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## COOL HEADS IN THE COLD WAR

### **Pierre Auger and the Founding of CERN**

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The year 2004 marked the 50th anniversary of the founding in Geneva of the European Organization for Nuclear Research, a particle physics laboratory established under the auspices of UNESCO.

The war had profoundly affected developments in nuclear physics, sharply accelerating the pace of research. Countries such as Italy, France, Denmark and Germany, which had been at the cutting edge in the 1930s, were excluded from those developments by the war. The stakes surrounding the atomic bomb were such that the United States of America and the United Kingdom monopolized and maintained a veil of secrecy around nuclear research, especially after the bombing of Hiroshima and Nagasaki. When the United Nations was established, nuclear issues, including basic research, were assigned directly to the Security Council and not to UNESCO or the Economic and Social Council.

From 1949, European physicists, in particular French and Italian (notably Edoardo Amaldi, the mainstay of the project), joined forces to bridge the gap and to draw up a plan for a European laboratory. Their aim was to attain a level of research equivalent to that of the USA. The project was examined in Geneva in December 1949 at the European Cultural Conference, organized by the European Movement. It was endorsed by scientists, diplomats and science officials, but had not yet won governmental support.

The situation changed completely when the physicist Isidore Rabi took up the idea on behalf of the American delegation to the 5th session of UNESCO's General Conference, held in Florence in June 1950. Rabi announced that, following the explosion of an atomic bomb by the Union of Soviet Socialist Republics at the end of 1949, the USA could no longer maintain absolute secrecy and was prepared to assist the Europeans in rebuilding their nuclear physics research capacity. Through UNESCO, he gave intergovernmental legitimacy to the project.

But, in the minds of some, "intergovernmental" was tantamount to "cumbersome machinery". Moreover, nuclear physics had not yet been given priority in the discussions on international laboratories. To implement the decision made in Florence, Pierre Auger, Director of the Natural Sciences Department at UNESCO, drew on his scientific and administrative contacts to build up the content of what was still only a general idea.

Auger, who had taken part in nuclear research in Canada during the war, had the advantage of still being closely involved in the world of physics. Before his appointment to UNESCO in the middle of 1948, he had participated in the United Nations Atomic Energy Commission, together with Isidore Rabi and Edoardo Amaldi. In France, he had also been a director of the Atomic Energy Commission (CEA) and Director of Higher Education in the Ministry of Education. He could therefore draw on his network of relations to move the project forward rapidly.

In December 1950, a group of physicists and the European Culture Centre in Geneva put forward a more broadly based project, opting for a particle accelerator rather than a nuclear reactor. The project was further refined at a meeting of consultants at UNESCO in May 1951,

but was opposed by the United Kingdom,<sup>1</sup> which was in favour of a much more modest laboratory, merely an annex to Niels Bohr's laboratory in Copenhagen. The General Conference, at its sixth session in July 1951, expressed its preference for the Auger project,<sup>2</sup> but the Anglo-Danish project was regarded as an alternative at two subsequent meetings of consultants (October and December 1951). In December 1951 UNESCO convened an intergovernmental conference which set up a Council of Representatives of States and working groups to implement the Auger project, while proposing that experiments should be conducted in Copenhagen in the meantime. At the second intergovernmental conference (February 1952) the interim agreement was finalized and it came into force in May 1952 after being ratified by five countries (Federal Republic of Germany, Yugoslavia, Netherlands, France and Sweden).

The official agreement establishing CERN and locating it in Geneva was signed in June 1954 and came into force in September of that year. In due course, the document was signed by 12 countries<sup>3</sup> and the first stone of the CERN building was laid in June 1955.

The rest is history: from the early 1970s, CERN has compared favourably with its American competitors in the field of particle physics and scientists working in its laboratories have won Nobel Prizes for their major discoveries.

UNESCO played to perfection its role as initiator of an international cooperation project. The period of time between decision and implementation was unusually short---five years---for an intergovernmental organization. Pierre Auger's personal role, through numerous networks, in conjunction with the European Movement, contributed significantly to that achievement.

#### **Sources:**

Armin Hermann, John Krige, Ulrike Mersits, Dominique Pestre et al.: *History of CERN*. 3 vols. North Holland, Amsterdam, 1987.

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<sup>1</sup> The British did not participate in the 1949 and 1950 meetings. Nor did they sign the provisional agreement of February 1952. They considered that they were ahead of the other European countries in particle physics and were sceptical about the persistent scientific vagueness of the Auger project. A British physicist, Skinner, even said that it was one of those "high-flown and crazy ideas which emanate from UNESCO". The British adopted and became fully involved in the project in 1954.

<sup>2</sup> Ronald Fraser, liaison officer between the International Council of Scientific Unions (ICSU) and UNESCO, endorsed the Anglo-Danish project.

<sup>3</sup> Belgium, Denmark, France, Germany, Greece, Italy, Netherlands, Norway, Sweden, Switzerland, United Kingdom and Yugoslavia. The countries of Eastern Europe had been explicitly excluded since the meeting held in Geneva in December 1950.