

INTRODUCTION

VISIONS AND REVISIONS

Defining UNESCO's scientific culture, 1945–1965

*Patrick Petitjean*¹

BORN of the cataclysm of the Second World War, battered by the storms of the Cold War, transformed by the end of colonialism, UNESCO (United Nations Educational, Scientific and Cultural Organization) – during the first two decades of its history – reflected much of the tumultuous change that defined the mid-twentieth century. The Organization's Natural Sciences Sector found itself engaged in some of the most significant issues of the era. The story of how this most idealistic of endeavours – trying to better the world and further the cause of peace through international scientific cooperation – developed, between 1945 and 1965, makes for an intriguing intellectual and political history. Part I of this book examines the priorities and principles that defined UNESCO's scientific programme from its inception to its early maturity.

It was in 1942 that the Allies began discussing post-war cooperation and laying the groundwork for new international, intergovernmental organizations. During the late war years, from 1943 to 1945, a continuing collaboration between the key players in the anti-Fascist alliance seemed assured. When the war ended with mushroom clouds over Hiroshima and Nagasaki, it was blindingly obvious that scientific development would play a critical role in the future of nations. Scientists had played an essential role in the war effort; now many hoped to do the same for keeping the peace. Science was understood to be neutral while at the same time promoting progress. For many scientists, international cooperation represented a means of not only continuing their anti-Fascist commitment but also preventing the destructive use of science in the post-war era.

Nevertheless, the subject of science had been neglected by the former international cultural and educational organizations. Before the war, the International Institute for Intellectual Co-operation (IIC) took steps in that direction but had little time to achieve much. Moreover, this scientific cooperation was between persons, not governments. While there was some government participation in

1 Patrick Petitjean is a historian of science with the REHSEIS team (Recherches Epistémologiques et Historiques sur les Sciences Exactes et les Institutions Scientifiques) of the French National Centre for Scientific Research (CNRS) and University of Paris 7.

the International Council of Scientific Unions (ICSU, since then renamed the International Council for Science), its activities too were cut short by the war.

Even after the ‘S’ was added (at the last moment) to the Organization’s name, at the conference which established UNESCO in November 1945, the place of science in the Organization – as in the United Nations system as a whole – remained ill-defined. Thanks to the determination of UNESCO’s first scientific staff, however, within a few years significant programmes were launched and successfully developed, often in the face of setbacks and formidable opposition from some Member States. In the process, leaders such as Julian Huxley, UNESCO’s first Director-General, and Joseph Needham, its first Head of the Natural Sciences Section,² promoted their compelling vision of the world, as well as ideas on the social and international role of science.

SETTING UP THE ‘S’, 1946–1950

UNESCO’s first science programmes were focused on the reconstruction of countries ravaged by the war. The funding for these programmes (less than 10 per cent of UNESCO’s total budget) was divided into three main fields:

- support to ICSU and the creation of new scientific unions;
- establishment of UNESCO’s Regional Scientific Offices and conferences; and
- creation of new forms of scientific cooperation, such as the Amazonian Institute project (initiated at the first session of UNESCO’s General Conference in Paris in 1946), the Arid Zone Institute project, and the International Computation Centre (both initiated at the General Conference in Beirut, Lebanon in 1948).

Other initiatives concerned the social aspects of science and nurtured the creation of films, publications, exhibitions and educational projects addressing a range of issues. There was also the establishment of the World Centre for Scientific Liaisons, which was engaged in exchange programmes, travel facilitation, the standardizing of analytical reports and other publications, and the creation of an international directory of scientists.

But the freezing winds of the Cold War had a profound effect on UNESCO. The Soviet Union refused to join the Organization, wary of the West’s prominent

² The names of the Sector have been, from 1946 to 1948: the Natural Sciences Section; from July 1948 to 1964: Natural Sciences Department; and from September 1964 to the present day: Natural Sciences Sector.

role in its creation. Meanwhile, Anglo-Saxon Member States accused UNESCO of being pro-Communist. They also applied pressure to reduce its scientific activities; their reasons varied: programmes were too disparate, bureaucracy was being expanded without results, the financial crisis in Europe required limits on funding.

In the spring of 1948, finding a successor to Joseph Needham as Head of Natural Sciences at UNESCO proved difficult. The United States vetoed candidates suggested by Needham, and Director-General Julian Huxley refused candidates suggested by the United States. Pierre Auger – liberal but less left-wing than Needham, and a man with close ties to the French Government – was a compromise choice. Succeeding Needham, Auger held the post of Director of the Natural Sciences Department until December 1958.

UNESCO also had difficulties fitting into the United Nations system as a whole. The scientific mandate was shared by several UN agencies and by the UN Economic and Social Council (ECOSOC). The responsibility for nuclear power was reserved for the United Nations Security Council. While scientific development had become an essential political issue during the war, a divergence soon became apparent between scientists and diplomats. Unlike ECOSOC, UNESCO was a hybrid organization, intergovernmental while also acknowledging the importance of intellectual personalities. The negotiation, timing and execution of a number of projects reflected the way scientists did things, which was largely incompatible with the rhythm and ways of diplomats and the necessities imposed by intergovernmental consultations.

The scientific–diplomatic culture clash was a main factor in the failure of the Amazonian Institute. Because of the persistent hostility of the United States to costly projects, the Arid Zone Institute was reduced to a simple ‘consultative committee’. Nevertheless, it would go on to become a resounding success.

LOOKING FOR A BALANCED PROGRAMME, 1950–1954

Jaime Torres Bodet succeeded Julian Huxley after the Beirut General Conference (December 1948), with only the last-minute endorsement of the United States. Writer and poet, diplomat and ex-minister of education, less opinionated than Huxley and more government orientated, Torres Bodet hoped that UNESCO would receive the funding necessary to fulfil its pacifist mission. He wanted UNESCO to bridge the gap between East and West by promoting contacts between intellectuals. At Florence (Italy, May–June 1950, fifth session of the General Conference), the United States prevented both: the Director-General was denied the budget he hoped for, and UNESCO maintained a bias towards the West. Membership was denied to the People’s Republic of China, and the Organization voiced its support for American intervention in Korea. A major

conference between Eastern and Western intellectuals was refused. Torres Bodet resigned, then changed his mind and stayed two more years as Director-General. He again resigned, this time for good, in November 1952 (seventh session of the General Conference, Paris).

Within the scientific field, dire changes took place at Florence. The place reserved for science was reduced to only one out of the ten programme priorities. Needham's 'periphery principle' – which favoured the inclusion of developing nations in the scientific progress pioneered by advanced countries – was undermined by the launching of the European Organization for Nuclear Research (CERN) project. Finally, the World Federation of Scientific Workers was judged pro-Communist and scratched from the list of non-governmental organizations (NGOs) benefiting from an official relationship with UNESCO.

Despite resistance from Anglo-Saxon countries, Torres Bodet, during his tenure, succeeded in imposing the idea that scientific cooperation undertaken by UNESCO should help countries rather than just individual scientists, notably in the formation of national policy. He reaffirmed that UNESCO should 'favour progress and the applications of science for the benefit of all'. This idea would be taken up again during the seventh session of the General Conference (Paris, 1952). There it was decided that international scientific cooperation should be based on a new type of social contract in which Western nations share with others the benefits of modern science. This represented, in effect, a renewed commitment to the periphery principle. Furthermore, the Paris Conference launched an assistance programme to underdeveloped countries for the creation of national research centres.

There were some prominent American voices calling for more aid to developing countries, if only as part of a strategy of waging the Cold War. The United States President Harry S. Truman, in his inaugural address on 20 January 1949, proposed his Point Four foreign-aid programme, which was approved by the US Congress in June 1950. The programme called for Technical Assistance in the effort to improve living standards in underdeveloped countries. Funds administered by several US agencies and the United Nations were used to provide industrial and agricultural equipment, as well as to teach useful skills to people in need. Despite its altruistic dimension, Technical Assistance was also intended as a bulwark against Communism.

UNESCO struggled to find its place within the context of the dramatic changes that scientific research was undergoing during the early 1950s. This research was now completely different from that preceding UNESCO's creation. With the advent of the Cold War, powerful countries invested massively in research and nationally organized development. 'Big Science', especially in physics, became the maxim. The armed forces dominated in sensitive areas. Many scientists worked closely with their governments and were considered a purely

national source of ‘wealth’. A large part of research was therefore excluded from international exchange and suffered from limited circulation of individuals and results. The Cold War inevitably complicated the relationships between scientists and governments and diminished the role of international organizations.

CONSOLIDATION, 1954–1965

The eighth session of the General Conference (Montevideo, Uruguay, 1954) marked the beginning of UNESCO’s consolidation phase, and the gradual thawing of Cold War hostilities. The most important indicator of change was the conference on the peaceful uses of atomic energy (Geneva, Switzerland, August 1955). The Union of Soviet Socialist Republics (USSR) finally became a Member State in 1954, and the Russian Victor A. Kovda replaced Pierre Auger as Director of the Natural Sciences Department in January 1959. International scientific cooperation was revived by this *détente*. There was also a sense of peaceful competition, exemplified by Polar expeditions and the first International Geophysical Year (1957–1958).

In 1954, the scientific programme’s objective to improve living conditions for humankind was reconfirmed and was divided into four equal budget chapters funding international scientific cooperation, contributions to research, the teaching and diffusion of science, and the spread of UNESCO’s Regional Offices for Science and Technology (ROSTs). UNESCO’s determination to encourage intergovernmental cooperation was reiterated at its tenth session of the General Conference (Paris, 1958), which contributed to the participation of newly independent countries in international scientific cooperation during the 1960s.

The success of the Arid Zones project led to a proliferation of new ventures during UNESCO’s second decade of existence. A similar project for Humid Tropics was launched in 1955, as was a consultative committee on marine sciences. In 1960, the Intergovernmental Oceanographic Commission (IOC) of UNESCO was created. In 1961, the International Computation Centre (ICC, in Rome, Italy) became, at last, operational. That same year, the FAO/UNESCO project for a world soil map was devised. And in 1965, the UNESCO magazine *Nature and Resources* was launched, and the International Hydrological Decade began.

The end of colonialism represented a major turning point for science at UNESCO. The sector benefited from a notable budget increase and greater involvement in policy issues. A United Nations conference (Geneva, February 1963) was organized around the ‘Application of Science and Technology for the Benefit of the Less Developed Areas’. The thirteenth session of the General Conference (Paris, 1964) then decided to raise science to the same high-priority level as education. During the second half of the 1960s, posts in the Natural

Sciences Sector doubled, and the portion of UNESCO's budget allocated for science rose, from an average of less than 10 per cent, to 15 per cent. UNESCO organized a first regional Conference on the Applications of Science and Technology (CAST) in Chile in 1965. More conferences followed in other parts of the world with the help of the ROSTs. The first volume in the series Science Policy Studies and Documents was published in June 1965.

TOWARDS THE NEW CENTURY

By the mid-1960s, UNESCO had mastered its own original approach to international scientific cooperation. The importance accorded to the environment, the emphasis placed on the social aspects of science, and the priority given to developing countries gave science in UNESCO its particular culture and identity. In the closing decades of the twentieth century, UNESCO's scientists were well prepared for the challenges ahead.

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CONCEPTION AND CREATION OF UNESCO

AN UNSUNG ANCESTOR

The International Institute of Intellectual Cooperation (IIIC) and science

*Jean-Jacques Renoliet*³

Although the Pact of the League of Nations did not provide for the creation of a technical body for intellectual cooperation, the League established the International Committee on Intellectual Cooperation (ICIC), a political body, in 1922. The Intellectual Cooperation Organization (ICO), which covered all of the League's intellectual activities, was active from 1922 to 1946, backed by the International Institute of Intellectual Cooperation (IIIC). The Institute's activities in the field of the exact and natural sciences, preceding those of UNESCO, are reviewed by Jean-Jacques Renoliet.

THE NATURAL SCIENCES

In the field of the exact and natural sciences, the IIIC conducted research and worked in cooperation with international scientific organizations. The Institute published a *Bulletin on International Scientific Relations* and studied various questions including the conservation of manuscripts and printed matter, the standardization of scientific terminology, the coordination of scientific bibliographies, and collaboration among science museums (which was the subject of a publication). Starting in 1931, the Institute devoted all its efforts to the conclusion of a cooperation agreement with the various international scientific Unions (notably physics and chemistry unions) and their International Council. Following the convening of several committees of experts by the Institute, an agreement, signed in July 1937,⁴ established the Council of Unions as a consultative organ of the ICO for scientific matters: the Council was to consult the

³ Jean-Jacques Renoliet is the author of *L'UNESCO oubliée: La Société des Nations et la coopération intellectuelle (1919–1946)* [The Forgotten UNESCO: the League of Nations and intellectual cooperation], from which this excerpt is extracted and translated (Paris, Publications de la Sorbonne, p. 309).

⁴ UNESCO CICI C.327.M220.1937.XII (Appendix 4), p. 503, 510.

Organization on all international questions relating to the organization of scientific work, while the Institute would provide the secretariat of the commissions set up by the Council. In the framework of the agreement, the Institute held, between 1937 and 1939, study meetings bringing together scientists for the purpose of studying a precise theme, some of which led to publications. The Institute also worked to ensure the dissemination of scientific work to the public at large. To that end, in February 1939, it convened a committee of scientists, which recommended the creation of an international centre for scientific documentation and dissemination. However, despite the financial backing of the Rockefeller Foundation, the implementation of the project was hindered by the war.

HOW THE ‘S’ CAME TO BE IN UNESCO

*Gail Archibald*⁵

IT was only on the sixth day of the United Nations Conference for the Establishment of an Educational and Cultural Organization, in 1945, that the reference to science was added to the new organization’s name.⁶ It had taken nearly three years for the ‘S’ to make its way into the acronym of an intergovernmental organization that was initially conceived as focusing on education, and then on culture and education. The following is a brief account of how science came to be part and parcel of UNESCO.

During the 1920s, international scientific cooperation had been rekindled with the restoration of peace after the First World War. The League of Nations’ International Institute of Intellectual Cooperation, founded in Paris in 1925, included a section devoted to Scientific Information and Scientific Relations. Among the activities of the International Bureau of Education, established in Geneva (Switzerland) the same year, was scientific research. In the non-governmental sector, the International Council of Scientific Unions (ICSU) would be founded in Brussels (Belgium) in 1931.

Then the Second World War broke out. By 1943, however, Allied victories encouraged politicians to turn their attention to post-war planning. On both sides of the Atlantic, non-governmental projects proposed the creation of an international organization for education. The same year, Joseph Needham

⁵ A UNESCO staff member since 1981, Gail Archibald is the author of *Les Etats-Unis et l’UNESCO 1944–1963* [The United States and UNESCO, 1944–1963] (Paris, Publications de la Sorbonne, 1993).

⁶ Before it was agreed to add ‘Scientific’ to the name, the original proposal was for a ‘United Nations Educational and Cultural Organization’ (thus, ‘UNECO’).

launched a campaign from China to develop post-war international scientific cooperation in the form of a World Science Cooperation Service. A biochemist at Cambridge University in the UK (1920–42), Needham was also a socialist. In 1937, he had received a cultural shock when three Chinese students arrived in Cambridge to work with him and his wife. He found their company exhilarating, learned Chinese and, much later on, married one of them.

The British Government sent Needham to China in February 1943 as a representative of the Royal Society to consolidate Anglo–Chinese cultural and scientific relations. In December of the same year, Needham wrote to China’s Foreign Minister elaborating his idea of international scientific cooperation: ‘The time has gone by when enough can be done by scientists working as individuals or even in groups organized as universities, within individual countries ... Science and technology are now playing, and will increasingly play, so predominant a part in human civilization that some means whereby science can effectively transcend national boundaries is urgently necessary’. Needham’s immediate goal was the transfer of advanced basic and applied science from highly industrialized Western countries to the less industrialized ones, ‘but’, he assured, ‘there would be plenty of scope for traffic in the opposite direction too’.

Meanwhile, in London (UK), at the Conference of Allied Ministers of Education (CAME), representatives – many exiles from Nazi-occupied countries – met between 1942 and 1945 to discuss and plan post-war educational reconstruction. Among the conference’s various activities was the creation of the Commission on Scientific and Laboratory Equipment. During the war, the Nazis had sabotaged scientific laboratories, and ransacked and closed down universities and institutions, in an effort to halt scientific activity in occupied countries. The commission took charge of assessing these post-war reconstruction needs and the appropriate measures to meet them.

In a declaration to the press in March 1944, the US Secretary of State Cordell Hull explained the rationale for US participation in emergency educational and cultural reconstruction of war-torn countries: ‘Teachers, students and scientists have been singled out for special persecution. Many have been imprisoned, deported or killed, particularly those refusing to collaborate with the enemy. In fact, the enemy is deliberately depriving the victims of those tools of intellectual life without which their recovery is impossible’.

A month later, in London, an American delegation presented the CAME with a ‘Suggestion for the development of the CAME into the United Nations Organization for Educational and Cultural Reconstruction’. A modified version of this text referred to ‘science’ four times. Reparation of damage through theft of scientific apparatus was mentioned twice and the restoration of scientific laboratories once, as was ‘including scientific research’ in the ‘interchange between nations bearing upon educational and cultural problems’.

Joseph Needham pursued his campaign in China by sending out the first of three memoranda to scientists, politicians and diplomats in Allied countries on the creation of an International Science Cooperation Service (July 1944). He explained that the Service would have permanent representatives in all countries or regions, advise governments and assist international organizations on scientific matters. After discussions with colleagues in the British Council and Royal Society, he sent out his second memorandum from London, ‘Measures for the organization of international cooperation in science in the post-war period’.

On a journey to Washington DC (USA) in February 1945, Needham was astonished to find that one of the main topics of conversation was the creation of an organization for culture and education. Surprised at how far the project had come, he concluded that it would be more reasonable to incorporate scientific cooperation into this organization, on the condition that the word ‘science’ be included in its name. Needham’s influence could be seen in the March version of the American project, which contained multiple references to scientific cooperation as a contribution to peace and security. However, ‘science’ was still missing from the name, which remained ‘the International Organization for Education and Cultural Cooperation’. This new project was presented to the CAME in April 1945, whose drafting committee turned the American project into a CAME document. Responding to the suggestion that ‘science’ be included in the organization’s name, a member of the US delegation explained that, for the American public, the word ‘culture’ covered ‘science’.

Needham sent a third memorandum from China in April 1945 to important scientific officers in several Allied countries. He insisted that, if they wanted scientists to be interested and involved in the organization, it must be evident that the organization was interested in them. Needham also requested that ‘science’ include applied sciences, in other words technology, which the word ‘culture’ would not cover. For Needham, the new organization’s principal role would be to promote exchanges between industrially advanced countries – which he called ‘the bright zone’ – and the less advanced ones, nations ‘on the periphery’. Needham supposed that the organization would not transfer commercial secrets from technologically advanced countries to less developed ones, but rather encourage industries to introduce the use of new technologies in the ‘periphery.’

Delegations to the San Francisco Conference (which elaborated the United Nations Charter, from 25 April to 26 June 1945, in San Francisco, USA) agreed upon a French recommendation to convene a conference to establish an international organization of intellectual cooperation. At San Francisco, the American astronomer Harlow Shapley was for including ‘science’ in the name of the proposed organization, but other members of the American delegation felt this would make for a wordy name.

For Joseph Needham, it was a June 1945 trip from Tehran (Iran) to Moscow (USSR) that was the turning point. Tehran airport turned out to be the meeting place for national scientific delegations on their way to Moscow to celebrate the 220th anniversary of the Russian Academy of Sciences. Needham's third memorandum was distributed to the American, Indian and Chinese delegations, all of whom displayed strong interest. Other delegations were given copies in Moscow; only the Soviet delegation proved unresponsive. The American scientists promised to undertake an important campaign to push Needham's point of view.



UNESCO's first General Conference, Paris, 1946. From left to right: Jean Thomas (profile); Julian Huxley, Director-General of the Organization (standing); Léon Blum, President of the General Conference (centre).

The United Nations Conference for the Establishment of an Educational and Cultural Organization was held in London from 1 to 16 November 1945. Ellen Wilkinson, British minister of education and president of the conference, announced in a plenary session that, although 'science' was not part of the original title of the organization, the British would put forward a proposal for it to be included. 'In these days', said Wilkinson, 'when we are all wondering, perhaps apprehensively, what scientists will do to us next, it is important that they should be linked closely with the humanities and should feel that they have a responsibility to mankind for the results of their labour'.

On 5 November, the conference divided itself into Commissions. The First Commission was charged with drafting the Title, Preamble and Aims and Functions of the new organization. It was the American delegate who proposed that it be called the United Nations Educational, Scientific and Cultural Organization. After hesitating for twenty-four hours, the commission decided in favour of the UNESCO title, which simultaneously served as an instruction to insert the word ‘science’ in the text of the Constitution wherever indicated. For example, ‘The purpose of the Organization is to contribute to peace and security by promoting collaboration among the nations through education, science and culture’.

In its concluding report, the First Commission felt it necessary to explain that the inclusion of ‘scientific’ in the title and elsewhere in the text implied inclusion in the Organization’s activities of the philosophy of science and not its applications (science as touching on military security would be dealt with by the disarmament conference). It was vital that scientists be in touch with those who saw the world in ‘human’ terms. On the afternoon of 16 November 1945, the heads of thirty-seven delegations signed UNESCO’s Constitution.

That UNECO should have become UNESCO is proof that the need for such an organization was greater than any mistrust prevailing at the time. The delay in including science in the Organization’s mandate, on the other hand, underlines the multiple, delicate and difficult relationships between science and governments in those turbulent years. This in turn would influence the various definitions attributed to the term ‘international scientific cooperation’. But that is another story.

BRAVE NEW ORGANIZATION

Julian Huxley’s philosophy

*John Toye and Richard Toye*⁷

JULIAN Huxley (1887–1975) served as the first Director-General of UNESCO from 1946 to 1948. Feeling the need to clarify his ideas about the Organization’s role, he took two weeks to write a substantial pamphlet. This was published on 15 September 1946, with the title *UNESCO: Its Purpose and Its Philosophy* (Huxley, 1946).⁸

⁷ John Toye, a professor at the University of Oxford (UK), is former Director of the Globalization Division of the UN Conference on Trade and Development (UNCTAD) (1998–2000).

Richard Toye is a lecturer in History at Homerton College, University of Cambridge (UK).

⁸ Published in book form the following year (Huxley, 1947).



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The eminent zoologist and popularizer of science, Julian Huxley (1887–1975), first Director-General of UNESCO, 1946–48.

Huxley wanted not only to clarify and elaborate on UNESCO's constitution, but also to provide the Organization with 'a working philosophy ... concerning human existence' (*ibid.*, p. 6), to guide its approach to the issues with which it had to deal. He noted that UNESCO was clearly debarred from endorsing the viewpoint of any one of the world's religions, and from espousing capitalism or Marxism, or indeed any other political, social, economic and spiritual approach that he called 'sectarian'. However, Huxley deduced from UNESCO's concern with peace, security and human welfare that 'its outlook must, it seems, be based on some form of humanism' (p. 7). Moreover, this humanism needed to be 'scientific' but not 'materialistic'; and furthermore, 'it must be an evolutionary as opposed to a static or ideal humanism' (p. 7). It is striking that Huxley does not seem to have appreciated, at the point he was writing, that such an approach was likely to be problematic for many Member States – almost as much so, in fact,

as the numerous philosophies that he recognized it was politically impossible for UNESCO to adopt.

Huxley viewed the term 'evolution', in its broadest sense, as denoting 'all the historical processes of change and development at work in the universe' (p. 8). He believed that humankind could guide these processes consciously, to achieve further world progress. As human societies could benefit from 'cumulative tradition' or 'social heredity', natural selection was being replaced by conscious selection as the motor of evolution, the possible rate of which was therefore 'enormously speeded up' (p. 9). Huxley believed that UNESCO had a significant role to play in 'constructing a unified pool of tradition' for the human species.

Manifestly, his conception of the Organization's purpose was extremely bold and ambitious. He argued that 'the more united man's tradition becomes, the more rapid will be the possibility of progress'; and that 'the best and only certain way of securing this will be through political unification' (p. 13). While conceding that such an ideal was remote and that it fell outside the field of the Organization's competence, Huxley argued that there was much that UNESCO could do to lay the foundations of world political unity.

He presented examples of activities that UNESCO could undertake to achieve this, in the fields of education, the natural and social sciences, and culture and the arts. The topics that he championed were widely esteemed in the 1940s, and many had a basis in psychology. They included the classification of psychophysical types, IQ testing, applied psychoanalysis, human resources planning, parapsychology, yoga and the history of the rise of individuality. Perhaps most significantly for the pamphlet's reception, it emphasized the need for UNESCO to promote population control and the study of 'the eugenic problem' (pp. 10, 12, 21, 37-8 and 45).

Understandably, Huxley's ideas proved controversial. The pamphlet had already been presented to UNESCO's Preparatory Commission and been ordered to be printed as an official document, when Sir Ernest Barker, one of the commission's members, took exception to it. Barker was an historian, political theorist, and convinced Anglican. According to Huxley, 'he argued forcibly against UNESCO's adopting what he called an atheist attitude disguised as humanism' (Huxley, 1978). The commission's Executive Committee was therefore agreed that, when the document was circulated, a slip of paper should be inserted into it, saying that the essay was a statement of Huxley's 'personal attitude', and that it was 'in no way an official expression of the views of the Preparatory Commission'.⁹

In his memoirs, Huxley conceded that Barker had been right to object. 'Though UNESCO has in fact pursued humanistic aims, it would have

9 UNESCO Document Misc./72, 6 December 1946.

been unfortunate to lay down any doctrine as a basis for its work’, he wrote. ‘Further, a purely humanist tone would have antagonized the world’s major religious groups, including the Russians with their pseudo-religion of dialectical materialism’ (Huxley, 1978). He did not admit, however, that deriving moral principles and policies from the science of evolution was in any sense a doubtful philosophical procedure.

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BLAZING THE TRAIL

Needham and UNESCO: perspectives and realizations

Patrick Petitjean

THE biochemist and historian of science Joseph Needham served a brief tenure as the first Head of the Natural Sciences Section – a mere two years. However, with the support of the first Director-General, Julian Huxley, Needham largely defined the role of ‘science’ in UNESCO, guaranteeing that his influence on the Organization would endure far beyond his limited mandate. In three important memoranda composed during the Second World War, Needham outlined an ambitious project for international scientific cooperation. They were to become the basis of the first scientific programme that he proposed in June 1946 and which was presented to the first session of the General Conference (Paris, November 1946).

Born in London, England, in 1900, Needham studied medicine and biochemistry at Cambridge University (UK), but he also had a keen interest in religion and philosophy. His political commitment was forged during the Great Depression. The massive unemployment resulting from the economic crisis that began in 1929 led many people to criticize the role of science and its applications to industry. It also brought about a reduction in both finances and employment within the field of scientific research. Needham joined the International Council of Scientific Unions (ICSU) and, throughout the 1930s, benefited from his

experiences with ‘movements for social relations in science’.¹⁰ Needham was part of an idealistic generation of scientists who wanted to use discoveries and their applications to improve living conditions for all and to develop democracy.

The war did not interrupt this commitment; quite the contrary. Needham, like most of his peers, was horrified by the way the Nazis deformed and used science to justify the racist ideology that led to the Holocaust. In the democratic countries, many scientists, including Germans in exile, participated directly in the struggle against Nazism. Even during the war, several conferences were



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Joseph Needham (1900–1995), biochemist, Head of Natural Sciences Section, 1946–48.

¹⁰ Including the ‘Division for the Social and International Relations of Science’ of the British Association for the Advancement of Science (BAAS), the ‘Committee on Science and its Social Relations’ of ICSU, the British Association of Scientific Workers (AScW) and other similar groups. The reference book for these groups was *The Social Function of Science*, by John Desmond Bernal (1939); ‘science will come to be recognized as the chief factor in fundamental social change’ was their leitmotiv.

organized in London by the British Association for the Advancement of Science (BAAS) and the British Association of Scientific Workers (AScW) to discuss the post-war role of science. Participants were determined that science and its applications be used for the well-being of all. The importance of international scientific cooperation would be paramount. In February 1945, several foreign delegations took part in the ‘Science for Peace’ conference, during which the creation of international scientific associations was notably discussed. From 1946 onward, these same scientists quite naturally met up again at UNESCO, ICSU or the World Federation of Scientific Workers to put into practice their ideas and projects.

NEEDHAM’S ORIENTATIONS

In 1942, Needham, who had learned Chinese, travelled to China to head the Sino-British Science Cooperation Office, one of several scientific liaison offices that were created during the war. The Anglo-Chinese bureau, according to Needham, devoted one-third of its activities to ‘war science’, another third to ‘pure science’ and the final third to scientific applications for agriculture and industry. In spite of the war, the office exchanged a large amount of equipment, information and research with the West. In April 1946, Huxley summoned Needham back from China to join the UNESCO Secretariat.

Needham’s ideas for UNESCO were inspired by both his war and his peacetime experiences. He was familiar with both scientific unions, which covered one subject and several countries, and scientific liaison offices, which covered all subjects but were bilateral. The scientific unions Needham had joined in peacetime were independent bodies, but – often lacking financial and administrative resources – they could be inefficient. The scientific liaison offices he had come to know during the war were better financed but were subject from time to time to bureaucratic controls. Thus, he concluded:

What we need today is fundamentally a system which will combine the methods which have spontaneously grown up for assuring international relations in time of peace, with those which the nations have had to work out under the stress of war. None of the machinery ought to be scrapped. The problem is to weld it into a satisfactory functioning system (Needham, 1946, p. 6).

One of Needham’s most original concepts was the ‘periphery principle’. He believed that the most scientifically advanced nations must share their knowledge and resources with less developed countries – that is, countries ‘on the periphery’ – in order to reduce disparities between the different regions of

the world. This principle was Needham's personal brainchild and represented a radical break from the past. At the creation of UNESCO, the majority of scientists were Eurocentric and did not think this way. Needham criticized 'the parochial theory of the "laissez faire" school', according to which everybody in the scientific world knew each other and therefore projects got done spontaneously; he pointed out that 'the picture of world science looks very different when seen from Romania, Peru, Java, Iran or China' (ibid., p. 7–8).

Needham believed that the 'social function of sciences' had to be part and parcel of UNESCO's science programmes. The Organization would need to address the history of science, scientific education and the social consequences of scientific development. Behind Needham's thinking was the idea of the universality of science and its subsequent internationalism. In his report to UNESCO's Preparatory Commission, July 1946, Needham defined the aims of the Natural Sciences Section:

UNESCO is an agency for peace through active international cooperation. In the field of scientific cooperation and service, we have one of the immediately effective means of accomplishing this. This is partly because scientific research is essentially and traditionally international and cooperative, and also because the applications of scientific knowledge to human welfare, if properly made, can be one of the most effective methods of removing some of the causes of war (UNESCO, 1946).

CONCLUSION

Joseph Needham met with two main difficulties in trying to realize his objectives. Little by little, UNESCO became a hostage of the Cold War. Even though the Soviet Union only joined the Organization in 1954, political bickering among the principal contributors (France, the UK and the USA) stymied commitments and projects formulated at UNESCO's founding. As early as 1947, budgets were limited, for science as for all UNESCO programmes.

Moreover, Needham and his left-wing friends were very marginal in the scientific world. UNESCO's support for ICSU was unanimously endorsed, but this was not the case for the 'periphery principle', nor for Needham's ideas about the social relations of science. Support for underdeveloped countries by scientists did not really get off the ground until the massive decolonization of the 1960s.

Pierre Auger, a French physicist, replaced Needham in April 1948, and Julian Huxley quit the post of Director-General at the end of the same year. The political climate led UNESCO (as well as the rest of the United Nations specialized agencies) towards a system of cooperation based on Technical

Assistance, an objective announced by US President Harry S. Truman in his January 1949 inaugural address. Needham's idealistic aims were replaced by a more utilitarian concept of the 'social and international functions of science', based on a Western liberal model for the economic development of societies. However, the 'periphery principle' had pointed UNESCO in a direction that it would later resume and continues to follow.

After leaving UNESCO, Needham expressed his bitterness concerning scientific colleagues from the 'bright zone' of developed nations:

I am frankly rather tired of the people who sit in their laboratories and never give a thought for their colleagues at the other end of the world who are working in difficult conditions and even desperate need. If they were to travel about the world and visit the places which are really remote, those are the conditions they will find. There must be an end of parochialism among scientific men themselves (Needham, 1949, p. 29).

Joseph Needham lived until 1995, long enough to see that much of his original vision for UNESCO came to be realized by the Organization.

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