

The Joint Establishment of the World Federation of Scientific Workers and of UNESCO after World War II

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Abstract

The World Federation of Scientific Workers (WFScW) and UNESCO have roots in the Social Relations of Science (SRS) movements and in the Franco-British scientific relations in the 1930s. These years saw the emergence of a new model of scientific internationalism where science and politics were mixed. Many progressive scientists tried to prolong their international commitments from wartime to peacetime.

Neither the WFScW nor UNESCO succeeded in achieving their initial aims. Another world emerged from the immediate post war years, but it was not the world fancied by the progressive scientists from the mould of scientific internationalism.

Introduction

The DSIRS (Division for the Social and International Relations of Science) of the BAAS (British Association for the Advancement of Science) is generally seen as the core of the SRS Movement in the 1930s.² The "social function" part has been widely studied. This is not the case for the "international function", neither for the participation of progressive scientists in

¹ This paper is based on the following archival sources: Needham Papers (Cambridge Library), Crowther Papers (University of Sussex), AScW and WFScW Archives (Warwick University), Singer Papers (Wellcome Institute), Joliot-Curie Archives (Institut Curie, Paris), FMTS-WFScW Papers (Archives départementales, Bobigny), UNESCO Archives (Paris), National Academy of Sciences Archives (Washington)

² Gary Werskey: The Visible College. A Collective Biography of British Scientists and Socialists in the 1930s. London, Free Association Books, 1988

international science. In many European countries, SRS movements existed, but were less influential and less organized than in the UK.

After World War I, the boycott of the German science was progressively overruled by the development of direct scientific exchanges between scientists and laboratories. The internationalization of science turned to be an important phenomenon in the 1930s, even if few scientists participated to these exchanges. The establishment of the International Council of the Scientific Unions (ICSU) in 1931 was a consequence of this internationalization. The International Institute for Intellectual Cooperation (IIIC), linked with the League of Nations, only played a minor role in the 1930s. Few progressive scientists committed themselves to these official international relations, whether through the ICSU or the IIIC.

Yet, the ICSU itself happened to be sensitive to the pressure of the SRS movement. The Royal Academy of Sciences of Amsterdam proposed to establish an ICSU commission on "Science and its Social Relations" (CSSR), which was acted by the council in April 1937. J.M. Burgers, who voiced this proposal, was chosen as its secretary. He re-established the CSSR in 1945.

The new scientific internationalism, which emerged in the 1930s, is partly a consequence of the growing internationalization of scientific practices, but also a reaction to the economical (the Great Depression) and political (the rise of fascisms) context. The development of progressive Franco-British scientific networks expressed such an internationalism.

Activists from the SRS movement and from the Franco-British networks played a major part in the establishment of the WFScW and of the UNESCO (United Nations Educational Scientific and Cultural Organization) Natural Science Department, both of which took form in 1946.

With their common origin and the same founders, they were conceived at first as complementary, and cooperated in their first years. But with the development of the Cold War, they travelled in opposite directions.

With UNESCO, Needham attempted to put into practice new forms of international scientific co-operation along three main lines: the "periphery principle", no science without history of science, no scientific research without caring for the social aspects of science. Needham met some initial successes. But after his departure (April 1948), and Huxley's (December 1948), UNESCO gradually became subordinated to the USA.

The aim of this paper is to follow the path from the Franco-British networks towards the establishment of the WFScW and UNESCO; from an ideological scientific internationalism towards practical projects. It is to understand how these two bodies, which shared a common origin and complementary projects, came apparently to embody two different scientific internationalisms during the Cold War.

Bernal's The Social Function of Science

Even though the "I" for "international" was included in the name of the Division of the BAAS, it did not seem to have many consequences until World War II.

Bernal's book, The social Function of Science,³ is usually considered as the main expression of this movement. A chapter is entitled "international science" and comprises four pages of general considerations, and nearly fifty pages providing a brief overview of science beyond United Kingdom: other European countries, fascist countries, socialist countries, India, China, and Japan...

Bernal's doctrine is clearly exposed in the first sentences: "The internationalism of science is one of its most specific characteristics. Science has been from the start international in the

³ John Desmond Bernal, The Social Function of Science (London: Routledge, 1939)

sense that men of scientific temper even in most primitive times were willing to learn from others in different tribes or races. (...) In later times, when natural barriers separated civilizations, or when religions or national animosities divided the civilized world into hostile camps, the scientist vied with the trader in breaking down those barriers". And further: "Internationalism in science was maintained and even increased throughout the 19th century, but the present century has marked a definite retrogression. Science, while still remaining international, has begun to suffer from the general tendency towards national exclusiveness, and the unity of the scientific world is being seriously threatened".

The economic crisis, capitalism, socialism, and the struggle against fascism acquired international dimensions in the late 1930s. Furthermore, being universal, science was evidently international. Nobody had to bother more about what it meant exactly, and what the practical consequences were. To the point that, concluding his half page about India, Bernal wrote: "probably the best workers for Indian science to-day are not the scientists but the political agitators who are struggling towards a self-reliant and free community".⁴

"Franco-British Science"

The WFScW not only had roots in the SRS movement, but more specifically emerged from the links between French and British scientists, forged in the common struggle against Nazism.⁵

In the 1930s, British and French progressive scientists had strong relations, professional as well as political. Biochemists like Needham and Rapkine, physicists like Bernal, Joliot,

⁴ Bernal (1939), p.208

⁵ Patrick Petitjean, 'Needham, Anglo-French Civilities and Ecumenical Science', in S. Irfan Habib & Dhruv Raina (eds), Situating the History of Science. Dialogues with Joseph Needham (New Delhi: Oxford University Press, 1999), 152-197

Blackett, Auger and Perrin, as well as Crowther and Zuckerman, were active in promoting these bilateral relations.

The context

During the 1930s, the economical crisis lead to a contestation of science, for its responsibility for unemployment, or, at least, for its incapacity to face the problem; sometimes, a suspension of scientific research was even proposed. This crisis had also hard consequences upon the professional situation of scientists. The same years saw the rise of fascism, its victory in Italy, and, above all, the Nazi seizing power in Germany in 1933. In reaction, new movements developed to help the scientists flying from Nazism, to defend science against the Nazi ideology, and to fight war and fascism. Intellectuals, and numerous scientists among them, took an active part in these movements. The pressure was high for a democratic anti-Nazi alliance between France and United Kingdom in all fields, science being one particular example.

Many scientists were also fascinated by the USSR, whether on the social and political ground (the USSR appeared to have escaped from the 1929 crisis) or on the scientific ground (the public support to science); many scientists travelled to USSR in the first half of the 1930s, where they eventually admired the scientific progress.

In this particular context, new forms of sociabilities appeared between French and British scientists, with roots in the traditional Academic relations, but going far beyond. They had similar public commitments and participated to the same networks. In both countries, the scientists, whether liberal, socialist or Marxist, radical or reformist, set up some sort of a "scientific popular front"⁶ with similar aims. Only a small fraction of the scientific community was actively engaged in antifascist politics, but it kept linked with most of their colleagues.

⁶ See Werskey (1988)

Nobel Price-winners and Academicians shared these commitments with rank-and-file scientists.

Some French features

Some differences may be noticed between the commitments of the French and the British scientists. The 1931 International Congress of History of Science, with the Russian delegation, echoed differently. In Great Britain, the scientists melt their professional and social concerns in the SRS movement. In France, the congress had fewer direct consequences. The social function of science remained secondary to intellectual leaning for rationalism and Marxism (with the Union rationaliste and the Groupe d'études matérialistes) or direct commitment in political struggles. But science and professional concerns kept largely apart from politics. When young scientists established a radical professional movement, Jeune Science⁷, in 1936, it conflicted with Jean Perrin (then Minister of the French Government) and the scientific progressive hierarchy. Finally, many French left-minded scientists were more at ease with the political support to the Russian revolution than with the progressive use of science for peace and welfare.

Partnerships

Many partnerships existed between British and French organizations in the late 1930s. Among them, the Cambridge Scientists Anti War Group with the Comité de Vigilance des Intellectuels Antifascistes (CVIA) and the Comité Mondial contre le Fascisme et la Guerre; the Society for the Protection of Science and Learning and the Comité d'Accueil et d'Organisation du Travail des Savants étrangers; the Association of Scientific Workers (AScW) and Jeune Science.

⁷ This movement disappeared well before the war. But the French AScW is somehow its reconstruction after the war.

British and French scientists frequently crossed the Channel for cross-participation in public meetings and conferences. In the autumn of 1937, most of the scientists implied in these networks participated to the International Scientific Congress which celebrated the inauguration of the Palais de la Découverte.

According to the Australian physicist E.H.S. Burhop, the idea to build an international organization for scientists against the war, and more generally, to defend science and its social function, came out these meetings in Paris during the years 1936 and 1937⁸.

In May 1940, in Paris and London, an Anglo-French Society of Sciences was established to strengthen the common involvement against the Nazis. It disappeared after the French defeat, but was reconstituted in September 1944 when Joliot travelled to London. The Society was co-presided by Dirac and Joliot, Crowther and Auger acting as co-secretaries. It benefited from the presence of the French Scientific Mission in London in 1944-45⁹ and had the support of the Society for Visiting Scientists. The links were so strong that Joliot was talking in 1946 of a "Franco-British Science".¹⁰ After 1945, the co-operation developed through more classical channels, and through the WFScW and UNESCO.

Franco-British scientific internationalism

In such networks in the 1930s, it was difficult to dissociate academic, political, institutional ideological, and even private, levels. Politics were never far within professional relations, and reciprocally. The networks were shaped by a continuity of commitments, from science to

⁸ Burhop, E.H.S, "Scientists and Public Affairs", in M. Goldsmith and A. MacKay, The Science of Science, (London: Souvenir Press, 1964), p.34. "I recall particularly one such meeting when some British scientists, from Cambridge and London, went urgently to Paris to meet Langevin, Frédéric and Irène Joliot-Curie and other French scientists to discuss these matters. In these discussions, the idea germinated of an international organization of scientists to press for the proper organization of science to constructive ends and against obscurantist and Fascist trends". Burhop presided over the WFScW after Joliot.

⁹ Dozens of French scientists worked in British laboratories and administrations to catch again the time lost during the Nazi occupation

¹⁰ Joliot-Curie, F, "La Science franco-britannique et la guerre", Dialogues, n°1, juillet 1946, 29-33

politics. The professional level was always present, and was often the starting point for an exchange. But these networks were never a mere extension of professional links. Some commitments were closely linked to the scientist's capacity: the struggle for the organization, planning and funding of science, the support of progressive uses of science for the welfare of humankind, the defence of science against the Nazi and obscurantist attacks, the refusal of the abuses of science, scientific trade unionism, the Marxist history of science, the public understanding of science... Other commitments participated more to the common features of intellectuals: pacifism, antifascism, relief for refugees, and fascination for the USSR. But the rebounds from one field to another were permanent. And for the scientists, their belief that science (and themselves) was naturally international.

International Science and World War II

The SRS Movement still active in London

The international function of science and the participation of progressive scientists to in the war efforts of the Allied Governments came definitely into focus during World War II, As early as September 1941, the BAAS Division organized a conference in London on "Science and World Order". Twenty two countries were represented. Needham, Huxley, Haldane, Hogben were present. Three more conferences took place in 1942 and 1943. The Association of Scientific Workers (AScW) organized its own international conferences such as: "the Planning of Science in War and Peace" (January 1943); "Science for Peace" (February 1945), which called upon the Allied Countries to establish an international scientific co-operation.

Between 1943 and 1945 various inter-governmental allied conferences discussed the place of science within the foreseen UN system. The Conference of the Allied Ministries of Education,

prepared UNESCO. After the bombing of Hiroshima in August 1945, science became a major issue for international relations.

It is not surprising then that organizing international science for a better world after the victory against Nazis attracted many progressive scientists. In continuity with their wartime commitments, it allowed them to bring coherence to their social and political leanings on the one hand, and their conception of universal science on the other. For a short period, everything looked possible.

Needham

Needham shared an idealistic conception of science with most of his colleagues, and even explained that scientists were spontaneously pre-disposed to international co-operation. For the immediate post-war years, the most complete exposition of Needham's ideas may be found in his Boyle lecture of 1948.¹¹

Needham's conceptions of scientific universalism were not free of Eurocentric bias, nor were Bernal's and their fellow scientists. But Needham differed from Bernal's idealistic or political views, particularly in two fields:

Universalism: his "ecumenical" science only existed with roots in the various civilizations and was constructed by exchanges and borrowings between these civilizations.¹² After the war, the issue of Eurocentrism turned to be a major divide between conservative and progressive historians: Colonialism and Fascism turned impossible to take the Western civilization as a model.

¹¹ Joseph Needham, Science and International Relations (50th Robert Boyle Lecture, Oxford, June 1, 1948) (Oxford: Blackwell Scientific Publications, 1949). See also his memos of 1944 and 1945, his proposals for UNESCO programme (UNESCO/Prep.Com/Nat. Sci. Com./12 July 1946, Tasks and Functions of the Secretariat's Division of Natural Sciences), his arguments in favour of the establishment of international scientific laboratories (UNESCO/Nat.Sci./24/1947)

¹² Needham shared many views with Lucien Febvre. See hereafter the Scientific and Cultural History of Mankind.

The Periphery Principle: with the Sino-British Co-operation Committee, Needham took conscience of the necessity of voluntary international action for the advancement of science in developing countries, beyond what he called "the bright zone". He denounced the "laissez faire" and the "parochial minds" of the majority of his fellow scientists, who are able to exchange, and to travel easily in Europe and North America. For him, "The picture of world science looks very different when seen from Rumania, Peru, Java, Iran, or China".¹³ He called this change in perspective the "periphery principle". International efforts should be, in priority, directed towards the countries, and the scientists, who need to be supported. To apply this "periphery principle," the commitment of the most powerful Governments was absolutely necessary, as shown by the war efforts. The ICSU has proved to be ineffective for that. In its first General Assembly after the war, the ICSU refused to consider the co-operation with underdeveloped countries.¹⁴ Initially, the foreseen WFScW did not look more promising, lacking institutional support.

Forms of scientific co-operation

Needham's proposals came from his balance of international scientific co-operation before the war, and in wartime. He discerned the governmental forms of co-operation from the non-governmental ones.¹⁵ Typically, a governmental co-operation is ruled by a diplomatic convention, whether bilateral or multilateral, such as the International Bureau of Weights and

¹³ UNESCO (12 July 1946), 7

¹⁴ In his welcome speech, Sir Robert Robinson (President of the Royal Society) said: "Our organizations restrict their activity to to what Dr Needham lately called the 'bright zone' (Western Europe, North America, South Africa, etc., the scientifically well-equipped countries) and they are of smaller use to the countries of the 'dark zone'. One could say: we form a scientific church, not a mission. We beg UNESCO to leave us the former domain, and take the latter itself, for we are not prepared to do that". FJM Stratton (ed), Reports of the Proceedings of the Fourth General Assembly of the ICSU Held at London July 22nd to 24th 1946 (Cambridge: University Press, 1946), 6.

¹⁵ Needham (1949), pp.6-16

Measures. The scientific unions, and their international council are generally considered as NGOs, but the reality was more contrasted. The governments might join the Unions, either directly or through their National Research Council. The ICSU was better characterized as a semi-governmental organization. In fact, there were a lot of hybrid forms of international co-operation.¹⁶

Needham noticed that the "national interests" have always been present in international co-operations, and that the dependence was important from governmental funding. It became heavier and heavier with the progress of government control over large areas of science.

After the war, the WFScW and UNESCO expressed two attempts of new forms of scientific internationalism, the first being purely professional but mixing science and politics, the latter being intergovernmental. The WFScW failed to maintain itself as a pure NGO. Scientific NGOs proved to be more successful in the 1970s, for instance the British Society for Social Responsibility in Science.

Needham underlined that the government-based co-operations were obviously dominant in wartime, if not the only ones after the suspension of their activities by the ICSU and the IIIC. The Sino-British Science Co-operation Office in Chungking and the British Commonwealth Scientific Office in Washington were the main examples chosen by Needham for the wartime. He proposed "to combine the methods which have spontaneously grown up for assuring international scientific relations in time of peace, with those which the nations have had to work out under the stress of war".¹⁷

Two projects, without the USSR

¹⁶ See Elzinga, Aant, "Introduction: Modes of Internationalism", in Elzinga, A & Landstrom, C, Internationalism and Science (London: Taylor Graham, 1996), 3-20. Elzinga stands for a more rigid typology for the forms of scientific co-operation.

¹⁷ UNESCO (12 July 1946), 6

While Needham was circulating his memos for an "International scientific co-operation service", Bernal and the AScW were attempting to build the WFSaW. The 1943 AScW annual Council decided to establish the WFSaW. The "Science for Peace" conference (February 1945) comforted the project. In March 1945, Bernal was charged to prepare an official document proposing a Federation, to circulate among world scientists to be discussed during the foreseen Moscow meeting.

Needham was present in London in December 1944, where he wrote his second memo. He participated in January 1945 to the council of the Anglo-French Society of Sciences. His friend Crowther represented the British Council in the Science Commission of the Conference of Allied Ministers of Education (CAME) where the UNESCO project was being elaborated. Crowther was secretary of this commission, where he voiced Needham's proposals. In March 1945, then in Washington, Needham realized how advanced was the preparation of the new educational international agency, and proposed to fusion his international scientific service with this agency, which he named UNESCO for the first time.

Curiously, even if belonging to the same group of progressive scientists, Needham and Crowther on one hand, Bernal and the AScW on the other, did not seem to know much of their parallel projects. Joliot, who received a letter from Needham asking for help to convince the USSR,¹⁸ never looked interested in the UNESCO project. Inside the progressive camp in 1945, different dynamics were already at work.

The USSR organized the first important gathering of scientists after the war, to commemorate the 220th anniversary of the Russian Academy of Sciences in June 1945. Bernal and Blackett were prohibited by the British Government from travelling to Moscow, but Needham, Joliot, Auger,¹⁹ Peter Wooster (for the British AScW), Huxley,²⁰ Harlow Shapley (an Astronomer

¹⁸ Needham to Joliot, 19 May 1945 (Needham Archives, D25)

¹⁹ Auger succeeded Needham in April 1948 in heading the UNESCO Science Department

from the American AScW) were there with dozens of scientists. Wooster said that he only discovered Needham's projects in Moscow, which were de facto on the same grounds than the foreseen WFScW, and was surprised by their state of advancement. Needham, Joliot, Shapley, Auger had informal meetings with Russian scientists to try to convince them to participate in the international scientific agencies under construction. But they refused to join both projects:

- The WFScW looked premature, the British AScW being "singular", with no equivalent in other countries. Consequently, for them, such associations were to be built before establishing a Federation.

- The USSR refused to join UNESCO until 1954, arguing that the UN (United Nations) Social and Economic Council could deal with all scientific matters as well as UNESCO. Its interests were protected by the right of veto in the UN Security Council, but were not in the specialized agencies.

In fact, the USSR was afraid of the cosmopolitan Western ideas upon its own intellectuals. The regime was even suspicious of the Western communists with their foreseen WFScW. This double refusal was symptomatic of the nationalist and anti-Western turn of the Stalinist regime after the war. The commemoration of June 1945 was an exception. After the war co-operation, the cultural and scientific exchanges between the USSR and the West fell to nearly nothing, a situation similar to the immediate pre-war years.

In the West, the Royal Society and the American National Academy of Sciences were equally hostile to Needham's memos, and didn't see the necessity to include science in UNESCO. On behalf of the American Academy, Field and Cannon consulted the scientific community through an inquiry about what should be the nature of international scientific co-operation after the war. The enquiry took place in spring 1945, and the report published in September

²⁰ Huxley would become the first Director General of UNESCO

1945.²¹ The main proposal was to reinforce and develop the existing Scientific Unions and the ICSU. But, Hiroshima was bombed, and despite the opinion of the majority of scientists, the "S" was introduced in UNESCO when it was established in November 1945, with the support of the American and British delegations.

The WFScW

Immediately after the Hiroshima bombing, the nuclear weapons became a major public issue for science and politics. French and British physicists discussed the topics during a conference on Cosmic Rays organized by N Mott in Bristol (September 1945). Back to London, Blackett, Joliot and other physicists held a conference on "the social consequences of the atomic bomb", for the Society of Visiting Scientists: The atomic question was to over determine the character of international scientific co-operation for years.

Giving way for the WFScW

The AScW organized a new international conference in London, February 1946, "Science and the Welfare of Mankind" to discuss how science could be used in peace times to solve the major social problems of humankind. With over six hundred participants, it was a major success, even if the BAAS refused to participate. The Russians declined the invitation. Nuclear weapons were a major issue of this congress, with a report by Blackett. Joliot was unable to attend, and Bonet-Maury read Joliot's speech. The young UNESCO was represented by Julian Huxley, its new Director General.

Following the Russian refusal during the Moscow meeting, establishing the WFScW was not among the official items of the programme. But the success of the conference opened the road

²¹ Walter B. Cannon & Richard M. Field, 'International relations in science. A review of their aims and methods in the past and in the future', *Chronica Botanica*, IX (4) (1945), 253-298.

for an international Federation. Informal meetings took place with foreign delegates, and the AScW was mandated to convene a formal conference to establish the desired Federation.

Former resistance movements had constituted a French AScW after the war, which was to be the second pillar of the WFScW. It was not a Trade Union, but it defined itself as a "Science and Society" movement, co-operating with existing Trade Unions for teachers or engineers. The Russians were reluctant about the founding an international trade union, and consequently, the coming Federation was defined as a "Science and Society" movement and not as an international Trade Union to be affiliated to the World Federation of Trade Unions, in order to leave the door opened to the Russians.

The establishment of the WFScW

The founding conference of the WFScW took place in London, July 1946. The same month, London welcomed many international gatherings of scientists: The Newton tercentenary celebrations, organized by the Royal Society; the meeting of the UNESCO preparatory Commission, dedicated to the elaboration of its first programme; the British Commonwealth Scientific Conference; and finally, the first post-war General Assembly of ICSU.

A dozen associations and six observers participated in the founding conference. Blackett, president of the AScW, delivered the inaugural speech, remembering the history of the project. Needham was the official UNESCO representative.²² He presented its main general objectives and the science programme. He proposed a co-operation agreement between UNESCO and the WFScW, similar with the ICSU's one. Burgers represented ICSU through its "Committee for Science and its Social Relations". The most numerous associations were the British AScW, and an American Engineers Union. The Federation of American Scientists was present, as an observer, but finally refused to join the Federation. Among the participants

²² Needham came back from China only in April 1945, to head the UNESCO Natural Sciences Department.

were Leon Rosenfeld from the Netherlands, Homi Bhabha from India, Eric Burhop from Australia, etc

Joliot was elected President, Bernal Vice-President, and Crowther Secretary-General. An American (Harlow Shapley) and a Russian (N N Semenov) were also both elected to the Executive Committee, in their absence. Harlow Shapley accepted on condition that his Russian colleague accepted. But the latter declined, and the Federation continued only with a British and French leadership.

A constitution defined the agenda of the Federation, whose aim was "to promote understanding and co-operative action between the member organizations", and included eight functions. The first was "to work for the fullest utilization of science in promoting peace and the welfare of mankind, and especially to ensure that science is applied to solve the urgent problems of the time". The second was to enter into co-operation with UNESCO: "to promote international co-operation in science and technology, in particular through close co-operation with UNESCO". One had to wait for the seventh function to meet professional problems: "to improve the professional and social status of scientific workers". And the last one: "to encourage scientific workers to take an active part in public affairs".

Clearly, the Federation was principally turned towards the "social responsibility of scientists", and not a classical Trade Union. In that, it tried to shape a new form of scientific internationalism, where political struggles and science were intimately mixed. But the Cold War did not let it develop.

UNESCO and the WFScW in 1946

The issue of UNESCO's relations with the Federation was discussed throughout the founding conference. Among the delegates, many were close to Needham. Various participants underlined the similarities between the objectives of both bodies, and some were puzzled

about the small space left by UNESCO to the Federation. In his address to the conference, Needham presented the first UNESCO science programme, and proposed that UNESCO should support the Federation through a formal agreement, similar to the one being negotiated with the ICSU. Later, he insisted on the complementary functions of UNESCO and WFScW, between an inter-governmental agency and a rank-and-file scientists movement, only more radical and freer.²³ For Needham, the ICSU and the WFScW were the operational bodies through which UNESCO would implement its projects, according to their respective characteristics.

It seems that Joliot and Crowther were more politically reluctant about close relations between the Federation and UNESCO, from the beginning. They feared a threat to the independence of the Federation²⁴ and expected mainly material and financial support from UNESCO. The question of locating the office of the Federation inside UNESCO House in Paris was discussed as early as the founding conference in July 1946.

The WFScW 1946-1951

One year after its foundation, the WFScW federated only 16 groups from 13 countries. Due to the lack of money and to the growing Cold War, the Federation barely survived the first two years. The first General Assembly was scheduled in Prague, September 1948. It had difficulties to bring together nine associations that the constitution required for the quorum of the General Assembly. American associations had left. British and French scientists accounted for 80% of the roughly 24 000 claimed members of the Federation.

It had organized commemorations for Langevin and Rutherford, in London and Paris, published and circulated the manifesto adopted in July 1946, worked for UNESCO, drafted a

²³ See Huxley's, Crowther's, and Bernal's quotations in David Horner, "The Cold War and the Politics of Scientific Internationalism: The Post-War formation and Development of the WFScW 1946-1956", in Elzinga (1996), 143-144

²⁴ The ICSU was also much reluctant towards the risk of UNESCO willing to control the Unions.

"Charter for Scientific Workers", and raised the problem of secrecy in science. Despite the important institutional and official recognition (largely due to the personality of its leaders), the Federation did not reach a critical mass of activities, and the Russians still refused to join it.

After the 1st General Assembly, the years 1948-1951 showed no improvement. The Wroclaw Congress (August 1948) had two long-term negative consequences: the pro-communist scientists became more isolated from their former friends of the popular fronts; the WFScW lost its independence and was actually transformed into the scientist branch of the World Peace Council, also headed by Joliot-Curie.

More, the Federation underwent a severe crisis in 1949 and 1950, arising from the split within the World Federation of Trade Unions (WFTU). Some Western associations left the WFScW. The AScW had to choose between its affiliation to the Trade Union Congress and a project of agreement between the WFScW and the WFTU, where the former was defined as the "scientific advisory body" of the latter. The AScW tried to promote a new, non-communist leadership,²⁵ but failed. Joliot, Bernal, Crowther and Biquard, the four main leaders, kept their positions. The Federation had to renounce to sign the agreement with the WFTU, which was later publicly regretted by Joliot-Curie and some members.

The second General Assembly had to be postponed from 1950 to 1951. It was unable to meet in Paris. The visas were denied to Eastern delegates, and two meetings were held simultaneously in Paris and Prague.

During these hard times, the WFScW was forced to stay on defensive grounds: the defence of the scientists victim of the loyalty policies in the USA and in Western Europe; the defence of the academic liberties under dictatorships; and above all, the challenge of Lysenkoism.

²⁵ The AScW Council proposed (12 November 1950) Lord Boyd Orr for the presidency. It proposed also to remove Bernal and Crowther from their functions, and kept Biquard only as the representative of the Western European scientists.

During summer 1948, Lysenkoism became the official doctrine in the USSR. The Marxist scientists were summoned to choose between modern genetics and their political commitment. Some supported Lysenko, some tried not to choose, many among the fellow travellers went aloof. The divisions were extreme among the progressive scientists, who got disillusioned by the USSR and by the socialist perspectives for science. Lysenkoism gave much help to the counter-attack of the ideological right against the left, which led to the victory of "coherent right-wing view of the role of science in society".²⁶

UNESCO

Meanwhile, Needham was organizing and developing the Natural Sciences Department of UNESCO. He tried to operate a multi-faced programme during the two years he headed the Department, with three main lines coming from the SRS movement: the periphery principle; the inclusion of the social aspects of science within the Department; and the inclusion of history of science.²⁷

A further dimension of Needham's agenda could be related to the social function of science: the importance given to the environmental problems, which became the core of UNESCO scientific programmes in the 1950s. The first attempt to establish an international laboratory was dedicated to the Amazonian Hylea in 1946, followed by the proposal of an Arid Zones Institute in 1947. A scientific conference was held in October 1948 to establish the International Union for the Protection of Nature.

²⁶ Jones, Greta, Science, Politics, and the Cold War (London: Routledge, 1988), introduction. See also the chapter on Lysenkoism, 16-37

²⁷ I developed various aspects of the history of the Natural Sciences Department in: Petitjean, P., Zharov, V., Glaser, G., Richardson, J., de Padirac, B. and Archibald, G. (eds), Sixty Years of Sciences at Unesco, 1945-2005, (Paris: UNESCO, 2006) 29-92. In the ORSTOM commemorative conference (Paris, UNESCO, 1994) Aant Elzinga presented an influential analysis "UNESCO and the Politics of international co-operation in the realm of science", which was later published in Petitjean, P. Les Sciences coloniales – figures et institutions (Paris: Orstom éditions, 1996), 163-202

The "Periphery Principle"

The periphery principle deeply marked the first initiatives. This is evident in:

- The constitution of Field Scientific Co-operation Offices in Latin America, Egypt and China in 1947, in India in 1948. These offices were to support local scientists and to promote scientific research in these regions.
- The proposal of international laboratories, such as a Computing Centre in Asia, and the Amazon Institute in Brazil. Due to the political context in Brazil, the latter one hardly started in 1948, and subsequently closed down. Needham proposed Asia to locate the Computing Centre, as compensation for the destruction of the Japanese synchrotron by the United States Air Forces at the end of the war. But after Needham's departure, UNESCO decided to locate this centre in Europe.
- The organization of regional scientific conferences, the first one was held in Montevideo, in September 1948.²⁸

No science without its social aspects

The social aspects of science were dealt by a special section in the Science Department, headed by Borg Michelsen. It was concerned with many activities:

- Panels dealing with the social aspects of science, October 1947. They were followed by two organized discussions about "Food and Mankind", and "Energy in the Service of Man". Books for the general public and scientific papers were published, on the same subjects. Another book was published on "Science and Freedom".

²⁸ After Needham, some initiatives continued in the 1950s, as the committees to develop scientific research on Arid Zones or Humid Tropics, the Advisory Committee with the directors of the National Bodies for Scientific Research, dedicated to support the organization of science in non-European countries, etc.

- Impact (1950), a journal dedicated to science and society, published papers on the impact of science upon society, but also on the impact of society upon science. In the 1960s, it was reduced to publishing articles on the one-way impact of science on society.
- Popularization of science was another important field of action for UNESCO, with the worldwide circulation of scientific exhibitions, books, guides, exchanges of know-how and practices, etc.
- Finally UNESCO attempted to co-ordinate worldwide the Associations for the Advancement of Science. A first meeting took place in Paris, September 1950, with 14 associations.

No science without history of science

The part played by Needham and UNESCO in History of Science was fundamental. The first proposal, submitted in July 1946, was for an International Institute for the History of Science, which was revised in December 1946, into one for the establishment of an International Union for the History of Science, besides the existing International Academy. Such an International Union, affiliated to ICSU, opened the possibility of obtaining financial support from UNESCO.

Armando Cortesao was contracted by UNESCO to build the Union in October 1946, and a History of Science section was created in the Science Department. Armando Cortesao was an exiled Portuguese, historian of science, and member of this Academy. The official birth of the Union took place during the 5th ICHS (International Congress of History of Science), the first after the War, in Lausanne, in October 1947.²⁹

Later, Armando Cortesao moved to head another of UNESCO's projects, the Scientific and Cultural History of Mankind. He was replaced by Jean Pelseener, also member of the

²⁹ Armando Cortesao, 'L'UNESCO, sa tâche et son but concernant les sciences et leur développement historique', Actes du Ve Congrès International d'Histoire des Sciences (Lausanne, 1947) 25-35

International Academy, in charge of the publication of a new journal Archives Internationales d'Histoire des Sciences, a successor to Archeion.

For Needham and Cortesao, History of Science had an important social function. It could bring into light that "there are few peoples and nations without any contribution, whether reduced or important, to the scientific patrimony of humankind". In opposition to narrow nationalism, the History of Science had the possibility to contribute to the UNESCO function, international understanding.

Moreover, the History of Science was an irreplaceable tool for understanding the social aspects of science, both ways. Therefore, the International Union established, right at the start, a special commission on "history of the social relations of science", headed by Leon Rosenfeld and Samuel Lilley, both Marxists and friends of Needham.³⁰ UNESCO entrusted the commission with the redaction of a report on the "social aspects of history of science", for which Samuel Lilley was the main redactor.³¹ The central thesis was that the contexts, whether economic, social, political, or cultural may impede or facilitate scientific progress, but without altering its direction. This was not a very strong "externalism". The commission ceased to exist after 2 or 3 years, due to the situation of history of science in the 1950s.³²

Related to Needham's interest in History of Science, was the project dedicated to producing a "Scientific and Cultural History of Mankind". This project had 3 initiators: Joseph Needham,

³⁰ Bernal, Farrington, Childe and Crowther were also members of this commission.

³¹ The report was published: Samuel Lilley 'Social Aspects of the History of Science', Archives Internationales d'Histoire des Sciences, 2 (1949), 376-443

³² Anna-K Mayer, 'Setting up a Discipline II: British History of Science and the 'end of ideology', 1931-1948', Studies in History and Philosophy of Science, 35 (2004) 41-72

Julian Huxley and Lucien Febvre. It was initially included in the Science Department programme (1947-48).

The aim was to highlight the part played by science and technology in the history of civilizations, to bring into the foreground the mutual dependency of all civilizations, the permanent exchanges and borrowings between cultures, etc. During the gestation period, 1948 and 1949, a fascinating convergence existed between Needham and Febvre³³ about the aims of the project, and therefore on the structure and the contents of the series of volumes. The agreement arose over a refusal of to produce a positivist, chronological and Eurocentric history, and proposed to write an history where all civilizations would be treated the same way, without setting Western civilization as the model and the final stage of a world civilization.

UNESCO and the WFScW

The relations between UNESCO and the WFScW were part of the partnership between UNESCO and Non Governmental Organizations, but it remained marginal among other activities of the Science Department, due to the weakness of the Federation and the strong American opposition..

The agreement between UNESCO and ICSU had been forged in July 1946, accepted by ICSU, voted by UNESCO in its General Conference of Paris in November 1946, and finally signed in December 1946. It served as a model for preparing the agreement between UNESCO and the WFScW.

The text was ready to be signed by January 1947, but it was vetoed by the American State Department. Nevertheless, Needham had started to apply it, by giving the WFScW an address and an office in UNESCO House. For six months, Joliot, Bernal and Needham had to

³³ See the verbatim of the drafting committee, with Needham and Febvre (UNESCO/PHS/DC1/SR1-10, December 1949) and the final report (UNESCO/PHS/Conf.6/1, 24 January 1950) in UNESCO Archives (SCHM23, 2.633(1))

campaign to convince the majority of the UNESCO Executive Council to accept the agreement. Needham had to retract his first proposal. Official meetings took place between WFScW, the Science Department and the American Delegation. Pierre Auger, the French representative, and Paulo Carneiro, the Brazilian representative, were the main supporters of the proposal. But the State Department did not depart from its hostility to the WFScW. In opposition to the American representative, a second agreement was adopted by the Executive Council in July 1947, giving the WFScW an "observer status", and not full partnership. WFScW had much less financial support. It was not associated with the preparation of UNESCO's official documents, but only invited to participate in some meetings.

With this agreement, the WFScW participated in the panels on the social aspects of science in Paris and New York in October 1947, in expert meetings, and General Conferences. Crowther represented the WFScW at the Second Conference in Mexico in November 1947. Inversely, Frank Malina, from the Science Department, represented UNESCO at the first General Assembly of the Federation in Prague in September 1948. Needham was excluded from the official British delegation, but represented the WFScW at the Third Conference held in Beirut in December 1948. Bonet-Maury was the delegate for the Fourth Conference (Paris, September 1949).

Another failed attempt of co-operation between UNESCO and the WFScW happened in 1948, when Burgers (CSSR-ICSU) and Michelsen (UNESCO, Natural Sciences Department) conceived the project of a journal on the social relations of science, supported by UNESCO and the ICSU. The editorial committee would have also representative of the WFScW and of the Lilley-Rosenfeld commission. Such a journal would have associated the four bodies which have inherited from the SRS movement, both the alliances and the social concerns.

But in summer 1948, Stratton and the ICSU council disagreed with this common project. They feared UNESCO control and refused to cooperate with the WFScW. They also refused

to support the Scientist Charter proposed by the WFScW. UNESCO published later its own journal on the subject, Impact.

The WFScW obtained support from UNESCO in the form of a 6-month mission awarded to Crowther in November 1947 by Needham to travel to North America. The official aim was to study the state of preparation of the UN Scientific Conference on the Conservation and the Utilization of resources, to be held in 1949. This conference originated in an American proposal, and was organized by the UN Social and Economic Council. UNESCO felt this conference as a bit of an intrusion into its own field of competence. Unofficially, Crowther's mission was designed to help the construction of the WFScW in North America. On the pretext of the mission, Crowther represented the WFScW at the Mexico Conference, discussed with the Social and Economic Council to try to obtain an observer status, and met the American AScW and other scientists associations in the United States. With this exception, the WFScW never obtained the expected support from UNESCO.

Finally, the WFScW was not represented at the Fifth Conference in Florence in June 1950.³⁴ The American delegation succeeded in suppressing the agreement between UNESCO and the WFScW. Even though the USSR joined UNESCO in 1954, a new agreement was only signed in 1965.

Conclusion

Both projects, UNESCO and the WFScW, were undertaken in a short interwar period. The scientists were important political protagonists in this period, even if some of them did not understand immediately this passage from an anti-fascist to a Cold War. Churchill's speech about the "Iron Curtain" falling down upon Europe (Fulton, 5 March 1946) marked the symbolic beginning of the Cold War, and preceded the implementation of both projects.

³⁴ This conference has been a turning point for the US control over UNESCO. See the conclusion.

Neither UNESCO nor the WFScW managed to fulfil their initial ambitions to found a new scientific internationalism based upon a progressive social function of science, a liberal democratic idealism, and peaceful international relations, an utopia coming out the antifascist alliances.

In the field of the scientific and cultural international relations, the Wroclaw Congress (August 1948) and the UNESCO 5th General Conference (June 1950) were the two turning points for the breaking of popular front alliances, the deepening of the gap between the camps, and the isolation of procommunist intellectuals from the democratic left and pragmatic liberal ones, giving an open field to the right.

The Wroclaw Congress took place when the Cold War reached its peak: the Truman's containment doctrine (March 1947), the Cominform's establishment (September 1947), the Prague coup (February 1948), the beginning of the loyalty trials in the USA, the acceptance of the Marshall plan by Western European countries (April 1948), and the Berlin blockade (running from 23 June 1948).

At the Wroclaw Congress, the USSR initial aim was to establish an alternative to UNESCO. None the less, UNESCO Director-General, Huxley, went to the Congress, despite the US hostility, even with no official mandate. He left the Congress before the end, and refused to sign the final declaration. Fadeyev had denounced the main Western progressive intellectuals as "hyenas and jackals"³⁵, in a clear move towards the rupture. The Congress failed to maintain some relations between communist and progressive Western intellectuals. Within UNESCO, the main supporters of the co-operation with the WFScW got discouraged. Pierre Auger, a physicist and a socialist, head of the Natural Sciences Department in May 1948, who was a close friend of Crowther in the 1930s, stopped supporting the WFScW and

³⁵ Fadeyev's speech was endorsed by Bernal. See Bernal, JD, "Wroclaw and After", *Modern Quarterly*, vol.4, n°1, Winter 1948-49, 5-27

accepted to break the agreement. Paulo Carneiro followed the same path. Neither UNESCO nor the WFScW managed to maintain political diversity.

After the Congress, the Cold War went harder, with the establishment of NATO (April 1949), the first Russian atomic bomb test (August 1949), the Stockholm Statement (18 March 1950), the Korean War (June 1950...)

In this context, the 5th UNESCO conference has been a turning point for the US control over UNESCO. The US delegation obtained favourable votes on key points: China's seat was given to the Kuomintang, and not to the Popular Republic; UNESCO supported the US intervention in Korea; UNESCO refused the proposal of Jaime Torres-Bodet (Director General) to convene an international conference of intellectuals from the Western and the Socialist blocks; the budget proposed by Torres-Bodet was reduced, which led to his resignation. Even if he accepted to come back to his position, he definitely resigned in 1952. This conference was also marked by the US proposal to establish a regional European laboratory for nuclear physics, far from the "periphery principle". After this conference, UNESCO was no longer a possible bridge between the blocks, a situation that it shared with the WFScW.³⁶

The same righteous backlash between 1948 and 1950 provoked the disappearance of the Lilley-Rosenfeld commission in the IUHS. Within ICSU, the CSSR encountered difficulties. It failed to conduct a survey among scientists about the funding of scientific research. Its last meeting was in 1950. The ICSU Council decided then to suppress the CSSR, arguing that the recently established International Council of Philosophy and Human Sciences has taken the subject among its aims. From 1937, Burgers had participated to the SRS movement and

³⁶ In that, I disagree with Horner when he wrote that the Federation provided "the only international forum for the discussion of political and professional issues between the scientists of Eastern Europe, the Soviet Union, China and those of Western Europe". Horner, "The Cold War and ..." p.146 in Elzinga (1996), *op.cit.*

accompanied the creation of the WFScW. The suppression of his commission was highly illustrative of the changing times.

Has the WFScW managed to be "a unique precedent for a specific mode of international science"³⁷ in its first years? Between 1946 and 1951, the WFScW kept a very limited scope. It did not meet any support from the USSR, and was fought by the USA. The participation of Chinese Unions was mainly formal. It had collective adhesions from national bodies, but the militancy for the WFScW was the monopoly of a very small number of scientists. For the great majority of the Union members, the WFScW simply did not exist. It expressed the politics of Communist leading scientists in Western countries. In such conditions, it has been very difficult to secure financial and material conditions to exist, a situation which became even worse when the links with UNESCO began to break.

Beyond the political divisions, the WFScW had its own internal problems on some key issues. Its wobbly situation between a Trade Union (the original project of the AScW) and a "science and society" movement, let the Federation with a fuzzy image and permanent oscillations. In fact, its identity was mainly given by the image of its leaders. It changed in the mid-1950s. Another problem has been the atomic bomb issue, where the AScW and Joliot-Curie initially reacted differently to the Baruch plan.³⁸ Einstein and other scientists promoted the internationalisation of atomic energy, including atomic weapons to be transferred to the UN Security Council, and defended the idea of a World Government. They were denounced as agents of the US war efforts.

After the Soviet atomic test (1949), the WFScW joined the political campaign for the interdiction of all atomic weapons (the Stockholm Statement) launched by the World Peace

³⁷ Horner, "The Cold War and..." p.132, in Elzinga (1996), *op.cit.*

³⁸ Jones (1988), *op.cit.*, 38-48 and 79-95

Council and Joliot-Curie. This political approach of the disarmament had later to be completed by a more scientific one, taking into account the effects of the atomic tests and of a nuclear war.

But still in the mid-1950s, the partisan, pro-Soviet, image of the WFScW prevented it to organize the peace scientific conference that it decided in 1951. The WFScW was not a forum for scientists from both blocks. Another frame had to be built later, through the Einstein-Russell appeal and the Pugwash conferences, in which scientists from the WFScW played a major, but discreet, part.

Even if the WFScW pretended to have the "broadest possible base of affiliated membership", the reality was different. It experimented the contradiction between the will to promote a sharp demarcation between science based on socialist and capitalist principles, while being opened to the majority of the scientists.

The situation and the role of the WFScW changed when the Russians finally decided to join the Federation in 1952, together with the Polish and the Hungarians, but that is another history.

Before the mid-1950s, the WFScW never had the opportunity to experiment a new scientific internationalism, and never actually influenced UNESCO.

We have seen that, for a short period of time, UNESCO profited by the antifascist impulse. It profited also by its hybrid nature, both intergovernmental and intellectual. It has been an open room for progressive initiatives for scientific co-operation.³⁹ This ended by the 5th Conference, even if the same impulse could also be found in the Race Statement some years after.⁴⁰

³⁹ Elzinga (1996), *op.cit.*, 89-131

⁴⁰ Jones (1988), *op.cit.*, 59-78

Such an open room has also been possible because, in fact, UNESCO itself never managed to be central for scientific co-operation for many years. Since its establishment, nuclear physics had been excluded: The UN created a special commission under the authority of the Security Council. Further, the Cold War transformed science into a central issue for some political battles, and provoked in the 1950s a kind of "re-nationalization" of some scientific sectors, with the formation of "scientific-industrial and military complex", in the West as in the East. In both blocks, the planning of science accompanied this growing state control, and consequently disappeared as a major ideological issue.

Physics, biology, chemistry, and scientists themselves, were part of national welfare, with secrecy and state control over exchanges. Only other sciences, when of lesser strategic importance, could be left to such an international organization as UNESCO, and to left-leaning scientists.

Furthermore, after Needham's departure, the "periphery principle" was easily incorporated in the "Technical Assistance"⁴¹ programmes. Support for science was reduced to de-politicized, instrumental, support to economical development, the social aims (the welfare of mankind) forgotten, and less priority given to the basic sciences in the developing countries.

But UNESCO inaugurated some directions, which proved to be important for progressive groups or scientists outside UNESCO, and which contributed to the identity of UNESCO: the place of environmental sciences (which are now fundamental), the leaning towards developing countries as the priority commitment for scientific internationalism, the linkages of science with its social aspects as well as of science and history of science.

The space within UNESCO to build a "better world" with science rapidly disappeared, but the influence of the progressive scientists echoed for many years, and is recently rediscovered.

⁴¹ Point IV of Truman's inaugural speech in January 1949

Biographical Note

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