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Alison Kraft, Holger Nehring, and Carola Sachse. "The Pugwash Conferences and the Global Cold War: Scientists, Transnational Networks, and the Complexity of Nuclear Histories." Special Issue. *Journal of Cold War Studies* 20:1 (Winter 2018): 1-240.

Introduction by **Matthew Evangelista**, Cornell University

Reviewers:
Lodovica Clavarino, Roma Tre University, Deutsches Historisches Institut (DHI), Rome.
John Krige, Georgia Institute of Technology
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Introduction by **Matthew Evangelista**, Cornell University

When the Pugwash Conferences on Science and World Affairs won the Nobel Peace Prize in 1995, the organization was hardly a household word. The prize went to Pugwash and its longtime president Joseph Rotblat "for their efforts to diminish the part played by nuclear arms in international politics and in the longer run to eliminate such arms."[1] During the rare times Pugwash had attracted attention in the United States, it was typically as the target of red-baiting. At worst its critics described Pugwash as a Communist front organization, serving the interests of Soviet foreign policy (or, coming from Soviet hawks, the interests of Western imperialism).[2] Alison Kraft, Holger Nehring, and Carola Sachse, the editors of this special issue of the *Journal of Cold War Studies*, point out that the mix of politics and science that characterized the Pugwash movement generated controversy in many countries: among others, Britain, where Pugwash was founded by Rotblat and Bertrand Russell in the midst of public agitation and mass protest against the dangers of nuclear testing, radiation, and an accelerating arms race; Czechoslovakia, where independent scientific participation was precluded by Soviet and Communist-Party

[1] Quoted in the Nobel Prize announcement: https://www.nobelprize.org/prizes/peace/1995/summary/.

[2] *The Pugwash Conferences: A Staff Analysis, Internal Security Subcommittee,* 87th Congress, 1st session (Washington, D.C.: Government Printing Office, 1961); George Melloan, "Oslo's Nobel Peace Message is Mostly Static," *Wall Street Journal*, 16 October 1995.

control; divided Germany, where international scientific exchanges unavoidably implicated internal domestic politics; neutral Austria, site of many international activities related to nuclear power; Japan, because of its unique history as the target of two nuclear attacks; and China, which sought to juggle its increasingly fraught relations with the USSR along with its aspirations to lead the nonaligned bloc and to develop its own nuclear weapons.[3] The special issue of *JCWS* contains case studies of these six countries, expertly reviewed here by Lodovica Clavarino, John Kriger, and Joseph Siracusa. Mark Kramer, the journal's editor, deserves credit for publishing these studies, even though he oddly devoted a third of his Editor's Note to criticizing the goal of "a world without nuclear weapons," along with Pugwash and other organizations that have pursued it, as "deeply misguided."[4]

In 1999 I published a book that examined the role of transnational networks of scientists, physicians, and peace researchers in seeking to end the Cold War and the Soviet-American arms race.[5] I wrote a fair amount about Pugwash and was fortunate to have gained access to the archives of the Russian Academy of Sciences, the Communist Party Central Committee, and the Foreign Ministry in Moscow, where I was able to learn something of the impact of Pugwash on Soviet arms control and security policy.[6] In 2012 I was pleased to receive an invitation to give a keynote lecture in Vienna at a conference on "Writing Pugwash Histories," where early versions of these papers were presented, but I felt a bit like Molière's Monsieur Jourdain: Had I been writing Pugwash History all my life without knowing it? In fact the level of detail about national Pugwash groups represented in these articles is far beyond what I had accomplished. Even on the Soviet case, ongoing and forthcoming work by Geoffrey Roberts, Fabian Lüscher, David Holloway, and a number of Russian scholars provides a much richer story than I was able to tell. [7] The reviews in this forum summarize the strengths of the current Pugwash History and suggest further topics to develop.

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[3] Alison Kraft, Holger Nehring, and Carola Sachse, "The Pugwash Conferences and the Global Cold War: Scientists, Transnational Networks, and the Complexity of Nuclear Histories," *Journal of Cold War Studies* 20:1 (Winter 2018): 4-30.

[4] Mark Kramer, Editor's Note, *Journal of Cold War Studies* 20:1 (Winter 2018), 1-3.

[5] Matthew Evangelista, *Unarmed Forces: The Transnational Movement to End the Cold War* (Ithaca: Cornell University Press, 1999).

[6] Particularly valuable was the report of the Mikhail Millionshchikov, the head of the Soviet Pugwash group, seeking to justify continuing support from the government: "Proekt (dokladnyi zapiski) v Prezidium Akademii nauk SSSR ob itogakh 15-ti letnei deiatelnosti Paguoshskogo dvizheniia uchenykh," 24 September 1972, M. Millionshchikov papers, fond 1713, opis' 2, delo I.5.2, no. 209, Archive of the Academy of Sciences of the Russian Federation, Moscow.

[7] Geoffrey Roberts, "The Communist Peace Movement and the Origins of Pugwash," presentation at the conference, Writing Pugwash Histories, from Hiroshima and Nagasaki to Kabul and Gaza, University of Vienna, 10-12 May 2012; David Holloway, "Physics, the State, and Civil Society in the Soviet Union," *Historical Studies in the Physical and Biological Sciences* 31:1 (1999); David Holloway, "The Soviet Union and the Creation of the International Atomic Energy Agency," *Cold War History* 16:2 (2016); Fabian Lüscher, chapter in forthcoming volume edited by Alison Kraft and Carola Sachse; Yu. A. Ryzhov and M.A. Lebedev, "RAS Scientists in the Pugwash Movement," *Herald of the Russian Academy of Sciences* 75:3 (2005): 271-277.

Joseph Siracusa sets the stage by discussing the crisis of conscience that confronted nuclear physicists such as J. Robert Oppenheimer and Leo Szilard in the wake of the atomic destruction of Hiroshima and Nagasaki, and the development a few years later of the thermonuclear hydrogen bomb or H-bomb, with its potential for unlimited destruction. In the United States, the founding of the Federation of Atomic (later American) Scientists already in 1945 suggested the potential for organizing physicists to address international political issues of public concern. Pugwash emerged a decade later, partly in reaction to health concerns about radioactive contamination of the atmosphere through testing the new H-bombs. Siracusa praises the case studies of the JCWS special issue as a "sterling achievement, bringing out the diverse experiences of individual scientists living and working within particular political systems" and "an important contribution to our understanding of nuclear history."

John Krige, who provides a bit more of the British background to Pugwash's founding, also finds the collection "an invaluable complement to the existing scholarly literature that concentrates on Pugwash from a U.S.-Soviet perspective, adding substantive insights into how the national intersects with the transnational in a movement led by scientists united in their concern to maintain dialogue between governments in a world threatened by nuclear annihilation." He particularly praises Akira Kurosaki's chapter on Japan for "highlighting the dissent within the Pugwash movement itself in the 1960s, where the U.S. and Soviet delegates took deterrence as the baseline for their discussions," whereas Japan's public and its Pugwash scientists shared a commitment to nuclear abolition, born of their experience in the war. It is an important point, but I would add that even the Soviet Pugwash participants did not initially embrace the logic of Mutual Assured Destruction that was premised on maintaining nuclear weapons for deterrence. Their U.S. counterparts worked hard to persuade them that, for example, antiballistic missile (ABM) systems should be limited or banned precisely to preserve each side's ability to threaten a devastating retaliatory nuclear strike as a deterrent to an attack.[8]

Although each country's Pugwash history is distinctive, there are a number of commonalities. Krige notes Gordon Barrett's treatment of the Chinese government's political control of its delegation in the interest of pursuing state interests and how the approach violated the Pugwash norm that scientists participate as individuals, not as national representatives. He correctly points out that "other participants in Pugwash had their wider national strategies too." Members of the U.S. delegation during certain periods maintained close contact with the White House to enhance their *bona fides* as interlocutors among their foreign counterparts; and the State Department sometimes sought to limit the U.S. scientists' independence, for example, by forbidding members of the advisory board of the Arms Control and Disarmament Agency to pursue bilateral contacts with Soviet scientists under the auspices of Pugwash in the early 1960s.[9] Navigating the boundary between scientists as experts and as political activists was also a difficult problem for several national delegations. It emerged as an issue right at the outset, given Russell's prominent role in the Campaign for Nuclear Disarmament and the adherence of Frédéric Jolie-Curie and other Communists to the Soviet-backed World Peace Council.

[8] Emanuel Adler, "The Emergence of Cooperation: National Epistemic Communities and the International Evolution of the Idea of Nuclear Arms Control," *International Organization* 46:1 (Winter 1992).

[9] Evangelista, *Unarmed Forces*, 42-44.

Lodovica Clavarino in her review praises the collection in part for its contribution to a larger understanding of transnational, nongovernmental actors in international politics. The collection provides a model "for the investigation of other similar organizations, institutions, and networks which, throughout the Cold War, acted as informal channels or communication across the blocs, in parallel with—and sometimes even in place of—regular formal diplomacy." Regarding Pugwash History itself, she suggests that it might expand beyond the study of internal and transnational politics of the 1950s and 1960s to an evaluation of the impact of Pugwash and kindred organizations on states' military policies and nuclear disarmament, even to the present. One organization that might merit attention is the International School on Disarmament and Research on Conflicts (ISODARCO), founded by Italian Pugwash members in 1966.[10] They consider it the teaching arm of Pugwash and have conducted winter and summer schools for over fifty years, including many seminars in China. ISODARCO maintains a website with a short history of the institution and information about recent courses, and it has published numerous books of written versions of course lectures. [11] Further historical research on this organization and the others mentioned by our reviewers, whether in the context of Pugwash History or some broader category, would be welcome. The articles reviewed here make an excellent start.

Participants:

Matthew Evangelista is President White Professor of History and Political Science at Cornell University. His recent books include *Gender, Nationalism, and War: Conflict on the Movie Screen* (2011); *The American Way of Bombing: Changing Ethical and Legal Norms, from Flying Fortresses to Drones* (2014), coedited with Henry Shue; *Do the Geneva Conventions Matter?* (2017), coedited with Nina Tannenwald; *Italy from Crisis to Crisis: Political Economy, Security, and Society in the 21st Century* (2018). Along with Neta Crawford he edited and introduced a book by the founder of the Nuclear Freeze movement, the late Randall Caroline Forsberg, *Toward a Theory of Peace: The Role of Moral Beliefs*. His current research concerns Italy during World War II.

Lodovica Clavarino is currently a Post-doc Stipendiatin at the *Deutsches Historisches Institut* (DHI), in Rome, and Adjunct Professor at Roma Tre University. In 2013 she earned her Ph.D. in International History at the same University, with the thesis: "*The Security Policy of the Federal Republic of Germany during Détente, 1967-1975.*" Her selected publications include *Scienza e politica nell'era nucleare: la scelta pacifista di Edoardo Amaldi* (Roma: Carocci, 2014)*;* "Many countries will have the bomb: there will be Hell." Edoardo Amaldi and the Italian Physicists Committed to Disarmament, Arms Control and Détente," in Elisabetta Bini and Igor Londero, eds., *Nuclear Italy: An International History of Italian Nuclear Policies during the Cold War* (EUT, 2017). Forthcoming in 2019 is a monograph based upon her Ph.D. thesis, concerning the West German security policy during the détente (Mondadori Università, CIMA series).

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[10] One of ISODARCO's founders was Edoardo Amaldi, the subject of Lodovica Clavarino, *Scienza e politica nell'era nucleare. La scelta pacifista di Edoardo Amaldi* (Rome: Carocci, 2014); and Lodovica Clavarino, "'Many Countries Will Have the Bomb: There Will Be Hell': Edoardo Amaldi and the Italian Physicists Committed to Disarmament, Arms Control and Détente", in Elisabetta Bini, Igor Londero, eds., *Nuclear Italy. An International History of Italian Nuclear Policies during the Cold War* (Trieste: EUT Edizioni Università di Trieste, 2017), 245-257.

[11] http://www.isodarco.com/html/history.html; Paolo Foradori, Giampiero Giacomello, and Alessandro Pascolini, eds., *Arms Control and Disarmament: 50 Years of Experience in Nuclear Education* (London: Palgrave Macmillan, 2018).

John Krige is the Kranzberg Professor in the School of History and Sociology at the Georgia Institute of Technology. His research explores the intersection of science, technology and American foreign policy. He is currently co-authoring, with Mario Daniels at Georgetown University, a history of the struggle since 1945 to balance free trade and academic freedom with national security as regards the global circulation of advanced knowledge. His major publications include John Krige, ed., *How Knowledge Moves. Writing the Transnational History of Science and Technology* (University of Chicago Press, 2019) and John Krige, *Sharing Knowledge Shaping Europe, US Technological Collaboration and Non-Proliferation* (MIT Press, 2016).

Joseph M. Siracusa is Professor of Human Security and International Diplomacy at the Royal Melbourne Institute of Technology University, Melbourne, Australia, and President of Australia's Council for the Humanities, Arts and Social Sciences. He is the author and co-author of numerous works, including: *Nuclear Weapons* (Oxford University Press, 2nd ed., 2015); *A Global History of the Nuclear Arms Race*, 2 vols. (Praeger, 2013); *A History of U. S. Nuclear Testing and Its Influence on Nuclear Thought, 1945-1963* (Rowman & Littlefield, 2014); and *Weapons of Mass Destruction* (Rowman & Littlefield, 2017). His interests include nuclear history, international diplomacy, and globalization and human security.

Review by **Lodovica Clavarino**, Roma Tre University, *Deutsches Historisches Institut* (DHI) Rome

The special issue on The Pugwash Conferences recently published in the *Journal of Cold War Studies* (JCWS) is an interesting attempt to broaden our understanding of the Cold War by the investigation of a peculiar actor of the history of that period: the Pugwash network. Before the Nobel Peace Prize was assigned to Pugwash and Joseph Rotblat in 1995, few citizens and scholars had heard of them, and that was also due to the method Pugwash participants had chosen for their activities, acting often without publicity or media exposure.

From the 1990s on, also due to the impact that the end of the Cold War had on the historiography, a few scholars started to study topics such as transnational actors, movements, the life of citizens and activists as a means to adding a peculiar point of investigation to the traditional framework of international history, based mainly on diplomatic and governmental sources. Here we should at a minimum mention the outstanding book written by Matthew Evangelista[1] and Lawrence Wittner's seminal trilogy,[2] which, two decades ago, shed new light on the history of the Cold War and opened new methodological opportunities in this field. Since then, several scholars have followed this approach, but what is still missing is a sound historiography that integrates different approaches, managing to overcome the often 'biographical' approach still prevailing in some works about personalities and movements.

Also for these reasons, this *JCWS* Winter 2018 special issue is extremely valuable, because it deals with the topic of the activities of Pugwash, putting together a plurality of sub-themes and national case-studies in a really intriguing way. One of the strengths of this special issue is its throwing new light on this network of scientists and delivering relevant information about Pugwash's activities and their impact in the first decade of its life in different countries worldwide, such as Austria, West Germany, China, Japan, Great Britain, along with some Eastern European countries. After an introduction by Carola Sachse, Alison Kraft, and Holger Nehring (who were also the conveners of an international Workshop on this topic hosted in 2012 in Vienna),[3] this issue offers six articles written by scholars in the field. The different nationalities and backgrounds of the authors are certainly one of the strengths of this special issue.

The issue is remarkable for many reasons. Firstly, as mentioned above, it is the first attempt to devote the attention of scholars to this network, without them being necessarily militant or directly involved, making it the subject of true historical investigation. This is original for Pugwash, because many of the works devoted to

[1] Matthew Evangelista, *Unarmed Forces: the Transnational Movement to End the Cold War* (Ithaca: Cornell University Press, 1999).

[2] Lawrence Wittner, *The Struggle against the Bomb*, vol. I-III (Stanford: Stanford University Press, 1993-2003).

[3] Alison Kraft, Holger Nehring, and Carola Sachse, "The Pugwash Conferences and the Global Cold War: Scientists, Transnational Networks, and the Complexity of Nuclear Histories," *Journal of Cold War Studies* (hereafter *JCWS*) 20:1 (Winter 2018): 4-30.

it are indeed written by one of its founding fathers, Joseph Rotblat.[4] Second, this case study can be seen as an example of a methodological path which is possible to adjust for the investigation of other similar organizations, institutions, and networks which, throughout the Cold War, acted as informal channels or communication across the blocs, in parallel with – and sometimes even in place of – regular formal diplomacy. This is particularly interesting considering the fact that especially from 1970s on, citizens (in the form of elites or mass movements) started to claim a voice on some issues that had previously been the strict prerogatives of diplomats and politicians. With different features in Western-neutral-or Eastern countries, the emergence of public opinion and of citizens' involvement in politics (in the case of Pugwash foreign or security policy), is a matter worthy of being deeply analyzed und understood by historians.

Putting the question of the definition of Pugwash (was it a movement, an International Non-Governmental Organization [INGO], or simply a network) aside, it can be useful to consider it as a possible 'agent of diplomacy,' a concept that underlines the value of a second-track diplomacy in nuclear affairs, but potentially also in other fields. This concept also opens the path to further investigation about the possible interaction between different elites (scientists, diplomats, politicians, but also intellectuals, etc.) and the broader issue of how such a groups can lobby the political establishment. Another crucial aspect to keep in mind (and that this *JCWS* Special issue underlines, even if this is not central in the essays), is that we should avoid confusing proper anti-nuclear movements/organizations with Pugwash, because several scientists who took part in the latter were at the same time strong advocates of the beneficial peaceful (industrial, medical) uses of nuclear energy, and against any possible military exploitation of the same source of energy.

This specific topic is thus at a crossroads between nuclear history, diplomatic history, the history of ideas, peace studies, the history of science, the history of the treaties, and the more comprehensive international history.

The introduction is indeed well conceived, presenting the special issue's argument, the aim, and the sources. It clearly shows that the attempt "to create the possibility for a dialogue across political and ideological divides" was no doubt the most important outcome (and probably aim) of Pugwash (11). Focusing on the first decade of its activity, the articles underline how difficult it was for this emerging organization to be politically and ideologically independent, an extremely challenging goal for the rigid division that existed during the early Cold War years.

Elizabeth Roehrlich's essay well describes the crucial period of 'institutionalization' of the international system around nuclear energy, through the lenses of crucial big events related to nuclear matters held in the neutral Austria and Switzerland in the same month (September 1958), analyzing the reasons behind the often competitive interplay between the three reported initiatives: the Second UN International Conference on the Peaceful Uses of Atomic Energy in Geneva, the Third Pugwash Conference in Vienna and Kitzbühel and the

[4] See for example: Joseph Rotblat, *Scientists and the Quest for Peace: A History of the Pugwash Conferences* (Cambridge: MIT Press, 1972) and Jospeh Rotblat, *Science and World Affairs. History of the Pugwash Conferences*, (London: Dawsons of Pall Mall, 1962). In Italy, most publications (articles and essays) devoted to this network are written by Francesco Calogero, who served as Pugwash's Secretary General in the period 1989-1997.

Second IAEA General Conference in Vienna .[5] Two other articles focus their attention on what Pugwash meant for Communist countries such as China and some Eastern European countries, and help us to understand how Rotblat's goal for Pugwashites to act just "as individuals and not as representatives of a particular country" was in practice ambiguously realized in authoritarian regimes.[6] In addition, especially the Chinese case shows as the issue of 'impact' could indeed be twofold: scientists' impact on governments, but also the regime's impact on the network of scientists.

Alison Kraft's article about Great Britain instead focuses on the extremely complex issue of radioactive fallout, which is an indispensable theme in our understanding of the origins of Pugwash and the roots of nuclear concern amongst public opinion all over the world.[7] The issue is particularly thorny in a country like Great Britain, firmly determined to achieve and preserve its status as nuclear power, and at the same time a democracy that guaranteed (or should have guaranteed) the freedom to express opinions and even to criticized the stance of the government. An aspect which comes out clearly from Kraft's article is the 'social responsibility' of some individuals (Bertrand Russell and Rotblat), who felt a moral duty to put their expertise and their personal prestige at the service of a civil struggle, often being labelled as 'dissident scientists.'

The essay on Japan shows instead the particular sensitivity that some countries had about nuclear matters. Akira Kurosaki's article on this topic, which is perhaps one of the strongest articles of the Special Issue, shows how the Japanese Pugwash group criticized the very theory of 'deterrence,' on which the balance of terror and the relations between the two superpowers were based during the Cold War.[8] Being in favor of the abolition of nuclear weapons, the Japanese scientists often were in strong opposition to the gradual-arms control logic that the transnational Pugwash network embraced as a possible path. Along with the article on Japan, another essay that casts light on the peculiar sensitivity of a national community of scientists is certainly Carola Sachse's article on the West German case, which shows how Pugwash acted in a country with a unique geopolitical position in the Cold War context, firmly determined to pursue the rehabilitation of its national science (and national cultural life in general as well) after the dramatic period of Nazism.[9] These two articles also tell us much about the way of working of Pugwash, along with the relevant differences among national groups.

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[5] Elizabeth Röhrlich, "An Attitude of Caution: the IAEA, the UN, and the 1958 Pugwash Conference in Austria," *JCWS* 20:1 (Winter 2018): 31-57.

[6] Gordon Barrett, "China 'People's Democracy' and the Pugwash Conferences, 1957-1964," *JCWS*: 140-169; Doubravka Olšáková, "Pugwash in Eastern Europe. The Limits of International Cooperation Under Soviet Control in the 1950s and 1960s," *JCWS*: 210-240.

[7] Alison Kraft, "Dissenting Scientists in Early Cold War Britain. The 'Fallout' Controversy and the Origins of Pugwash, 1954-1957," *JCWS*: 58-100.

[8] Akira Kurosaki, "Japanese Scientists' Critique of Nuclear Deterrence Theory and its Influence on Pugwash, 1954-1964," *JCWS*: 101-139.

[9] Carola Sachse, "The Max Planck Society and Pugwash During the Cold War. An Uneasy Relationship," *JCWS*: 170-209.

Rather than being a "History of Pugwash," the Special Issue wants to be the (first) collection of 'Pugwash histories', and the authors clearly explain this point. Due to the different aims, agendas, and security concerns of the states here analyzed, the purpose was not to try to connect all these peculiar situations in one tentative 'global history' but instead to present them in all their whole specificities. While understanding this methodological path, a suggestion for further research could be the (extremely challenging) goal of starting to working toward an attempt to reconstruct a scientifically documented history of Pugwash.

A weakness of this special issue could be perhaps identified considering that the various contributions sometimes appear slightly disconnected with each other: maybe it could have been desirable to search for a greater integration and dialogue among the articles, in the attempt to make the essays contribute at an even more consistent level. The question of Pugwash's impact on the international system and on the nuclear policies of the investigated countries is probably the most difficult to be assessed, and the articles chose – perhaps wisely - to not fully address the issue.

Moreover, without prejudice to the fact that the articles devote attention to the 1950s and 1960s, it could have been meaningful to try to broaden the historical investigation through some tentative assessments about the possible role of Pugwash (and other transnational elites networks as well) in the nuclear affairs currently challenging the international system. In a world that is increasingly interconnected, but also characterized by domestic political ruling classes that are quite often attracted toward siren calls of nationalism and protectionism, the role that transnational networks are able to play throughout the international system could be crucial in order to deal with some challenges which cannot really be solved simply through a national approach.

In any case, the special issue offers a compelling starting point for scholars interested in the field, showing once again that there is plenty of room for further historical investigation in this area.

Review by **John Krige**, Georgia Institute of Technology

In March 1954 radioactive fallout from an American hydrogen bomb test accidentally rained down on a Japanese fishing boat in the Pacific. Everyone on board fell ill, and one sailor died. The ensuing public outcry alerted the world to the dangers of nuclear weapons and sowed the seeds for a burgeoning public anti-nuclear, anti-war movement. These energies were focused by the British mathematician, philosopher, and Nobel Laureate, Bertrand Russell, together with the famed scientist and pacifist, Albert Einstein. The Russell-Einstein manifesto released in July 1955 called for dialogue between East and West and suggested that the future of humankind itself was in doubt unless nuclear weapons were abolished. Joseph Rotbalt, who had left the Manhattan Project when the Nazis were defeated, and who was working in Britain on the health dangers of fallout, was one of its signatories. Along with others he organized a meeting of 22 scientists from ten countries in the Canadian fishing village of Pugwash. It was financed by steel magnate Cyrus Eaton, who hosted it on his estate. The group meetings came to be known as the Pugwash Conferences on Science and World Affairs. They were organized by a Continuing Committee: Rotbalt was the only permanent member. People were invited in their individual capacities, not as official representatives of their governments, to assess the perils to humanity posed by weapons of mass destruction. To give backbone to the network the Pugwashites established national chapters in separate countries. This collection of articles describes the trajectory of engaged individuals or national societies in Austria, Communist China, Czechoslovakia, Japan, the United Kingdom and West Germany. It is thus an invaluable complement to the existing scholarly literature that concentrates on Pugwash from a U.S.-Soviet perspective, adding substantive insights into how the national intersects with the transnational in a movement led by scientists united in their concern to maintain dialogue between governments in a world threatened by nuclear annihilation.[1]

Elizabeth Röhrlich situates Pugwash as an actor in the world nuclear order, a transnational movement among intergovernmental organizations, including the IAEA (International Atomic Energy Agency) and the United Nations.[2] She does so by focusing on three major events in 1958: the Second Conference on the Peaceful Uses of Atomic Energy in Geneva, the General Conference of the IAEA in Vienna, and the Third Pugwash Conference on Science and World Affairs in Kitzbühel and Vienna. She concludes that the nuclear order as it emerged at that time was fractured by ideological and political divisions between the two gatherings in Austria, with the IAEA seeking to distance itself as best it could from the left-leaning, oppositional, and transnational Pugwash.

The paper by Alison Kraft tells the pre-history of Pugwash.[3] It emphasizes the importance of radioactive fallout from nuclear testing as a transnational phenomenon (fallout does not respect national borders) whose lethal effects united concerned scientists all over the world—and particularly in Britain—and led to the

[1] The standard work remains Matthew Evangelista, *Unarmed Forces. The Transnational Movement to End the Cold War* (Ithaca: Cornell University Press, 1999).

[2] Elizabeth Röhrlich, "An Attitude of Caution: the IAEA, the UN, and the 1958 Pugwash Conference in Austria," *Journal of Cold War Studies* (hereafter cited as *JCWS*) 20:1 (Winter 2018): 31-57.

[3] Alison Kraft, "Dissenting Scientists in Early Cold War Britain. The 'Fallout' Controversy and the Origins of Pugwash, 1954-1957," *JCWS*: 58-100.

formation of the transnational Pugwash movement. Kraft ably discusses the sustained efforts made by Joseph Rotblat to alert the British public to the dangers of fallout in the early 1950s, documenting his attempts to dent the widely-publicized view of the political and scientific establishment that it posed no serious threat to human health. Fallout focused the energies of the formidable grassroots CND (Campaign for Nuclear Disarmament) that was established in 1957 with Russell as President. It was also "an animating force in the inception of Pugwash" (99), whose early debates on radiation hazards "gave practical form and meaning" (96) to the Russell-Einstein manifesto.

Akira Kurosaki's chapter describes the activities of Japanese physicists affiliated to the Pugwash movement, emphasizing their anti-nuclear stance, above all their hostility to nuclear deterrence as a peacekeeping strategy.[4] Their views were widely shared by the general public and among a large section of the political elite in Japan who had to navigate between U.S. pressure to rearm and domestic opposition to war. The paper is noteworthy for highlighting the dissent within the Pugwash movement itself in the 1960s, where the U.S. and Soviet delegates took deterrence as the baseline for their discussions. For some of the Japanese members "the policy of depending on nuclear weapons for the prevention of war" (132) was tantamount to a betrayal of the spirit of the Russell- Einstein manifesto.

Gordon Barrett discusses the role of Chinese scientists at Pugwash up until their participation ended in 1964 (when the People's Republic of China [PRC]tested its first nuclear weapon).[5] He places great emphasis on the diligence with which the Communist Party selected suitable candidates, briefed them on the line they had to take at meetings, and debriefed them on returning home: "political suitability was far more important than specific scientific knowledge" (145) in deciding who would attend Pugwash gatherings. In fact he sees participation as a cynical strategy based on deception to "obscure China's nuclear ambitions, increase its influence among the global left, and generally improve its image overseas" (168). The first Chinese test in 1964 made it impossible to continue with this "duplicity" (166) and was one major reason for the PRC's withdrawal from Pugwash, its cover blown, as it were. Barrett ignores the fact that other participants in Pugwash had their wider national strategies too, and that having a nuclear capability did not exclude one from participation; on the contrary. He also assumes without evidence that other Pugwashites (except perhaps the Soviets) were duped into thinking that the Chinese delegates attended in their personal capacity and had no idea that the Chinese were developing nuclear weapons. The inclusion of an article of such uncompromising hostility to China in a volume dedicated to an organization that precisely sought to build bridges and keep dialogue open, even with the most obnoxious of regimes, is jarring.

Carola Sachse focuses on the role of the Max Planck Society (MPS) in the relationship between German physicists and the Pugwash movement.[6] This was dominated by the highly visible protest against German rearmament with tactical nuclear weapons in the so-called Göttingen Declaration. In April 1957 eighteen eminent German scientists published a manifesto stating that Germany was better off without nuclear

[4] Akira Kurosaki, "Japanese Scientists' Critique of Nuclear Deterrence Theory and its Influence on Pugwash, 1954-1964," *JCWS*: 101-139.

[5] Gordon Barrett, "China 'People's Democracy' and the Pugwash Conferences, 1957-1964," *JCWS*: 140-169.

[6] Carola Sachse, "The Max Planck Society and Pugwash During the Cold War. An Uneasy Relationship," *JCWS*: 170-209.

weapons on its soil, and declaring that they would not do work connected with nuclear weapons themselves. This flew in the face of Germany's readmission to NATO in May 1955 and of Chancellor Konrad Adenauer's military policy. Sachse's paper describes how the MPS, keen to establish itself as a leading organ for science in Germany, had to deal with Adenauer's wrath while trying to take advantage of the opportunities that Pugwash provided for transnational dialogue. When the West German Pugwash movement did eventually take root it was thanks to the capacity of eminent MPS physicist Carl Friedrich Von Weizsäcker to satisfy Adenauer's anxieties and to the energetic efforts of a new organization (the VDW – Vereinigung Deutscher Wissensschafter) that was explicitly committed to awakening scientists to the social effects of their work and to the misuse of science and technology.

Doubravka Olšáková describes the constraints placed by the Soviet authorities on the participation of scientists from the Eastern bloc in Pugwash, notably from Czechoslovakia.[7] Both groups valued Pugwash as offering "a unique possibility to influence international policy through unofficial and informal transnational channels" (238). That opportunity was soured by the Soviet authorities, who controlled who went to meetings, and decided whether or not suitable topics were being discussed (as did the Chinese, as we saw a moment ago). They also contributed to the demise of the Czechoslovak Pugwash committee. The national group implored the Pugwash Continuing Committee not to discuss the Soviet invasion of Czechoslovakia at a meeting in 1969. Their plea was rejected and their participation came to a bitter end.

This collection suffers from the usual flaws of this genre. There is considerable overlap between chapters, notably on the origins of Pugwash. There is no conversation between the authors. There are also unfortunate gaps, the most significant being the absence of anything on France. France successfully tested its first atomic bomb in the Sahara desert in February 1960. At the same time many French nuclear scientists were left-wing. One of their most eminent number and Nobel prizewinner, Frédéric Joliot Curie, was not only an outspoken Communist but also played a key role in some of the early initiatives that led to Pugwash, as several authors mention. Yet the French were only marginally involved in Pugwash (4% participation—225) and did not even serve on the key Continuing Committee as far as I know. This may not deserve a chapter, but it deserved at least a paragraph in the introduction.

There are times, too, when authors miss important opportunities. Kraft wonders whether Pugwash had any influence (97). One place to start might have been to explore the effect of its emphasis on fallout on the drafting and signature of the Limited Test Ban Treaty (LTBT). Even the U.S. Department of State's potted history of the LTBT explicitly links the origins of the treaty to "widened and intensified public attention" to the fallout caused by nuclear tests.[8] Kurosaki's analysis of Pugwash in Japan does not pause to discuss the effects (if any) of the Chinese nuclear test in 1964 on the anti-nuclear, anti-war physicists or on public opinion. Sachse's paper could have been enriched by considering America's attitudes to Germany's nuclear weapons policy that—broadly speaking—assumed that the Federal Republic would eventually want to develop its own nuclear weapons, notwithstanding official declarations to the contrary. No wonder Adenauer

[7] Doubravka Olšáková, "Pugwash in Eastern Europe. The Limits of International Cooperation Under Soviet Control in the 1950s and 1960s," *JCWS*: 210-240.

[8] Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, https://www.state.gov/t/isn/4797.htm.

furiously demanded that the Gottingen Eighteen sign a communiqué "clarifying that the government had never planned to develop or produce its own nuclear weapons […]." (175) He wanted to reassure Washington that the scientists were not opposing a back-door national program to develop nuclear arms on German soil. In fact a top-secret joint French-Italian-German initiative *was* being discussed at the time.[9] In short, many papers fail to situate their arguments in the context of broader foreign policy concerns that would engage readers of the *Journal of Cold War Studies.*

Looking ahead, there are a number of areas in which further work can enrich our understanding of Pugwash. The first is origins. The standard narrative of Pugwash's origins traces its birth back to a heightened awareness of a "new problem: radioactive fallout" (13) subsequent to radioactive rain falling on Japanese fishermen after the Castle Bravo test in March 1954. This event was indeed a turning point in public awareness of the dangers posed by nuclear war, and by hydrogen bombs in particular. But it was not a 'new problem': thousands of Japanese citizens had died from radiation sickness in Hiroshima and Nagasaki and the Atomic Bomb Casualty Commission, controversial as it was, was still involved in its research. Nor was it new to governments, of course. The official Strath report, produced in 1954, had painted a dire picture of the effects of blast and radioactive fallout caused by a carefully targeted Soviet H-bomb attack on Britain.[10] Later, the Gaither report, presented to President Dwight Eisenhower the day after Sputnik II was launched, called for a massive increase in offensive capabilities along with a 5 year - $25 billion program to build a national network of fallout shelters.[11] Neither report was publicly released. The manufactured amnesia in the West of the horrors of the bombings in Japan is worth a study in its own right.

Some major conceptual work also needs to be done. Several authors unquestioningly associate criticism of nuclear weapons, and of the nuclear establishment, with 'socially responsible' scientists, as the actors often called themselves: dissenters occupy the moral high ground. Their opponents, of course, often saw them as utterly naïve at best, as treacherous at worst, and in any event as socially *irresponsible*. For them, there was no 'morality' in leaving the world prostrate before Soviet expansionism. Rotblat was driven by a sense of moral outrage to oppose nuclear weapons and to alert the public to the dangers of a nuclear arms race. A sense of moral obligation to counter perceived Soviet aggression doubtless also drove insiders like Herbert York, the first director of the Livermore National Laboratory that developed thermonuclear weapons, and Manhattan physicist Hans Bethe who helped design the hydrogen bomb. The dissenters had no monopoly on morality nor on social responsibility, and their opponents were just as concerned to stop nuclear war as they were. Indeed many participants in Pugwash took nuclear deterrence as a necessary step to eventual nuclear disarmament, to the distress of their Japanese colleagues (see above). Self-attribution of social responsibility is itself a strategic move in a polarized debate.

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[9] The context of the 'FIG' is described in John Krige, *Sharing Knowledge Shaping Europe, US Technological Collaboration and Non-Proliferation* (Cambridge: MIT Press, 2016), 55.

[10] Jeff Hughes, "The Strath Report: Britain Confronts the H-bomb, 1954-1955," *History and Technology* 19:3 (2003), 257-274.

[11] Yanek Mieczowski, *Eisenhower's Sputnik Moment. The Race for Space and World Prestige* (Ithaca: Cornell University Press, 2013), 115.

More fundamentally, though, it is essential that further work on Pugwash make a major effort to define the science/politics relationship. It is not simply that this distinction is used in a bewildering variety of ways in, and between, the papers in this set, suggesting that no careful thought has been given to the issue. The cardinal point is that Pugwash itself dissolved the science/politics divide in practice. This was inevitable: a sharp distinction made no sense in nuclear weapons debates, where any technical issue had political ramifications, and vice versa. Going further, it is clear from the volume that, with the passage of time, technical debates over issues like fallout coexisted with, or were supplanted by, explicitly political debates that called for little or no technical competence. The main points at the Pugwash meeting in Karlovy Vary in Czechoslovakia in 1964, for example, were Germany's borders, a non-aggression treaty between NATO and the Warsaw Pact counties, and nuclear arms in central Europe (227). The same co-existence is evident in the profiles of the delegates. Pugwash is repeatedly said to be a scientific movement, whose participants were independent of their governments — except for the Chinese, Soviet, and East European delegates who were carefully chosen by their state authorities and groomed to toe the party line, as indicated above. The implication is that Western delegates were 'independent' scientists who could freely criticize government policy. They obviously were not. Eminent physicist Weizsäcker was the politically correct German participant whom Adenauer could rely upon "to uphold and represent Western liberal values and FRG interests among scientists at the Pugwash table" (184). Hans Thirring, who had good contacts with Bruno Kreisky, who was prominent in Austria's Socialist Party, represented his country at the IAEA one day and attended a Pugwash meeting in his 'personal' capacity the next. Whether or not Jerome Wiesner, MIT professor of electrical engineering and U.S. Presidential Science Adviser, went to Pugwash meetings in his 'personal' capacity or as an official U.S. representative makes no difference to the line he was likely to take—he did not need to be groomed as he could be counted on to spontaneously present the views being discussed in establishment circles in Washington. We can only understand Pugwash and what it did by analyzing the multiple domestic roles played by scientists in the organization over the years, and by paying attention to how they changed over time—not by imposing a rigid science/politics grid on them.

Overall, the volume suggests that Pugwash evolved from a scientific organization with a strong left-wing dissident complexion into a politically more orthodox hybrid. That hybrid brought together an international community of scientists of diverse views (including on how to maintain peace in a nuclear world), and who were, by and large well-connected, or at least tolerated, sometimes indoctrinated, by their governments. They sat around tables at Pugwash meetings, which became increasingly prestigious and large in size (223 participants from 47 countries at its 20th anniversary meeting), with very senior policymakers who could convey their ideas back into the world of high-politics at home. Seen thus, Pugwash's commitment to scientific internationalism, and its determination to focus on world peace, along with its capacity to attract men like U.S. foreign policy specialist Henry Kissinger, men who served as vectors for second-track diplomacy, distinguished it from governmental organizations in the nuclear domain. It is because it brought science and politics together in this hybrid transnational configuration, at once fluid and driven by scientists themselves, that its history is worth knowing, perhaps emulating, and certainly worthy of further study. This volume will be an essential companion on that path.

Review by **Joseph M. Siracusa**, Royal Melbourne Institute of Technology University

When Los Alamos Laboratory Director J. Robert Oppenheimer met President Harry Truman late in 1945 and told him he believed that he had blood on his hands, Truman reacted angrily. He recalled telling the famous physicist that "the blood is on my hands. Let me worry about that." The President later recalled to his undersecretary of state Dean Acheson that "I don't want to see that son-of-bitch in this office ever again."[1] The Father of the Atomic Bomb had apparently touched a raw nerve. And there were plenty of raw nerves to go around, as key members of the scientific community began to turn on their own creation.

Four of the prominent Manhattan Project scientists who had helped create the atomic bomb became leaders of the burgeoning scientists' movement to control its spread and use. At the conclusion of World War II, in 1945, Hans Bethe, George Kistiakowsky, Philip Morrison, and Victor Weisskopf founded the Federation of Atomic Scientists (later the Federation of American Scientists), declaring, "the value of science to civilization has never been more clear, nor have the dangers of its use been greater."[2] These scientists fully recognized they had created the ultimate weapon, which might result in untold future destruction, with this sense of foreboding leading them to refine their views in respect of their social obligation. Specifically, some scientists now considered it their duty to explain the broader implications of the bomb to the American public, and further urge the government to seek an international control agreement. Also, the *Bulletin of Atomic Scientists* was founded in 1945 as a newsletter distributed among nuclear physicists concerned by the possibility of nuclear war; and for over seventy years the *Bulletin's* Doomsday Clock—presently at 2 minutes to midnight—has followed the rise and fall of nuclear tensions.

In 1955, in a period of intense nuclear testing,[3] physicist Albert Einstein and philosopher Bertrand Russell issued a manifesto reminding scientists everywhere that the escalating nuclear arms race depended on the cooperation of science, and called on them to re-consider the ethical implications of their work and confront the danger of nuclear war. Two years later, a small group of scientists met in Pugwash, Nova Scotia, to take up the challenges of the new dangers of the hydrogen bomb, and sought to bring together scientists from East and West to find new ways to halt the arms race. In September 1958, at the third Pugwash meeting held in Vienna, it was agreed, inter alia, that Pugwash would be organized around national groups as a means to foster participation between conferences while attempting to gain a foothold in different countries. By 1967, at the height of the Cold War, twenty-two such groups had been formed, from across the Iron Curtain divide and the non-aligned countries. Since then, the Pugwash conferences, bringing together scientists from around the world to discuss and resolve some of the technical issues that would otherwise stand in the way of arms control, have provided the foundation of an international scientists' movement dedicated to preventing the

[1] Quoted in Wilson D. Miscamble, *From Roosevelt to Truman: Potsdam, Hiroshima, and the Cold War* (New York: Cambridge University Press, 2007), 245.

[2] See Mary E. Lord, "Nongovernment Organizations in Arms Control and Disarmament," in Richard Dean Burns, ed., *Encyclopedia of Arms Control and Disarmament*, 2 vols, vol. 1 (New York: Charles Scriber's Sons, 1993), 412.

[3] See David M. Blades and Joseph M. Siracusa, *A History of U.S. Nuclear Testing and Its Influence on Nuclear Thought, 1945-1963* (Lanham: Rowman & Littlefield, 2014), 51-96.

spread of nuclear weapons. Though it is difficult to assess its exact contribution to Cold War nuclear non-proliferation, the award in 1995 of the Nobel Peace Prize in 1995 jointly to Pugwash and its long-serving secretary general Sir Joseph Rotblat underscored its significant role within the international landscape of nuclear diplomacy.

This special issue, which brings together selected papers from the 2012 Vienna Workshop, makes the case that the Pugwash movement "is a compelling subject for Cold War studies by virtue of its impact in many countries, the nature of its organization, and the distinctive way it worked, as well as its importance for the relationship between scientists and the Cold War states and its role as a transnational actor" (4).[4] The aim of the editors, Alison Kraft, Holger Nehring and Carola Sachse, is not to tell a straightforward story that adds what they call "anti-warriors" to the tale of militarized science during the Cold War, but rather "to explore in finer detail how, why, and to what effect scientists were able, under the auspices of Pugwash, to fashion and hone roles as political and transnational actors. [And] In so doing …illuminate more fully the realm of science and scientists during the Cold War" (22-23). The contributions to this themed issue, then, focus on national patterns of engagement with Pugwash, in six national contexts, with an emphasis on the period from the organization's founding into the 1970s: Austria, China, Czechoslovakia, Japan, the United Kingdom, and West Germany. The result is a sterling achievement, bringing out the diverse experiences of individual scientists living and working within particular political systems during the Cold War, enriching our understanding of what Jessica Wang once called the "uneasy, ambivalent cultural space" some scientists occupied during the Nuclear Age.[5]

Within this context, Akira Kurosaki examines Japanese scientists' critique of nuclear deterrence and its influence on Pugwash, 1954-1964, concluding that "even though the members of the Japanese group had no impact on Cold War reality, they deserve attention for their innovative, difficult and unique role, both in the Pugwash organization and in Japanese society" (138);[6] Alison Kraft focuses on dissenting scientists in early Cold War Britain, with special emphasis on the 'fallout' controversy and the origins of Pugwash, 1954-1957, underscoring the importance of these issues as they "unfolded in Britain at a critical moment in the development of it thermonuclear program" (98);[7] Gordon Barrett discusses on China's 'People Diplomacy' and the Pugwash conferences, 1957-1964, concluding that "Even though Chinese scientists may have claimed to be interacting with other Pugwashites in a personal capacity . . ., their actions were highly choreographed

[4] Alison Kraft, Holger Nehring, and Carola Sachse, "The Pugwash Conferences and the Global Cold War: Scientists, Transnational Networks, and the Complexity of Nuclear Histories," *Journal of Cold War Studies* (hereafter *JCWS)* 20:1 (Winter 2018): 4-30.

[5] Jessica Wang, "Scientists and the Problem of the Public in Cold War America, 1945-1960," *Osiris*, 17 (January 2002), 325.

[6] Akira Kurosaki, "Japanese Scientists' Critique of Nuclear Deterrence Theory and its Influence on Pugwash, 1954-1964," *JCWS*: 101-139.

[7] Alison Kraft, "Dissenting Scientists in Early Cold War Britain. The 'Fallout' Controversy and the Origins of Pugwash, 1954-1957," *JCWS*: 58-100.

and constrained by CCP officials" (168);[8] Carola Sachse explores the Max Planck Society and Pugwash during the Cold War, observing that the complex story of West German relations with Pugwash "was shaped by an array of domestic factors, including Germany's position as the defeated aggressor of the Second World War and the subsequent territorial and political division of the country between the two Cold War blocs" (170) ;[9] Doubravka Olsakova investigates Pugwash in Eastern Europe, focusing on the limits of international cooperation under Soviet control in the 195s and 1960s, making the case that Pugwash "provided an independent, alternative, even non-Communist, agenda and platform for discussing the maintenance of world peace and the roles and responsibilities of scientists in the process" (238);[10] and Elsabeth Roehrlich details the interplay of the establishment of the International Atomic Energy Agency, launched in Vienna in 1957, the UN, and the 1958 Pugwash Conference in Austria, concluding that "because of the complex and immediate links among the three conferences, the international organizations carefully defined their relation to Pugwash, often resulting in a strengthening of the boundaries between transnational and international actors, as the question of the IAEA's representation at the Pugwash conference underlined" (57).[11] Taken together, all of these pieces, together with an enlightening introduction by the editors, make an important contribution to our understanding of nuclear history while filling a notable lacuna in Cold War historiography.

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[8] Gordon Barrett, "China 'People's Democracy' and the Pugwash Conferences, 1957-1964," *JCWS*: 140-169.

[9] Carola Sachse, "The Max Planck Society and Pugwash During the Cold War. An Uneasy Relationship," *JCWS*: 170-209.

[10] Doubravka Olšáková, "Pugwash in Eastern Europe. The Limits of International Cooperation Under Soviet Control in the 1950s and 1960s," *JCWS*: 210-240.

[11] Elizabeth Röhrlich, "An Attitude of Caution: the IAEA, the UN, and the 1958 Pugwash Conference in Austria," *JCWS* 20:1 (Winter 2018): 31-57.