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Assessment and recommendations for
The Centro Interuniversitário de História das Ciências e da
Tecnologia (CIUHCT)

Having read the Report, let me hasten to note how impressed I am both about the range of activities as well as the quality of the work produced by the Unit. It should also be stressed, that the Unit *continues* to produce excellent research and initiate all kinds of other activities over the past years, and provides convincing evidence that it is now an established institution of an international standing.

Let me be a little more specific.

1. History of Science and Technology is a very demanding subject. The researchers must be quite familiar with some branch of science and they should also be particularly knowledgeable of historical scholarship. The researchers of the Unit have shown an admirable understanding of the historical problems in the sciences, and have, as result, produced a number of superb books and papers.
2. It is usually the case, that many such institutions of “peripheral” countries produce work exclusively in their local language, and, hence, are rather isolated from the international community of scholars. The researchers of the Unit have followed the strategy of publishing both in Portuguese as well as in the other languages that are being read by a much larger group of people. It would not be an exaggeration to claim that it is basically due to the work of the staff of the Unit, that Portuguese History of Science and Technology has been squarely on the map of the international community. Less than ten years ago, the knowledge we had of the various aspects of Portuguese Science and Technology was very rudimentary, and, I might add, written in ways that were reflecting approaches that had long been abandoned by the leading scholars of the international community.

3. The range of themes that the researchers of the Unit have been developing is, also, rather, impressive. The work covers a period from the 16th century to our days and involves subjects from mathematics to physics to the earth sciences to technology. In analogous institutions, one can hardly find such a range of subjects, and when one does come against such varied research activity, it is in places that have many more people with substantial funding (I have in mind the Max Planck Institute for the History of Science, in Berlin).
4. Another aspect of the Unit that should be underlined, is its educational role. Usually such institutions are exclusively research oriented. In the case of the Unit, there is a large number of masters and doctoral students. I have met some of these students over the years, and my feeling was that they were at the same level as students who go through programs in old and very well established Departments (I have in mind the analogous programs at Cambridge and Harvard University which have graduate programs in History of Science and Technology which I know quite well).
5. One should be particularly insistent on commending the work of Unit concerning popularization and organization of exhibitions. These are truly time consuming activities, and often they are realized at the expense of research. However, such activities are absolutely essential not only for the further consolidation of the discipline, but also, for giving it a social relevance. The visits by schoolchildren and the close collaboration with the Museum of Science of the University of Lisbon, as well as the active role of the Unit in the strengthening of the network of museums of science in Portugal and Brazil, provide a very pronounced social dimension to the overall work of the Unit.
6. The collaborations and networking of the senior research staff at the Unit is well documented, and each scholar is well known to many other scholars of the international community of historians of science and technology. In addition, members of the Unit have played a decisive role in the establishment and strengthening of two very significant pan-European groups of researchers: STEP (Science and Technology at the European Periphery) and Tensions of Europe. These two networks are holding regular meetings, they have been publishing edited volumes with prestigious publishers and they are producing many interesting papers in well regarded journals. Most importantly, they introduced new and novel ways of looking at science and technology in Europe and, by now, they have become two "institutions" that the community of historians of science and technology is progressively taking more and more seriously. As mentioned, the senior scholars of the Unit have played an indispensable role in this development.
7. Perhaps the most important problem faced by the Unit at this juncture is its financial future. Though the problems with which academic and research institutions are faced in Europe is rather difficult, Governments and Ministries will be obliged to take decisions not with

“across the board” criteria, but by assessing the true merits and future of each case separately. History of Science and Technology is among the fastest growing disciplines in the humanities. Furthermore, much of the work done in this discipline is not independent of a number of issues that are related to national (and not nationalistic) histories. In a world that more often than not, is unaware of the pluralism in the ways the sciences and technologies had been developing and applied at every region, it is absolutely important that the proper attention should be given to the history of science and technology. Portugal is in the very proud position that it already has an institution which has been producing work of excellent quality and which has a policy of openness to society rather than being an introverted research institute. Such a Unit which is clearly projecting Portuguese scholarship internationally, should be given a definite priority when decisions are taken to provide funding to hire more people and further strengthen their collaborations of existing staff members.

Kostas Gavroglu

REPORT ON THE 2010 ACTIVITY OF THE CENTRO INTERUNIVERSITARIO DE HISTÓRIA DAS CIÊNCIAS E DA TECNOLOGIA (CIUHCT)

The CIUHCT is an internationally well known centre of research based on two universities of Lisbon, Portugal. Gathering the two universities (University of Lisbon, New University of Lisbon) paves the way for the study of a number of subjects in the history of science, in the history of medicine, and in the history of technology, from the XVIIth century to the XXth century. The centre is able to promote pure research in such fields and periods and also to organize activities of application of them, for educational purposes or for the public understanding of science.

One of the objectives of the centre is to study the specific role of Portuguese people in developing science and technology, not only in Portugal but in Europe and the world. This also implies the comparative studies of science and technology in different countries. It should be recognized that the CIUHCT has managed to introduce Portuguese subjects in present historiography of science and technology.

The 2010 activity should be considered in this context. The members of the two groups have developed a very relevant activity. The number of papers and books published is significant, the number of students and doctoral thesis presented is also significant, but the quality of the papers and the orientation of the programs of research and education represent an excellent achievement. It should be mentioned several paper published in *Science & Education*, *Host*, *Geology* or *Quaderns d'Història de l'Enginyeria*.

Another important activity is centered in the scientific heritage, in relation with special Portuguese archives and collections. In this sense, the members of the group belonging to the Museum of Science of the University of Lisbon play a very important role. It should be mentioned the participation at the project of the edition of the works of Pedro Nunes or the study of the archives of the Escola Politecnica de Lisboa.

The task of translation of Classics of Science and of dissemination of scientific ideas is also relevant in the CIUHCT. We must mention a new Portuguese translation of Galileo's *Siderius Nuncius*, that was reedited a number of times.

The CIUHCT is a very important promoter of research, as it can be seen for the meetings and congresses organized in 2010. The members of CIUHCT are also very active participating in international projects and meetings (Host meeting, sessions of the Barcelona Conference of the European Society for the History of Science, and other). In this sense, the centre plays an important role in the international community of history of science and technology. I wish to mention three examples of this role. First, the leading action in the program STEP (Science and Technology in the European Periphery). From the beginning of this group, several members of CIUHCT have contributed to consolidate this project through meetings and publications. Second, the promotion of new historiography of science through the Engineering Studies international network (INES), and through the Society for the History of Technology. One member of the CIUHCT belongs to the board of both organizations. Third, the leading role played by the Museum of Science of Lisbon in the international project on university museums.

As a conclusion, I stated that the CIUHCT is one of the outstanding centers for the history of science in Europe. The 2010 activity shows the actual maturity of the undergone projects. The CIHCT merits the highest evaluation.

Barcelona, 9th October 2011

A handwritten signature in blue ink, reading "A. Roca-Rosell", with a long horizontal line underneath it.

Antoni Roca-Rosell
Lecturer at UPC
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Report on the 2010 activity of the *Centro Interuniversitario de História das Ciências e da Tecnologia* (CIUHCT)

I will focus my report on the activities of the *Centro Interuniversitário de História das Ciências e da Tecnologia* (CIUHCT) in three aspects that I consider particularly relevant: continuity, internationalization and interdisciplinary approach.

The first aspect of the CIUHCT's activities I would like to emphasize goes beyond the chronological limits of the report that I am asked to evaluate, since it refers to the **continuity of its activities** that lasted for more than a decade and its ability to maintain for years a steady and increasing production. Some quantitative data included in CIUHCT's *Relatório científico 2010*, such as the number of teachers and researchers, as well as graduated, postgraduate and doctoral students associated to the Unit; the number of master and doctoral thesis carried out and finished; or its increasing success to secure national and international funds are good evidences that sustain such assessment. Equally quantifiable is CIUHCT 's constant and growing scientific production, both in terms of publications and participation in conferences and scientific meetings, reaching levels of productivity comparable to any European research centre.

It is also significant CIUHCT 's continuity concerning its educational activity and its institutional position . Starting with the latter, CIUHCT has shown a special capacity to coordinate and integrate the activities of groups in different institutional contexts. It is also remarkable CIUHCT 's teaching activity in graduated, master and doctoral programs. In light of these results, it can be argued that the CIUHCT is now, in Portugal, a key element in the process of consolidation of a discipline like history of science and technology, which has achieved in the last decades a growing presence in the most important European universities and national research agencies.

In addition to meeting international standards of teaching and scientific productivity, CIUHCT has succeeded in putting Portuguese history of science and technology in the international map. **Internationalization** is an explicit goal expressed by CIUHCT's members and a verifiable achievement in all areas of its activity. The list of publications reveals a clever strategy to disseminate results of research that combines publications in Portuguese journals and publishers with numerous international publications, some of them in prestigious journals and publishers. Internationalization prove to be also a key element of the research organization strategies, as shown by the fact that members of the unit are active collaborators and in some cases founders of international research groups such as STEP or Tensions in Europe. Moreover, CIUHCT's international vocation proves to go beyond its research activity, since it also involves its training programs. Its explicit intention to achieve the internationalization of the ongoing master and doctoral programs is supported by past achievements in this field. The STEP group membership as well as CIUHCT's members long experience of participation in international master and doctoral programs will no doubt facilitate the achievement of CIUHCT's training programs internationalization aims. At this point it should be also mentioned CIUHCT key role as training centre of successful Portuguese doctoral and postdoctoral fellows following part of their studies abroad, as well as host centre for post-doctoral students from abroad.



Internationalization of research and teaching activities appears as an achievement in addition to being an explicit goal.

A third aspect that seems to characterize CIUHCT's activity is the **interdisciplinary approach**. Besides the diversity of backgrounds and career paths of CIUHCT's members, the diversity of research projects are evidence of a clever strategy to build bridges between work areas, very different either from the chronological, thematic and even material point of view. Along lines of research in classics topics like astronomy, scientific institutions or scientific biographies, CIUHCT's members have successfully open research lines in very innovative areas within the historiography of science such as popularization of science or circulation and appropriation of knowledge between centres and peripheries. It is also extremely valuable CIUHCT's efforts to contribute from the historical research to the study, conservation and dissemination of scientific heritage and material culture of science, as shown by their work on scientific collections and its close collaboration with museums and conservators. At this point, it deserves to be underlined CIUHCT's active participation in museum exhibition design. Besides being a way to raise awareness of scientific heritage to the general public, it is also an exceptional means of disseminating historical research results and offer to a general audience arguments for a critical reflection about the role of science and technology in contemporary societies.

Continuity, training and research internationalization and interdisciplinary perspective are key elements to understand what is probably one of the main contributions of CIUHCT's members: their ability to place in the framework of international historiography subjects, characters and places that has traditionally been considered as "local". CIUHCT's work has been crucial to show the importance of scientific activity in places traditionally regarded as peripheral and the interest that its understanding has for national and international historiographies.

Alicante, October 16, 2011

Antonio García Belmar

As a member of the Scientific Advisory Board I would assess the Centro de Investigação in every respect as an optimal unit, particularly since it consists of two groups. The manageable number of researchers guarantees a more than sufficient external visibility and a real and vigorous communication between the members.

The most important goal that has been expressed, that of advancing internationalization, has been fully guaranteed and implemented by virtue of activities already in progress. Of course this goal should not be overvalued in the context of an assessment, since everywhere great importance is at present being attributed to internationalization, but this should not be at the cost of meeting national needs. At any rate, a glance at the report reveals that the balance between internationalization on the one hand and the upholding of traditional local requirements on the other is well-known to the members of the *Centro* and is being ideally realized. This is revealed not only in the themes pursued but also in the considerable international networks and the visibility of researchers in international associations. What is of supreme importance for the European view of the system of science and knowledge is the inclusion of experience from the perspective of smaller states such as Portugal. This transfer of historic findings is guaranteed by the researchers in this group in a very particular way. In a society that is increasingly oriented to science, and for this reason we also speak of a 'knowledge society' in Europe, the differentiation according to local circumstances in historicization cannot be overlooked, and publication in the national language is also important. The fact that the *Centro* has also embarked upon this discourse must be considered excellent. In this context it is also laudable that some members of the group are also concerned both theoretically and academically with questions of popularization and with exhibitions, and that they themselves are organizing this transfer to a wider public. Tasks of this nature are very time-consuming, and in the present academic world they scarcely receive the credit they are due. But it is precisely in the field of the history of science that they are important and productive.

As regards content, the direction that *Centro* is taking, from early modern themes in mathematics and cartography, to topics in life sciences and earth sciences, is proving

to be a prudent strategy in the overlapping of research fields that simultaneously cover a very broad spectrum of themes and epochs. Here account is taken of the particular leading sciences of the eras in question. With regard to the breadth of the history-of-science fields, the choice has been so successful that it has also made available a specific profile. Questions that transcend both epochs and research fields (such as areas of knowledge or collections) are visible as an indicator of high quality and topicality. In these questions and the topics that are covered it is already evident that the research groups are very up-to-date in international debates, that they are focusing on them and making a relevant contribution. The inclusion of earth sciences in their research focus – otherwise rather rare in universities – also seems to be of particular importance in respect of the special nature and applicability of these fields in cartography and technology, and this orientation is very innovative. This demonstrates the formation of a research focus and is the best indicator of the uniqueness of this research centre within Europe.

If, in the context of publication results and output, the report emphasizes that there are long-term products that cannot immediately appear in the list, than the criticism should not be directed at the researchers but at the conditions of the evaluation. I can readily support this argument. One year may indeed be very productive, but this productivity cannot be given equal weighting in the list. Irrespective of that, the list of publications presented is considerable and stands up to any international comparison. It only remains to assess the activities of obtaining third-party funding, which also indicate a high degree of activity on the part of the representatives. Here too it must be emphasized that such activities cost researchers a great deal of time and divert them from their real work, research. In this sense, an award of funds on the part of the university would be of greater long-term value for the research itself.

Marianne Klemun mp.

Vienna, 30th of September 2011

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