



# Pugwash

**HISTORY SERIES**

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*The Origins of the*

## RUSSELL-EINSTEIN MANIFESTO

*by Sandra Ionno Butcher*

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# Pugwash

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*Dedicated to*

**Ruth S. Adams**

1923–2005



*To those of us in Chicago [the Manifesto] was like finding a crack in the Iron Curtain. Especially to me, and to many of those in my generation in that setting, it gave meaning and set a principled direction that we could follow with enthusiasm.*

—Ruth S. Adams, who participated in the first Pugwash Conference in Pugwash, Nova Scotia, in July 1957 and many thereafter, shown here at Thinker's Lodge in Pugwash, Nova Scotia, at the 53rd Pugwash Conference, July 20, 2003.

## About the Author

Sandra Ionno Butcher, a writer and consultant, is working on a full-length history of the Pugwash Conferences on Science and World Affairs. She has served as senior analyst and interim research director for the British American Security Information Council, and as executive director and national student activities coordinator for Student Pugwash USA.

## Acknowledgments

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The historical research—of which this report represents the first step—relies heavily on the willingness of the Pugwash community to help bring to light these early and important days. My conversations on these topics within the Pugwash community began more than a decade ago, when Pugwashites first sat down with me, as a member of Student Pugwash, and imparted their enthusiasm for and belief in this unique and needed organization. My thanks to all those individuals (too numerous to name in this short space) who have provided me with greater understanding, and to the current Pugwash leadership for their support, including: Secretary-General Paolo Cotta-Ramusino, Executive Director Jeffrey Boutwell (who, as editor of this series, has been invaluable in helping to shape the Pugwash history work), Chair of the Pugwash Council Marie Muller, and President M.S. Swaminathan. Former Secretaries-General Francesco Calogero and George Rathjens have been unfailingly encouraging of my efforts, as was the late Martin Kaplan. Ruth Adams was a close advisor on this history project, and I will greatly miss her friendship, insights, and anecdotes. Sally Milne's chats over many cups of tea have been very helpful after my visits into the depths of the Pugwash archives. Tom Milne has provided encouragement from the very beginning of this project.

Above all, Professor Rotblat's guidance, perspective, humor, and patient optimism continue to be indispensable.

## foreword:



### The Russell-Einstein Manifesto in 2005

In her very comprehensive essay on “The Origins of the Russell-Einstein Manifesto”, Sandra Butcher asks: “Are there lessons in this experience relevant to today’s world?” In other words, is the Russell-Einstein Manifesto still relevant today? My answer to this question is an emphatic “Yes”: the Manifesto is highly relevant in 2005.

During the 50 years since its publication, the world’s political climate has changed dramatically. There is no doubt in my mind that some of these changes are the result of issuing the Manifesto.

In 1955 we were at the height of the Cold War, with the two super powers of the time, the USA and the USSR, accumulating obscenely huge nuclear arsenals, 100 times more than required for deterrent purposes. Many of the warheads were kept on hair trigger alert increasing the possibility of accidental war. On several occasions, in particular, during the 1962 Cuban missile crisis, we came very, very close to a nuclear confrontation. The publication of the Manifesto had brought home to the general public the dire consequences of such a confrontation. More importantly, as elucidated in the essay, the direct outcome of the Manifesto was the setting up of the Pugwash Movement, with its objective: to avert the dangers resulting from the development of weapons of mass destruction, in particular, thermonuclear weapons. The activities of Pugwash received recognition in the award to it (and myself) of the 1995 Nobel Peace Prize. The citation for this award reads, “for their efforts to diminish the part played by nuclear arms in international politics and in the longer run to eliminate such arms.”

The most important outcome of the realization of the danger of a nuclear catastrophe was the Nuclear Non-Proliferation Treaty (NPT), which came into force in 1970. It has, by now, an almost universal acceptance, with 188 signatories, 98% of the UN membership.

The NPT contains two major commitments by its signatories: a) the non-nuclear weapon states undertook not to manufacture, or otherwise acquire, nuclear weapons; b) the five nuclear weapon states—USA, USSR, UK, China and France, that had carried out nuclear tests by 1968—undertook, in Article VI, to proceed in good faith, to nuclear disarmament.

In the 1980s, the political climate became propitious for the fulfilment of the objectives of the NPT. The single most important event in the post-war era was the appointment of Mikhail Gorbachev as Russia’s leader. Realizing the awesome consequences of a continuing nuclear arms race, he took a momentous decision: to bring the arms race to a halt. But the consequences of that decision were much more far reaching, namely, the dissolution of the Soviet Union, and the end of the ideological struggle that divided the world for seven decades. The Cold War came to an end.

For a time it seemed that the problems raised in the Manifesto had been overcome. Indeed, public opinion polls recorded a huge drop in public concern about the nuclear issue which, it was thought, could be taken off the agenda of matters requiring urgent attention.

Several respectable institutions, apart from Pugwash, carried out studies on the desirability and feasibility of a nuclear weapon-free-world, and drafts of treaties leading to such a world were elaborated. To some extent, these attempts to rid the world of nuclear weapons were an outcome of the Manifesto which so vividly described the consequences of a nuclear confrontation.

But the euphoria, after the end of the Cold War, did not last long. The five nuclear weapon states, increased to eight by the addition of Israel, India and Pakistan, began to prevaricate about the purpose of the NPT, particularly about Article VI. Referring to a sub-section in that article, in which general and complete disarmament was mentioned, it was claimed that nuclear disarmament must be linked with the achievement of general and complete disarmament, which would have delayed nuclear disarmament for a very long time. This argument was squashed during the 2000 NPT Review Conference (the review conferences are held every five years), when the nuclear weapon states undertook unequivocally to complete nuclear disarmament. Despite this, they persistently refused to discuss this issue at the Conference on Disarmament in Geneva, the UN body specifically set up for that purpose. Indeed, attempts are being made to interpret Article VI as conferring on the overt nuclear weapon states the right to keep these weapons.

The worst setback came in 2000, with the election of George W. Bush as President of the USA. In statements on nuclear policy, soon after the election, he not only made it clear that he wants to keep nuclear arsenals *ad infinitum*, but he elevated nuclear weapons to the status of weapons of first use, to be an essential element of the US general armed forces. Moreover, in accordance with these policies, the possession of nuclear arsenals by other states would be allowed, provided they are friends of the USA; those not friendly to the USA would be prevented, by force if necessary, from acquiring such weapons.

Thus, 50 years after the Manifesto that warned us about the dire consequences of a nuclear war, the world is still in danger of a nuclear holocaust; the nuclear states still refuse to honour their obligations under the NPT; there are still huge nuclear arsenals held by the former two super powers; the USA still seeks to develop new nuclear warheads; more nations are likely to acquire nuclear arsenals on the excuse that they are needed for their security. A new nuclear arms race has become a real possibility. On top of all this, there is the real danger of terrorist groups acquiring nuclear weapons.

The words of the Manifesto: “We appeal, as human beings to human beings: Remember your humanity, and forget the rest” are as cogent in 2005 as they were in 1955.

Joseph Rotblat

# The Origins of the Russell-Einstein Manifesto

*Sandra Ionno Butcher*

## Introduction

On July 9, 1955, a room full of curious international reporters gathered in London for a mysterious announcement of purported world significance. To a hushed crowd, Bertrand Russell dramatically delivered the news of one of Albert Einstein's last public acts—a grave warning ultimately signed by 11 eminent scientists about the need to avoid war in the nuclear age.<sup>1</sup> This statement, later termed the Russell-Einstein Manifesto, captured the world's attention.

The Manifesto led directly to a conference of scientists, held in Pugwash, Nova Scotia in 1957. This conference was a catalyst for the formation of a unique and innovative transnational organization, the Pugwash Conferences on Science and World Affairs.<sup>2</sup> This organization has had a profound effect on the ways individuals and non-governmental actors promote arms control and disarmament. In recognition of this important role, Pugwash and Joseph Rotblat, one of its key figures, were jointly awarded the 1995 Nobel Peace Prize for their “efforts to diminish the part played by nuclear arms in international affairs and, in the longer run, to eliminate such arms.”

How did this Manifesto, which was to have such historic impact, come about? How did it compare to other, similar, efforts at the time? What were the elements of its success, and are there lessons in this experience relevant to today's world?

This paper is the initial installment of a series of discussion documents, which we hope will elicit further conversation on the role of the Pugwash Conferences on Science and World Affairs during the past half-century. This work is preliminary to a full-length history of Pugwash.

This report emphasizes the roles of key figures in the nascent Pugwash movement and includes sidebars with brief biographical information about and quotes from the signatories of the Manifesto. Although many others also were working on these issues at the time, the purpose of this study is to highlight the voices of those initial instigators and to provide a greater understanding of their personalities. In this, the Manifesto's fiftieth anniversary year, it is important for the Pugwash community to reconsider the courage, commitment and vision of these early leaders, and to use their example to help guide the organization through today's complicated challenges.

## The Backdrop

The Russell-Einstein Manifesto was one of several efforts by scientists in the 1950s to focus world attention on the critical need for new approaches to international security in the nuclear age. In particular, scientists feared that national leaders and the public little understood the implications of the new and devastating hydrogen bombs.

Many of the atomic scientists originally became involved in research on nuclear weapons because they feared that Hitler might acquire, and use, such weapons. After it became widely known that the German program failed, other reasons surfaced for keeping the US nuclear weapons project going. A matter of great debate today, there was (and still is among many) a belief that the use of the atom bomb was needed to force Japan to surrender. The quick end to the war after US nuclear weapons destroyed Hiroshima and Nagasaki left one other reason for developing the weapons—to ensure the US stayed ahead of the Soviet Union. The growing

“Mankind are faced with a clear-cut alternative: either we shall all perish, or we shall have to acquire some slight degree of common sense. A great deal of new political thinking will be necessary if utter disaster is to be averted.”

—Bertrand Russell



## Max Born

UK,<sup>1</sup> 1882–1970

Nobel Prize in Physics, 1954 “for his fundamental research in quantum mechanics, especially for his statistical interpretation of the wavefunction” with Walther Bothe.<sup>2</sup>

“We are a great fellowship, men of all nations seeking after the truth. It is my greatest hope that the modern trend to subjugate science to politics and to inhuman ends and to erect barriers of fear and suspicion around national groups of scientists will not continue. For it is against the spirit of scientific research, as the mind can grow and bear fruit only in freedom.”<sup>3</sup>

Born stayed in contact with Bertrand Russell following the release of the Manifesto. Correspondence in the Pugwash archives between the two men indicates they both initially were very skeptical that a conference of scientists as called for in the Manifesto would prove useful. The Pugwash efforts and those of the signers of the Mainau Declaration continued to be somewhat at cross purposes, as well. Born attended one Pugwash meeting in Kitzbühel in 1958.

<sup>1</sup> Born preferred to be listed as a UK citizen. As he wrote in a letter to Bertrand Russell, October 5, 1956, after seeing a draft in which Russell listed him under Germany: “The only remark I have to make [about the draft invitation] is that you have listed my name under Germany. In fact, I am a British subject and have taken only my residence here in Germany.” (Pugwash Archives)

<sup>2</sup> Photo Source: © The Nobel Foundation

<sup>3</sup> Max Born, in his banquet speech at the Nobel celebrations. From *Les Prix Nobel 1954*, <http://nobelprize.org/physics/laureates/1954/born-speech.html>.

shadow of the Cold War between the US and the Soviet Union darkened hopes for the post-war period.

In this somber setting, many scientists’ worst fears were being realized on test ranges and in weapons labs. The US, Russia, and—later—Britain, were developing and testing a new generation of nuclear weaponry: hydrogen bombs whose blast and heat, they knew, were as much as 1,000 times greater than earlier atomic bombs. What remained unclear, and what became central to an ongoing public debate, was whether these new weapons also had increased radioactivity. Since tests were occurring in the atmosphere, as many as 16 times per year by 1954, this was a grave concern.

The idea of a hydrogen bomb was not new. In fact, Edward Teller and his colleagues were developing the “Super” from the earliest days of the secret US nuclear weapons program, the Manhattan Project. The first hydrogen device was detonated by the US in November 1952. While the device was unwieldy and impractical by bomb-making standards, it nevertheless obliterated an island in the Eniwetok Atoll. The Soviet Union tested its first hydrogen bomb in 1953. In March 1954, the US had its first successful test of a hydrogen bomb—the Bravo Test—in the Bikini Atoll, with a yield of 15 megatons (approximately 1,000 times more powerful than the bomb used on Hiroshima). However, winds apparently shifted and a Japanese fishing vessel, the *Lucky Dragon*, was doused with radioactive fallout. Word of new radiation poisoning spread across Japan and around the world. One man died and several were severely sickened. Panic spread as to the safety of fish and the extent of radioactive fallout. The US government, in an effort to calm fears, issued what were later deemed to be misleading reports. Those scientists who had some background in these areas were not convinced by public pronouncements and they began to demand greater information. They became sleuths themselves.

## Russell and Rotblat Begin Collaborations

This is the moment in time when a propitious meeting occurred between Bertrand Russell and Joseph Rotblat. These men, who later would become the founders of Pugwash, were well ahead of their peers in raising concerns about these new weapons. Both of these men were already public figures in the field.

Bertrand Russell, an eminent philosopher, mathematician, and pacifist, had shared his concerns about atomic weapons from the earliest days of the nuclear age. His first known recorded comment on the atomic bomb was published in the *Glasgow Forward* on August 18, 1945.<sup>3</sup> In this text, which Russell began to compose three days after the bombing of Hiroshima, some of the language that would later appear in the Russell-Einstein Manifesto was already taking shape:

The prospect for the human race is sombre beyond all precedent. Mankind are faced with a clear-cut alternative: either we shall all perish, or we shall have to acquire some slight degree of common sense. A great deal of new political thinking will be necessary if utter disaster is to be averted.<sup>4</sup>

Lord Russell was a man of great intellectual reach. Although he was not a physicist, he warned the British House of Lords about the possibility of hydrogen bombs as early as November 1945:

It is possible that some mechanism, analogous to the present atomic bomb, could be used to set off a much more violent explosion which would be obtained if one could synthesize heavier elements out of hydrogen. All that must take place if our scientific civilization goes on, if it does not bring itself to destruction: all that is bound to happen.<sup>5</sup>



In this talk Bertrand Russell foreshadowed his later work with Pugwash. He “suggested that a meeting between Western and Soviet scientists might provide the best entry towards genuine co-operation and establishment of a system of international control.”<sup>6</sup>

Joseph Rotblat, a Polish-born physicist, was the only project scientist who left the Manhattan Project for moral reasons. Once he learned that Germany had given up its atomic bomb program, his reason for working on nuclear weapons had ceased to exist. Despite the very negative reaction his resignation caused, he moved back to England (where he had been working prior to the war). In the UK, he became involved in launching the Atomic Scientists’ Association. Like the Federation of Atomic Scientists in the USA, the British Atomic Scientists’ Association (ASA) sought to influence policy and to educate the public on nuclear weapons issues.

Due to some internal conflicts within the ASA, most of this effort became focused on public education.<sup>7</sup> In 1947, Rotblat created and organized an exhibit called the *Atom Train*, which visited many cities in the UK, the Middle East and Scandinavia. (Organizers of the *Atom Train* sold fifty-six thousand booklets that accompanied the exhibit, helping to fund the ASA’s work.)

Joseph Rotblat knew about the existence of the secret hydrogen-bomb project from his time at Los Alamos, when he befriended the Polish scientist, Stanislaw Ulam, who worked with Edward Teller. (Teller’s office was next to Rotblat’s.) As soon as he learned about the bombing in Hiroshima, he became gravely concerned about the possibility of a hydrogen bomb. He said:

I knew a little bit more than other people about what was going on. So I knew that it would begin an arms race and that the hydrogen bomb would come in. And then...for the first time I became worried about the whole future of mankind. Because...once you are going to develop these huge weapons, where are you going to stop? And this was my reaction on the 6th of August [1945].<sup>8</sup>

On April 13, 1954, following the previously mentioned test in the Bikini Atoll and the *Lucky Dragon* incident, the BBC called upon Russell and Rotblat to help explain to the public this new hydrogen bomb. In a widely viewed program, which included the Archbishop of York and others, Rotblat was asked to provide scientific explanations and Russell provided a moral evaluation.<sup>9</sup>

The information that began to circulate following the Bravo test and the fallout it caused raised alarm as to the nature of the radioactivity of the weapon that was tested. Most of the public discussion indicated that the bomb was a fission-fusion device. The idea was that this device would have an increased explosive power in terms of blast and heat of about 1,000 times greater than earlier atomic weapons, without a related increase in radioactivity since there was—they said—no fission in the second stage. At the time, this was called a “clean” bomb. Rotblat relied upon these public statements in his presentation on the BBC.

After the show, the director-general of the BBC invited all of the speakers to dinner. Russell was reportedly “very impressed” with Rotblat’s presentation. “So, subsequently,” Rotblat said, “he would from time to time ask my opinion on some of those things.”<sup>10</sup>

Later in 1954, Rotblat attended a conference in Belgium on radiobiology (his new field), and met there a Japanese scientist, Professor Yasushi Nishiwaki, who had data on the radioactivity of the *Lucky Dragon*. Rotblat requested more information from the scientist and became convinced that the weapon must have had a third stage—making it a fission-fusion-fission bomb. He surmised that fast neutrons from the second stage must have produced additional fission in a third stage, thus nearly increasing the radioactivity a thousand-fold from the bomb used on Hiroshima.<sup>11</sup> According to one observer, Rotblat’s analysis was of the “utmost significance” in that it “made clear both the relative cheapness and simplicity with which such bombs can be made, and the potential hazard from the large amount of radioactivity released in the explosion.”<sup>12</sup>

“I knew a little bit more than other people about what was going on. So I knew that it would begin an arms race and that the hydrogen bomb would come in. And then...for the first time I became worried about the whole future of mankind.”

—Joseph Rotblat

“I appeal, as a human being to human beings: remember your humanity, and forget the rest. If you can do so, the way lies open to a new Paradise; if you cannot, nothing lies before you but universal death.”

—Bertrand Russell

Rotblat was originally convinced by Sir John Cockcroft, the head of the UK Atomic Energy Authority, not to publish this result (due to fears that the US would think Rotblat had used classified secrets and that it would rekindle bad feelings between the two countries following the Klaus Fuchs spying scandal). However a misleading report by the US Atomic Energy Commission infuriated Rotblat enough in February 1955 that he went ahead and published his report in the March issue of the ASA newsletter and in the May issue of the *Bulletin of the Atomic Scientists* in the US.<sup>13</sup> As Rotblat said, “[The paper] turned out to be a sensation: the mass media picked up the story and gave it much publicity.”<sup>14</sup> “This caused a terrific uproar in Britain...I was attacked viciously in the House of Lords. And I could not respond...It was really a very bad time for me. But also, I became sort of very well known, a bit famous. The Labour Party was in opposition at that time and...I became sort of their darling, the source of information. And of course, Russell was very much taken in...and Russell became very much worried about it.”<sup>15</sup>

According to Rotblat, he kept Russell briefed about his thoughts prior to the publication of these reports. Rotblat states, “Even earlier I had told Lord Russell about my detective work. He was becoming more and more agitated about the danger of a thermo-nuclear war and its catastrophic consequences, in particular the long-term effects of the radioactive fall-out.”<sup>16</sup> Russell often referred (with tongue in cheek) to Rotblat’s so-called “detective work.”<sup>17</sup>

In late 1954, Russell felt the urge to “find some way of making the world understand the dangers into which it was running blindly, head-on.”<sup>18,19</sup> He began negotiations with the BBC for another show. The BBC insisted on new material from Russell (in fact, they even suggested Russell debate a popular footballer to offset his “grim forebodings”). Russell rejected this as “utterly frivolous” and the BBC relented.<sup>20</sup>

Russell claimed the ultimate text of his presentation “was so tight-packed that anything that I have since said on the subject can be found in it at least in essence.”<sup>21</sup> In fact, many of the phrases from the Russell-Einstein Manifesto are foreshadowed in this December 23<sup>rd</sup> broadcast, called *Man’s Peril*. For example, *Man’s Peril* ended with the following warning, now familiar from the Manifesto:

There lies before us, if we choose, continual progress in happiness, knowledge, and wisdom. Shall we, instead, choose death, because we cannot forget our quarrels? I appeal, as a human being to human beings: remember your humanity, and forget the rest. If you can do so, the way lies open to a new Paradise; if you cannot, nothing lies before you but universal death.<sup>22</sup>

As Nicholas Griffin observed, “The ground had been well-prepared—both by the political events of the preceding year and by previous commentaries of those trying to come to terms with them—and Russell’s broadcast hit a nerve.”<sup>23</sup> *Man’s Peril*, heard by an audience of between six and seven million people,<sup>24</sup> was pivotal in bringing together efforts by scientists on different continents to draw greater attention to the dangers of the nuclear age and to encourage governments to take action. This confluence is a key reason why the Russell-Einstein Manifesto had such an international impact and it laid the foundation for the later success of the Pugwash movement.

### Max Born’s Interest in a Statement by Scientists

One of the people who contacted Bertrand Russell following the broadcast was the German-born physicist and Nobel laureate, Max Born. According to Griffin, “Born was already thinking of an appeal to governments signed by Nobel Laureates, but was uncertain how to make the appeal effective. He asked for Russell’s advice. Russell jumped at the opportunity.”<sup>25</sup>

In fact, Max Born had written to Einstein about engaging fellow scientists to take action in a letter dated November 28, 1954, about one month prior to *Man's Peril*:

I read in the paper recently that you are supposed to have said: 'If I were to be born a second time, I would become not a physicist, but an artisan.' These words were a great comfort to me, for similar thoughts are going around in my mind as well, in view of the evil which our once so beautiful science has brought upon the world....I am thinking of using my present popularity [as a Nobel laureate]...to try and arouse the consciences of our colleagues over the production of ever more horrible bombs.<sup>26</sup>

Born wrote to Russell on January 21, 1955. In his reply on January 25, Russell seemed to acknowledge that the idea of a statement came first from Born:

It seems to me that *your* plan of collecting a considerable number of Nobel Laureates in physics and chemistry to sign an appeal to the Governments is a good one [emphasis added].<sup>27</sup>

Russell then provided comments on some of the people Born suggested as possible signatories, and gave a long description of his own idea of having a statement by neutral governments that would be presented to both the East and West (an idea he had been exploring since the 1954 BBC *Panorama* programme). Russell finished the letter by suggesting an "order of proceedings":

- 1.) Approach to distinguished scientists whom you know to be sympathetic.
- 2.) After winning their approval, approach to other distinguished scientists.
- 3.) Approach to every neutral Power. (I think Switzerland most likely to agree at first.)
- 4.) Full publicity wherever possible.<sup>28</sup>

The account given in *The Selected Letters of Bertrand Russell: The Public Years, 1914-1970*, stated that "Born was unable to take the initiative: his health was poor and his lack of political experience was a handicap. So the task of organizing the appeal fell to Russell."<sup>29</sup>

Further research is needed in the archives of Russell and Born to determine exactly what occurred during this time between the two men. It is obvious that Born continued to pursue the idea and to support Russell's efforts (Born was, after all, one of the 11 signatories).<sup>30</sup> However, at the time he also became a major force behind a similar statement—the Mainau Declaration, which was released a week after the Russell-Einstein Manifesto (see below for more information on this declaration).

Born broached the idea of working with Russell in another letter to his "dearest friend,"<sup>31</sup> Einstein, dated January 29, 1955. In this letter, he said that concerns over whether or not others may use the results of one's work for "evil purposes" were very much on his mind:

I think a great deal about these things, and have got in touch with Bertrand Russell. He has made an effective statement over the British radio, which is printed in the Listener of December 30th. I will let you know whether this discussion leads to any conclusions, of either a personal or a more far-reaching nature. A Japanese periodical has asked me to agree to the publication of my correspondence with [Hideki] Yukawa [another of the subsequent signatories to the Manifesto] about the atom bomb, etc., and sent me a letter by Y. This did in fact actually appear, together with my reply...It will not have amused any Americans who read it. But this is only a miserable beginning.<sup>32</sup>



### Percy W. Bridgman

USA, 1882–1961

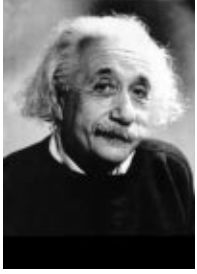
Nobel Prize in Physics, 1946 "for the invention of an apparatus to produce extremely high pressures, and for the discoveries he made therewith in the field of high pressure physics"<sup>1</sup>

"[T]he most intelligent way of dealing with the problems arising from scientific discoveries is to create an appropriate society. This society will be a society that recognizes that the only rational basis for its functions is to be sought in its relations to the individuals of which it is composed; a society in which the individual in his capacity as a member of society will have the integrity not to stoop to actions he would not permit himself as an individual; a society broadly tolerant and one which recognizes intellectual achievement as one of the chief glories of man; a society imaginative enough to see the high adventure in winning an understanding of the natural world about us, and a society which esteems the fear of its own intellect an ignoble thing. In a society so constituted I venture to think the problems created by scientific discoveries will pretty much solve themselves."<sup>2</sup>

Bridgman did not attend any Pugwash meetings. He tragically died in 1961, committing suicide when faced with fatal cancer. His suicide note is widely used by those seeking the option of physician-assisted suicide.

<sup>1</sup> Photo Source: © The Nobel Foundation

<sup>2</sup> P.W. Bridgman, *Reflections of a Physicist* (New York: Philosophical Library, 1950), 292.



## Albert Einstein

1879–1955

Nobel Prize in Physics, 1921 “for his services to Theoretical Physics, and especially for his discovery of the law of the photoelectric effect”

“[I]f we are to have security from the atom bomb and other man-made weapons, we must find a way to prevent war. Unless we are able to do that, you can be sure that, despite all the promises they may make, nations will, in the event of war, employ every means of destruction at their disposal. Further, as long as war remains a possibility, the governments of all nations will continue to arm. This policy of military preparedness makes the abolition of war impossible.

“I believe this is the crucial problem that confronts us. Our first task should be to try to communicate to others our conviction that war must be abolished at all costs, and that all other considerations must be of secondary importance.”<sup>1</sup>

While Einstein was very enthusiastic about Russell’s efforts, he unfortunately died shortly after signing the Manifesto.

<sup>1</sup> Albert Einstein, remarks before the Emergency Committee of Atomic Scientists, Princeton, NJ, November 17, 1946. In Otto Nathan and Heinz Norden, *Einstein on Peace* (New York: Avenel, 1981), 394.

Born’s letter to Einstein, which laid the groundwork for the Manifesto, was nearly two weeks earlier than Russell’s February 11<sup>th</sup> letter to Einstein (about which more follows below). Ironically, in his letter to Einstein, Russell did not mention Born at all.

## Frédéric Joliot-Curie and an International Conference

Meanwhile, another internationally recognized physicist contacted Russell in the wake of the *Man’s Peril* broadcast. Frédéric Joliot-Curie, who also was intimately involved in pioneering scientific work of the nuclear age, had been active against nuclear weapons for many years. Russell’s instincts about the necessity of having endorsements of Communists on the statement led him into a series of negotiations with Joliot-Curie which resulted in the critical call for a conference of scientists that was a pillar of the Russell-Einstein Manifesto.

Joliot-Curie was not new to anti-nuclear-weapons efforts; he had been instrumental in promoting the abolition of all nuclear weapons at a meeting of the Council of Partisans of Peace in Stockholm in 1950. This idea grew into the Stockholm Appeal, which ultimately gathered over 500 million signatures.<sup>33</sup>

As early as 1951, at the World Federation of Scientific Workers’ General Assembly, Leopold Infeld (who also would become one of the signatories of the Russell-Einstein Manifesto), proposed that a committee of twenty or so should organize a conference on “science for peace” that would be independent of both the WFSW and the World Peace Council.<sup>34</sup> Discussions continued on this idea at a later Executive Council meeting, and Joliot-Curie said that the proposed conference “should have the broadest aims to secure the widest participation. It should examine the nature of the present tensions between nations, discuss the role that scientists should play in this situation, and how best they could contribute to the cause of peace.”<sup>35</sup> The Executive agreed, and concluded that the “conference was necessary and that it should be called by a small body of eminent scientists representing different countries and tendencies...”<sup>36</sup> Efforts to move forward on the idea repeatedly fell through.

However, after the thermonuclear tests in 1954, Joliot-Curie decided it was time for the WFSW to act. He enlisted Eric Burhop’s efforts to coordinate the work

The central aim was to arrange an impressive conference of world scientists to assess objectively the effects of nuclear weapons, the magnitude of the threat facing mankind in the event of their use, and the effects of continued testing of these weapons. Joliot stressed that an open statement of their findings would have to be heard by governments and people.<sup>37</sup>

On January 4, 1955 (preceding the correspondence between Russell and Einstein), Burhop sent a memorandum to about one hundred scientists outside of the WFSW, asking for support for a conference:

The danger that faces humanity appears to us so terribly real that we believe it essential to issue an objective statement on this matter, addressed to a very wide public, over the signature of scientists of great eminence and of such a broad range of views that it would be possible to raise a cry of alarm without any section of public opinion being able to doubt the sincerity of the warning.

The preparation of the text of such a statement will require careful study in different countries, and we propose the holding of an international scientific meeting to discuss the results of these preliminary studies and the drawing up of the terms of the statement.<sup>38</sup>

According to Maurice Goldsmith, Joliot-Curie, Burhop, and another of their colleagues, Pierre Biquard, contacted other scientists who had been active in other efforts to convene such a conference. This included Joseph Rotblat, Eugene Rabinowitch (editor of the *Bulletin of the Atomic Scientists*, who would later become a key figure in the Pugwash movement), Otto Kahn, Max Born, and Alexander Haddow. After Russell's *Man's Peril* broadcast, Joliot wrote to Russell on January 31, 1955 "explaining his desire to secure a conference of, and pronouncement by, scientific eminents."<sup>39</sup> He wrote to Russell, "The support of a personality such as yourself could very largely contribute to this, and so help to promote the idea of a conference."<sup>40</sup> Russell replied positively to Joliot-Curie on February 5, 1955, but urged that a statement should precede the idea of a conference. Negotiations between Russell and Burhop, on behalf of Joliot-Curie, continued through the spring.<sup>41</sup>

When Russell wrote in his initial approach to Einstein on this matter on February 11, he mentioned Joliot-Curie's interest in a conference:

Joliot-Curie apparently pins his faith to a large international conference of men of science. I do not think this is the best way to tackle the question. Such a conference would take a long time to organize. There would be difficulties about visas. When it met there would be discussions and disagreements which would prevent any clear and dramatic impression upon the public. I am convinced that a very small number of very eminent men can do much more, at any rate in the first instance.<sup>42</sup>

However, Russell placed enough importance on including Joliot-Curie in the statement that he continued discussions with him. The men met in Paris on April 20, 1955. According to Biquard, one of Joliot's colleagues and friends, Russell told Joliot-Curie, "I am an anti-Communist, and it is precisely because you are a Communist that I am anxious to work with you."<sup>43</sup> Nevertheless, the two nearly reached an impasse over the language of the text, so much so that at one point Russell suggested that they might need to release separate statements simultaneously.<sup>44</sup> However, Russell was able to prevail—especially since Einstein's death made revisions to the text impractical. However, Joliot-Curie was able to secure Russell's "agreement to add a paragraph calling specifically for a scientific conference [which] became the first paragraph of the Russell-Einstein declaration..."<sup>45</sup>

Therefore, by the time Bertrand Russell contacted Albert Einstein about the statement his plans had been significantly influenced by two other leading scientists, both of whom would ultimately sign the Manifesto. Max Born's idea of a statement by leading scientists and Frédéric Joliot-Curie's proposal for a conference became the hallmarks of the Manifesto and set the stage for the birth of the Pugwash movement.

## Einstein's Imprimatur

It is clear, however, that Russell and Einstein were the key figures in the success of the Manifesto. Together, they represented such intellectual and moral authority that it is doubtful the Manifesto would have had nearly the same impact without their involvement. Throughout their careers, both men reached beyond their academic disciplines to speak out on many social issues of their time. They both had long experience in the efforts to raise awareness about nuclear weapons. Albert Einstein's role in this respect was particularly poignant, given the fact that a letter from him to Franklin Delano Roosevelt (and drafted by Leo Szilard, another early Pugwash participant) was pivotal in the establishment of the US Manhattan Project, the top-secret nuclear weapons program.<sup>46</sup> (Einstein, however, did not work on the Manhattan Project.)



## Leopold Infeld

Poland, 1898–1968<sup>1</sup>

The only signatory not to receive a Nobel Prize, Leopold Infeld was a friend of Einstein's. Together they wrote a book in 1938, *The Evolution of Physics*, and Infeld later wrote a biography of Einstein. After the death of Einstein and Bohr, Infeld considered Russell "the greatest living man."<sup>2</sup> He once gave a vivid description of Russell, "He looks like an old eagle from whom long life has taken the toll of a few feathers."<sup>3</sup>

"We [scientists] cannot keep our eyes closed... We look with astonishment at a world which we never wanted to shape, trying to understand the forces of sudden and unforeseen destruction... We are not fighters; we care little for power; no great political leader has ever arisen from our circle. Not one who has tasted research would exchange it for power. We are trained in too many doubts to employ force and to express unconditional belief. But in the fight against destruction our words and thoughts may count. We shall have to learn the use of words which will be understood, we shall have to sharpen our thoughts on problems which we have ignored before."<sup>4</sup>

Infeld attended eight Pugwash meetings between 1958 and 1966. Infeld also served on the Pugwash Executive Committee.

<sup>1</sup> Photo Source: AIP Emilio Segrè Visual Archives, gift of Jost Lemmerich and the Born Collection

<sup>2</sup> Leopold Infeld, *Why I Left Canada: Reflections on Science and Politics*, Helen Infeld, Trans., (London: McGill-Queen's University Press, 1978), 101.

<sup>3</sup> Ibid.

<sup>4</sup> Leopold Infeld, *Quest: The Evolution of a Scientist* (London: Readers Union Limited, 1942), 270-271.

“I am profoundly disquieted by the armaments race in nuclear weapons. ...I think that eminent men of science ought to do something dramatic to bring home to the public and governments the disasters that may occur.”

—Bertrand Russell

As early as 1944, Einstein promoted the idea of consultations with “the most outstanding scientists” from America and the Allied countries (including the Soviet Union) to “bring the collective influence of the scientists to bear upon their respective governments, with a view to establishing an international army and a supranational government.”<sup>47</sup> He remarked in his letter on this subject to a fellow scientist that he feared future wars would be “wars of veritable destruction with much greater loss of life than in the present war.”<sup>48</sup> However, his biographers stated that “there is no indication as to whether he was assailed with specific forebodings about the impact of atomic energy upon humanity or whether his fears resulted from a general understanding of the inevitable, never-ceasing technological refinements in the production of instruments of destruction.”<sup>49</sup>

Einstein became involved in the Emergency Committee of Atomic Scientists, an early effort to educate the public in the United States and to raise money to support anti-nuclear activities of scientists.<sup>50</sup> The following appeal letter, sent by the Committee of Atomic Scientists in 1946 under Einstein’s signature, contained some language similar to that of the Russell-Einstein Manifesto. This shows the extent to which Russell was influenced by Einstein, and *vice versa*:

The unleashed power of the atom has changed everything save our modes of thinking, and thus we drift toward unparalleled catastrophe. We scientists who unleashed this immense power have an overwhelming responsibility in this world life-and-death struggle to harness the atom for the benefit of mankind and not for humanity’s destruction.<sup>51</sup>

The link between Albert Einstein and Bertrand Russell went back many years, and was a strong bond. In many ways it was natural that these two men of conviction would collaborate on a topic of such importance. This friendship reportedly was based on decades of mutual respect:

...Bertrand Russell was a close associate [of Einstein’s]. They not only shared their devotion to logic and science but held almost identical political views....[Russell] was an early supporter of relativity and published a highly successful book on the subject in 1925 called *The ABC of Relativity*. The book was much admired by Einstein and served to forge a friendship between the two men which was to continue for the rest of Einstein’s life.<sup>52</sup>

It was only natural, then, that once Bertrand Russell began to seriously consider the notion of contacting scientists for an appeal, one of the first people he turned to was his old friend, Albert Einstein. On February 11, 1955, Russell wrote his eloquent letter to Einstein about this idea:

In common with every other thinking person, I am profoundly disquieted by the armaments race in nuclear weapons. You have on various occasions given expression to feelings and opinions with which I am in close agreement. I think that eminent men of science ought to do something dramatic to bring home to the public and governments the disasters that may occur. Do you think it would be possible to get, say, six men of the very highest scientific repute, headed by yourself, to make a very solemn statement about the imperative necessity of avoiding war? These men should be so diverse in their politics that any statement signed by all of them would be obviously free from pro-Communist or anti-Communist bias....

There are certain points that seem to me important. First: It would be wholly futile to get an agreement prohibiting the H-bomb. Such an agreement would not be considered binding after war has broken out, and each side on the outbreak of war would set to work to manufacture as many bombs as possible.

Second: It is important not to be sidetracked by the peaceful uses of atomic energy....Third: In any attempt to avoid atomic war the strictest neutrality is to be observed....Everything must be said from the point of view of mankind, not of this or that group....Fourth: The thing to emphasize is that war may well mean the extinction of life on this planet....Fifth: Although the H-Bomb at the moment occupies the center of attention, it does not exhaust the destructive possibilities of science, and it is probable that the dangers from bacteriological warfare may before long become just as great. This reinforces the general proposition that war and science can no longer coexist.<sup>53</sup>

Russell then went on to mention, with limited enthusiasm, Joliot-Curie's idea of an international conference. He did not refer at all to his earlier correspondence with Born. He proceeded to outline his own idea of appealing to neutral powers to exert their influence through a small commission of experts who might prepare a report and present it to all governments of the world. This idea eventually faded away.<sup>54</sup>

One of Einstein's biographers claimed that "Russell's letter had stirred Einstein in a way which few things had stirred him in recent years."<sup>55</sup> On February 16, Einstein replied enthusiastically to Russell:

I agree with every word in your letter of February 11. Something must be done in this matter, something that will make an impression on the general public as well as on political leaders. This might be best achieved by a public declaration, signed by a small number of people—say, twelve persons whose scientific attainments (scientific in the widest sense) have gained them international stature and whose declarations will not lose any effectiveness on account of their political affiliations. One might even include men who, like Joliot, are politically labeled provided they were counterbalanced by men from the other camp....

I suggest that the text to be offered for signature should be composed by at most two or three people—indeed, preferably by you alone—but in such a way to insure in advance that there will be full agreement on the part of at least a few of the signers....<sup>56</sup>

In the letter, Einstein offered to contact some people in the USA and suggested names of others whom Russell might contact. He mentioned that his Polish colleague, Leopold Infeld (who became a signatory himself) might be of help in outreach to Russians. He also mentioned the importance of involving Niels Bohr (see the separate section below regarding Bohr's refusal to participate in this effort).

Russell next replied to Einstein on February 25 (this correspondence was proceeding rapidly):

...I am very glad to find that you and I are in such agreement....Before attempting to draw up a draft for submission to a small number of eminent men of science, I should like to have your opinion as to the best scope for such a document. My own feeling is that after pointing out, briefly and soberly, the universal suicidal folly of a thermonuclear war it should go on to suggest that governments which are uncommitted should approach both sides in an attempt to get them simultaneously to agree that war cannot serve the purpose of either. I think it is important, not only because it may succeed, but also because it suggests a possible line of action. I find many people paralyzed by inability to think of anything that could be done; and I do not think we should rest content with pointing out the horrors of war, but should suggest practical steps toward preventing it....<sup>57</sup>



## Frédéric Joliot-Curie

France, 1900–1958

The Nobel Prize in Chemistry 1935 (with Irène Joliot-Curie), "in recognition of their synthesis of new radioactive elements"<sup>1</sup>

"[T]hose who prostitute science are those who have inaugurated the atomic era by destroying 200 thousand civilians in Hiroshima and Nagasaki... It is because I know all that science can bring to the world that I shall continue my efforts for it to serve the happiness of men, whether they be white, black or yellow, and not to wipe them out in the name of some divine mission."<sup>2</sup>

Joliot's commitment to the idea of holding a conference, despite resistance to the idea from Russell, led to the inclusion in the Manifesto of a call for a conference. He urged organizations affiliated worldwide with the World Federation of Scientific Workers to support Russell's efforts to organize a conference.

He was, however, never able to participate in a Pugwash conference due to health issues.

<sup>1</sup> Photo Source: © The Nobel Foundation

<sup>2</sup> Frédéric Joliot-Curie, quoted in Maurice Goldsmith, *Frédéric Joliot-Curie: A Biography* (London: Lawrence and Wishart, 1976), 191.



## Hermann J. Muller

USA, 1890–1967

The Nobel Prize in Physiology or Medicine  
1946 “for the discovery of the production of  
mutations by means of X-ray or irradiation.”<sup>1</sup>

“[S]cientists can no longer stand aloof from  
the question of whether their work will be  
used to wreck or to re-create civilization, even  
though they can scarcely have the deciding  
voice.”<sup>2</sup>

Muller attended two Pugwash meetings—the  
first in July 1957 in Pugwash, Nova Scotia,  
and another in 1958 in Kitzbühel, Austria.

<sup>1</sup> Photo Source: © The Nobel Foundation

<sup>2</sup> Muller, in his speech at the Nobel banquet, from *Les  
Prix Nobel 1946*, [http://nobelprize.org/  
medicine/laureates/1946/muller-speech.html](http://nobelprize.org/medicine/laureates/1946/muller-speech.html).

Russell then outlined contact he had recently with Prime Minister Jawaharlal Nehru, and the possibility that the Indian government might be willing to take the lead in some of these matters. It is important to note Russell’s belief in the need to provide some plan of action in the statement. Despite the fact that this particular idea did not find its way to the final version of the Manifesto, the ultimate call for a conference fulfilled this need and gave the Manifesto more of a lasting impact than other statements issued at the time.

Einstein wrote again to Russell on March 4, 1955. In this letter, he sought to clarify the role Russell intended the signatories to play. He wrote, “to avoid any confusion you should regard yourself as the dictator of the project and give orders.”<sup>58</sup> Einstein again reinforced the importance of involving Bohr, and encouraged Russell to contact the famous humanitarian, Albert Schweitzer.

On April 5, 1955, Russell wrote to Einstein. In this letter, the final shape of the initiative was outlined:

...I think the first step should be a statement by men of highest eminence, Communists and anti-Communists, Western and Eastern, about the disasters to be expected in a war. I enclose a draft of such a statement, and I very much hope that you will be willing to sign it. I enclose also a list of those whom I am asking to sign. If sufficient signatures are obtained, I think the next step should be an international scientific congress which should be invited by the signatories to pass a resolution on the lines of the draft resolution which I enclose. I hope that in this way both governments and public opinion can be made aware of the seriousness of the situation.

On the whole, I have thought that it was better at this time to approach only men of science... Scientists have, and feel they have, a special responsibility, since their work has unintentionally caused our present dangers. Moreover, widening this field would make it very much more difficult to steer clear of politics.<sup>59</sup>

Thus, Russell’s thinking finally came round to include Born’s original idea of a statement, and Joliot-Curie’s call for a conference.

Albert Einstein wrote a brief 3-line letter to Russell on April 11:

Thank you for your letter of April 5. I am gladly willing to sign your excellent statement. I also agree with your choice of the prospective signers.<sup>60</sup>

In what would forever become the most stirring aspect of the subsequent Manifesto, Einstein’s signature on this letter and on the Manifesto itself were his last signatures. Two days following his correspondence with Russell, he was “fatally stricken.”<sup>61</sup> He died on April 18, 1955. Russell was flying from Rome to Paris on that day, and when the pilot announced Einstein’s death Russell “felt shattered.” He thought the whole plan would fall through without Einstein’s endorsement. However, when he arrived at his hotel in Paris, he found Einstein’s letter.<sup>62</sup>

As Joseph Rotblat eloquently summarized:

...this gives the Manifesto extra poignancy: the last message from the man who was the symbol of the great heights the human intellect can reach, imploring us not to let all this be destroyed by human folly.<sup>63</sup>

The interaction between Bertrand Russell and Albert Einstein was crucial in the evolution of Russell’s thinking about the statement, its potential signatories and possible impact. As one author claimed, “Russell’s initial idea was considerably influenced by Einstein and the outcome was quite rightly known as the Russell-Einstein Declaration.”<sup>64</sup>

It is impossible to know whether continued collaboration between Russell and Einstein



might have yielded even greater results than Russell achieved on his own. Some immediate effects of Einstein's death were noted by one observer:

Einstein's death made it more difficult for Russell to collect signatures from American scientists. It also fixed the text of the statement, for no significant changes could now be made without sacrificing Einstein's support. This was a blessing in disguise, since it saved Russell from a good deal of negotiation over the wording.<sup>65</sup>

### Why Niels Bohr Did Not Sign

As previously mentioned, both Einstein and Russell initially felt that the involvement of Niels Bohr was essential to any possible success of this initiative. This was most likely due to the fact that Bohr was one of the first atomic scientists to warn of the challenges these new weapons would pose for international security.

While still at Los Alamos, Bohr spoke with fellow scientists about these matters, emphasizing the need for openness with Russia as a way to avoid a future arms race. Joseph Rotblat was one of the people with whom he shared these views. Bohr joined Rotblat in his room at 8:00 am each morning so they could listen to a long-wave bulletin of BBC world news. Afterwards, they would discuss world events and the conversation would wander. As Rotblat said, "this is how I got to learn from him things which were not known generally, namely his scheme which he had that we should share the secret of the bomb with the Russians...on condition that they will agree to international control of atomic energy in all its aspects."<sup>66</sup>

Bohr held meetings with both Roosevelt and Churchill in 1944 in which he encouraged this approach. These efforts looked promising after an hour-and-a-half long talk with Roosevelt, but were dashed after a disastrous meeting with Churchill for which Churchill was, Rotblat believes, "deliberately not briefed." During the meeting, according to Rotblat, Bohr's speech impediment fed into Churchill's deep distrust of Bohr's intentions. Rotblat summarized, "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."<sup>67</sup>

Bohr later issued many of the same points on June 9, 1950 in an "Open Letter to the United Nations."<sup>68</sup> However, this letter "evoked very little public reaction outside Scandinavia."<sup>69</sup> Despite this minimal response, he continued to emphasize the importance of the United Nations and to play a leading role in discussions with his fellow scientists.

For example, in 1944, Einstein had contacted Bohr with an idea to "induce [international scientists] to prevail upon the political leaders in their countries, in order to achieve an internationalization of military power."<sup>70</sup> Bohr discouraged Einstein from pursuing this plan, since he feared it "might have the worst possible consequences if anyone bound to official secrecy were to participate in it."<sup>71</sup> Einstein "promised Bohr he would remain silent."<sup>72</sup> He clearly valued Bohr's advice and leadership on these matters.

This was obvious in correspondence relating to what became known as the Russell-Einstein Manifesto. As mentioned earlier, Albert Einstein replied enthusiastically to Russell's first inquiry about the "need for eminent men of science...to do something dramatic to bring home to the public and governments the disasters that may occur."<sup>73</sup> In his response, Einstein proposed a course of action. He suggested a public declaration, endorsed by a small number of men with international scientific stature. He wrote:

The neutral countries ought to be well represented. For example, it is absolutely vital to include Niels Bohr, and surely there is little doubt that he would join.



### Linus Pauling

USA, 1901–1994

Nobel Prize in Chemistry 1954 "for his research into the nature of the chemical bond and its application to the elucidation of the structure of complex substances"

Nobel Peace Prize 1962<sup>1</sup>

"I believe that there will never again be a great world war—a war in which the terrible weapons involving nuclear fission and nuclear fusion would be used. And I believe that it is the discoveries of scientists upon which the development of these terrible weapons was based that is now forcing us to move into a new period in the history of the world, a period of peace and reason, when world problems are not solved by war or by force, but are solved in accordance with world law, in a way that does justice to all nations and that benefits all peoples."<sup>2</sup>

Pauling was not one of the initial signatories of the Manifesto, but he added his name once he received word of the statement. Pauling was himself a leading voice in efforts to halt nuclear testing. For example, his 1957 Scientists' Bomb Test Appeal was signed by over 11,000 scientists. Pauling attended four Pugwash meetings between 1958 and 1962.

<sup>1</sup> Photo Source: © The Nobel Foundation

<sup>2</sup> Linus Pauling, Nobel Lecture, December 11, 1963. From Frederick W. Haberman (ed), *Nobel Lectures, Peace 1951–197* (Amsterdam: Elsevier Publishing Company, 1971). Available at <http://nobelprize.org/peace/laureates/1962/pauling-lecture.html>.

“It was a dreadful week. All day long the telephone rang and the doorbell pealed. Journalists and wireless directors wanted to be told what this important piece of news was to be....”

—Bertrand Russell

Indeed, he might even be willing to visit you beforehand and take part in formulating the text of the document to be signed. He might also be helpful in proposing and enlisting signatories.<sup>74</sup>

Indeed, Einstein followed up this suggestion with a personal letter to Bohr, dated March 2, 1955. He included a copy of Bertrand Russell’s letter describing the project. He wrote to Bohr:

Bertrand Russell knows and desires that I write you. Of course, he is well aware that you could greatly aid the project because of your influence, your experience and your personal relationships with outstanding people; indeed, he realizes that your counsel and active participation are virtually indispensable to the success of the project....Much will be gained if you can reach agreement with Bertrand Russell on the main points.<sup>75</sup>

Russell stated that he “could achieve no reply from him for many weeks in spite of repeated letters and telegrams.”<sup>76</sup> When Bohr replied to Russell on March 23,

Bohr voiced doubt whether such a declaration would have the desired effect, especially with respect to free access to vital information, which Bohr deemed essential. He also feared that the declaration might impede the forthcoming United Nations Conference, but said he was giving much thought to the proposal and hoped he might reach a more considered opinion.<sup>77</sup>

In the end, Bohr did not align himself with the declaration, and did not become involved later with the Pugwash movement.<sup>78</sup> (He passed away in 1962.) The general impression is that he was absolutely committed to pursuing the need for openness between governments, “so much so that he would not weaken it by joining the other ‘peace’ moves and appeals from men such as Einstein and Bertrand Russell.”<sup>79</sup> As Rotblat said, he would have believed that “anything of the sort of Russell’s proposal should come really from the United Nations.”<sup>80</sup>

### “This is Going to be a Damp Squib”

After determining the scope of the Manifesto, drafting it, and gathering most of the signatures, Russell turned his attentions to planning the release of the statement. The following, lengthy quote provides, in Russell’s own words, insight into the excitement and uncertainty surrounding the release strategy:

It seemed to me that it should be given a dramatic launching in order to call attention to it, to what it said and to the eminence of those who upheld it. After discarding many plans, I decided to get expert advice. I knew the editor of the *Observer* slightly and believed him to be liberal and sympathetic. He proved at that time to be both. He called in colleagues to discuss the matter. They agreed that something more was needed than merely publishing the fact that the manifesto had been written and signed by a number of eminent scientists of varying ideologies. They suggested that a press conference should be held at which I should read the document and answer questions about it. They did far more than this. They offered to arrange and finance the conference with the proviso that it not become, until later, public knowledge that they had done so. It was decided finally that the conference should take place on July 9th (1955). A room was engaged in Caxton Hall a week before. Invitations were sent to the editors of all the journals and to the representatives of foreign journals as well as to the BBC and representatives of foreign radio and TV in London. This invitation was

merely to a conference at which something important of world-wide interest was to be published. The response was heartening and the room had to be changed to the largest in the Hall.

It was a dreadful week. All day long the telephone rang and the doorbell pealed. Journalists and wireless directors wanted to be told what this important piece of news was to be.... The burden of all this flurry fell upon my wife and my house-keeper. I was not permitted to appear or to speak on the telephone except to members of the family. None of us could leave the house. I spent the week sitting in a chair in my study trying to read. At intervals, I was told later, I muttered dismally, 'This is going to be a damp squib.'<sup>81</sup>

In finding a chair for the press conference, Bertrand Russell sought someone who would not only add lustre to the occasion but would be equipped to help... in the technical questions that would surely be asked. For one reason or another everyone whom I approached refused the job. I confess that I suspected their refusal to have been the result of pusillanimity. Whoever took part in this manifesto or its launching ran the risk of disapproval that might, for a time at any rate, injure them or expose them to ridicule, which they would probably mind even more. Or perhaps their refusal was the result of their dislike of the intentional dramatic quality of the occasion. Finally, I learned that Professor Josef Rotblat was sympathetic.<sup>82</sup>

Joseph Rotblat described this call for his involvement in more dramatic terms:

The preceding week [before the press conference] I spent with friends in Bray, a small village in Ireland. One evening, after returning from a dinner in Dublin, I found a message from the police to call immediately. Somewhat alarmed I hurried to the station, only to find that Bertrand Russell had phoned asking me to ring him urgently. The telephone at the police station was the only one in the village.

Russell's request was that I should take the Chair at the Press Conference. He was worried that there might be technical questions about the H-bomb which he would be unable to answer, and I was the only one among the signatories to have worked on the Manhattan Project. Since the Panorama Programme the previous year he was confident that I would manage to answer awkward questions. And so I, the most junior of the signatories, found myself chairing this historic episode.<sup>83</sup>

In his autobiography, Bertrand Russell wrote of Joseph Rotblat in the most complimentary of terms:

[Professor Rotblat] bravely and without hesitation agreed to act as Chairman and did so when the time came with much skill. From the time of that fortunate meeting I have often worked closely with Professor Rotblat and I have come to admire him greatly. He can have few rivals in the courage and integrity and complete self-abnegation with which he has given up his own career (in which, however, he still remains eminent) to devote himself to combatting the nuclear peril as well as other allied evils. If ever these evils are eradicated and international affairs are straightened out, his name should stand very high indeed among the heroes.<sup>84</sup>



## Cecil Frank Powell

UK, 1903–1969

Nobel Prize in Physics 1950 "for his development of the photographic method of studying nuclear processes and his discoveries regarding mesons made with this method"<sup>1</sup>

"Never before has a generation been faced by such an acute dilemma. It will be decided in our times, whether the long and painful progress of humanity, from savagery, through barbarism, to civilization, is to be followed by an advance towards a splendid future, or whether we are to suffer a stunning blow in a war with atomic weapons, a battered remnant of humanity beginning life anew in a strange world in which even the surviving animal and vegetable life of our planet has assumed strange and distorted forms."<sup>2</sup>

Powell was extremely active in the earliest days of Pugwash. As Rotblat wrote: "He was, of course, very close to Bertrand Russell, and shared with him a unique distinction: both of them received the Nobel Prize in the same year, 1950... Cecil Powell has been the backbone of the Pugwash Movement. He gave it coherence, endurance and vitality... Cecil Powell has chaired the meetings of the Pugwash Continuing Committee, the body which organizes the Pugwash Conferences, practically since it was set up..."<sup>3</sup> Powell played a significant role in Pugwash, often standing in for Bertrand Russell. He attended 15 meetings (including the first) from 1957 to 1968.

<sup>1</sup> Photo Source: © The Nobel Foundation

<sup>2</sup> Cecil Powell, quoted by Joseph Rotblat in a speech at the University of Bristol, February 5, 1970, "C.F. Powell Memorial," *Pugwash Newsletter*, 7 (April 1970), 98.

<sup>3</sup> Joseph Rotblat, *ibid*, 97-98.



## Joseph Rotblat

UK, 1908–

Nobel Peace Prize 1995 (with the Pugwash Conferences on Science and World Affairs)

“for their efforts to diminish the part played by nuclear arms in international politics and, in the longer run, to eliminate such arms”<sup>1</sup>

“At a time when science plays such a powerful role in the life of society, when the destiny of the whole of mankind may hinge on the results of scientific research, it is incumbent on all scientists to be fully conscious of that role, and conduct themselves accordingly. I appeal to my fellow scientists to remember their responsibility to humanity...

“I have to bring to your notice a terrifying reality: with the development of nuclear weapons, Man has acquired, for the first time in history, the technical means to destroy the whole of civilization in a single act. Indeed, the whole human species is endangered, by nuclear weapons or by other means of wholesale destruction which further advances in science are likely to produce.

“I have argued that we must eliminate nuclear weapons. While this would remove the immediate threat, it will not provide permanent security. Nuclear weapons cannot be disinvited...

continued on page 23

## The Statement Gains Worldwide Attention

Bertrand Russell began the July 9, 1955 press conference with a brief introduction, during which he summed up his hopes for the statement's impact: “I am bringing the warning pronounced by the signatories to the notice of all the powerful Governments of the world in the earnest hope that they may agree to allow their citizens to survive.”<sup>85</sup>

The statement included ringing phrases:

In the tragic situation which confronts humanity, we feel that scientists should assemble in conference to appraise the perils that have arisen as a result of the development of weapons of mass destruction, and to discuss a resolution in the spirit of the appended draft.

We are speaking on this occasion, not as members of this or that nation, continent, or creed, but as human beings, members of the species Man, whose continued existence is in doubt. The world is full of conflicts; and, overshadowing all minor conflicts, the titanic struggle between Communism and anti-Communism.

Almost everybody who is politically conscious has strong feelings about one or more of these issues; but we want you, if you can, to set aside such feelings and consider yourselves only as members of a biological species which has had a remarkable history, and whose disappearance none of us can desire.

We shall try to say no single word which should appeal to one group rather than to another. All, equally, are in peril, and, if the peril is understood, there is hope that they may collectively avert it.

We have to learn to think in a new way. We have to learn to ask ourselves, not what steps can be taken to give military victory to whatever group we prefer, for there no longer are such steps; the question we have to ask ourselves is: what steps can be taken to prevent a military contest of which the issue must be disastrous to all parties?...

[T]he best authorities are unanimous in saying that a war with H-bombs might possibly put an end to the human race. It is feared that if many H-bombs are used there will be universal death, sudden only for a minority, but for the majority a slow torture of disease and disintegration....

Here, then, is the problem which we present to you, stark and dreadful and inescapable: Shall we put an end to the human race; or shall mankind renounce war? People will not face this alternative because it is so difficult to abolish war....

There lies before us, if we choose, continual progress in happiness, knowledge, and wisdom. Shall we, instead, choose death, because we cannot forget our quarrels? We appeal as human beings to human beings: Remember your humanity, and forget the rest. If you can do so, the way lies open to a new Paradise; if you cannot, there lies before you the risk of universal death.

### Resolution:

We invite this Congress, and through it the scientists of the world and the general public, to subscribe to the following resolution:

‘In view of the fact that in any future world war nuclear weapons will certainly be employed, and that such weapons threaten the continued existence of mankind, we urge the governments of the world to realize, and to acknowledge publicly, that their purpose cannot be furthered by a world war, and we urge them, consequently, to find peaceful means for the settlement of all matters of dispute between them.’<sup>86</sup>

The statement was signed by Max Born (Professor of Theoretical Physics at Göttingen, Nobel Prize in Physics), Percy W. Bridgman (Professor of Physics, Harvard University, Foreign Member of the Royal Society, Nobel Prize in Physics), Albert Einstein, Leopold Infeld (Professor of Theoretical Physics, University of Warsaw, Member of the Polish Academy of Sciences), Frédéric Joliot-Curie (Professor of Physics at the Collège de France, Nobel Prize in Chemistry), Herman J. Muller (Professor of Zoology, University of Indiana, Nobel Prize in Physiology and Medicine), Linus Pauling (who added his name after the initial release, Professor of Chemistry, California Institute of Technology, Nobel Prize in Chemistry), Cecil F. Powell (Professor of Physics, Bristol University, Nobel Prize in Physics), Joseph Rotblat (Professor of Physics, University of London, St. Bartholomew’s Hospital Medical College), Bertrand Russell, and Hideki Yukawa (Professor of Theoretical Physics, Kyoto University, Nobel Prize in Physics). (Please see sidebars for more information about the signatories and their later involvement in Pugwash.)

Bertrand Russell referred to this group in the press conference as being “exceedingly eminent in the scientific world.”<sup>87</sup> All but two had received Nobel prizes, and Russell predicted that “the other two I think will get the Nobel Prize before too long! That is the order of eminence of these men.”<sup>88</sup>

Russell claimed at the press conference to have contacted 18 men for signatures, “None of the answers I have received was unsympathetic. Those who did not sign had various good reasons, for instance, that they had official positions or were engaged in some official work which made it difficult, but nobody either of Right or of the Left replied in a manner that was unsympathetic.”<sup>89</sup>

It was at the time a significant accomplishment to have signatures from men from such a wide range of countries and political perspectives. However, the lack of Russian signatures was notable. Rotblat reflected that Russell’s earlier strong anti-Communist stand was “to some extent...one of the reasons why no Russians signed the Manifesto....They still didn’t quite trust him.”<sup>90</sup>

As mentioned in the introduction to this paper, the media strategy was such that the reporters were invited to attend a press conference of world significance, but they were not told what to expect. Rotblat wrote:

It was thought that only a few of the Press would turn up and a small room was booked in Caxton Hall for the Press Conference. But it soon became obvious that the interest was increasing and the next larger room was booked. In the end the largest room was taken and on that day of the Conference this was packed to capacity with representatives of the press, radio and television from all over the world.<sup>91</sup>

The journalists were reportedly initially skeptical, but soon became enthusiastic. Rotblat described the change in atmosphere in the room:

Russell answered a barrage of questions from members of the press, some of whom were initially openly hostile to the ideas contained in the Manifesto. Gradually, however, they became convinced by the forcefulness of his arguments,

## Joseph Rotblat *continued*

“The only way to prevent [catastrophe] is to abolish war altogether. War must cease to be an admissible social institution. We must learn to resolve our disputes by means other than military confrontation...”

“The quest for a war-free world has a basic purpose: survival. But if in the process we learn how to achieve it by love rather than by fear, by kindness rather than by compulsion; if in the process we learn to combine the essential with the enjoyable, the expedient with the benevolent, the practical with the beautiful, this will be an extra incentive to embark on this great task.

“Above all, remember your humanity.”<sup>2</sup>

Joseph Rotblat played a pivotal role in the founding of Pugwash. Rotblat has participated in all levels of Pugwash, he was secretary-general, president, and remains a member of the Pugwash Council. Needless to say, Joseph Rotblat has attended more Pugwash meetings than anyone else. He has the distinction of being the only person to have participated in every annual conference since the beginning.

<sup>1</sup> Photo Source: Pugwash Council

<sup>2</sup> Joseph Rotblat, “Remember Your Humanity,” Nobel Speech, December 10, 1995, Oslo, Norway. <http://nobelprize.org/peace/laureates/1995/rotblat-lecture.html>

as was evident in the excellent reporting in the Press, which in many cases gave front page coverage.<sup>92</sup>

The Manifesto was widely covered in newspapers around the world. The *New York Times* published an editorial on the “global patriotism” expressed in the Manifesto:

The sinister clouds that blossomed over Hiroshima and Nagasaki have not wholly dissipated. Their psychological fallout continues, distressing the minds of men.

What can cure this sickness of our generation?... The answer is an agreement not to go to war... because, in grim truth, world-wide war would now be suicide for all concerned, aggressors and defenders alike....

Lord Russell may be thanked to the degree that he has waked us up—and possibly our Communist contemporaries—to reality.<sup>93</sup>

Not all of the press attention was positive. For example, the *New York Times* pointed out in side stories those who refused to sign the appeal, and it ran a full-length story entitled, “The H-Bomb Danger: An Analysis of Scientists’ Warning Finds It Is Old and Omits Much.” Harold Urey, a leading atomic scientist, was quoted as saying he refused to sign the appeal because “I don’t sign anything that’s futile.” He reportedly said, “It seemed to me their statement was completely obvious to anyone... It’s something everybody should know by this time.” He further complained that there was no practical way to implement the proposals.<sup>94</sup>

Rotblat summarized the overwhelming response they received from well-wishers all over the world:

The response to the Manifesto was indeed enthusiastic. Hundreds of letters and cables, from individuals and groups, came pouring in from all over the world, expressing approval and offering help. If any confirmation was needed, the attitude of the Press and the spontaneous response from the people showed that the Manifesto had struck a sensitive chord in the minds of the public; the idea that scientists should take an active part in world affairs was evidently approved by public opinion.<sup>95</sup>

Rotblat said that they knew from the press coverage and telephone calls they received from all over the world that they had “really, a very big reaction... it did not go down without effect.”<sup>96</sup>

The statement was sent to many world leaders, and received a favorable response from many of them. Russell forwarded the appeal to leaders of government in the USA, the Soviet Union, Britain, France, China and Canada, “the heads of countries that have acquired or will eventually acquire nuclear armaments,” as reported by the *New York Times*.<sup>97</sup>

The timing was important. An article in *Le Monde* subtitled, “Einstein’s Shadow on Geneva,” claimed that “Russell could hardly have chosen a better moment to publish the message from eight [sic] scientists against atomic warfare. Coming eight days before the opening of the Geneva Conference between the four heads of government of the United States, Great Britain, France and the Soviet Union, this message... can be seen as a solemn warning... The interest which it has already aroused in the public opinion of most countries will only reinforce the value of this warning...”<sup>98</sup>

The UK Prime Minister, Anthony Eden, on the eve of his trip to Geneva, said “I agree that only the abolition of war can finally remove the perils which threaten the future of mankind... I therefore welcome the fact that the statement recognizes that it is war itself and not simply nuclear weapons that must be abolished, and that the renunciation of nuclear weapons must

“If any confirmation was needed, the attitude of the Press and the spontaneous response from the people showed that the Manifesto had struck a sensitive chord in the minds of the public; the idea that scientists should take an active part in world affairs was evidently approved by public opinion.”

—Joseph Rotblat

form part of a general reduction of armaments. This is in full accord with the policy which Her Majesty's Government has consistently followed."<sup>99</sup>

The *New York Times* reported that "Congressmen and Government officials [in the USA] today happily endorsed the plea of Albert Einstein and eight other renowned scientists." The report mentioned two Democratic senators who had reservations. Senator Henry M. Jackson stated, "This declaration from London is a pious hope...but it will have very little meaning in this atomic age until there is means of enforcing it." And Senator Albert Gore agreed with the declaration "as an ideal," but added that "there remains the practical problem of dealing with aggression in its devious modern-day forms—subversion, infiltration and revolution."<sup>100</sup>

*L'Osservatore Romano*, which reflected the Vatican's viewpoint, expressed surprise that the appeal had a greater response than similar statements by the Pope. The front page article took issue with the fact that the statement "spoke of the 'biological species' [man] in the same way as the director of a zoological garden would say that the heat was excessive for his polar bears or that there was not enough water for his seals or exotic ducks."<sup>101</sup>

### The Mainau Declaration

As mentioned earlier, a similar effort to the Russell-Einstein Manifesto was underway at the same time in Germany. The German scientist Otto Hahn did not sign the Russell-Einstein Manifesto despite long-standing opposition to the use of nuclear energy for military uses.<sup>102</sup> (Hahn had been involved in Germany's chemical weapons efforts during World War I.<sup>103</sup>) Russell wrote:

After some correspondence, Professor Otto Hahn refused to sign, because, I understood, he was working for the forthcoming 'Mainau Declaration' of scientists. This declaration was already in preparation, but seemed to me to be somewhat emasculated by the fact that it was intended to include among its signatories only scientists of the West. Fortunately, others who signed the Mainau Declaration agreed with me and signed both.<sup>104</sup>

According to Horst Kant:

...Otto Hahn was not willing to join the activities of those shown by Bertrand Russell (1872-1970) or by the World Federation of Scientific Workers under Frédéric Joliot-Curie (1900-1958) for fear of being shifted into the vicinity of Communists or Russians respectively—and being in fear of communism was one of the most powerful political batons in the 1950s West-Germany.<sup>105</sup>

Hahn apparently chose to use the annual meeting of Nobel laureates in Lindau, West Germany, as the occasion to release a statement as a way to isolate it from "communist influences" and in hopes that this exclusivity would have more political impact.<sup>106</sup>

The Mainau Declaration was made public on July 15, 1955, just six days after the Caxton Hall press conference. Its text was in many ways very similar to the Russell-Einstein Manifesto:

...Our appeal is to all men everywhere. We must recognize that ours is a common fate, that if we are to live, it can only be as brothers. The alternative is that we will die....

[W]e have learned with horror that science has...provided man with the instruments for self-destruction.

In an all-out war the earth can be made so radioactive that whole nations will be destroyed. Many men and women of neutral countries also might be killed....



### Earl (Bertrand Arthur William) Russell

UK, 1872–1970

Nobel Prize in Literature 1950 "in recognition of his varied and significant writings in which he champions humanitarian ideals and freedom of thought"<sup>1</sup>

"For countless ages the sun rose and set, the moon waxed and waned, the stars shone in the night, but it was only with the coming of Man that these things were understood. In the great world of astronomy and in the little world of the atom, Man has unveiled secrets which might have been thought undiscoverable. In art and literature and religion, some men have shown a sublimity of feeling which makes the species worth preserving. Is all this to end in trivial horror because so few are able to think of Man rather than of this or that group of men? Is our race so destitute of wisdom, so incapable of impartial love, so blind even to the simplest dictates of self-preservation, that the last proof of its silly cleverness is to be the extermination of all life on our planet?...I cannot believe that this is to be the end. I would have men forget their quarrels for a moment and reflect that, if they will allow themselves to survive, there is every reason to expect the triumphs of the future to exceed immeasurably the triumphs of the past."<sup>2</sup>

Russell's health was already declining at the time of the first Pugwash conference, and he was not able to attend, though he sent a taped message in his place. He served as the chair of the Continuing Committee, established to organize further conferences. He attended two meetings, in 1958 in Kitzbühel, Austria and London in 1962.

<sup>1</sup> Photo Source: © The Nobel Foundation

<sup>2</sup> Bertrand Russell, "Man's Peril," BBC Radio, London, 30 December 1954. (Pugwash Archives.)



## Hideki Yukawa

Japan, 1907–1981

Nobel Prize in Physics, 1949 “for his prediction of the existence of mesons on the basis of theoretical work on nuclear forces”<sup>1</sup>

Hideki Yukawa worked for decades for nuclear disarmament. He developed a friendship with Einstein when he spent a year at the Institute for Advanced Study at Princeton in 1948. After Einstein died he said, “I feel very strongly that we have to take up his search and striving for world peace, and support Mr. Russell’s efforts to realize it.”<sup>2</sup>

“Why are we human beings still treading such a foolish and pernicious path? What can we gain from the spiraling arms race? With much regret I have to state that even scientists gathering at Pugwash Conferences in pursuit of world peace cannot avoid some responsibility for this matter. One of the fundamental causes for the present awful situation of the arms race, I think, is that we have rejected as unrealistic the original idea of Bertrand Russell that nuclear weapons are an absolute evil and must be eliminated... Another fatal cause may be that we have been so indolent, if not rather timid, in pursuit of a new world order where one can live without armaments.”<sup>3</sup>

Yukawa attended 5 Pugwash meetings, including the first, from 1957 to 1975. He was very active in the Japanese Pugwash group during the time when his health precluded long-distance travel.

<sup>1</sup> Photo source: © The Nobel Foundation

<sup>2</sup> H. Yukawa, quoted in Toshiyuki Toyoda, “Hideki Yukawa 1907–1981,” *Bulletin of the Atomic Scientists* 38, No. 8 (October 1982): 65.

<sup>3</sup> H. Yukawa, “The Absolute Evil,” *Bulletin of the Atomic Scientists* 37, No. 1 (January 1981): 37.

The independent nations must bring themselves to the decision by which they voluntarily renounce force as the last political recourse. If they are not prepared to do this, they will cease to exist.<sup>107</sup>

Of the Mainau Declaration’s eighteen signatories, three also had signed the Russell-Einstein Manifesto: Born, Muller, and Yukawa.<sup>108</sup> By one year later, there were 51 signatures to the declaration.<sup>109</sup>

The immediate reaction to the Mainau Declaration was limited. Russell had a better formulated press strategy. Hahn’s group was more casual, and in fact, they did not send out the Declaration to all potential participants until the autumn of 1955.<sup>110</sup>

## First Steps on the Road to Pugwash

As mentioned earlier, one of the keys to the success of the Russell-Einstein Manifesto was the inclusion in the statement of a call to action. This is one of the major differences between the Russell-Einstein Manifesto and the Mainau Declaration. Timing and prior planning worked to the advantage of Russell’s call. Several different trends merged following the statement’s release. While this current paper will not go into many details about how the conference was organized, this section highlights other contemporaneous efforts that made the first Pugwash conference possible.

Independently of the previously mentioned efforts by Frédéric Joliot-Curie and the WFSW to organize an international conference of scientists, another effort involving the Federation of American Scientists (FAS) and the British Atomic Scientists’ Association (ASA) had been underway.

In 1951, at the first international conference on nuclear physics held in Chicago after the war, Joseph Rotblat and Eugene Rabinowitch<sup>111</sup> met for the first time. Rabinowitch held an informal talk there that began a collaboration that would ultimately lead toward the first Pugwash conference. Rotblat and Rabinowitch, leaders in the ASA and FAS, respectively, stayed in close communication.<sup>112</sup>

Early in 1954, Jawaharlal Nehru, the Indian Prime Minister “called for the setting up of a committee of scientists to explain to the world the effect a nuclear war would have on humanity. This idea was taken up in a correspondence between the FAS and the ASA...”<sup>113</sup> In the spring of 1954 (the year of the test in the Bikini Atoll), Eugene Rabinowitch, for the FAS, and Joseph Rotblat, for the ASA, polled leaders in the two organizations on the “desirability of organizing an International Conference on Science and World Affairs.”<sup>114</sup> They found that “considerable support” existed in their groups, and also among a few French scientists whom they contacted.<sup>115</sup> The ASA set up a study group to prepare for an “International Conference on Science and Society.”<sup>116</sup> During 1954 and 1955, Rabinowitch and Rotblat met several times in London to discuss the idea of a meeting with the Russians.<sup>117</sup> Rotblat said,

He and I worked out an agenda for the international meeting, which at that time was still a dream. But as it turned out, it was the actual agenda for the first Pugwash Conference.<sup>118</sup>

These efforts “were soon overtaken by other events.”<sup>119</sup> The World Association of Parliamentarians for World Government, in conjunction with Bertrand Russell, began to plan for an international conference of scientists.<sup>120</sup> Alexander Haddow, Rotblat and Rabinowitch helped the World Association prepare a meeting on August 3-5, 1955, a few short weeks after the release of the Russell-Einstein Manifesto.<sup>121</sup> While only a few scientists attended, it was a positive first step, and provided the opportunity for Academician Alexander Topchiev from the



Soviet Union to meet Rabinowitch. Topchiev was a senior official in the Soviet Academy of Sciences who would later become the head of the Soviet Pugwash group.<sup>122</sup>

Plans began for a future conference.<sup>123</sup> They established the following three commissions for this purpose:

- 1) the assessment of the consequences of nuclear weapons and nuclear power development (with Rotblat as convener);
- 2) problems of disarmament (convener Peter Hodgson);
- 3) social responsibilities of scientists (convener Jacob Bronowski).<sup>124</sup>

While these commissions spurred some discussion within the ASA, they “never developed into proper study groups and they gradually faded away.”<sup>125</sup> These subjects, based on the agenda Haddow, Rabinowitch, and Rotblat conceived for the Parliamentarians’ conference, became essentially the working group topics for the first Pugwash conference.

In his speech to the Association of Parliamentarians for World Government conference, Bertrand Russell seemed not yet fully aware of what was to come in the form of the soon-to-be-born Pugwash Conferences:

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.<sup>126</sup>

Russell did not seem to sense the momentum he created toward just such involvement of scientists in world affairs. Within two years the strands came together: the continuing efforts by the World Federation of Scientific Workers and its leaders, especially Powell and Burhop, to organize an international conference; interest shown in such a meeting by India’s Pandit Nehru; the collaborations between Rabinowitch and Rotblat; the generous offer to fund such a conference by Cyrus Eaton and others; and the continuing uncertainties over the impact of atmospheric nuclear testing. But these are all subjects for subsequent examination.

## Enduring Impact

As the 1950s continued to unfold, other great scientists would add their voices to the ongoing debate about the hydrogen bomb. They included Albert Schweitzer and Linus Pauling, both of whom undertook personal efforts to use their considerable stature to draw attention to the dangers of, in the first instance, nuclear testing.

At a time of governmental secrecy and misinformation, the public was confused and needed help in sorting through the scientific jargon and the implications of new discoveries. Russell’s appeal engaged some of the most eminent moral and scientific voices of the day. To this day, the prestige added to the statement by Einstein’s signature adds weight to the warning.

The Manifesto was not an end in and of itself (unlike the Mainau Declaration). The call for a conference gave the media and the public something to follow in the future. It probably was not enough to raise alarm without suggesting positive steps forward. Russell knew this, and believed it so fervently that he willingly changed his original plan to allow for a conference, in which he in fact appeared to have little faith initially.

Another key aspect of the Manifesto was Russell’s insistence on inclusion of people from a wide range of political and national perspectives. Despite his own earlier fierce anti-Communism, he believed it was essential to cross the political divides in order to protect humanity from a

“The independent nations must bring themselves to the decision by which they voluntarily renounce force as the last political recourse. If they are not prepared to do this, they will cease to exist.”

—The Mainau Declaration, 1955

looming danger. The Manifesto also involved people from different generations, thereby creating the possibility of its long-term propagation and impact.

The Manifesto was eloquent and not too technical. Having a Nobel laureate in literature write the statement ensured that the message had ringing phrases equal to the dangers it addressed.

Perhaps most importantly, Russell sought media advice, and allowed those who knew how the media worked to lead the way. (Schweitzer later did this as well, having his later statement released from Radio Oslo, the city of the Nobel Peace Prize.)

Finally, there is an extent to which the Manifesto was serendipitously timed. The fact that it was one of Einstein's last acts gives it eternal potency. In addition, it also pulled together many other efforts and thoughts at the time. It gave a rallying point for those who were already seeking a way forward, and provided an ongoing forum for these discussions to continue. It is clear that those involved in this early effort little dreamed of the long-term impact their statement would have, and how it would be a catalyst for the formation of an organization that would ultimately help determine the direction of efforts to control the looming arms race.

*Bertrand Russell reading the proclamation of the Russell-Einstein Manifesto in Caxton Hall, London, on 9 July 1955.*

Photo: Pugwash Archives



# The Russell-Einstein Manifesto, July 9, 1955

In the tragic situation which confronts humanity, we feel that scientists should assemble in conference to appraise the perils that have arisen as a result of the development of weapons of mass destruction, and to discuss a resolution in the spirit of the appended draft.

We are speaking on this occasion, not as members of this or that nation, continent, or creed, but as human beings, members of the species Man, whose continued existence is in doubt. The world is full of conflicts; and, overshadowing all minor conflicts, the titanic struggle between Communism and anti-Communism.

Almost everybody who is politically conscious has strong feelings about one or more of these issues; but we want you, if you can, to set aside such feelings and consider yourselves only as members of a biological species which has had a remarkable history, and whose disappearance none of us can desire.

We shall try to say no single word which should appeal to one group rather than to another. All, equally, are in peril, and, if the peril is understood, there is hope that they may collectively avert it.

We have to learn to think in a new way. We have to learn to ask ourselves, not what steps can be taken to give military victory to whatever group we prefer, for there no longer are such steps; the question we have to ask ourselves is: what steps can be taken to prevent a military contest of which the issue must be disastrous to all parties?

The general public, and even many men in position of authority, have not realized what would be involved in a war with nuclear bombs. The general public still thinks in terms of the obliteration of cities. It is understood that the new bombs are more powerful than the old, and that, while one A-bomb could obliterate Hiroshima, one H-bomb could obliterate the largest cities, such as London, New York, and Moscow.

No doubt in an H-bomb war great cities would be obliterated. But this is one of the minor disasters that would have to be faced. If everybody in London, New York, and Moscow were exterminated, the world might, in the course of a few centuries, recover from the blow. But we now know, especially since the Bikini test, that nuclear bombs can gradually spread destruction over a very much wider area than had been supposed.

It is stated on very good authority that a bomb can now be manufactured which will be 2,500 times as powerful as that which destroyed Hiroshima. Such a bomb, if exploded near the ground or under water, sends radioactive particles into the upper air. They sink gradually and reach the surface of the earth in the form of a deadly dust or rain. It was this dust which infected the Japanese fishermen and their catch of fish.

No one knows how widely such lethal radioactive particles might be diffused, but the best authorities are unanimous in saying that a war with H-bombs might quite possibly put an end to the human race. It is feared that if many H-bombs are used there will be universal death—sudden only for a minority, but for the majority a slow torture of disease and disintegration.

Many warnings have been uttered by eminent men of science and by authorities in military strategy. None of them will say that the worst results are certain. What they do say, is that these results are possible, and no one can be sure that they will not be realized. We have not yet found that the views of experts on this question depend in any

degree upon their politics or prejudices. They depend only, so far as our researches have revealed, upon the extent of the particular expert's knowledge. We have found that the men who know most are the most gloomy.

Here, then, is the problem which we present to you, stark and dreadful and inescapable: Shall we put an end to the human race; or shall mankind renounce war?<sup>1</sup> People will not face this alternative because it is so difficult to abolish war.

The abolition of war will demand distasteful limitations of national sovereignty.<sup>2</sup> But what perhaps impedes understanding of the situation more than anything else is that the term "mankind" feels vague and abstract. People scarcely realize in imagination that the danger is to themselves and their children and their grandchildren, and not only to a dimly apprehended humanity. They can scarcely bring themselves to grasp that they, individually, and those whom they love are in imminent danger of perishing agonizingly. And so they hope that perhaps war may be allowed to continue provided modern weapons are prohibited.

This hope is illusory. Whatever agreements not to use H-bombs had been reached in time of peace, they would no longer be considered binding in time of war, and both sides would set to work to manufacture H-bombs as soon as war broke out, for, if one side manufactured the bombs and the other did not, the side that manufactured them would inevitably be victorious.

Although an agreement to renounce nuclear weapons as part of a general reduction of armaments<sup>3</sup> would not afford an ultimate solution, it would serve certain important purposes. First: any agreement between East and West is to the good in so far as it tends to diminish tension. Second, the abolition of thermonuclear weapons, if each side believed that the other had carried it out sincerely, would lessen the fear of a sudden attack in the style of Pearl Harbour, which at present keeps both sides in a state of nervous apprehension. We should therefore welcome such an agreement, though only as a first step.

Most of us are not neutral in feeling, but, as human beings, we have to remember that, if the issues between East and West are to be decided in any manner that can give any possible satisfaction to anybody, whether Communist or anti-Communist, whether Asian or European or American, whether White or Black, then these issues must not be decided by war. We should wish this to be understood, both in the East and in the West.

There lies before us, if we choose, continual progress in happiness, knowledge, and wisdom. Shall we, instead, choose death, because we cannot forget our quarrels? We appeal as human beings to human beings: Remember your humanity, and forget the rest. If you can do so, the way lies open to a new Paradise; if you cannot, there lies before you the risk of universal death.

<sup>1</sup> Professor Joliot-Curie wishes to add the words: "as a means of settling differences between States".

<sup>2</sup> Professor Joliot-Curie wishes to add that these limitations are to be agreed by all and in the interests of all.

<sup>3</sup> Professor Muller makes the reservation that this be taken to mean "a concomitant balanced reduction of all armaments".

## resolution:

We invite this Congress, and through it the scientists of the world and the general public, to subscribe to the following resolution:

*In view of the fact that in any future world war nuclear weapons will certainly be employed, and that such weapons threaten the continued existence of mankind, we urge the governments of the world to realize, and to acknowledge publicly, that their purpose cannot be furthered by a world war, and we urge them, consequently, to find peaceful means for the settlement of all matters of dispute between them.*

### Professor Max Born

Professor of Theoretical Physics at  
Göttingen; Nobel Prize in Physics

### Professor P.W. Bridgman

Professor of Physics, Harvard University,  
Foreign Member of the Royal Society;  
Nobel Prize in Physics

### Albert Einstein

### Professor L. Infeld

Professor of Theoretical Physics,  
University of Warsaw;  
Member of the Polish Academy of Sciences

### Professor J.F. Joliot-Curie

Professor of Physics at the College de France;  
Nobel Prize in Chemistry

### Professor H.J. Muller

Professor of Zoology, University of Indiana;  
Nobel Prize in Physiology or Medicine

### Professor L. Pauling

Professor of Chemistry,  
California Institute of Technology;  
Nobel Prize in Chemistry

### Professor C.F. Powell

Professor of Physics, Bristol University;  
Nobel Prize in Physics

### Professor J. Rotblat

Professor of Physics in the University of  
London, at St. Bartholomew's Hospital  
Medical College

### Bertrand Russell

### Professor Hideki Yukawa

Professor of Theoretical Physics,  
Kyoto University; Nobel Prize in Physics

Author's Note: This text of the Manifesto is from Joseph Rotblat, ed., *Proceedings of the First Pugwash Conference on Science and World Affairs*. Pugwash Council, 1982.

## notes:

- <sup>1</sup> Ten people had signed the statement at the time of its release. Linus Pauling later added his name. Einstein's signatures on the manifesto and the accompanying letter to Russell were his last two signatures. See Otto Nathan and Heinz Norden, *Einstein on Peace* (New York: Avenel Books, 1981), 639-640 and 631.
- <sup>2</sup> See Matthew Evangelista, *Unarmed Forces: The Transnational Movement to End the Cold War* (Ithaca: Cornell University Press, 1999), for an in-depth examination of the ground-breaking role played by Pugwash during the Cold War.
- <sup>3</sup> Kenneth Blackwell, ed., *Bertrand Russell: His Works. Volume 22: Civilization and the Bomb, 1944-47*. A hypertextual draft is available at [www.humanities.mcmaster.ca/~russell/brbomb.htm](http://www.humanities.mcmaster.ca/~russell/brbomb.htm) (accessed January 23, 2005).
- <sup>4</sup> Bertrand Russell, "The Bomb and Civilisation," *The Glasgow Forward*, Vol. 39, No. 33, August 18, 1945, in Blackwell, *Bertrand Russell: His Works*.
- <sup>5</sup> Bertrand Russell, November 1945 speech in the House of Lords. Quoted from the *News Chronicle*, April 1, 1954 in Bertrand Russell, *The Autobiography of Bertrand Russell, 1944-1969* (New York: Simon and Schuster, 1969), 72.
- <sup>6</sup> J. Rotblat, *Science and World Affairs: History of the Pugwash Conferences* (London: Dawsons of Pall Mall, 1962), 6.
- <sup>7</sup> According to Joseph Rotblat, the organization signed on very eminent scientists as vice presidents to help provide the organization "great respectability," even if they "were not so much sympathetic to our ideas about the bomb." When the ASA tried to do a report saying that Britain should not "follow the line of the acquisition...of nuclear weapons...the vice presidents who were from the establishment...said...this association of ours should not get involved in purely political issues." Rotblat then realized that it had been a "big mistake" to invite these men to participate, and to give them a veto. He then thought that it would be best to turn the organization's attention to public education about nuclear energy in both its aspects. Joseph Rotblat, discussion with the author, July 13, 2003.
- <sup>8</sup> Ibid. Rotblat attributes some of his thoughts on this matter to earlier discussions at Los Alamos with Niels Bohr, who foresaw an arms race if the atomic bomb were used against Japan without "trying to reconcile it with the Soviets..."
- <sup>9</sup> Rotblat spoke longer than any of the other guests, using many props from the earlier *Atom Train* exhibit to explain the basic principles of the hydrogen bomb. Other speakers explored social and political aspects of the weapons. Russell made the case that in the nuclear age we must either abolish war or war will abolish us. The Archbishop of York argued a more convoluted approach, defending the UK's bomb while referring to the sin and folly of men that led to this situation. BBC Panorama Programme, April 13, 1954. Rotblat said, "on the ethical situation, Russell made mincemeat of the Archbishop of York. I felt sorry for the Archbishop. He was a very nice man actually, but Bertrand Russell could be cruel in his logic." Interview with Joseph Rotblat, July 13, 2003.
- <sup>10</sup> Joseph Rotblat, discussion with the author, July 13, 2003.
- <sup>11</sup> This notion was highly disputed at the time. See, for example, William L. Laurence, "The H-Bomb Danger: An Analysis of Scientists' Warning Finds It Is Old and Omits Much," *The New York Times*, July 10, 1955. In this article, he refers to the "speculation" that a hydrogen bomb is a fission-fusion-fission bomb and says that "Authorities of the highest competence have assured this writer that no such uranium bomb exists or could exist..." This statement is later refuted in a letter by William C. Davidon, *The New York Times*, July 31, 1955, who writes, "Though U238 cannot sustain a chain reaction, this fact is irrelevant. U238 can capture neutrons...Practically all the neutrons of the energies produced in the fusion process, when captured by U238, cause it to fission." This is just a small snapshot of the ongoing debate.
- <sup>12</sup> P.E. Hodgson, "The British Atomic Scientists' Association, 1946-59," *Bulletin of the Atomic Scientists* 15, no. 9 (November 1959): 394.
- <sup>13</sup> J. Rotblat, "The Hydrogen-Uranium Bomb," *Bulletin of the Atomic Scientists* 11 (May 1955): 171-2, 177. The article states:  
"It seems more than likely that should there be a full-scale atomic war—in which the large stocks of the bigger and better hydrogen bombs now manufactured were used—it would have disastrous results for the whole world, partisans and neutrals alike, from the genetic point of view, quite apart from the immediate effects. But even without a war there is a probable risk of running into genetic trouble, if the tests of these weapons continue at the present rate."
- <sup>14</sup> Joseph Rotblat, "Bertrand Russell and the Pugwash Movement: Personal Reminiscences of Joseph Rotblat." This article originally appeared in the *Russell: The Journal of Bertrand Russell Studies* 18, no. 1 (Summer 1998). It was reprinted by *The ACTivist Magazine* 14, no. 5 (September/October 1998). It was accessed January 23, 2005 at <http://webhome.idirect.com/~ocpehr/articles/pugwash.htm>.
- <sup>15</sup> Joseph Rotblat, discussion with the author, July 13, 2003.
- <sup>16</sup> Joseph Rotblat, "Reminiscences on the 40<sup>th</sup> Anniversary of the Russell-Einstein Manifesto," *Pugwash Newsletter* (July/October 1995): 50.

- <sup>17</sup> The above account is based on Joseph Rotblat, discussion with the author, July 13, 2003.
- <sup>18</sup> Russell, *The Autobiography of Bertrand Russell*, 90.
- <sup>19</sup> To give a sense of the public's opinion at the time, a Gallup poll conducted in Britain was made public on April 14, 1954. Seventy-four per cent of those asked thought that an agreement to ban the atom and hydrogen bomb was desirable, although 57% said it was unlikely in the next year or two. George H. Gallup, *The Gallup Poll: Public Opinion 1935-1971* (New York: Random House, 1972), 1227. However, a US poll released on April 23, 1954 indicated that 71% of the people polled believed that the US should continue planned hydrogen tests. (Ibid., 1229). A poll released on April 6, 1955 showed that despite some initial efforts to educate the public by various scientists and groups, only 17% of the people in the US gave a correct description of what was meant by the "fall-out" of an H-bomb. (Ibid., 1322)
- <sup>20</sup> Russell, *The Autobiography of Bertrand Russell*, 90-91.
- <sup>21</sup> Ibid., 90.
- <sup>22</sup> Bertrand Russell, *Man's Peril*, December 23, 1954. Quoted in Russell, *The Autobiography of Bertrand Russell*, 91.
- <sup>23</sup> Nicholas Griffin, ed., *The Selected Letters of Bertrand Russell: The Public Years, 1914-1970* (New York: Routledge, 2001), 486.
- <sup>24</sup> Ibid.
- <sup>25</sup> Ibid.
- <sup>26</sup> Max Born to Albert Einstein, November 28, 1954. Quoted in Max Born, *The Born-Einstein Letters: Correspondence between Albert Einstein and Max and Hedwig Born from 1916 to 1955 with commentaries by Max Born*, trans. Irene Born (New York: Walker and Company, 1971), 229-230. In a letter dated January 17, 1955, Einstein later corrected him. Einstein said he referred to being an artisan as an example of earning a living that had "nothing to do with the search for knowledge." It was not necessarily a reference to the atomic bomb. According to Otto Nathan, it was a reference to the civil rights crisis led by McCarthy. Ibid., 232.
- <sup>27</sup> Bertrand Russell to Max Born, January 25, 1955. Quoted in Griffin, *Selected Letters*, 486.
- <sup>28</sup> Bertrand Russell to Max Born, January 25, 1955. Quoted in *ibid.*, 487.
- <sup>29</sup> Ibid., 488.
- <sup>30</sup> During the press conference at which the Russell-Einstein Manifesto was released, Bertrand Russell inadvertently forgot to mention Max Born was a signatory. Recalling this mistake, Russell wrote:
- "I learned that I had omitted Professor Max Born's name from the list of signatories, had, even, said that he had refused to sign. The exact opposite was the truth. He had not only signed but had been most warm and helpful. This was a serious blunder on my part, and one that I have never stopped regretting. ... Professor Born himself was magnanimous and has continued his friendly correspondence with me. As in the case of most of the other signatories the attempt and achievement of the manifesto took precedence over personal feelings." Russell, *The Autobiography of Bertrand Russell*, 99.
- <sup>31</sup> Born, *The Born-Einstein Letters*, 234.
- <sup>32</sup> Max Born to Albert Einstein, January 29, 1955. Quoted in Born, *The Born-Einstein Letters*, 233. Born commented that he and Yukawa correspond regularly, and see each other, for example, at the meetings of Nobel prize winners in Lindau, Germany. Born stated, "We are united not only by our ideas about physics...but also by our attitude toward the misuse of scientific research results for the purposes of war and destruction." Ibid., 233.
- <sup>33</sup> Maurice Goldsmith, *Frédéric Joliot-Curie: A Biography* (London: Lawrence and Wishart, 1976), 189-190. The Stockholm Appeal stated:
- "We demand the absolute banning of atomic weapons which are weapons of terror and of the mass destruction of whole populations.
- "We demand the setting up of rigorous international control to guarantee the implementation of this ban.
- "We consider that a Government which was the first to use atomic weapons against any other country would be committing a crime against humanity and should be regarded as war criminals.
- "We call upon all men of good will to sign this appeal." (Ibid., 190.)
- <sup>34</sup> Goldsmith, *Frédéric Joliot-Curie*, 182-183. The World Federation of Scientific Workers was established in 1946. According to a 1982 study by Rotblat, "Numerically, the World Federation of Scientific Workers is by far the largest organized group of

scientists and engineers who are concerned with the social implications of science and technology, striving for the maintenance of peace in the world, and opposed to the misuse of science for war. But its influence on these issues is not commensurate with the numerical strength of its membership. The main weakness of the WFSW is that by the distribution of its membership and the tenor of its pronouncements it is seen by many scientists in the West as being politically biased [sic] towards the communist ideology.” Joseph Rotblat, “Movements of scientists against the arms race,” in *Scientists, the Arms Race and Disarmament*, Joseph Rotblat (ed). (London: Taylor & Francis Ltd, 1982), 127-28.

<sup>35</sup> Goldsmith, *Frédéric Joliot-Curie*, 183.

<sup>36</sup> Ibid.

<sup>37</sup> Ibid., 191.

<sup>38</sup> Eric Burhop, January 4, 1955, quoted in *ibid.*, 192. According to Lawrence Wittner, also in January 1955, the World Peace Council launched the Vienna Appeal, which opposed “any government that prepares for atomic war” and demanded “the nuclear powers abolish all the atomic weapons they have in their possession and cease to produce them immediately.” This appeal, according to the WPC, eventually gathered 660 million signatures. Lawrence Wittner, *The Struggle Against the Bomb, Volume Two. Resisting the Bomb: A History of the World Nuclear Disarmament Movement, 1954-1970* (Stanford, California: Stanford University Press, 1997), 86.

<sup>39</sup> Goldsmith, *Frédéric Joliot-Curie*, 193.

<sup>40</sup> Frédéric Joliot-Curie to Bertrand Russell, January 31, 1955, quoted in *ibid.*

<sup>41</sup> Ibid.

<sup>42</sup> Bertrand Russell to Albert Einstein, February 11, 1955, quoted in Griffin, *The Selected Letters of Bertrand Russell*, 489.

<sup>43</sup> Bertrand Russell, quoted in Pierre Biquard, *Frédéric Joliot-Curie: The Man and His Theories*, trans. Geoffrey Strachen (New York: Paul S. Eriksson, Inc, 1966), 112.

<sup>44</sup> See Goldsmith, *Frédéric Joliot-Curie*, 194-195 and Bertrand Russell to Frédéric Joliot-Curie, June 17, 1955, quoted in Griffin, *Selected Letters of Bertrand Russell*, 490-492. At one point during these negotiations, Joliot sent Biquard to London to meet with Bertrand Russell. Joseph Rotblat was also part of these discussions. Rotblat says that Russell commented after the meeting that Biquard made Eric Burhop, accused at the time of being a Communist, look like the “bluest of Tories” compared to Biquard. Joseph Rotblat, discussion with the author, April 20, 2004.

<sup>45</sup> Goldsmith, *Frédéric Joliot-Curie*, 194.

<sup>46</sup> Albert Einstein took an early stand against the misuse of science for political aims. When in October 1914 ninety-three German scientists signed the Fulda manifesto, claiming that science should be at the service of the Fatherland and the military, Einstein signed a counter manifesto organized by G.F. Nicolai which promoted internationalism and peace. See, for example, John Cornwell, *Hitler's Scientists: Science, War and the Devil's Pact* (New York: Viking, 2003), 32-33, 57-58, 69. For a copy of the letter sent to FDR, see Nathan and Norden, *Einstein on Peace*, 294-296.

<sup>47</sup> Nathan and Norden, *Einstein on Peace*, 303.

<sup>48</sup> Albert Einstein, letter to unnamed friend, quoted in *ibid.*

<sup>49</sup> Ibid.

<sup>50</sup> One recipient of the Committee's funds was the influential *Bulletin of the Atomic Scientists*, a journal that would play an important role in the early years of the Pugwash movement. For information on the Committee and the early political activities of US scientists, see Alice Kimball Smith, *A Peril and a Hope: The Scientists' Movement in America, 1945-47* (Chicago: The University of Chicago Press, 1965) and Robert Gilpin, *American Scientists and Nuclear Weapons Policy* (Princeton, New Jersey: Princeton University Press, 1962).

<sup>51</sup> Appeal telegram sent by the Emergency Committee of Atomic Scientists, under Einstein's signature, May 23 & 24, 1946. Quoted in Nathan and Norden, *Einstein on Peace*, 376. Einstein's “new thinking” language is again present in a CBS broadcast from May 28, 1946: “Just as we have changed our thinking in the world of pure science to embrace newer and more useful concepts, so we must now change our thinking in the world of politics and law.” Albert Einstein, May 28, 1946, CBS broadcast, “Operation Crossroads.” Quoted in *ibid.*, 379.

<sup>52</sup> Michael White and John Gribbin, *Einstein: A Life in Science* (New York: A Dutton Book, 1994), 190.

<sup>53</sup> Bertrand Russell to Albert Einstein, February 11, 1955. Quoted in Nathan and Norden, *Einstein on Peace*, 623-625.

<sup>54</sup> When asked about Russell's idea of lobbying neutral governments, Joseph Rotblat said, “He had a number of ideas. He came out every day with a new idea, and not always sensible despite the fact he was a very rational person. But some of his ideas, as you know the dropping of the bomb on Russia was one of those with which he came out, were very strange.” Joseph Rotblat, discussion with the author, July 13, 2003.



- <sup>55</sup> Ronald W. Clark, *Einstein: The Life and Times* (New York: Avon Books, 1984), 759.
- <sup>56</sup> Albert Einstein to Bertrand Russell, February 16, 1955. Quoted in Nathan and Norden, *Einstein on Peace*, 625-626.
- <sup>57</sup> Bertrand Russell to Albert Einstein, February 25, 1955. Quoted in *ibid.*, 626-627.
- <sup>58</sup> Albert Einstein to Bertrand Russell, March 4, 1955. Quoted in *ibid.*, 628-629.
- <sup>59</sup> Bertrand Russell to Albert Einstein, April 5, 1955. Quoted in *ibid.*, 630-631.
- <sup>60</sup> Albert Einstein to Bertrand Russell, April 11, 1955. Quoted in *ibid.*, 631.
- <sup>61</sup> *Ibid.*
- <sup>62</sup> Russell, *The Autobiography of Bertrand Russell*, 94.
- <sup>63</sup> Joseph Rotblat, Reminiscences on the 40<sup>th</sup> Anniversary of the Russell-Einstein Manifesto, 50.
- <sup>64</sup> Clark, *Einstein*, 758.
- <sup>65</sup> Griffin, *The Selected Letters of Bertrand Russell*, 490. For example, Griffin includes a letter from Russell to Joliot-Curie that laboriously details his reply to Joliot-Curie's suggested changes. In the letter, dated June 17, 1955, Russell writes, "I thought I had made it clear that, as Einstein had died since signing it, I could not make any alteration of substance unless I was prepared to sacrifice his signature." *Ibid.*, 491.
- <sup>66</sup> Joseph Rotblat, discussion with the author, July 13, 2003.
- <sup>67</sup> *Ibid.*
- <sup>68</sup> See "Open Letter to the United Nations," excerpted in A.P. French and P.J. Kennedy, *Niels Bohr: A Centenary Volume* (Cambridge, Massachusetts: Harvard University Press, 1985), 288-296. This letter, has many salient points for today's situation:
- On the one hand, the progress of science and technology has tied the fate of all nations inseparably together; on the other hand, it is on a most different cultural background that vigorous endeavors for national self-assertion and social development are being made in the various parts of the globe....
- The development of technology has now reached a stage where the facilities for communication have provided the means for making all mankind a cooperating unit, and where at the same time fatal consequences to civilization may ensue unless international divergences are considered as issues to be settled by consultation based on free access to all relevant information." "Open Letter," quoted in *ibid.*, 294-295.
- <sup>69</sup> Margaret Gowing, "Niels Bohr and Nuclear Weapons," in French and Kennedy, *Niels Bohr*, 277.
- <sup>70</sup> Einstein to Niels Bohr, December 12, 1944. Quoted in Albrecht Fölsing, *Albert Einstein: A Biography*, trans. Ewald Osers (New York: Viking, 1997), 719.
- <sup>71</sup> *Ibid.*
- <sup>72</sup> *Ibid.*
- <sup>73</sup> Bertrand Russell to Albert Einstein, February 11, 1955. Quoted in Nathan and Norden, *Einstein on Peace*, 623.
- <sup>74</sup> Albert Einstein to Bertrand Russell, February 16, 1955. Quoted in *ibid.*, 626.
- <sup>75</sup> Albert Einstein to Niels Bohr, March 2, 1955. Quoted in *ibid.*, 629-630.
- <sup>76</sup> Russell, *The Autobiography of Bertrand Russell*, 94.
- <sup>77</sup> Nathan and Norden, *Einstein on Peace*, endnote 10, 680.
- <sup>78</sup> Rotblat says that Bohr was sent an invitation to the first conference and replied "that he was unable to make it, in very polite terms." Joseph Rotblat in discussion with the author, July 13, 2003.
- <sup>79</sup> Margaret Gowing, "Niels Bohr and Nuclear Weapons," in French and Kennedy, *Niels Bohr*, 277.
- <sup>80</sup> Joseph Rotblat, discussion with the author, July 13, 2003.
- <sup>81</sup> Russell, *The Autobiography of Bertrand Russell*, 96-97. Joseph Rotblat also knew Kenneth Harris, the *Observer* editor. Harris wrote a full-page story on Rotblat following the BBC Panorama program in April 1954. Rotblat says, Harris "put me on the map." Joseph Rotblat, discussion with the author, April 20, 2004.
- <sup>82</sup> Russell, *The Autobiography of Bertrand Russell*, 98.
- <sup>83</sup> Joseph Rotblat, "Reminiscences on the 40<sup>th</sup> Anniversary of the Russell-Einstein Manifesto," 51.

- <sup>84</sup> Russell, *The Autobiography of Bertrand Russell*, 98. At the press conference, Russell misspoke and claimed that Rotblat was from Liverpool, though he was at the University of London, St. Bartholomew's Hospital Medical College at the time. "The incident swelled to immense proportions in my mind. The disgrace of it prevented me from even speaking of it. When we walked to the news hoardings outside of Parliament to see if the evening papers had noted the meeting and found it heralded in banner headlines, I still could not feel happy." (Ibid., 99.)
- <sup>85</sup> Quoted in Joseph Rotblat, ed., *Proceedings of the First Pugwash Conference on Science and World Affairs* (Pugwash Council, 1982), 164 and Nathan and Norden, 632.
- <sup>86</sup> The full text of the manifesto is available as Appendix A. It is available on the World Wide Web at [www.pugwash.org/about/manifesto.htm](http://www.pugwash.org/about/manifesto.htm). Joliot-Curie and Muller qualified their signatures with minor reservations to specific wording in the text.
- <sup>87</sup> Bertrand Russell, Caxton Hall Press Conference, July 9, 1955, quoted in Rotblat, *Proceedings of the First Pugwash Conference*, 164.
- <sup>88</sup> Ibid., 165.
- <sup>89</sup> Ibid.
- <sup>90</sup> Joseph Rotblat, discussion with the author, July 13, 2003.
- <sup>91</sup> Joseph Rotblat, *Science and World Affairs*, 6.
- <sup>92</sup> Ibid., 7.
- <sup>93</sup> Editorial, *New York Times*, July 11, 1955, 22.
- <sup>94</sup> "Urey Terms Appeal 'Futile,'" *New York Times*, July 11, 1955, 3.
- <sup>95</sup> Rotblat, *Science and World Affairs*, 7.
- <sup>96</sup> Joseph Rotblat, discussion with the author, April 20, 2004.
- <sup>97</sup> Peter D. Whitney, "Nine Noted Scientists Urge War Ban," *New York Times*, July 10, 1955, 1.
- <sup>98</sup> "La bonhomie croissante des Soviétiques provoque quelques appréhensions aux États-Unis," *Le Monde*, July 12, 1955, 1.
- <sup>99</sup> Anthony Eden, quoted in Thomas P. Ronan, "Eden Bases Hopes on Perseverance," *New York Times*, July 16, 1955, 3.
- <sup>100</sup> "Senators Call War Ban Futile Unless Enforced," *New York Times*, July 10, 1955, 25.
- <sup>101</sup> "The Vatican's Viewpoint," *New York Times*, July 12, 1955, 5.
- <sup>102</sup> For example, in his Nobel address in 1946, Hahn stated:
- "The energy of nuclear physical reactions has been given into men's hands. Shall it be used for the assistance of free scientific thought, for social improvement and the betterment of the living conditions of mankind? Or will it be misused to destroy what mankind has built up in thousands of years? ...undoubtedly the scientists of the world will strive towards the first alternative." Otto Hahn, Nobel Address, 1946, quoted in Horst Kant, "Otto Hahn and the Declarations of Mainau and Göttingen," Max-Planck Institute for the History of Science, Preprint 203 (2002), 23.
- <sup>103</sup> For more information on Hahn's early activities, see for example Chapter 4, "The Poison Gas Scientists," in Cornwell, *Hitler's Scientists*, 61-84.
- <sup>104</sup> Russell, *The Autobiography of Bertrand Russell*, 94-95. According to a new report by Nancy Thorndike Greenspan, Max Born wrote to Otto Hahn at about the same time he wrote to Russell about his idea for an appeal by scientists. Born, Hahn, Heisenberg, and von Weizsäcker met and discussed the idea of a statement. Born reportedly told the pro-Communist Leopold Infeld about his plan, who said it must be launched by neutrals and not "Reds." Meanwhile, Born received a letter from Joliot-Curie about the idea of an international conference of scientists. Born believed members of the World Federation of Scientific Workers, like Joliot-Curie and Cecil Powell, had good intentions but were "workhorses for the Russians." He rejected Joliot-Curie's offer, as did Hahn who received a similar request. Born learned that Russell had proceeded with a statement of his own. According to Thorndike Greenspan, "Hahn did not want to sign for the same reason as he refused the Joliot-Curie request—its association with Communism—but Born was persuaded because he felt that Einstein and Russell would condemn him for refusing..." Born agreed to sign the Russell-Einstein Manifesto, and sent with his reply a copy of what became the Mainau Declaration. When the Mainau Declaration was released: "Russell, however, had already stolen the moment....As for Born, he was more unhappy with Russell for overshadowing the Lindau effort than with the omission of his name [at the Manifesto's release], especially since he had kept Russell informed of the Lindau schedule." Nancy Thorndike Greenspan, "Max Born and the Peace Movement," *Physics World* 18, no. 4 (April 2005), 37-38.
- <sup>105</sup> Kant, "Otto Hahn," 27.
- <sup>106</sup> Ibid., 27, footnote 27.

- <sup>107</sup> The Mainau Declaration, quoted in Nathan and Norden, *Einstein on Peace*, footnote 10, 681.
- <sup>108</sup> For the list of initial signatories, and a slightly different translation of the text, see “Nobel Prizemen in Plea: 18 Bid Nations, Renounce War or Face Self-Destruction,” *New York Times*, July 16, 1955, 3.
- <sup>109</sup> Kant, “Otto Hahn,” 29.
- <sup>110</sup> *Ibid.*, 30.
- <sup>111</sup> Eugene Rabinowitch, a Russian émigré, was a leading voice among scientists concerned about the growing nuclear arms race. Among the earliest to raise concern, Rabinowitch “was one of the prime movers and drafters of the ‘Franck Report’ which first pointed out to the U.S. Government the dangers arising from the development (and use) of nuclear weapons. . . . [I]n addition to his active scientific career, [Rabinowitch] was perhaps the most effective scientist-journalist of his generation.” From “Obituaries,” *Pugwash Newsletter*, 11 (July/October 1973): 9-10. A biophysicist, Rabinowitch was co-founder and editor of the *Bulletin of the Atomic Scientists*. He became a very important leader in Pugwash, and is credited with ensuring that the organization’s agenda included wider discussions about the social responsibilities of scientists. “Eugene’s involvement in Pugwash was complete. He participated in 21 of the 22 Conferences; he was a members of the Continuing Committee from the very beginning until 4 weeks before his death. He was President of the Pugwash Movement in 1969-70. . . .” Joseph Rotblat, letter, *Bulletin of the Atomic Scientists* 29 (June 1973): 10.
- <sup>112</sup> Joseph Rotblat, “Fifty Pugwash Conferences: A Tribute to Eugene Rabinowitch,” Address to the 50<sup>th</sup> Pugwash Conference on Science and World Affairs, Cambridge, England, August 8, 2000 (accessed January 23, 2005 at [www.pugwash.org/reports/pac/pac256/rotblat.htm](http://www.pugwash.org/reports/pac/pac256/rotblat.htm)) and Joseph Rotblat, *Scientists in the Quest for Peace* (Cambridge, Massachusetts: The MIT Press, 1972), 1.
- <sup>113</sup> Joseph Rotblat, *Pugwash: A History of the Conferences on Science and World Affairs* (Czechoslovak Academy of Sciences, 1967), 11.
- <sup>114</sup> Wittner, *The Struggle Against the Bomb*, 33.
- <sup>115</sup> *Ibid.*, 33-34.
- <sup>116</sup> Rotblat, “Movements of scientists,” 133. Also, at the same time, the London *Times* published a letter by Alexander Haddow which called for the establishment of a United Nations Science Concilium. Rotblat, *Science and World Affairs*, 5.
- <sup>117</sup> Rotblat, “Fifty Pugwash Conferences.”
- <sup>118</sup> Rotblat, “Fifty Pugwash Conferences.” For more information about the early plans for an international conference, see also, Joseph Rotblat, “The Early Days of Pugwash,” *Physics Today* 54, no. 6 (June 2001). Accessed on the World Wide Web January 23, 2005 at [www.physicstoday.org/vol-54/iss-6/p50.html](http://www.physicstoday.org/vol-54/iss-6/p50.html).
- <sup>119</sup> Wittner, *The Struggle Against the Bomb*, 34.
- <sup>120</sup> *Ibid.*
- <sup>121</sup> Rotblat, *Science and World Affairs*, 5.
- <sup>122</sup> It is interesting to note that the *New York Times* highlighted an apparent disagreement between Topchiev and Russell and Rabinowitch at the meeting. Russell had asked the 80 participants from 14 countries to approve a resolution based on the Manifesto, including a warning that nuclear weapons would “certainly” be used if world conflict broke out. Rabinowitch seconded this proposal. Topchiev reportedly “denied that it was inevitable that nuclear weapons would be used in a future world war.” Topchiev, however, despite this disagreement “pledged the full support of Soviet scientists in seeking to eliminate war as a means of settling disputes and to solve such problems instead by peaceful means,” as reported by the *Times*. “Russian Rejects Atomic War Idea,” *New York Times*, August 4, 1955, 6.
- <sup>123</sup> Eugene Rabinowitch, “Pugwash: History and Outlook,” *Bulletin of the Atomic Scientists* 13 (September 1957): 243 and Wittner, *The Struggle Against the Bomb*, 34.
- <sup>124</sup> Rotblat, *Science and World Affairs*, 5-6. Rotblat was appointed even though he was not at the Parliamentarians’ conference because he was a UK delegate at the Geneva Conference on the Peaceful Uses of Atomic Energy.

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