



Introducing the symposium: REFOUNDING THE INTERNATIONAL SCIENTIFIC RELATIONS IN THE POST- WAR PERIOD:THE EXACT AND NATURAL SCIENCES DIVISION OF UNESCO IN ITS FIRST YEARS.

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**Introducing the symposium:
Refounding the International Scientific Relations in The Post-War Period:
The Exact and Natural Sciences Division of Unesco in its First Years.**

Patrick Petitjean (REHSEIS-CNRS)

The symposium

Looking back to the immediate post-war period, when international scientific relations were reconstructed and when the Unesco's Science Division was established, can throw light on the historical background of present discussions and controversies about the globalization of science (between conscious multilateralism and market interests), about universalism and multiculturalism in science, about science and sustainable development, and about the growing part played by international bodies for scientific research in peripheral countries (which autonomy is left in the elaboration of scientific programs : who decides ?).

These recent developments make a global discussion of their philosophical, political and ideological roots topical. As noticed by the contributions herewith presented, it is more urgently needed than ever to relate "scientific progress with human values in an age of genetic engineering, nuclear technology and ecological peril", we need to link "scientific discoveries and technological progress to ethics, sharing and caring", all issues which have been a major worry, after Hiroshima, for the Unesco founders.

Present issues also call out for a historical comparison based on case studies with the early activities of Unesco in various scientific disciplines and countries, when international scientific-based development was invented as an alternative to scientific-based colonial exploitation, a transition period between colonization and a new international order.

Such were the issues of the symposium proposed by Heloisa Bertol Domingues (Mast-CNPq, Rio de Janeiro - Brazil), Gregory Blue (University of Victoria, British Columbia - Canada) and Patrick Petitjean (REHSEIS-CNRS, Paris - France), on behalf of the "Science and Empire" commission (History of Science Division, IUPHS), for the XXIst International Congress of History of Science (Mexico, July 2001)

Our entry point was the foundation of Unesco in November 1945. It took place in the very specific political and historical context of the immediate post-war period, before the cold war over-determined international relations and while several key assumptions of the Allied war effort were still to some extent in place: that the role of the state would be decisive for reconstruction as it had been for the war effort; that international organizations should function to prevent war and to build a better world; that the economical and social functions of science as recognized by Governments during the war (and by the public opinion, especially since Hiroshima) would be taken for granted.

In these conditions, international scientific co-operation was perceived for the first time as a crucial ideological and political issue, and as an arena of opportunity to maintain links at the end of the second world war. It seemed wise to try to organize science at a global and international level, and not only through disciplinary unions or national bodies as these had existed before the war.

A specific division was established for the exact and natural sciences. This component of the new organization had no precise precedent before the war. According to its promoters, particularly Joseph Needham, the first divisional director, the Science Division of Unesco was intended to inaugurate a revolution in the international organization of science.

The aims assigned to the symposium were then:

- To analyse the various channels through which the international scientific relations were reconstructed in the post-war period: Unesco's Science Division, ECOSOC (Economic

and Social Council of UNO), International Council of Scientific Unions (ICSU), World Federation of Scientific Workers (WFSW), bilateral relations, etc; how they differed from the pre-war period.

- To analyse whether and how, in this refoundation, the asymmetry of scientific international relations has been recognized as an actual problem to be handled, together with Eurocentrism and the colonial heritage.
- To analyse why and how Unesco scientists tried to fight against Eurocentrist prejudices in science and in the international organization of science. To analyze the new conceptions the Science Division's first director, Joseph Needham, and his associates tried to implement, as well as to consider the underlying philosophical, political and ideological foundation (including, for instance, the notion of "ecumenical science", "scientific humanism" and the "peripheral principle").

Five papers were presented for discussion in the symposium. It allowed a first approach of some issues of such historical studies about scientific co-operation and internationalism. Obviously, these papers are even very far from covering the whole field. They concern: the international function of science and the part it played in Unesco foundation (Gail Archibald) and in various scientific co-operation projects after the end of World War II (Patrick Petitjean); the philosophical background of the Unesco founders, situating it from an historical perspective (Gregory Blue); and the IIHA (International Institute of Hylean Amazon), a case study of the first Unesco international scientific project, from two different standpoints (Heloisa Bertol Domingues and Marcos Chor Maio).

Focussing

When putting together the different elements brought by each contribution, and various points raised in the discussions during the symposium, some significant items may be stressed :

Sharing political aims ?

Before the war was over, allied governments, non-governmental bodies and scientists were well aware of the social and international functions of science, and the organization of scientific co-operation was a shared conscious political aims: to prevent new wars, to put scientific research in the service of humankind welfare, to reduce economical inequalities and to fight against hunger. This has been noticed by Gail Archibald and others. But, in practice, far from such a rhetoric, different political aims obviously lead to different proposals for international science.

Never the less, after many internal discussions, in May 1945, the American government and the Congress actually made the choice to participate to the new institutions, which was quite a rupture with their diplomatic tradition before the war. In that, the American government appeared to be quite permeable to ideas from non-governmental bodies. Cold war drew it back to a more rigid intergovernmental frame for Unesco.

Hiroshima, a "scientific success" ? (in Le Monde, August 1945)

Hiroshima atomic bomb was decisive to include science in Unesco: it appeared necessary both to link science with humanities (the theory of the "two cultures" was still to come) and to make scientists and governments more responsible in relation with the consequences of scientific research. At first, the US State Department was not very keen to include the S in Unesco. As Gail Archibald noticed, Harold Shapley was the only scientist included into the official American delegation for the London conference (November 1945). Though the US State Department finally supported the including of science, he went on opposing alleged atomic secrets to the freedom of scientific communication.

The Science Division of Unesco was only one among other projects launched in the mid-

1940s. More ambitious even – and a rapid failure - has been Laugier's idea of an International Research Council, reproducing the French CNRS at the world level. This proposal was completely out of practical application, either for the organization of international science organization, or for the world institutions to be created.

Philosophy and Politics

Julian Huxley's book "Unesco, its purpose and its philosophy" needed to be remembered. From one side, it brought into light his philosophical ideas, defined as "scientific humanism" (and shared by Joseph Needham), which shaped his action as first Unesco Director General. But from the other side, it showed the immediate rejection of such ideas by most governments and scientists. Huxley's book was refused as an official Unesco publication and to be published on his personal responsibility.

Julian Huxley and Joseph Needham not only shared a common philosophical background, but had also close conceptions of the social function of science, as a powerful tool for social change. Their scientific internationalism was to support social and political goals. Such a strong articulation between philosophical background, political goal and the promotion of scientific co-operation, seems hardly conceivable nowadays, but was not so peculiar in the very immediate post-war period, even if the practical difficulties in concrete situation and the cold war rapidly put an end to this orientation. To promote science and to fight for humankind welfare was the same. For this reason, Needham always refused to separate basic science from its application.

The question remains to understand if Paulo Carneiro's positivism was so far from Huxley and Needham scientific humanism, far from their conception of the function of science. In 1947, when Needham headed the Science Division, it seems hard to say that he underestimated the necessity of scientific research to deal with concrete social problems. Has Paulo Carneiro disagreed with Joseph Needham about the IIHA objectives, and criticized Unesco for an alleged indifference to social problems ? The analysis has to go deeper. In 1948, Needham left Unesco, but Paulo Carneiro shared Unesco's later transformations of international scientific co-operation.

Needham's Science Division

Needham voluntarist policy was meant to replace the previous "laissez-faire" approach with a planned and centrally organized action; to apply a "peripheral principle" for promoting scientific and technical development in the non-industrialized countries, rather than simply meeting the spontaneous needs of scientific exchanges as defined by scientists from developed countries; and to take into account the cultural diversity of the world's different civilization's by means of the notion of "ecumenical science". Needham tried to end with the colonialist and Eurocentric organization of science which predominated before the war. This opposed a missionary conception of science (science as a support for Western civilization, as inherited from the colonial period) as well as a reduced conception of science as a mere instrument for capitalist expansion.

Between 1946 and 1953, the Science Division pursued a number of key aims to "build bridges" between scientists: the providing of support to ICSU and its unions; the activation of Unesco as a scientific clearing house; the establishment of four field scientific co-operation offices, outside Europe and the United States; and the promotion of research, through international laboratories, international co-ordinating committees and technical assistance programs.

Anti-Eurocentrism was a strong component of Needham (and Huxley) initiatives. It was part of their common philosophy : as Gregory Blue pointed out (quoting H.G. Wells), for them, the continuous progress of the sciences would demonstrate a long-term tendency towards the growth of peaceful co-operation among peoples. Science prefers mutual aid rather than competition. Among the projects for which the Science Division joined other Unesco

divisions, was the editing of the “Scientific and Cultural History of Mankind” (SCHM afterwards). Such history, in Needham’s view, should have stressed these growing exchanges between civilizations, and the part played by science in building more and more bridges between cultures, possibly even towards a common culture.

The same philosophical roots (science as the source of the essential unity of humankind) gave strong impulse for antiracist projects such as the race declaration and race studies.

A very short period

1948 appeared to be the crucial turn for international scientific co-operation, and specifically for Unesco. In April, Needham is back to Cambridge University, and a French physicist, Pierre Auger, with less radical political commitments, and more sensitive to the American orientations, becomes the head of the Science Division. In July, Ecosoc sends back to more studies the UN laboratories proposals made by Laugier and Needham. In August, the split between pro- and non-communist intellectuals is definitive and Unesco as a whole is rejected into the “imperialist side” by the Wroclaw Congress.

In December (3rd Unesco General Conference in Beyrouth), the joint Febvre-Needham orientations for the SCHM project are not accepted and a new expert meeting is scheduled under the lead of Ralph Turner, an American historian linked with the State Department. A Mexican writer and diplomat, Jaime Torres Bodet, is elected as the new Unesco Director General to be the successor of Julian Huxley. He was preferred to Paulo Carneiro by the American delegation and supposed to be closer to American conceptions – which he proved not to be in fact.

Some more years were needed for a complete normalization, but the game was over at the end of 1948, and so was also the IIHA.

A White Elephant

Till the 1960s, one name still was not to be pronounced in Unesco circles: the IIHA, a so-called “white elephant” for Unesco functionaries. Two papers directly concern the IIHA, and one more indirectly: the IIHA was THE case to be discussed in the symposium.

Unesco’s first scientific experimentation

The real history of the IIHA, as an Unesco project, has been very short: proposed by Paulo Carneiro in May 1946, selected by the first General Conference in December, put among the 4 major initiative in April 1947, but already somehow put aside by the second General Conference in Mexico (December 1947).

Before the war, there has been no such attempt to create an international laboratory. The IIHA was then a first “experiment”, and even a first experiment of Needham’s conceptions, that is the priority to scientific development beyond Europe. It was a left-wing experiment. From that, it is not difficult to understand Unesco’s choice, and both papers agree on that : the proposal was made by a Brazilian diplomat and scientist; the initial project was rather a small one; Unesco as a whole, and the Science Division in particular, needed visible results at a short term; Latin-American were supposed to be ready to share the fundings of the IIHA. The Belem meeting took place (August 1947), when Unesco was preparing the Mexico General Conference and was under strong pressure by United States and United Kingdom to reduce its programs and expenses . Administrative control of all ground actions by Laves, the deputy Director General, was instrumental in cutting financial expenses. Before Mexico, Huxley, Needham and Carneiro feared a complete Unesco withdrawal from the IIHA project. The lack of practical commitments in Belem final conclusions was not very positive. Finally, a compromise was defined in Mexico: Unesco will directly fund some surveys, and a new meeting was to be called in Iquitos to establish the juridical basis for the IIHA. In this context, which colonial part Unesco could play in the Amazon region?

Did Unesco fall into the Amazon myths?

To what extent did Unesco fall into the myth of the Amazon basin as an immense and permanent source for the world welfare? It is true that the tropical world, as a whole, was seen with this colonial representation, and this myth was shared by scientists, governments and peoples, including in Brazil. In the post-war political rhetoric, it was common to see discourses about the need to solve the refugee question, the demographical explosion and the hunger problem with agricultural settlements in yet unexplored regions. Undoubtedly, the Amazon region has often been quoted as one of these regions. But there is a large gap between discourses, actual projects and concrete actions.

Was also Unesco attracted by the ecological welfare (now biodiversity) of the Amazon region, and therefore strongly supported Carneiro's project, in order to control this welfare? But had Unesco an actual project to exploit the Amazonian welfare? Had it the will, and the possibility, to undertake it? Or for which interests Unesco was acting? France was busy with her own colonial problem; United Kingdom was only concerned by the Commonwealth; URSS was out of Unesco; and the United States had many reasons to be against the IIHA. None of the big powers actually supported this Unesco project.

A project which is permanently reshaped

Both papers point out the transformations which the project followed between 1946 and 1948. At first, Carneiro proposed an international support to Museu Goeldi in Belem, to save its precious botanical, zoological and ethnological collections. The project was soon enlarged by Unesco to an international institute for natural sciences in the Amazon region, this institute being the prefiguration of other tropical institutes elsewhere.

The Belem meeting transformed the Unesco project. The economical development of the Amazon region became a major concern for the proposed IIHA, though it still co-existed with a basic research program. The exploitation of Amazonian natural resources was not yet the structuring orientation. Felisberto Camargo, head of the Instituto Agronomico do Norte, deplored that the discussion about agricultural settlements has been denied.

Was this transformation opposed to scientific humanism and to Paulo Carneiro's ideas? In these years, it was probably not. A development perspective was not thought to be a contradiction neither with the conservation of natural welfare nor with the preservation of Indian life. For Paulo Carneiro, to civilize was to help for food, health and education.

After 1948, the transformation went on, and the economical development became central to the IIHA. Scientific research was to help directly this development. According to Marcos Chor, Corner criticized this colonialist evolution, now far from Unesco's first proposals. This was a pull back to former conceptions, inherited from colonial times, the use of colonial sciences for economical exploitation. When soon after the "Institut Français de l'Amérique Tropicale" was founded in French Guyana, the orientation was also the economical exploitation of natural welfare.

US sabotage, as usual?

The opposition of the American State Department was clear before the Mexico General Conference, though all American scientists did not share it.

The United States did have many reasons to fight against Huxley and Needham, Unesco in general and the IIHA. But is this enough to argue that the IIHA failure is due to American sabotage, as Corner did, and that Artur Bernardes has just been "objectively" an ally for United States, behind his nationalist discourse? The strong critics to Unesco alleged colonialism would have only been, then, a mask for American interests in the Amazon region – and some American scientists and agencies were active in these years. Unesco was a nationalist target, but American agencies were not. But this is still to be proved by further documents and analysis, which Corner has not done.

The “nationalism versus colonialism” has also been a curtain behind which economical interests in the Amazon region were hidden, whether national or international. Opposing the IIHA was a way to put aside Brazilian scientists more conscious of the situation which the indigenous peoples have to face with the settlements and the exploitation of natural resources.

A complex failure

There is a general agreement not to accept now the way the debate took place in 1948-1950, (Brazilian nationalism versus Unesco colonialism) and to analyse the IIHA failure as a complex thing. US opposition had a part. The nationalist reaction was important, but probably unable by itself to stop the project.

Unesco had a major part in the failure. It certainly underestimated the “colonial trauma”, as noticed by Heloisa Bertol Domingues. It was not enough to rely upon the Brazilian origin of the proposal to understand the local context and to foresee the consequences. The Amazon region was considered as an economical and political “frontier”, a source for profits more than a source for scientific results. Quotations of Artur Bernardes are unambiguous. From the beginning, the IIHA project was a trap in which Unesco has fallen.

Unesco Secretariat and Latin American scientists underwent the same debates about the IIHA main functions. Unesco changed its policy for scientific co-operation, in particular when Auger took Needham's succession. But the IIHA went wrong from the beginning.

The juridical problems have been underlined in these years, leading to an additional protocol to the Iquitos convention, without success. The first juridical proposal was made by a UN specialist, and was a standard UN one. But, in transforming the issues from basic sciences to welfare exploitation, Latin-American scientists changed the nature of the international institute. An international status, with centralization and international managing, has not the same meaning in both cases. The international science question is quite different from the international exploitation... UN juridical proposal was inappropriate, and this gave space for nationalist critics.

But Unesco, nationalist leaders and the US State department were far to be the only actors involved in the failure of the IIHA. What about some groups of Brazilian scientists, whose part is somehow still in the shadow? Which was the part played by power struggles inside the scientific community, struggles for which the IIHA could have been also a pretext? Why to search for external roots (in Unesco, or in political nationalism), if internal roots could be encountered in the scientific community? At least, the analysis must go on...

Is Scientific Internationalism an imperialism ?

Did Needham and Huxley act practically just the opposite of what they claimed to be their philosophy? Were they anti-Eurocentrists in words, and colonialists in facts? Such an issue was discussed during the symposium.

Acclimating Unesco scientific projects

Marcos Chor is right: when an international project (whether scientific or not) is developing, its sense and issues are strongly dependent of the social groups who appropriate this project, and the result might be very far from what was expected from its international origin. This can give birth to many conflicts, but this can also positively transform the programs. The IIHA, and the race studies, both initiated by Unesco and appropriated by Brazilian scientists, showed both possibilities. It is therefore interesting to compare two different Unesco projects, originating from two divisions in order to analyse how they were “brazilianified”.

As far as the relations with Unesco were concerned, Brazilian scientists took different positions. Conflicts existed at the end of the 1940s between the Sao Paulo group (Sociedade Brasileira para o Progresso da Ciencia) who tried to have their own direct links with Unesco, and the more official and diplomatic scientists constituting the IBECC (Instituto Brasileiro para Educaçao, Cultura e Ciencia). Some scientists did seek for assistance from Unesco to

organize scientific institutions. Other preferred direct co-operation with the United States or European countries rather than multilateral co-operation through Unesco. All these attitudes and groups were moving rapidly according to the specific issues and to the political situation. Can we infer a posteriori that both projects proceeded with misunderstandings between Unesco and Brazilian scientists? One has to remember that the IIHA project was first proposed by Paulo Carneiro, Brazilian delegate to Unesco, and the race relations studies by Artur Ramos, then member of Unesco secretariat. One has also to remember that the conflict, if any, did not oppose the Brazilian scientific community as a whole to Unesco as a whole. About the IIHA, its organization and its research programs, the debates were the same among Unesco and among Brazilian scientists. The project changed, and Unesco was subsequently marginalized (exploitation of natural resources is not among Unesco functions), though later Unesco followed the same evolution towards Truman's Technical Assistance (and even Needham himself did not see any contradiction between these programs and his political and scientific commitments). Unesco began pulling back from the IIHA project as soon as the Mexico conference at the end of 1947, but was the main reason the appropriation of the project by Brazilian scientists?"

In the case of the race relations in Brazil project, the first studies were undertaken by Unesco, American and Brazilian social scientists, and led to a continuous evolution of the project. How did it differ from an ordinary scientific program? Did Unesco oppose such transformations?

Scientific internationalism and scientific humanism

Scientific internationalism and scientific humanism are twin conceptions. Have they to be considered as a form of imperialism? Could, during the first years of Unesco, international scientific practice be separated from imperialism and later from cold war policies?

There are clearly differences of interpretation between the various contributions. Marco Chor's diagnostic ("Needham and Huxley were moved by colonialist perspectives" – "For Needham, Amazon was another China") clearly opposed Blue's and Petitjean's presentation of Huxley and Needham policies.

Because science is supposed to be neutral, scientific internationalism appears to be unquestionable. Needham and Huxley claimed not to be Eurocentrist. To pay equal attention to the cultures of the Orient and the West was a key constituent of the SCHM project. In his address to Unesco first conference, Needham praised Chinese scientific achievements. For him, the existence of "bright" and "peripheral" zones, as far as scientific development is concerned, did not imply the absence of scientific research and of top scientists beyond the Euro-American world. Obviously, this claimed anti-Eurocentrism is not enough to discard any question about Needham's scientific internationalism.

When Miguel Ozorio de Almeida argued about Needham's "bright zones", he mainly underlined that the key question was to understand why such differences existed in scientific researches. Fifty years after, differences are even worse in the international scientific system. Ozorio de Almeida also insisted upon the necessity of concrete surveys of the scientific situation in each country, instead of rejecting them in an undiscernable black box. For Needham, China was not in the "bright zone", but he can not be attacked for his underestimation of Chinese scientific achievements. "Bright zone" is defined with regards to the main flux of scientific co-operation, not with regards of the scientific ability and results. But China is the Orient, and Needham studied China. What about African and Latin-American Cultures? They do not belong to the Oriental world, and are certainly less taken into account (and possibly even ignored) by Needham. But is this enough to charge Needham with prejudices and a colonialist attitude towards Latin-America? Is it enough to qualify Unesco's Amazon project as a colonial one?

Is the alleged neutrality of science Eurocentrist ?

To consider science as neutral-valued was the dominant ideology in this period, and this was shared by Needham and by Huxley. The same research may exist everywhere, and any scientist can move from one country to another. Neutrality of science leads to underestimate the way cultural differences are shaping scientific practices and issues. In that, when Needham and Unesco have chosen Corner to be the head of the Amazon Project, it had the taste of neo-colonialism, even if Corner proved later to have a great capacity of assimilation by Latin-America. Corner was a British colonial scientist who spent nearly twenty years in Malaysia, with no knowledge of Latin-American languages and societies. The way Paulo Carneiro reacted is legitimate. But Unesco accepted the critics, and adapted itself. Such a conception of science also implied that scientists have the possibility to co-operate together without the interference of political powers. Needham, once, defended the idea of a "scientist passport", allowing them to travel freely everywhere. But (un?)fortunately, politics are more powerful than scientists. From the beginning, USA opposed military and commercial secrets to the free flow of scientific results. Scientists are not free to join their forces to build an international research institute with a minimum interference from governments, a fortiori when Unesco is an inter-governmental institution. To create an institute needs to pay a tribute to diplomatic rhythms and to diplomatic logics. Needham's voluntarism clashed (as well for the IIHA, for the UN laboratories, and for the SCHM project) with the political realities. Other interests have to be taken into account to establish inter-governmental conventions and to set up an international scientific institutions. As Gregory Blue noticed, "the defeat of Huxley's proposal raises serious questions about claims that scientifically-oriented philosophy and modern political power necessarily reinforce each other in any straightforward way". Science neutrality and free scientist communities are fictions when confronted to political powers.

Defeats

Various aspects of Huxley's scientific humanism were unacceptable for the main ideologies : the rejection of fixed dogmas with the stress put on the variety of human nature and the subsequent impossibility to give any pre-eminence, the necessity of exchanges between various traditions, the re-interpretation of religions in the realm of science and evolution... Trying to build bridges between the West and the East when the cold war was beginning was indeed provocative. Either on political or philosophical grounds, Huxley was distrusted by the US State department to be too left-wing.

The impetus given to Unesco in its first year and the difficulty to control Unesco's dynamics, soon raised the hostility of United States. Through the administrative control (via Walter Laves, deputy General Director), many financial cuts or strong limitations to programs (including the IIHA), ideological pressure (the so-called "Bentonism") and the selection of new Unesco Secretariat members, With the support of the UK, the US State Department fought to reduce the influence gained by Huxley and other progressive-reformist intellectuals in the immediate post-war period. It finally gained hold on this institution when Jaime Torres Bodet resigned in 1952.

In 1947/48, USA opposed the Unesco dominant orientation. And the failure of the IIHA project cannot be separate from this hostility, and is part of the general failure of Unesco initial nucleus to build a new kind of international institution. This failure is also Laugier's, with his UN Laboratories projects.