugwash Conference would become the next step in the campaign. Rotblat, Russell and Powell with the assistance of Eric Burhop (a physicist at University College, London), continued to correspond for the remainder of 1955, developing a plan to achieve this goal.

Although this group had originally planned to hold a conference of scientists in India, the plan for India fell through due to political instability

21. Albert Einstein to Bertrand Russell, 4 March 1955, RA 1 *600 x 1/1 file-1 (box 1.36).
22. Russell, "The Russell-Einstein Manifesto," 318-321.
23. Russell met with Eric Burhop in April of 1955 to agree on the final draft sent to prospective signatories. Burhop was a physicist at University College London and Joliot-Curie's colleague within the Communist-aligned group the World Federation of Scientific Workers. See Bone, "Russell and the Communist-Aligned Peace Movement in the mid-1950s," 50.
24. Russell, "The Russell-Einstein Manifesto," 318.

created by the Suez Canal crisis. They were left without a location or funding for their event. In September of 1956, Rotblat and Russell decided to approach Cyrus Eaton for funding.[25]

Cyrus Eaton had originally contacted Russell after reading the widely publicized Russell-Einstein Manifesto. In his letter to Russell, Eaton offered financial support for a future meeting of scientists.[26] Eaton agreed to act as host to the group, and pay for the travel and accommodation expenses of participants. His only caveat was that the conference be held in Eaton's hometown of Pugwash, Nova Scotia.[27] Cyrus Eaton was a wealthy Canadian-American industrialist. Born in Pugwash, Eaton left the Maritimes to study at McMaster University. Through family connections, Eaton met John D. Rockefeller, and through his acquaintance with Rockefeller, Eaton moved to Cleveland and launched his own career in big business. Eaton made $100 million in the utilities, automotive and steel business before losing most of his fortune in the Depression. Eaton made a remarkable comeback in the early 1940s by gambling $40 million on the development of a risky iron mine in northern Ontario.[28] The project was a success, and by the mid-50s Eaton was heading up the Chesapeake and Ohio Railway Company.

Eaton was one of the most famous American businessmen in his day. In the media Eaton was a recognized symbol of capitalism and an industry leader. He was also outspoken on political matters, and expressed controversial opinions. Eaton fraternized with Soviet leaders throughout the Cold War. He publically criticized the ability of American politicians to negotiate world affairs. Some regarded his opinions and actions as troublesome, annoying, or even dangerous. A person of lesser stature may well have paid a greater price for the free speech that Eaton enjoyed. His grand proclamations on the subjects of war, politics and the future of humanity were, not surprisingly, the fodder for media coverage.[29] In 1956,

25. Joseph Rotblat to Bertrand Russell, 4 September 1956, RA 1 *625 x 2/1 File-1 (Box 1.38).

26. Marcus Gleisser, *The World of Cyrus Eaton* (Kent, Ohio : Black Squirrel Books, Kent State University Press, 2005), 218. Also see Cyrus Eaton to Bertrand Russell, 13 July 1955, RA 1 *600 x1/1 File-3 (Box 1.36).

27. Cyrus Eaton to Bertrand Russell, 3 December 1956, RA 1 *625 x 2/1 File-1 (Box 1.38).

28. Eaton created an iron mine at Steep Rock Lake, located 140 miles northwest of the head of Lake Superior. Eaton gambled on an engineering solution that allowed for the extraction of ore from under the lake bottom. See "A Great New Ore Supply : Steep Rock mine reaches big-scale production," *LIFE* 27, no. 17 (October 24, 1949): 189-94.

29. Eaton was a subject of news reports in North American during the 1850s and 1860s. A sampling of news stories on Eaton from this time can be found in "Clippings on Eaton", 1956-1976, in files F2-F5, Box 1, Cyrus Eaton Collection, William Ready Division of

the *Toronto Daily Star* quoted him on the subject of Cold War tensions. Eaton stated, "World War III won't succeed. We stand a very good chance right now of exterminating the human family. It is time for thinking men to sit back and reflect. Let us get time to work on our side instead of trying to force it. I'd like to see scholars of the world get together and see what they would suggest."[30]

Eaton's personal wealth, combined with his political interests, lead to his becoming host to various meetings of intellectuals. In 1954 Eaton decided to convert the Eaton ancestral estate in Pugwash–a fifteen-room summer home–into what became known as the Thinker's Lodge.[31] In the summer of 1956 Eaton organized a conference called The Life of the Intellect. This meeting brought together various college presidents and professors, which inspired similar conferences in Colorado Springs and Suwanee, Tennessee, in the following years. During the Suez Canal crises, Eaton invited scholars to his Pugwash home to discuss the resolution of tensions in the Middle East.[32]

This was all part of Eaton's plan to turn his Pugwash estate into a place where intellectuals could retreat and discuss ideas. In the summer of 1957, Eaton invited three separate conferences to take place there. The first meeting in July was for thirty international scholars from both Eastern and Western countries. Following this Eaton planned to host fifteen college presidents and their wives, who had been selected from a thousand US colleges. Another group composed of college deans and their wives attended the concluding conference.[33]

Russell and Rotblat needed funding to carry out their meeting, and they eventually agreed to hold the conference at Eaton's Thinker's Lodge, having exhausted other options. However, they were determined to keep the group independent, and told Eaton that their meeting was not to be confused with Eaton's own seminars, and that decisions about conference proceedings and publicity would remain under their control.[34]

Archives and Research Collections, McMaster University Library.

30. Robert Adams, "Stop Goading Russ Red China, We Can't Win–Cyrus Eaton," *Toronto Daily Star*, Thursday November 15, 1956, 37, 39.

31. Gleisser, 212.

32. "See "Cyrus Eaton's Hideaway for Brains", *Maclean's*, Saturday October 27, 1956, in "Clippings on Eaton" 1956-1957, file F2, Box 1, Cyrus Eaton Collection.

33. "Visions Maritimes As : 'Richest, Happiest Area'," *The Halifax Chronicle-Herald*, Monday May 27, 1957; "College Presidents, Deans to meet at Pugwash," *The Halifax Chronicle-Herald*, Tuesday June 18, 1957, in "Clippings on Eaton" 1956-1957.

34. Andrew G. Bone, «Introduction», in Bertrand Russell, *The Collected Papers of Bertrand Russell*, vol. 29, *Détente or Destruction*, ed. Andrew G. Bone (London : Routledge, 2005), xiii-lxiii. Eaton's involvement with Russell and the Pugwash conference is discussed on pages xliv-xlv.

The First Pugwash Conference on Science and World Affairs

Twenty-two scientists from various nations ended up making the trip to Pugwash. The scientists who attended included Brock Chisholm and J. S. Foster from Canada; Cecil Powell and Joseph Rotblat from the United Kingdom; Aleksandr Topchiev and Dimitry Skobeltzyn from the Soviet Academy of Science in the USSR; Hermann Muller, Eugene Rabinowitch and Leo Szilard from the United States; and Hideki Yukawa, Shinichiro Tomonaga and Iwao Ogawa from Japan. There were also scientists from other nations including Australia, Austria, China, France and Poland.[35]

Arrangements were made to fly guests to Montreal, where Eaton had orchestrated their travel from Montreal to Pugwash via private plane and car. Although the Thinkers Lodge had fifteen rooms, its size was not adequate to accommodate the entire group of scientists plus their assistants, so some visitors stayed aboard private railway cars supplied by the Chesapeake and Ohio Railway Company. Others boarded in village homes. Official sessions took place in a Masonic Lodge that typically functioned as a one-room schoolhouse.[36] The desks were removed and an ad-hoc conference table was constructed. Chairs were collected from members of the community who could spare them. Mrs. E. R. Webb, Eaton's sister, brought additional chairs from a store in Amherst.[37]

While formal discussion took place inside the schoolhouse; informal discussions took place outdoors in the idyllic seaside setting of Pugwash. Eaton had made available to his guests various retreat pastimes, including tennis, croquet, swimming, golf, and motorboat rides.[38] Two chefs

35. A. M. Kuzin, also a Soviet, was present. Mark Oliphant from Australia, Hans Thirring from Austria, Zhou Pei-Yuan from China, Marian Danysyz from Poland and A.M.B. Lacassagne from France were also attendees. Additionally David F. Cavers, Paul Doty, Walter Selove and Victor Weisskopf came from the United States (with the highest representation by nationality at seven delegates). Eric Burhop attended as "scientific staff," along with Ruth Adams, who provided secretarial work, and Vladimir Pavlichenko, also considered scientific staff, from the U.S.S.R. The complement of delegates included fourteen physicists, two biophysicists, two chemists, a geneticist, a physiologist, a psychiatrist and a lawyer. There were more Western scientists than Communist ones, but as Andrew Bone noted, the Communist presence was not a token one (Bone, «Introduction», *Détente or Destruction*, xlvii).

36. "Atomic Age Powwow in Pugwash" *LIFE* 43, no. 4 (July 22, 1957), 86-8.

37. Raymond Daniell, "Scientists Assay The Nuclear Age : 22 from 10 nations assemble for study in the Nova Scotia home of Cyrus Eaton," *The New York Times*, Wednesday July 10, 1957, 6.

38. Gleisser, 214.

prepared meals in the dining hall (which was a former lobster factory), while local high school students did the housework and waited on tables.[39]

Anne Kinder Jones, Eaton's future wife and an attendee at the meeting, remembered that the Russian delegates initially regarded Eaton, the famed capitalist, with suspicion. However, things quickly warmed up over a friendly game of croquet. She recalled, "neither of [the Soviet scientists] spoke English and at the time neither of us spoke any Russian. By the time we were through trying to explain croquet, being helpful to each other, the ice was broken".[40] She hailed the conference as an unforgettable experience : "Here were many of the men who had to do with the creation of the bomb, sitting together to prevent its use".[41]

The Russian-American biophysicist Eugene Rabinowitch acted as a translator between the English-speaking and Russian-speaking delegates.[42] The schedule was improvised–there was neither a completely prearranged program nor an advance circulation of papers. Many papers were presented on an ad hoc basis.[43] A decision had been made to keep the conference private, so apart from a few photographs, the media was not allowed to document the proceedings. No media interviews were given during the conference.[44] At the conclusion of the conference, an official statement undersigned by the delegates was released to the media.[45]

Rationale for political engagement

The Pugwash conference was not unique. Many scientists in the 1940s and 1950s were concerned about nuclear weapons, and a variety of organizations had been put in place in which scientists lobbied for either the restriction of nuclear weapons or their outright abolishment.[46] Despite

39. Ibid.
40. Gleisser, 220.
41. Ibid.
42. Rabinowitch was highly useful with respect to translations, and noticed at the first plenary session that Pavlichenko, the Soviet translator, was adding a propagandistic slant to Topchiev's statements. Joseph Rotblat, "Bertrand Russell and the Pugwash Movement : Personal Reminiscences," *Russell : The Journal of Bertrand Russell Studies*, new series, 28 (summer 1998): 5-24, on page 12.
43. Leonard E. Schwartz, *Perspective on Pugwash, International Affairs* 43 (1967): 498-515, on page 500.
44. "Mr. Eaton's Guests," *TIME magazine* 70, no. 4 (July 22 1957), 10.
45. The official statement is reprinted in Joseph Rotblat, *Scientists in the Quest for Peace : A History of the Pugwash Conferences* (Cambridge, MA : MIT Press, 1972), 141-7.
46. Scientists' petitions to restrict the use nuclear weapons began before the bombs dropped on Hiroshima and Nagasaki. Chicago-based members of the Manhattan Project,

the existence of these other organizations, the scientists involved in Pugwash felt there was still need for another, different organization, serving an aim that none of these other groups could achieve. Considering that many Pugwash participants were also members of other anti-nuclear groups, it is notable that they felt an independent initiative was necessary. They saw their challenge as facilitating the meeting of Western and Communist scientists, while escaping accusations that such a meeting would disseminate either pro-Western or pro-Communist propaganda.

In the letter of invitation to Pugwash, Russell explains why he felt that an independent meeting remained necessary.[47] Russell believed that official channels, including scientific committees set up by the United Nations, consisted of official delegates who were bound to various political considerations. He felt that in their capacity as official representatives for government organizations, scientists were limited in what they could say. Secondly, Russell felt that the bureaucracy of governmental organizations create delays that do not adequately address the urgency of the problem the committee was set up to discuss. Third, Russell hoped that a statement of a group of scientists, independent from any official body, "who represent nobody, but follow only the dictates of their own consciences," might find a public audience larger than the pronouncements of an official body.[48] Fourth, Russell saw the importance

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lead by Leo Szilard and Eugene Rabinowitch, became concerned about the after-effects of the atom bomb. They drafted a document about these effects known as The Franck Report. The Franck Report was submitted to US Secretary of War Henry Stimson in June 1945. This report, along with a separate petition to the President organized by Leo Szilard, advised the government not to use nuclear weapons on civilian populations. These recommendations were not heeded however, and after the atom bombs dropped on Hiroshima and Nagasaki in August of 1945, American scientists formed organizations to prevent the future use of nuclear weapons. The Federation of American Scientists (FAS), and the Society for the Social Responsibility in Science (SSRS) were founded in 1945 and 1949 respectively. Eugene Rabinowitch began publishing the *Bulletin of the Atomic Scientists* after the bombing in 1945. In the UK, the Atomic Scientist Association (ASA) carried out similar activities on a smaller scale, until senior members of the ASA tried to quell the expression of antinuclear opinions when the British decided to manufacture their own bomb. In 1946, the World Federation of Scientific Workers (WFSW) was created to represent the anti-nuclear campaign from the communist perspective. Eighteen nuclear scientists from Germany released the Göttingen Manifesto in 1957, opposing NATO's plan to equip the West German army with nuclear weapons. See *The Atomic Age; Scientists in National and World Affairs, Articles from the Bulletin of the Atomic Scientists, 1945-1962*, eds. M. Grodzins and E. Rabinowitch (New York : Basic Books, 1963), and Rotblat, "The Early Days of Pugwash," 50-55.

47. Bertrand Russell to Neils Bohr, 29 August 1956, in *The Selected Letters of Bertrand Russell : The Public Years, 1914-1970*, 504.

48. Draft letter to invitees of the first Pugwash conference (1956), see document entitled "Draft Letter," RA 1 *625 x 2/1 File-1 (Box 1.38).

of bridging the divide between East and West, between Communism and its vocal opponents (of which Russell had been one). This intention to bring scientists from both sides together was present since the organization of the Russell-Einstein manifesto, at which time Russell had said to Joliot-Curie, "I am an anti-Communist, and it is precisely because you are a Communist that I am anxious to work with you."[49]

The organizers communicated to conference participants that the event had been conceived in order to maximize the freedom of discussion, so that every scientist represented only himself. In this way, the scientist's point of view is free to be spoken with the utmost frankness. Since the proceedings would remain closed to the public and to the media, delegates could speak without fear of misquotation or distortion of their opinion in the press. Rotblat noted that the hope for the meeting was that informal exchanges would achieve more than formal ones, given the intense political climate and sensitive nature of the issues.[50] The Pugwash meeting would recognize the existence of shared values between people from East and West, and offer an example of cooperation on that basis. Russell later wrote : "It is the hope of those who participated that from this beginning a more cooperative spirit may grow up."[51]

Regardless of the organizers' zeal, not all invitees felt a pressing need for, or enthusiasm towards, an independent meeting of scientists tasked with discussing nuclear weapons. On April 29 1957, only a few weeks before the scheduled meeting was to take place, Rotblat wrote to Russell "What I am more worried about [than money] is the very poor response to our invitations. We have still had no reply at all to the last batch of letters and time is getting rather short. Do you think we should prompt people by sending them cables?"[52] Throughout May Rotblat was still sending out invitations in order to attract the compliment of scientists that they desired. As late as early July further invitations were sent to several more scientists from the United States.[53]

While 64 letters of invitation to the Pugwash conference were sent out, only 30 scientists accepted. Of these, only 22 ended up making the trip. As to why less than half the invitees accepted their invitations, Rotblat later noted : "Many of the refusals were due to previous engagements… Some scientists refused because they feared that the Conference might

49. Pierre Biquard reported Russell saying this during a meeting with Joliot-Curie in Paris, in April of 1955. Quoted from Pierre Biquard, *Frédéric Joliot-Curie : The Man and His Theories* in Butcher, 11.
50. Rotblat, "The Early Days of Pugwash," 55.
51. Bertrand Russell quoted in Bone, "Introduction," *Détente or Destruction*, xlx.
52. Joseph Rotblat to Bertrand Russell, 29 April 1957, RA 1 *625 x 2/1 File-2 (Box 1.38).
53. Introduction to Bone, "Introduction," *Détente or Destruction,* xlv.

have ulterior motives and be politically biased. Only a small minority expressed open opposition to the idea of such a conference, and claimed that it was not the business of scientists to meddle in such matters. This negative attitude was also encountered at the next few conferences. It took several years, until after the Sixth Conference in Moscow, in 1960, for this attitude to be dispelled."[54]

The correspondence from scientists who declined their invitations to the first Pugwash conference was handled by Rotblat and Powell.[55] However, various scientists who were approached to sign the Russell-Einstein Manifesto declined to do so, and their letters to Russell explain their reasons why they decided against. As the Russell-Einstein Manifesto was eventually adopted as the charter of Pugwash, we can gather from this correspondence (which resides in The Bertrand Russell Archive), some insight into the concerns of scientists who did not ultimately join the Pugwash movement.

Rationale for political disengagement

Five primary concerns were raised by scientists who declined to sign the Russell-Einstein Manifesto. The reasons given for political disengagement were the following. Some noted that the dangers of nuclear weapons were already well known, and that there was no need to re-state the facts again, even if this re-statement came directly from scientists. Secondly, some felt that activities of this nature would draw attention away from UN and nation-based projects underway to study the effects of radiation and nuclear testing. Thirdly, some feared that taking a public stand would politicize and discredit the results of their current scientific research. Others thought the goal of getting physicists to agree on this subject was unrealistic, and that the overarching goal of securing agreement between governments was similarly futile. Lastly, some scientists either expressed repugnance at keeping the company of Communists, or feared that by joining the initiative they would risk being labeled Communist.

Some correspondents claimed that there was no need for a group of scientists to reiterate the already well-known facts about the dangers of nuclear weapons. The Danish physicist Niels Bohr, a Nobel Prize winner for his discovery of atomic structure, noted in his letter to Russell : "Although of course I deeply appreciate individual efforts like your own,

54. Rotblat, *Scientists in the Quest for Peace*, 4.

55. Rotblat's personal correspondence can be found in the Papers of Professor Sir Joseph Rotblat, Churchill Archives Center, Churchill College, Cambridge UK. One might also look for related correspondence in the Pugwash Conferences Papers, Department of Manuscripts and University Archives, Cambridge University Library.

it is not clear to me whether a joint declaration from a group of scientists would have the desired effect. The perils are now common knowledge and many of the most competent scientists with special access to information are thoroughly studying the dangers of radioactive effects so generally talked about. My question is therefore not only whether a group like that you have in mind could agree on an approach on sufficiently constructive lines, but also what relevant new information its declaration could contain."[56]

Lord Edgar Adrian, a British electrophysiologist and Master of Trinity College, Cambridge wrote to Russell : "the risk that we know about is quite bad enough and that the immediate destruction produced by a major war with H-bombs would be enough to cause a complete breakdown of civilization and a return to the dark ages. This doesn't need scientists to point out."[57]

Harold Urey was one of the American atomic scientists Russell approached for support. In July 1955, Urey explained to the *New York Times* that his reason for not signing the Manifesto was because he thought it was a futile effort, that there was no way to implement the proposals, and that the statement was something everyone already knew at that time.[58]

Secondly, many scientists believed that a public action such as Russell was proposing would detract from the work of committees being stuck to study the after-effects of atmospheric radiation from nuclear testing.[59] Lord Adrian noted that from a scientific point of view, he felt these committees and their participants ought to be given time to investigate and report their conclusions. After their work had been completed, he wrote, "Some sort of pronouncement of this kind, even though it only emphasizes our ignorance, would be something for an international body to take up."[60] Professor Alexander Haddow from the Chester Beatty Research Institute felt that an independent conference of scientists would not be worth the energy it would take to organize it, and preferred the idea of scientists meeting through official channels, such as the United Nations.[61]

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56. Neils Bohr to Bertrand Russell, 23 March 1955, RA 1 *600 x 1/1 file-1 (box 1.36).
57. Lord Adrian to Bertrand Russell, 12 April 1955, RA 1 *600 x 1/1 file-2 (box 1.36).
58. Butcher, 20.
59. Committees were formed by the National Academy of Sciences in the USA and the Medical Research Council in the UK tasked to study the potential genetic damage caused by radiation.
60. Lord Adrian to Bertrand Russell, 12 April 1955, RA 1 *600 x 1/1 File-2 (Box 1.36).
61. Alexander Haddow to Bertrand Russell, 18 April 1955, RA 1 *600 x 1/1 File-2 (Box 1.36).

Niels Bohr also brought up a concern about whether an independent initiative would in fact, draw attention away from similar efforts being made at the United Nations level. He wrote to Russell, "Another question to be carefully examined is whether such an initiative just at this moment might impeed [sic.] the effect of the conference to be arranged this summer under the auspices of the United Nations, when scientists from many parts of the world will for the first time meet for open discussion."[62] The Indian nuclear physicist Homi J. Bhabha also mentioned as a reason for his abstention that new information on the dangers of nuclear radiation was already to become "available at the time of the Geneva Conference on The Peaceful Uses of Atomic Energy".[63] Alex Haddow told Russell that a permanent science council within the United Nations (a formation he had previously called for) was a better outlet to judge the "misapplication of science" on an ongoing basis, than a single conference of independent scientists as Russell had suggested.[64]

Third, some scientists felt that making a public statement about the effects of nuclear testing would politicize and discredit the results of their current scientific research. Bhabha opted out principally because he wished to avoid taking a political position before he had finished his current research on the atmospheric radiation effects of nuclear testing. He explained to Russell, "A small group here in India is informally collecting all available data on the effects of atomic thermo-nuclear weapons. In order to reach definite conclusions as objectively as possible I feel it would prejudice this work if I were to commit myself to any definite statements in advance."[65] But Bhabha said he would be willing to consider making a statement once this work was complete.

In the end, Lord Adrian declined to sign for similar reasons, expressing, "I have been unofficially involved with the various bodies which are investigating risks from experiments with H-bombs and I want to keep free from any commitment which would make it difficult to act as an impartial advisor."[66]

Fourth, some correspondents doubted that agreement among physicists, let alone nations, was an attainable goal. The Austrian physicist Wolfgang Pauli felt that it was naïve to think that a group of scientists could inspire a policy change on the part of the world's most powerful governments.

62. Neils Bohr to Bertrand Russell, 23 March 1955, RA 1 *600 x 1/1 file-1 (box 1.36).
63. Homi J. Bhabha to Bertrand Russell, 16 April 1955, RA 1 *600 x 1/1 File-2 (Box 1.36).
64. Alex Haddow to Bertrand Russell, 18 April 1955, RA 1 *600 x 1/1 File-2 (Box 1.36).
65. Homi J. Bhabha to Bertrand Russell, 16 April 1955, RA 1 *600 x 1/1 File-2 (Box 1.36).
66. Lord Adrian to Bertrand Russell, 24 June 1955, RA 1 *600 x 1/1 File-2 (Box 1.36).

Pauli wrote "consider critically the practical question whether the discussion of a resolution of the kind proposed by you at an International Conference of Scientists could effectively further the cause of peace. First of all the ethical force which is needed for an actual effect on the governments in the direction of a 'settlement of all matters of dispute between them with peaceful means' seems to be only realizable on a broader basis than what scientists as an isolated group can provide. Moreover, knowing the very divergent views and opinions of many physicists on these matters, I even doubt whether a resolution as proposed by you would be accepted at present by scientists on a sufficiently large scale".[67] Neils Bohr also questioned Russell on whether scientists themselves would be able to agree on a single approach to the problem.[68]

Lastly, several Western scientists expressed an unwillingness to sign a statement also signed by scientists of Communist identification. In the political climate of 1955, publicly agreeing with a Communist could be misconstrued as agreeing with Communism. In his article about Russell and the peace movement in the 1950s, Andrew Bone explains how in the Cold War climate, people's desire to avoid Communist taint submerged most other political objectives.[69] Russell saw scientists in particular as having the potential to overcome this paralysis. He explained to Einstein "I have thought it was better …to approach only men of science and not men in other fields…Scientists have, and feel that they have, a special responsibility, since their work has unintentionally caused our present dangers. Moreover, widening the field would make it very much more difficult to steer clear of politics."[70]

But scientists did not always see themselves as especially able to steer clear of politics. While Russell thought that science itself was depoliticized, the context in which scientists lived and worked was not. When in July 1955, Russell approached Hermann Muller to help him coordinate American scientists who might participate in the proposed scientists' conference, Muller declined. His reasoning demonstrates that he was very sensitive to his position within the political context :

> A considerable difficulty with which the proposed conference would have to contend lies in the climate of opinion in western countries, more particularly in the United States, which would tend to cast suspicion upon scientists who as individuals were willing to participate in a conference in which delegates (for they must be regarded as delegates) from communist countries also took part. Because of this difficulty it would be important to have as participants from the western

67. Wolfgang Pauli to Bertrand Russell, 3 May 1955, RA 1 *600 x 1/1 File-2 (Box 1.36).
68. Neils Bohr to Bertrand Russell, 23 March 1955, RA 1 *600 x 1/1 File-1 (Box 1.36).
69. Bone, "Russell and the Communist-Aligned Peace Movement in the mid-1950s," 37.
70. Bertrand Russell to Albert Einstein, 5 April 1955, RA 1 *600 x 1/1 File-2 (Box 1.36).

> countries as many persons as possible of the type of [Arthur] Compton, who are regarded with favor by the leading political powers of their own countries. The fact that I do not fit into this category is a major objection to my playing an active role…[71]

Swedish physicist Manne Siegbahn explained in a letter that he was not willing to associate with Russell's peace movement. He felt the Communist side professed peace while maneuvering to get an upper hand. Siegbahn expressed the worry that Russell's initiative would either accomplish nothing or might ultimately come to harm :

> My hesitation to sign a resolution of this kind is due to the fact that the eastern side has misused "peace-resolution" and "peace-conference" for propagandistic purposes, which in reality have very little to do with the work for a lasting peace. The resolution is directed to the Governments asking them 'to find peaceful means for the settlement of all matters of dispute between them.' As you certainly know Eisenhower for U.S.A., as well as Stalin, Malenko, Chrusjtjev [sic] and the other Soviet leaders have all emphatically declared that they hate the idea of war and that their foremost purpose is to work for peace in the world. All other Governments have made the same declarations. By this reason I am afraid that the proposed resolution will have very little or no practical effect. If it is misused as mentioned above it will do harm."[72]

Harold Urey also expressed hostility towards the Communist side, particularly Communists living in the West, in his explanation for his refusal.

> "I must say I have a dislike for some of the people on your list. I do not object to the Communists from communist countries, but I dislike Communists from the democratic countries. I was brought up in my childhood on the story of Benedict Arnold, and it has always been a lesson to me in matters of this kind. Before I agree to sign the statement I wish you would reconsider the whole problem."[73]

Otto Hahn did not sign the Manifesto because of whom it would associate him with. He wrote:

> "You know from your correspondence with Max Born that we here independently have planned something quite similar [i.e. the Mainau Declaration] and the content of our proposal is very similar to yours. Nonetheless I should wish to say you not to put my name under your appeal. In view of the very small number of gentlemen who are communists and living in the East with whom you wish to be associated I should find a difficulty for myself which would be harmful to the action planned by Born and me."[74]

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71. Herman Muller to Bertrand Russell, 29 August 1955. As quoted in Bone, "Russell and the Communist-Aligned Peace Movement in the Mid-1950s," 53-54.
72. Manne Siegbahn to Bertrand Russell, June 30 1955, RA1 *600 x1/1 File-2 (Box 1.36).
73. Harold Urey to Bertrand Russell, 7 July 1955, RA 1 *600 x 1/1 file-3 (box 1.36).
74. Otto Hahn to Bertrand Russell, 23 April 1955, RA 1 *600 x 1/1 file-2 (box 1.36).

Alexander Haddow was a little more circumspect, but nevertheless intimated some discomfort over the potential of having his name appear with Communist co-signatories. He wrote on July 7, 1955, "As I explained, I do not mind writing under my own name when the spirit really moves, but I am much less sure about joint signature, and should feel more out of place and indeed a little presumptuous unless the British signatories were more generally representative of science in this country."[75] The scientific signatories representing the UK were Cecil Powell and Joseph Rotblat. Powell was a Communist, and Rotblat had caused a major furor in the House of Lords the previous year when he leaked crucial information about hydrogen bomb testing.[76] Keeping company with Powell and Rotblat, at this juncture, may have been too radical for Haddow. He declined to sign the Manifesto.

Scientists as political actors

Joseph Rotblat, the longest participating member of the Pugwash organization, never ceased to champion the useful role of the scientist in public affairs. He wrote in 1972, "The Pugwash Conferences have shown that it is possible to apply the scientific approach, which has proved so successful in science and technology, to problems which are only indirectly related to science. [The Conferences] have shown that even when dealing with highly controversial matters, it is possible to tell the truth, without being abusive, to be candid, without trying to embarrass, provided that there is a common approach based on scientific objectivity and mutual respect."[77] While at times Rotblat makes sweeping statements about the usefulness of scientists' cooperation on political matters, at other times, Rotblat's assessment of what scientists can do seems more realistic : "Scientists are not a superior class of humans; rather they are trained in the scientific tradition of appraising a problem without prejudice but with respect for facts."[78]

Russell's opinion about the appropriate political and moral duty of the scientist evolved during the period in which he was active on the nuclear issue. Russell expressed in writing his belief that scientists, whose shared approach to knowledge meant that they could agree on facts, could achieve something that political representatives could not. Russell's conception of this special role for scientist seems to originate from a belief that science itself was neutral, despite the ideological commitments

75. Alex Haddow to Bertrand Russell, 7 July 1955, RA1 *600 x1/1 File-3 (Box 1.36).
76. Butcher, 8
77. Rotblat, *Scientists in the Quest for Peace*, 85.
78. Rotblat, "The Early Days of Pugwash," 53.

of individual scientists or the political decisions that applied the fruits of science in immoral ways.[79] He wrote : "I have taken considerable trouble to induce men of science to examine the role of conscience as it pertains to the uses and abuses of their creative work…Scientists, as opposed to those technicians who have sold themselves to the mass society, are particularly burdened with a responsibility to act. Your work has been prostituted by those who have no sense of its creative meaning. Our responsibility, therefore, is to make known the facts, particularly the facts which offend the possessors of power, and to draw on these facts for the development of movements of mass resistance in all countries."[80]

While Rotblat and Russell both urged the scientific community to assume a larger share of social responsibility, some of Russell's statements in particular put a fairly narrow limit on how he expected the scientist to act politically. These statements, taken along with his previous exhortations for scientists to step up to a public role, can seem to offer contradictory advice. On a few occasions, Russell noted that he did not expect scientists to offer opinions in political matters for which scientists did not have particular expertise. In a letter to Hermann Muller Russell wrote that any conference of scientists ought "not go into the question of *how* war is to be avoided since this is a political matter in which scientists, as such, have no special competence".[81] In a later speech, Russell reiterated "I do not think that it is any part of the business of scientists as such to suggest the political means by which war is to be avoided…I think that when the scientists have made clear in lucid and simple language what a nuclear war would involve, they have fulfilled their collective responsibility. Any further action that any one of them may be moved to take, he must act as a citizen and not as a member of any scientific body.[82]

Russell wanted scientists to proclaim on the one issue for which he saw its voice as being uniquely suited : that universal destruction would ensue from a world war with nuclear bombs. In these moments Russell seems to suggest that having scientists speak very loudly and publicly about the facts of nuclear war is enough. His own role would be to change the political landscape, using this gambit, towards disarmament and peace.

During the years leading up to Pugwash, ongoing testing demonstrated the escalating destructive power of nuclear weapons. This cast a pall over

79. Bone, "Introduction," *Man's Peril, 1954-55*, xl.
80. Unpublished manuscript, entitled "Statement for future use by S.O.S." RA 1 *625 x 2/2 File-1 (Box 1.39).
81. Bertrand Russell to Hermann Muller, 23 July 1955, as quoted in Bone, "Introduction," *Man's Peril, 1954-55*, xliii.
82. Russell's address to the Association of Parliamentarians for World Government conference is quoted in Butcher, 23.

physics. Physicists defected to biological fields in which they felt they could contribute to the science of life. When Russell described the public image of scientists in 1955 as "merchants of death…destitute of human feelings and interested only in their own ingenuity", this hyperbolic description was not entirely off the mark.[83] It is clear from the letters to Russell that some physicists had internalized feelings of guilt and responsibility "for what physics has collectively done" (as Born said). Scientists were drawn to participate in the peace movement to relieve consciences and to bring a sense of respectability back to physics.

However, fulfilling this responsibility and taking on a more public role was not easy for scientists, even in circumstances in which some were highly motivated to act. Hideki Yukawa, who undersigned the Russell-Einstein Manifesto and also attended the first Pugwash conference, was not immune to worry. While supporting the movement he confided "I would like to keep myself as far as possible from political and ideological conflicts."[84] Even Max Born, who initiated the Manifesto and Mainau Declaration, both public statements from scientists, stated, "I need hardly say that I hate publicity".[85] They may have had reason for reticence. When Niels Bohr met with Winston Churchill in 1944, he advised Chirchill that in order to prevent a future arms race, all nations should share openly their nuclear weapons science. Unfortunately Bohr's speech impediment meant that "Churchill couldn't understand what this man was saying, all he could follow was that here this man wanted to give the top secret to the Russians…And so not only did he reject the idea completely, he even wanted to intern Niels Bohr as a criminal", according to Joseph Rotblat.[86]

Taking a stand wasn't something most of Russell's scientist-correspondents took lightly. Lord Adrian wrote "I have taken a long time to come to this conclusion [to decline] and I'm not very certain about it."[87] Burhop wrote to Russell, shortly after the release of the Manifesto, "I am sorry there was so much difficulty about obtaining Joliot's signature, but perhaps one may argue that the fact that the signature was not lightly given represents a measure of the earnestness with which the matter was regarded."[88]

Alexander Haddow, who had expressed caution about the company he would keep in signing the Russell-Einstein Manifesto, later regretted

83. Russell, quoted in Bone, "Introduction," *Man's Peril, 1954-55*, xl.
84. Hideki Yukawa to Franklin Miller Jr., 28 February 1955, see the copy sent to Russell in RA 1 *600 x 1/1 File-1 (Box 1.36).
85. Max Born to Bertrand Russell, 21 January 1955, RA 1 *600 x 1/1 File-1 (Box 1.36).
86. Rotblat, quoted in Butcher, 15.
87. Lord Adrian to Bertrand Russell, 12 April 1955, RA 1 *600 x 1/1 File-2 (Box 1.36).
88. E. H. S. Burhop to Bertrand Russell, 21 July 1955. RA 1 *600 x 1/1 File-3 (Box 1.36).

somewhat his decision not to sign. After the Manifesto's public release he wrote to Russell, "I feel I can do no less than write to congratulate you on your courage. …I remember you said I would be sorry if I did not sign, and in many ways you are right. While I was perplexed whether I could sign a statement in which, while in general very sympathetic, I could not subscribe to every individual word, I now feel perplexed whether I may have failed in my duty. … For many reasons I adhere to my former position, but mean time you have taught me a lesson in sheer courage."[89]

Conclusion

Although originally conceived as a one-time event, the 1957 Pugwash conference initiated the Pugwash movement, officially entitled the Pugwash Conferences on Science and World Affairs, an organization that continues to this day, working on issues of nuclear disarmament, the responsible use of science and technology, and world peace.[90] Joseph Rotblat, who became the longest serving member of the Pugwash movement, commented once, "a war-free world may seem utopian, but the alternative is unacceptable."[91] Although both Russell and Rotblat described themselves as qualified pacifists, they both expounded the view that ending war altogether was the only rational solution to the atomic age in which human beings had weapons powerful enough to bring about their own annihilation.[92]

John W. Reuss, in his review of *Pugwash–The First Ten Years,* notes that many questions remain unanswered about the effectiveness of the Pugwash movement, despite Rotblat's many self-assured statements about Pugwash's success. Ruess notes, "Indeed, as one model of scientific–technological internationalism, it is important to know more about some of the Pugwash activities Rotblat only briefly recounts : To what extent is Cyrus Eaton's early sponsorship of Pugwash responsible for its political impotence? What are the tangible results of continuous contacts between American and Soviet scientists and less frequent encounters with East German and Communist Chinese scientists? What role did Pugwash play

89. Alex Haddow to Bertrand Russell, 10 July 1955, RA1 *600 x1/1 File-3 (Box 1.36).
90. The Pugwash Conferences on Science and World Affairs have a website which can be found at http ://www.pugwash.org. org. Accessed Thursday, 4 September 2014.
91. Rotblat, "Taking Responsibility," 729.
92. See Joseph Rotblat's essay, "Leaving the Bomb Project" in *Assessing the Nuclear Age : Selections from the Bulletin of the Atomic Scientists*, eds. L. Ackland and S. McGuire (Chicago : Educational Foundation for Nuclear Science, 1986), 15-22. Also see Moorehead, 428-9; and Bone, "Introduction," *Man's Peril, 1954-55*, xxv.

vis-à-vis the 1963 Partial Test Ban Treaty? How has the Vietnam war affected various Pugwash goals and activities?"[93]

In the long run, it has proved hard to evaluate the significance of the Pugwash conferences, as each meeting remained unrecorded and private. Participant's reminiscences after the fact have not always been in agreement, making it hard to reliably evaluate the significance of dialogues that took place.[94] Although Pugwash may have served the need for discussion about topics that were too preliminary or sensitive for official deliberation, the choice to remain off-the-record may have rendered scientists' role in these debates behind-the-scenes and somewhat vague to the public.

Since the first conference, the Pugwash movement has been noted for its dominance by physical scientists, and over-representation of delegates from the US, Britain and Russia. The conferences have experienced a high turnover of delegates and the "unofficially-official" nature of the conferences has also been a point of criticism. While the organizers always declared that delegates would be able to leave institutional affiliations at the door, one might question if this actually took place, given that most conference-goers had consulting arrangements with governments or held positions in quasi-governmental academies.[95]

When the first meeting of Pugwash scientists in 1957 spoke with one voice that yes, the effects of nuclear arms were deleterious, this did not immediately deter the race of nations to arm with them. Over subsequent years Pugwash began to tackle matters of international relations, and to offer suggestions regarding international agreements that would at least partially achieve their goals. The Pugwash movement succeeded in making the question of disarmament realistic enough to merit serious public discussion in 1958, a year when the US conducted 77 nuclear tests, and the Soviets had run 29 tests of their own.[96] Their work helped to achieve certain limitations on nuclear arms, such as the Partial Test-Ban Treaty (1963) and the Nuclear Non-Proliferation Treaty (1968). In 1995 the Pugwash Conferences on Science and World Affairs, in conjunction with longtime Secretary General Joseph Rotblat, won the Nobel Peace Prize.[97]

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93. John W. Reuss, "Review of Pugwash–The First Ten Years : History of the Conferences of Science and World Affairs," *The Western Political Quarterly* 22 (1969), 705-706.

94. L. E. Schwartz, "Perspective on Pugwash," *International Affairs* 43 (1967): 498-515, on page 511.

95. Schwartz, 503.

96. Bone, "Introduction," *Détente or Destruction*, xvi.

97. For some of Rotblat's own judgments about the successes and failures of Pugwash,

The Pugwash conferences attempted to use "the scientific approach" (as Rotblat described it) to achieve political goals. Scientists' foray into the political and public realm with respect to disarmament produced some gains, although these gains were more modest than what one might think were the sweeping and idealistic goals of Pugwash's original founders.

When Russell received letters from scientists declining to join the movement, he moved on quickly with his own plans, but also encouraged those who sympathized with the basic premise to speak their own minds in public. To Mark Oliphant, a respected researcher in high-energy physics and a former participant in the Manhattan project, Russell wrote, "I would urge, in conclusion, very strongly that for those who feel as you and I do it is not enough to say 'something should be done'. We must actually do something."[98] On this front, Russell and Rotblat lead the way, and the Pugwash movement and the scientists who joined it did actually do something on the principles of their conscience. On this front, if in nothing else, they should be commended.

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see Rotblat, "Bertrand Russell and the Pugwash Movement," 15, 23.

98. Bertrand Russell to Mark L. Oliphant, 10 May 1955, RA1 *600 x1/1 File-2 (Box 1.36).