

Nehru, Science and Secrecy

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Nuclear programs the world over are, and have always been, powerful symbols of State power. In the early history of the Indian nuclear program, the one political figure who figures repeatedly is Pandit Jawaharlal Nehru, India's first prime minister.

Nehru's interest in nuclear power as an example of a scientific enterprise is not surprising. Since his early days in England, Nehru was always convinced of the positive good that could result from science. Addressing the Indian Science Congress in 1938, he emphasized his faith in science as follows : "The application of science is inevitable and unavoidable for all countries and people today. But something more that its application is necessary. It is the scientific approach, the adventurous and yet the critical temper of science, the capacity to change previous conclusions in the face of new evidence, the reliance on observed fact and not on pre-conceived theory - all this is necessary not merely for the application of science, but for life itself and the solution of its many problems.[Bright, 1978]"

A central canon in science is openness; secrecy is the bane of science. Two reasons can be given for this. First, secrecy in science is unethical. Science does not grow by the intellectual activities of individual scientists, or even of a team of scientists. It is the product of the whole community. It is for this reason that one of the greatest physicists of all time, Sir Isaac Newton said : If I have seen further than others, it is because I stand on the shoulders of giants. If one takes information from others, then one must also give. Second, secrecy hides errors and inefficiencies. In the words of J. D. Bernal : "With no check from publication and free criticism, the most arrant nonsense is likely to receive official sanction. Teaching will become an initiation into mysteries, and science will degenerate into the kind of cabalistic alchemy it was in the decay of the Roman Empire. The growth of modern science coincided with a definite rejection of the idea of secrecy.[Bernal, 1939, p. 150]"

Secrecy and the Indian Nuclear Establishment

The Indian nuclear program which began by envisioning itself as devoted to scientific research violated this canon from its very inception. During Nehru's reign as the Prime Minister, the Indian nuclear establishment progressively insulated itself from outside gaze. Passed shortly after independence, the Atomic Energy Act of April 1948 made atomic energy the exclusive responsibility of the state [Pathak, 1980]. In 1958, with the creation of the Atomic Energy Commission, the nuclear establishment succeeded in increasing its authority. And, finally, on 15 September 1962, the Parliament passed a new Atomic Energy act that granted the chairman of the Atomic Energy Commission the sole authority to initiate, execute, propagate, and control exploration, plan and manufacture of

atomic material and its related hardware and all nuclear research and developmental activities. Under Section 18 (i) of this act, the government was empowered to restrict the disclosure of information, whether contained in a document, drawing, photograph, plan, model, or in any other form whatsoever, which relates to, represents or illustrates :

- a) an existing or proposed plant used or proposed to be used for the purpose of producing, developing or using atomic energy, or
- b) the purpose or method of operation of any such existing or proposed plant, or
- c) any process operated or proposed to be operated in any such existing or proposed plant.

Section 20 denied any person or organization not authorized by the AEC to invent or to patent anything which the AEC believes as relating to atomic energy. Section 21 (5) gives the AEC absolute authority over any legal or formal arbitration [Sharma, 1983].

Saha and the Nuclear Establishment

Not only is this secrecy meant to prevent lay people from knowing what is happening, but also the rest of the scientific community in the country, i.e. outside the nuclear establishment. One of the biggest challenges to the Indian nuclear establishment, and probably the only major challenge to come from the rest of our scientific cadre, came from the famous scientist Meghnad Saha. Saha was an early votary of the application of science and modern industrialized development to India. It has been argued that he may have been one of the first scientists anywhere to realize that atomic energy can be used to generate electricity. Thus, he was certainly not opposed to nuclear energy. What he was opposed to was secrecy and the exclusivity of the Indian Atomic Energy Commission. In particular, he wanted to see universities do research, and be supported in their efforts to do so, on nuclear physics and engineering. During the early 50s, as an elected Member of Parliament, he repeatedly raised this issue on the floor of the Lok Sabha.

Responding to Saha's constant pressure and critiques, Nehru agreed to hold a special conference entitled "The Development of Atomic Energy for Peaceful Purposes in India" on November 26 and 27, 1954 [Abraham, 1997]. For Saha, it was to be a way of addressing the appropriateness of the Atomic Energy Commission's (AEC) strategy. However, the very choice of location - the National Physical Laboratory (NPL) in Delhi - suggested that the die was already cast against him. NPL's director was K. S. Krishnan, one of the three founding members of AEC, the other two being Homi J. Bhabha and S. S. Bhatnagar. In the words of Raja Ramanna, Krishnan would eventually "save the day for us (the AEC). [Ramanna, 1991, pg. 61]" The bulk of the speakers were from the AEC and the whole conference had the effect of marginalizing Saha and defusing the challenge to the power of the AEC. In his opening remarks at the conference, Nehru clearly defined the technological aspects of nuclear energy as restricted to the state alone though he suggested the possibility that the scientific aspects may be pursued in the universities. All these suggest that Nehru was far from being neutral in his role of arbiter.

Why Secrecy?

While introducing the Atomic Energy Act in 1948, Nehru gave two reasons for the imposition of secrecy. “The advantage of our research would go to others before we even reaped it, and secondly it would become impossible for us to cooperate with any country which is prepared to cooperate with us in this matter, because it will not be prepared for the results of researches to become public. [Bhatia, 1979, pg. 85]”

To say that the US, Canada, England and so on, from whom we got much of our early nuclear know-how, would steal ideas from Indian research is disingenuous at the very least. Further, it is not clear why “others” should not benefit from “our research”. India, after all, was planning to benefit from the results of research carried out by western countries. And, last, if these were to be the only reasons, then the same levels of secrecy should have applied to other fields of science and technology.

The answer, perhaps, lies elsewhere.

Nehru and the Bomb

To attempt to understand the reasons for Nehru’s support for secrecy in the Indian nuclear establishment, we turn to an early quote of Nehru's dating back to 1946. In a remarkably forthright speech, he said "As long as the world is constituted as it is, every country will have to devise and use the latest scientific devices for its protection. I have no doubt that India will develop her scientific researches and I hope Indian scientists will use the atomic force for constructive purposes. But if India is threatened she will inevitably try to defend herself by all means at her disposal.[Norman, 1965, pg. 186]"

This statement reveals several aspects of Nehru’s thinking. In 1946, less than a year after the bombing of Hiroshima and Nagasaki, it was impossible for anyone thinking about atomic power not to think of its use for defence purposes. But, it is interesting to note that even though India was still a colony of Britain, Nehru envisages it having potential threats. And, implicitly, in stating what India would do in the future, he also seems to see himself as a statesman and leader of the country.

Nehru’s understanding of the dual nature of atomic power seems to have stayed with him. Several years later, on a memo submitted by Bhabha, Nehru is also reported to have written a note to the effect that : “Apart from building power stations and developing electricity there is always a built-in advantage of defense use if the need should arise. [Kapur, 1976, pg. 194]”

Both these quotes fly against the conventional view of Nehru as one of the foremost votaries of universal nuclear disarmament. Clearly, his activities in the 1950s lends support to this view. All through this period, Nehru was intensely concerned about nuclear disarmament. Being the first to suggest a ban on nuclear testing, he was glad when the limited test ban treaty was signed and welcomed it as a great landmark in history [Pandey,

1976, pp. 392-413]. He also commissioned an official study on the effects of nuclear explosions [GOI, 1956]. Not only did Nehru push for universal nuclear disarmament, but as late as 1961 he had categorically stated in public that India would not produce nuclear weapons “whatever may happen”[Kapur, 1976, pg. 146].

As Ashok Kapur points out, there is an ambiguity between Nehru’s mistrust of nuclear weapons and his policy of promoting the peaceful applications of nuclear power [Kapur, 1976, pg. 96]. Ambiguity does not mean hypocrisy. But, as a leader of a state, Nehru could not perhaps make the choices that he may have chosen as an individual.

This ambiguity is inherent in the whole nuclear enterprise - that something can be developed ostensibly, or even honestly, for peaceful purposes and then put to use for producing weapons. Very early on, this dual nature was explained by Robert Oppenheimer, the head of the Manhattan project that produced the first atomic bombs. In 1946, commenting on a proposal for the international control of nuclear weapons, he wrote : “We know very well what we would do if we signed such a convention :We would not make atomic weapons, at least not to start with, but we would build enormous plants, and we would design these plants in such a way that they could be converted with the maximum ease and the minimum time delay to the production of atomic weapons saying, this is just in case somebody two-times us; we would stockpile uranium; we would keep as many of our developments secret as possible; we would locate our plants, not where they would do the most good for the production of power, but where they would do the most good for protection against enemy attack. [Oppenheimer, 1946]”

A few months after Nehru's death, Bhabha pronounced that India was capable of exploding a nuclear device within 18 months. The pronouncement came on the heels of the first Chinese nuclear test. However, given the intricacies involved in manufacturing nuclear explosives, this statement, if true, reveals that much work had been done towards making a bomb even prior to this. The timing also lends credence to the claim that it was Nehru who held back Bhabha’s enthusiasm for nuclear tests [Kapur, 1994, pg. 221].

The promised bomb exploded on 18 May 1974 at Pokharan in Rajasthan. The seemingly innocuous choice of words - “The Buddha is Smiling” - used to inform Mrs. Indira Gandhi, Nehru’s daughter and the Prime Minister of India during that period, of the successful explosion is ironical. For, in 1957, during a visit to Japan, standing in front of the Peace Memorial, Nehru said : “The world must choose between the path of violence symbolised by the atom bomb and the path of peace symbolised by the Buddha. [Kapur, 1993, pg. 292]”

The choice is still before each of us.

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