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Fintan Hoey, "The 'Conceit of Controllability': Nuclear Diplomacy, Japan's Plutonium Reprocessing Ambitions and US Proliferation Fears, 1974-1978." *History and Technology* 37:1 (2021): 44-66. DOI: <https://doi.org/10.1080/07341512.2021.1882126>.

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From the time that US President Dwight D. Eisenhower made the "Atoms for Peace" speech before the United Nations General Assembly in 1953, the international community has tried to manage the nuclear proliferation risk of the peaceful use of nuclear energy. Sensitive materials and technologies, namely plutonium and the reprocessing technology that can extract usable uranium and plutonium from spent nuclear fuel, were matters of particular concern. While enriched uranium could also be diverted into nuclear explosive devices, plutonium became the main focus in the 1970s due to India's first nuclear test in 1974, which used the material extracted through its civilian nuclear program. Thereafter, the United States called for global restraint from the peaceful use of plutonium, while other major industrialized countries, including Japan, continued to defend their own programs.

Fintan Hoey's new article sheds light on this contentious problem from both Japanese and American perspectives, and places Japan's plutonium utilization in "the wider context of its growing national power in the 1970s" (46). He defined both countries' nuclear diplomacy as efforts to control nuclear power for their respective purposes, which included not just the technology but also the accompanying benefits and prestige. Japan sought to control its energy supplies by developing an indigenous nuclear fuel cycle, including the reprocessing of spent nuclear fuel and recycling plutonium, as this provided a quasi-domestic energy supply and the national prestige associated with mastering advanced nuclear technology. By contrast, the United States sought to control the spread of nuclear weapons by preventing the use of plutonium for its possible diversion to nuclear explosive devices. Its efforts were a "vivid example" of science diplomacy, as the differing views of science served different purposes, going beyond the British Royal Society's assertion that "science is a value-free arena and therefore the perfect ground on which to foster international cooperation" (45).

Based on these perspectives and documents from US and Japanese archives, Hoey discusses Japanese and US nuclear diplomacy in the 1970s in four sections.

The first section begins with Japan's domestic controversies over the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) during its signing in 1970 and its ratification in 1976. The author stressed the problem of Japan's international status as key to understanding the debates over the treaty. When Japanese

officials discussed whether the country should go nuclear, their concerns included the equality between nuclear have and have-not states. Some even hoped that “Japan might find itself in a position to join the nuclear club at some point in the future” (48). The nuclear industry also insisted on equality regarding safeguards, as nuclear-weapon states were not obliged to accept safeguards under the NPT, and the European Atomic Energy Community (EURATOM) had a self-inspection system.

The next section discusses the shift in US nonproliferation policy after India’s first nuclear test in 1974. While Japan dealt with the equality concerns through a safeguards agreement with the International Atomic Energy Agency (IAEA) and ratified the NPT in 1976, the US government began to tighten restrictions on plutonium. In the Nuclear Suppliers Group that was established in 1975, Hoey argues, Washington was “largely successful in persuading others to agree to a code of conduct on the sale of sensitive nuclear technologies” but was less so in convincing other nuclear suppliers to drop their own reprocessing programs (51). This led to discussions on further restrictions against the peaceful use of plutonium during the US presidential election in 1976; the Democratic Party’s presidential candidate, Jimmy Carter, stressed the proliferation risk of plutonium, while President Gerald Ford issued a tougher nuclear nonproliferation policy during the election campaign.

The third section briefly touches on Japan-US negotiations over Japan’s reprocessing plant in Tokai Mura, in the north of Tokyo, which was planned to open just after President Carter’s inauguration in January 1977. The bilateral nuclear cooperation agreement contains a US veto clause on Japan’s plutonium utilization if the material was of US-origin. Tokyo gained Washington’s consent for the operation of the reprocessing plant for several reasons, including the disorganization of US officials until the appointment of Ambassador at Large and President’s Special Representative for Non-Proliferation Matters Gerard Smith as an ambassador on this issue and Japan’s promise to actively participate in the International Nuclear Fuel Cycle Evaluation (INFCE), which was a “center-piece of the Carter administration’s attempts to change international opinion on reprocessing” (53).

The final section discusses the INFCE and its outcomes. This international conference on the technical aspects of nuclear power started in October 1977. However, it was “a lost cause from the start,” according to Ambassador Smith (54). Hoey stresses that the INFCE was rather successful in undermining “the linkages that the Carter administration was making between nuclear power and concerns regarding proliferation” (54). Although Japan actively participated in the meeting as co-chairman of Working Group Four, which was tasked with examining plutonium and reprocessing, its officials emphasized the energy need for plutonium and downplay its proliferation risk. Nonetheless, Hoey argues, the United States took a unilateral approach and enacted the Nuclear Non-Proliferation Act of 1978 (NNPA).

In the conclusion, Hoey refers to the revision of the Japan-US nuclear cooperation agreement in 1988 as “a major diplomatic breakthrough for Japan and a reversal in US policy on controlling the spread of plutonium since the mid-1970s” (57). Ironically, however, to date, Japan’s plutonium program has suffered numerous mishaps and accidents. In the end, both Tokyo and Washington failed to “achieve the level of control they sought” (57).

Overall, Hoey's article successfully highlights the importance of status and prestige in Japan's nuclear diplomacy as well as of technological cooperation in US nuclear diplomacy. It is an especially welcome contribution to the study of Japan in this particular field since previous research focused on individual problems, such as the NPT ratification, and Japan's material gains rather than ideational factors as a motivation behind its attitudes.<sup>1</sup> Despite these significant achievements, there are some areas where further explanations and clarifications would be helpful.

First, the application of several concepts is unclear. One is the "controllability" that is applied to both countries' nuclear diplomacy in the 1970s. The author compellingly discusses the failure of the latter regarding plutonium, which is also a useful case study of science diplomacy. Nonetheless, Japan's failure to control plutonium was largely due to its domestic nuclear power development.<sup>2</sup> By contrast, looking back to its nuclear 'diplomacy' during the 1970s, Tokyo seemed to have successfully controlled its own plutonium utilization program against pressure from Washington.

A similar problem occurs in relation to the "nuclear diplomats," which refers to US diplomat Gerard Smith and Japanese nuclear engineer Ryukichi Imai. While they are described as moving "between the technological, scientific, and diplomatic worlds," giving "effect to nuclear diplomacy" (46), there are few mentions of these important roles in the article. I am sure that Ambassador Smith deserved the name. As the "tzar" on nonproliferation matters, he played significant roles in the INFCE and the review process of the Carter administration's nuclear nonproliferation policy, as is discussed below.

However, these roles fall outside of the scope of Hoey's article. Though Imai's role in the Tokai Mura negotiation is mentioned, he was not an effective mediator in this case. Indeed, he was widely known for his technical knowledge and contributions to INFCIRC/153, the IAEA document that set up the framework of NPT safeguards in 1971.<sup>3</sup> Nevertheless, during the early phase of the bilateral negotiations in 1977, he clashed with the Japanese government, which was not supportive of his personal ideas, and did not appear in the negotiations thereafter.<sup>4</sup>

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<sup>1</sup> Akira Kurosaki, "Japan's Nuclear Disarmament and Non-Proliferation Diplomacy during the Cold War: The Myth and Reality of a Nuclear Bombed Country," in John Baylis and Yoko Iwama, eds., *Joining the Non-Proliferation Treaty: Deterrence, Non-Proliferation and the American Alliance* (New York: Routledge, 2018) [hereafter *Joining NPT*]: 131-150; Yoko Iwama, "The Japanese Ministry of Foreign Affairs and the Decision to Join the Non-Proliferation Treaty," *Joining NPT*: 151-171; Takafumi Arai, "Satō Eisaku seiken to kakudai kakuyokushiryoku: Kakudoukatsu to kokunaiseiji 1964-1968," [The Sato Eisaku Administration and Extended Nuclear Deterrence: Nuclear Blackmail and Domestic Politics, 1964-1968] *Kokusaiseiji* [International Relations], 203 (March 2021): 126-141; Eunil Cho, "Impact of the Nuclear Non-Proliferation Regime on Japan's Non-Nuclear Policy, 1965-1976," *Diplomacy & Statecraft* 32:1 (2021): 114-130.

<sup>2</sup> Hitoshi Yoshioka, *Shinpan genshiryoku no shakaishi: Sono nihonteki tenkai* [A Social History of Nuclear Power: Its Development in Japan, New Edition] (Tokyo: Asahi Shuppan, 2011).

<sup>3</sup> Ryukichi Imai, "NPT hoshōsochi 10 nen ni omou," [Thoughts on the 10th Anniversary of NPT safeguards] *Kaku Busshitsu Kanri Sentā News* [Nuclear Material Control Center News] 16:3 (March 1987): 1-5.

<sup>4</sup> Telegram TOKYO08910 from Tokyo to State, "Bureaucratic Dynamics of Nuclear Issue Updated," June 16, 1977, National Archives and Records Administration, RG59, Central Foreign Policy Files, Access to Archival Databases, <https://aad.archives.gov/aad/series-list.jsp?cat=WR43>; Yu Takeda, 'Keizai Taikoku' Nihon no Tai-Bei Kyōchō ['Economic

As a Japanese “nuclear diplomat” in the 1970s, Shigefumi Tamiya, a former official of the Science and Technology Agency and co-chairman of the INFCE Working Group Four, might be a better example. He and UK co-chairman Sir Hermann Bondi were hailed by conference participants for their superb chairmanship in producing a balanced working group report and were both considered for the position of chairman of the final plenary of the INFCE.<sup>5</sup> His role and advice were indispensable to Japan’s success in leading the INFCE.

Second, although the author relies on Japanese primary sources, their context is not discussed. For instance, regarding Japan’s ratification of the NPT, the article emphasizes the importance of the safeguards agreement and the nuclear industry’s concern of being cut off from international nuclear trade had Japan not ratified it (50). While I agree with the importance of the nuclear industry, the process leading up to Japan’s ratification was much more nuanced. Other possible factors could include Prime Minister Takeo Miki’s personal commitment, the first review conference of the NPT in May 1975, and the emperor’s interest in this issue, to name a few.<sup>6</sup>

This issue further leads to an overestimation of Japan’s nuclear ambition. The author discusses that the NPT’s article IV, which recognized the inalienable right of member states to use nuclear power for peaceful purposes, was “seen as the means by which to pursue its nuclear ambitions” (45), and that “[m]any in Japanese officialdom were reluctant to forego the option of developing an independent deterrent” (47). They might go too far since Japan’s nuclear power development and diplomacy were too decentralized and compartmentalized to have pursued a single joint purpose.<sup>7</sup> In addition, the article cites the records of the *Gaikō Seisaku Kikaku Inukai* [Foreign Policy Planning Committee] within the Japanese foreign ministry and Japan-US policy planning talks (47-48). These forums were for brainstorming rather than policy making as the author rightly explained (47). Although some of the participants were senior and influential diplomats, their mission was to provide analyses for other bureaus, such as the Office of Disarmament Affairs that was in charge of the NPT.

Third, a lack of discussion of secondary sources is problematic in the section regarding the INFCE. This section seems relatively superficial, using few statements, working group reports, and the memoir of Gerard Smith. Considering the conference’s unprecedented scale, these sources are inadequate. Representatives and experts from 51 countries and 7 international organizations gathered to discuss all aspects of nuclear power, ranging from uranium mining to advanced reactors, to reprocessing, to waste disposal. It took more than two years to produce final reports of more than 20,000 pages, while eight working groups and a coordinating

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Superpower’ and Its Relations with the United States: Japan-U.S. Policy Coordination on Security, Economy, and Nuclear Power, 1975-1981] (Kyoto: Minerva Shōbō, 2015) [hereafter *Keizai Taikoku*]: 172-173.

<sup>5</sup> Takeda, *Keizai Taikoku*: 203-204.

<sup>6</sup> Kazuhara Takanori *Oral History* (Tokyo: National Graduate Institute for Policy Studies, 2019), <http://doi.org/10.24545/00001672>; Yu Takeda, “Japan and the Creation of the NPT Regime”, *Sources and Methods*, March 17, 2021, <https://www.wilsoncenter.org/blog-post/japan-and-creation-npt-regime>.

<sup>7</sup> See, for example, Akira Kurosaki, “Nuclear Energy and Nuclear-Weapon Potential: A Historical Analysis of Japan in the 1960s,” *Nonproliferation Review* 24:1-2 (2017): 47-65.

body discussed technical analyses, and major industrialized states held bilateral meetings. The cause was a rumor that the most profitable actors in the INFCE were Xerox and airline companies.<sup>8</sup>

In order to understand the essential aspects of this gigantic conference, secondary sources, such as reflections of participants, would have been particularly helpful. Such materials are abundant in Japanese since the main topic of the INFCE, reprocessing and plutonium, were “life and death” issues for the country (53).<sup>9</sup> It is regrettable that the author did not consult these sources while researching Japanese diplomatic documents.<sup>10</sup>

Based on these secondary sources and some unused US diplomatic documents, namely the National Security Archive’s unpublished collection, the article’s explanation of the INFCE might be changed significantly in two aspects.<sup>11</sup> One is the evaluation of US efforts during the INFCE. Contrary to the author’s argument, the US government seemed to achieve part of its purposes, as President Carter’s national security advisor Zbigniew Brzezinski insisted (63, footnote 95). The original concept of the INFCE was to examine alternative nuclear fuel cycles that did not produce separated plutonium.<sup>12</sup> However, well before the organizing conference in October 1977, expert meetings of the Group of Seven (G7) significantly changed it to the neutral and non-binding technical evaluation of all nuclear fuel cycles.

Thus, US officials made efforts to achieve the refocused purpose of spreading recognition of the “proliferation vulnerabilities” of plutonium during the INFCE (56). US allies in Europe and Asia agreed with this call. Though they did not cease their plutonium utilization, they subsequently revised nuclear cooperation agreements with the United States in the 1980s to adopt stricter regulations on the peaceful use of nuclear power.<sup>13</sup> This included full-scope safeguards, which was one of the core components of Carter’s nonproliferation policy.

The other aspect is the influence of the INFCE on US nonproliferation policy. While the author argues that it had “little effect on US efforts in this field” (57), the US government started to review the nuclear nonproliferation policy in December 1978 based on discussions during the INFCE.<sup>14</sup> After the US Congress enacted the NNPA in March 1978, requiring the US government to tighten nonproliferation conditions for nuclear cooperation, the Carter administration instead focused on maintaining nonproliferation cooperation with Japan and Western European countries by permitting their reprocessing programs. One such effort was

<sup>8</sup> “IAEA taiō INFCE no ketsuronni” [IAEA’s mission written in a conclusion of INFCE], *Gensiryoku Sangyo Shimbun* [Atomic industry paper], October 18, 1979, [https://www.jaif.or.jp/data\\_archives/n-paper/sinbun1979-10.pdf](https://www.jaif.or.jp/data_archives/n-paper/sinbun1979-10.pdf).

<sup>9</sup> See, for example, Shigefumi Tamiya, ed., *80nenndai Genshiryokukaihatsu no shinsenryaku* [New strategy of nuclear development in the 1980s] (Tokyo: Denryoku Shinpōsha, 1980).

<sup>10</sup> Even if paper materials were not accessible due to the pandemic, there are several online resources, such as *Gensiryoku Sangyo Shimbun*, which is cited in footnote 8.

<sup>11</sup> National Security Archive, “Nuclear Non-Proliferation Unpublished Collection”, <https://nsarchive2.gwu.edu/nsa/NC/nuchis.html#unpub>.

<sup>12</sup> Takeda, *Keizai Taikoku*: 175-179.

<sup>13</sup> Takeda, “US nonproliferation policy, nuclear cooperation, and Congress: revision of the US–Japan Nuclear Cooperation Agreement, 1987-88,” *The Nonproliferation Review* 24:1 (2017): 67-81.

<sup>14</sup> Takeda, “Beikoku no taigai seisaku ni okeru doumeikoku no yakuwari: houkatsuteki zizendoui no seiritsu, 1977-1982,” [U.S. Nuclear Cooperation Policy and the Western Allies: Making Programmatic Prior Consent, 1977–1982] *Kokusaiseiji* 185 (2016): 114-125.

the new policy, later named “programmatic prior consent,” which provided indefinite consent to nuclear fuel cycle programs in foreign countries only when their actual need and no proliferation risks were confirmed by the US government.

This policy offers a good example of the work of a “nuclear diplomat,” since Ambassador Smith played a major role in forming this principle in the final years of the Carter administration. His recommendations were realized in the successive Reagan administration in 1982 and are still valid today as the pillar of US nuclear cooperation with industrialized countries, including Japan.

Finally, based on the above criticisms, the description of the Japanese nuclear diplomacy seems somewhat exaggerated. In the introduction and conclusion, Japan is described as a “challenger” to the emerging US-led global non-proliferation order (46, 57). Nonetheless, as Hoey discusses, the Japan-US nuclear cooperation agreement provided Washington a veto over the Japanese reprocessing program (52). Although US officials promised in 1968 that this veto, a provision of the Japan-US joint determination on “safeguardability” of facilities handling plutonium, would represent a purely technical judgment, it became a tool of political leverage to demand Japan go along with the US nonproliferation policy during the Carter administration.<sup>15</sup> In other words, Japan was in no position to challenge the nuclear order led by the United States. The country rather cooperated with the United States, along with Western European allies, to build a new order, one based upon the aforementioned programmatic prior consent, while India and other developing countries criticized any restrictions on peaceful use of nuclear power.

These criticisms aside, Fintan Hoey’s article sheds light on new factors, namely technologies and their associated prestige, in the Japanese and US nuclear diplomacy during the 1970s. It will be a basis for further studies on not just the diplomatic history of the 1970s or nuclear nonproliferation, but also on science diplomacy.

**Yu Takeda** is associate professor at Hiroshima City University, Japan. His recent book is *Nihon no Genshiryoku Gaikō: Shigenshōkoku 70nenn no Kutō* [Japan’s Nuclear Diplomacy: A Resource-poor Country’s 70 Years of Struggle] (Tokyo: Chūō Kōron Shinsha, 2018). His research focuses on Japan-US relations during the Cold War, with particular interest in nuclear nonproliferation, and is currently working on negotiations of the International Plutonium Storage.

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<sup>15</sup> Yoshinori Izumi, “Nichibeī saishori kōshō ni okeru beikoku seisakukettei no bunkiten ni tsuite,” [Turning Point of U.S. Government decision in US-JAPAN Nuclear Fuel Reprocessing Negotiation in 1977] *The Proceedings of the Institute of Nuclear Materials Management (INMM) Japan Chapter 31th Annual Meeting* (2010): 1-13.