

FCT Relatório Científico 2009 Centro de Investigação em História e Filosofia da Ciência e da Tecnologia

General Information	
Name of Research Unit:	(HIS-LVT-286) Centro Interuniversitario de Historia das Ciencias e da Tecnologia (CIUHCT)
Coordinator:	Maria Paula Pires dos Santos Diogo
Main Scientific Domain:	História
Other Subdomains:	n/a
Host Institutions	
Leading Host Institution:	Faculdade de Ciências e Tecnologia - Universidade Nova de Lisboa
Other Institutions Involved:	Fundação da Faculdade de Ciências Universidade de Lisboa
Objectives & Achievements	
Unit Description	
<p>The Centro Interuniversitário de História das Ciências e da Tecnologia (CIUHCT) comprises two research groups allocated to its two different host institutions (FCT/UNL and FC/UL). These institutions have recognized the importance of this field by creating respectively the Unit of History and Philosophy of Science (Department of Social Sciences) and the Autonomous Unit of History and Philosophy of Science. The two research groups in the Unit share a similar designation - Science and Technology (i) and (ii) - to stress that both have a common research agenda, although including eventually specific research topics. Another important difference relates to their association to different institutional settings.</p> <p>Concerning scientific management, the unit applies the rules outlined by the FCT/MCTES. Evaluation by international consultants selected by the unit among outstanding scholars in the area of History of Science and Technology is considered particularly important to secure the unit's high standards of scholarship.</p>	

Objectives & Achievements

General Objectives

The CIUHCT aims at promoting research in the History of Science and Technology according to international standards of scholarship and at contributing to the development and consolidation of this discipline in Portugal.

Already established but still a growing area in Portugal, the very existence of this research unit is of paramount importance not only to support a permanent and consistent research practice, but also to promote a dialogue and exchange of information and views among researchers.

Furthermore, the new unit aims at contributing to the consolidation of a strong scientific community by actively participating in the education of students (graduate and post-graduate level) as well as by enrolling in outreach activities (popularization, exhibits). The CIUHCT is involved in two MSc programs and two PhD programs in the field. We envisage the articulation of a joint PhD program, to be expanded in the coming year to encompass several universities. We will also assess the advantages to fuse the MSc programs into a more ambitious one, taking advantage of our complementary subfields of expertise.

The unit aims at articulating discussion at the conceptual and methodological levels with research on specific topics especially focused on, but not restricted to, Portuguese history. In any case this focus does not preclude the integration of Portuguese research in international groups and initiatives. On the very contrary we consider our main mission to present our local case studies in a format appealing to an international audience. This international dimension has been greatly encouraged through the dissemination of research carried out locally in international publications as well as in the participation and organisation of national and international meetings. The unit shares a conception of the field encompassing both more traditional and more recent approaches, including material culture, instrumentation and collection based history of science, material reconstructions, technoscience, all framed in the context of methodological pluralism. Especially important has been the input from the framework developed within the international group sSTEP (Science and Technology in the European Periphery) and ToE (Tensions of Europe) and the move from relying on the concept of transmission and the perspective of the centre to the concept of appropriation and the perspective of the periphery. We also explore relations between the History of Science and Technology and the Philosophy of Science and the role of scientific-technological structures in contemporary thinking.

Main Achievements during the year of 2009

The research agenda of the Unit for this period reveals continuity with that of 2008. In the national context, the Unit's work contributed to an ever growing professionalization and institutionalization of the history of science and technology in Portugal. Furthermore, it engaged in bringing to the forefront of Portuguese History the role played by scientists and engineers.

During 2009 considerable attention has been given to the construction of the web-site as the visible face of the new unit (<http://ciuhct.com>). Involving members of both lines, it has recently become accessible.

Objectives & Achievements

Besides on-going international and FCT projects main projects building a common identity for the Unit included: the up-grading of the bibliographic guide of History of Science and Technology in Portugal which we hope to publish during 2010; contributions to the international journal HoST, its accompanying annual workshops and the launching of monthly HoST conferences by both well known foreign experts and national scholars; a pre-print series; collection of books published by CIUHCT; and accessibility of primary sources, namely on-line transcription and digitalization of manuscripts/printed works involved in projects carried out by Unit members. As far as the database project on Portuguese scientists and engineers is concerned no substantial advancement has occurred during 2009 except for the outline of working lines which will enhance the efficiency of entries to be completed during 2010.

Besides building a common identity for the Unit, strengthening of ties, through work involving members of both groups, has been reinforced. It included participation in scientific projects on popularization of science and technology, and on instruments, on the preparation of an exhibit, on talks at international meetings and on the writing of joint papers.

Stress on internationalization continued to be a priority. The importance to frame case-studies in the history of science and technology in Portugal in a way appealing to an international audience was fundamental. Specifically the role played by the so-called peripheral countries in the development of science and technology as crucial parameters in shaping the identity of modern Europe is a methodological guide of the different case studies explored.

Networking activities, both at the national and international level, were deemed crucial to the Unit's development. Especially relevant for the Unit's research agenda is the participation in networks such as Science and Technology in the European Periphery (STEP), Tensions of Europe (ToE), International Network of Engineering Studies (INES) in the framework of which conceptual issues on Europe's identity and the changing relations between so-called centres and peripheries are addressed; the Network of Portuguese and Brazilian museums of science for the emphasis on material culture, collections-based history of science, and specifically on the role of university collections within Europe.

The Unit's research groups work in synergy, sharing members, projects, and methodological choices and fostering research crossing over traditional disciplinary boundaries.

Another dimension of the professionalization of the discipline in Portugal, considered a priority for this Unit, is the on-going participation in the formation of graduate students and young scholars (scholarship holders, Post-Docs etc.). Supervision of MSc and PhD dissertations continued as well as a journal club put forward by graduate students and the organization of graduate students workshops.

Activities

Integrative/multidisciplinary activities during the year of 2009

Our interdisciplinary activities included individual and series of lectures, publications, the organization of two conferences and the on-going project of translation of

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ancient scientific texts. These activities aimed at both the general public and the scholarly community.

1. Individual lectures

A.M. NUNES DOS SANTOS, “Rómulo de Carvalho na obra Bárbara Ruiva”, Sociedade Portuguesa de Autores, 18 June.

H. LEITÃO

* Scientific Archives and Historians of Science: three cases from Portugal, Future Proof V: 5th International Scientific Archives Conference, Barcelona, May.

* Os manuscritos científicos da Biblioteca Nacional e a coleção Japonica-Sinica (Jap-Sin), Museu de Ciência da Universidade de Lisboa, Lisboa, December.

* Património Científico em Arquivos e Bibliotecas Portuguesas: os próximos anos, VIII Encontro Regional da BAD, “A Informação ao Serviço do Património”, Ponta Delgada, December.

J. N. SILVA, A. Carvalho, C. Santos J. Neto, “Computer-Assisted Board Games”, Board Game Studies Colloquium XII, Jerusalém, April.

J. N. SILVA, C. Dias, P. Palhares. “Mathematical Games for the Blind”, Recreational Mathematics Colloquium I, Évora.

J. N. SILVA, C. Santos, “Card Tricks: Math vs Magic”, Recreational Mathematics Colloquium I, Évora.

M. E. CALLAPEZ

* “Women Empowerment in Science”, II International Amonet Meeting, Fundação Calouste Gulbenkian, 13 October.

* “Literacia Científica e Tecnológica”, Escola Naval, Alfeite, 3 June 2009.

* “Utilidade da História da Ciência e da Tecnologia para Explicar Conceitos Científicos “Difíceis”, Agrupamento Escolas Gil Vicente, Lisboa, 17 February , 3 March 2009.

M. C. LOURENÇO, M. Granato, “Thesaurus de Instrumentos Científicos em Língua Portuguesa”, MCUL, 18 November.

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M. C. LOURENÇO

“The Future of University Museums: Reflections on Mission and Management”, The Future Prospects of University Museums and Collections, Gustavianum Museum, University of Uppsala, 20 October.

* “Património da Ciência em Portugal: História e Desenvolvimentos Recentes”, II Seminário de Cultura Material e Património da Ciência e Tecnologia, Museu de Astronomia, Rio de Janeiro, 30 July.

T. S.MOTA, "A Filosofia da Ciência e a História da Ciência", Museum of Science of the University of Lisbon, 20 June 2009

T. S. MOTA, "Modelos Cristalográficos", Museum of Science of the University of Lisbon, 27 June 2009.

P. F. COSTA , “Ciência e Arte: A Representação do Corpo em Tratados de Anatomia do Século XVI ao XVIII”, Escola Artística António Arroio, 15 de Abril de 2009.

2. Sets of Lectures

* Seminars of Material Culture, Museus da Politécnica da Universidade de Lisboa (monthly)

* Seminars of Portuguese Scientific Heritage, Museus da Politécnica da Universidade de Lisboa (monthly)

* Seminars of Ancient Texts (monthly)

* HoST conferences (monthly)

3. Conferences

* Recreational Mathematics Colloquium I.

* Afinal, quem fez rebentar os limites do tempo: reflexões à volta do papel da História das Ciências no ensino da Geologia.

4. Other projects

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* Project of translation of texts from Classical Antiquity, East Asia and China

5. Publications

C. AURETTA, "Pleito, Pedagogia e Parábola em 'À porta da lei' de Franz Kafka (1883-1924)", in *Justiça e Sociedade*, R.Rangel, J.Sapateiro (coords.), Coimbra, Almedina, 2009, pp. 205-221.

A. M. NUNES DOS SANTOS, "Consciência do Cidadão, consciência do cientista - Impacte na Justiça" in *op.cit.*

Outreach activities during the year of 2009

Our outreach activities included individual lectures (36), publications (including 2 collections), exhibitions (6) and various sort of activities (books presentations, TV and radio programs).

1. Individual lectures

In what concerns individual lecturers (36) many of them were delivered in the context of commemorative events such as the 200/150 years Darwin, the Year of Astronomy, the commemorations of Gago Coutinho. Topics included the lifes and works of Darwin and Galileo, Galileo and the telescope, Einstein, Eddington, the expedition to Principe and the solar eclipse of 1919, the nautical sciences, Gago Coutinho and the scientific navigation, and the history of mathematical games.

2. Sets of lectures:

Graduate students continued to organize the Journal Club sessions open to all interested. In each session a paper is presented by one graduate student followed by discussion (<http://www.ciuhct.com/index.php/pt/ciclos-de-conferencias/journal-club.html>). They have also created a blog (<http://jc-chcul.blogspot.com/>).

Graduate students have organized monthly conferences on topics of interest for a general audience, delivered by national and international scholars.

3. Publications for the general public

A. SIMÕES, H. LEITÃO, scientific advisors to the Collection History and Philosophy of Science (prepared in 2009: Michael Sharrat Galileo and Kohler Lords of the Fly, translated by M. M GAGO)

Activities

A. SIMÕES, scientific advisor to the Collection Science and Enlightenment (2 volumes in 2009)

H. LEITÃO, Os Descobrimientos Portugueses e a Ciência Europeia (Lisboa: Alêtheia, Fundação Champallimaud, 2009). English version: The Portuguese Discoveries and the Science in Europe, trad. por William Gallagher (Lisboa: Alêtheia, Champallimaud Foundation, 2009).

J. N. SILVA

* “Galeria de Matemáticos: John Horton Conway”, *Jornal de Matemática Elementar*, 272/3/4, Jan/Fev/Mar 2009.

* “Galeria de Matemáticos: Richard Guy”, *Jornal de Matemática Elementar*, 275, Abril 2009.

* “Galeria de Matemáticos: Persi Diaconis”, *Jornal de Matemática Elementar*, 276-7, Maio-Junho 2009.

* “Português ganha prémio internacional”, *Jornal de Matemática Elementar* 278, Setembro de 2009.

4. Exhibitions with Catalogues

* “Nery Delgado (1835-1908), Geólogo do Reino”, Museu Geológico, 30 September 2008-30 June 2009. (A.CARNEIRO, scientific organizer; V. LEITÃO, researcher)

* “Medir os Céus para Dominar a Terra”, Museum of Science of the University of Lisbon, 23 October 2009-30 April 2010 (L. M. CAROLINO, Scientific coordinator; T.S. MOTA, Member of the Organizing Committee).

* “200/150 anos Darwin: a revolução darwiniana” (including installation art and lectures), Library FCT/UNL, March-April 2009 (P. FONTES DA COSTA, I. AMARAL (co-organizers). This exhibition won the Evolve your library international contest, supported by Springer Publishers.

* “Estrelas de papel. Livros de astronomia dos séculos XIV a XVIII”, BNP, Lisboa, April-July (H. LEITÃO, Scientific coordinator, C.M.SILVA, member of the scientific team).

* “Registos do Céu. Astronomia em Manuscritos da Torre do Tombo», IAN-Torre do Tombo, Lisboa, September-December (H. LEITÃO, Scientific coordinator).

* “A Evolução de Darwin”, FCG, Lisboa (M.M. GAGO, member of the scientific team).

Funding

	2005	2006	2007	2008	2009
LA FCT	0,00	0,00	0,00	0,00	
Units FCT	0,00	0,00	0,00	66.825,00	77.810,00
Projects FCT	0,00	0,00	0,00	21.152,52	132.063,91
Other (National)	0,00	0,00	0,00	3.000,00	0,00
Other (International)	0,00	0,00	0,00	2.000,00	6.500,00
National Industry	0,00	0,00	0,00	0,00	0,00
International Industry	0,00	0,00	0,00	0,00	0,00
	0,00	0,00	0,00	92.977,52	216.373,91

General Indicators

	2005	2006	2007	2008	2009	Total
No. of Researchers Proposed	0,00	0,00	0,00	1,00	0,00	1,00
No. of Researchers Hired (LA)	0,00	0,00	0,00	0,00	0,00	0,00
Balance	0,00	0,00	0,00	0,00	0,00	0,00
No. of Researchers Hired (Ciência Programme)	0,00	0,00	0,00	0,00	0,00	0,00
No. of Researchers (FTE)	12,00	15,00	18,00	21,00	20,00	
Training Masters (Master thesis completed)	1,00	4,00	9,00	2,00	2,00	18,00
Training PhDs (PhD thesis completed)	1,00	0,00	2,00	2,00	1,00	6,00

Researchers Hired

Name	Start Date	End Date	Other Institution
No researchers found...			

Technical Personnel Hired

Name	Start Date	End Date	Other Institution
No technical personnel found...			

Additional Comments

Research Groups

Reference	Title / Principal Investigator
RG-LVT-286-1116	Ciência e Tecnologia (i): estudos históricos e interdisciplinares (Maria Paula Pires dos Santos Diogo)
RG-LVT-286-1600	Ciência e Tecnologia (ii): estudos históricos e cultura material (Ana Isabel da Silva Araújo Simões)

Group Description	
Title of Research Group:	(RG-LVT-286-1116) Ciencia e Tecnologia (i): estudos históricos e interdisciplinares
Principal Investigator:	Maria Paula Pires dos Santos Diogo
Main Scientific Domain:	História
Group Host Institution:	Faculdade de Ciências e Tecnologia - Universidade Nova de Lisboa
Funding, source, dates	
Funding, source, dates	
Key-words: science and engineering; science, technology and empire; science/art/ethics; knowledge and authority	
Funding:	
1. I&D UNIT (Pólo FCT/UNL):34 650€	
2. FCT	
A. Carneiro, Das Comissões Geológicas aos Serviços Geológicos (1848-1970): História e Herança Científica; 2009 Budget: 21.766,91	
I.Amaral, Tropical Medicine and The Portuguese Colonies (1887-1942), 2009 Budget: 5 731 €	
M. P. Diogo, The Popularization of Science and Technology, C2007/FCT 453 (2007-2012); Total Budget: Post-doc position during 5 years (Researcher: Maria Antónia Pires)	
M. P. Diogo, Portuguese Engineering and the African Empire: strategies of appropriation and management of the colonial territories of Angola and Mozambique (1850-1930); 2009 Budget: 5 600 €	

Funding, source, dates

3. INTERNATIONAL PROJECTS

M.P. Diogo, Manuais de Engenharia na Península Ibérica, nos séculos XVII e XVIII: um estudo comparativo. A.I. Luso-Espanhola E75-09. 2009 Budget: 2 000,00 €

M. P. Diogo (co-author), Making Europe. Technology and Transformations 1850-2000 book series. Foundation for the History of Technology, Eindhoven University of Technology. No budget in 2009.

M. P. Diogo, Ingeniería e Cultura Científica en Catalunya y España, Ministerio da Educación y Ciencia (España). No budget in 2009.

Objectives & Achievements

Objectives

This research group shares a common agenda with the other research line of this unit. It will contribute to: a growing professionalization and institutionalization of the history of science and technology in Portugal; bring to the forefront of Portuguese History the role played by scientists and engineers; and to analyze the role played by the so-called peripheral countries in the development of science and technology as crucial parameters in shaping the identity of modern Europe, namely by using the concepts of networking, circulation and appropriation of knowledge.

Together with our twin research line we are working on the following topics:

1. Popularization of science and technology in Portugal (18th-20th century)
2. Institutions for the Teaching of Science and Technology in Portugal
3. Collection based History of Science
4. History of Astronomy

Specific to this research group are the following research topics:

1. History of Geology

Objectives & Achievements

2. History of Life Sciences

3. History of Medicine

4. Engineering and Medicine in the Portuguese Empire

5. Engineering in Portugal

6. Intersections of science, art, literature, ethics, philosophy and society

All research projects have outputs, namely publications, organization of conferences and exhibits (see Group Productivity).

Main Achievements

We committed ourselves to contribute to unveil the role played by science and technology in Portuguese history, mainly from the 17th to the mid 20th century, by exploring some specific topics on an interdisciplinary basis. The number of publications (29), which includes an authored book published by an international press and an edited volume with 26 contributions both national and international, papers presented at meetings (more than 50), and sessions/conferences organized by the team members (10) speak by themselves (see group productivity). The significant number of lectures by invitation, both in Portugal and abroad, is also the recognition of the quality of the research group, as well as the editing of international volumes. Moreover one of the members of the unit participates in an international book series project - Making Europe: Technology and Transformations, 1850-2000 (Palgrave/MacMillan Publishers) - co-authoring one of the six volumes (vol 1. Europe in the Global World) (<http://www.tensionsofeurope.eu/Dissemination.asp?wh=IE/ToE%20Book%20series>) and three other members (2 from research line (i) and one from research line (ii)) are engaged in the publication of the biography of the Portuguese Botanist Correia da Serra in the United States (in the series of the Institute for Governmental Studies of the University of Berkeley, USA).

We continue to emphasize internationalization, and specifically by making known Portuguese case studies to the international community of historians of science and technology. Our strategy to rewrite the role of Portugal in the international context has been anchored in: (i) publications in international volumes, edited volumes and peer-reviewed journals; (ii) presentation of papers in international conferences; (iii) organization of sessions and conferences on topics related to the Portuguese case; (iv): editorial activity; (v) active participation in international research networks. We also engaged in conceptual and methodological international debates, namely concerning issues such as the relationship between centre(s) and periphery(ies), the meaning of being a scientist or an engineer in the periphery of Europe, the role played by the “tools of the Empire” in building up the Portuguese and the European identities.

Objectives & Achievements

We continued to contribute to enlarge the national community of historians of science and technology, by encouraging new scholars to participate in our research projects and by inviting them to present their research to an international audience, notably within PhD. programs. Presently we have 10 on-going PhDs (one in co-tutelle with Sorbonne) and 3 Post-Doc.

Junior scholars and students are strongly encouraged to participate in this international activity, mainly by presenting their papers to an international audience. When possible, and specially in the case of Post-doc students, we encourage our collaborators to go abroad and enrich their training in reference schools in the field of History of Science and Technology (Berkeley (USA), MIT (USA) Royal Institute of Technology (Sweden), Imperial College (UK). Recently (December 2009) a group of historians of technology (including one of the members of the unit) gathered around the Tensions of Europe research network developed an informal teaching network within the Erasmus framework that will allow MSc and PHd students to profit from different expertise in European universities, namely the University of Eindhoven, the Royal Institute of Technology, Sorbonne, Technical University of Athens and Faculty of Science and Technology/New University of Lisbon.

Within the unit itself, a regular collaboration with the twin research line and across different disciplines has been at the core of our work. In this context, the building of the new CIUHCT site has been an important step towards cohesion and visibility. Besides frequent occasional collaborations, we have also carried out joint projects such as the construction of a database and transcription of news on science and technology appearing in three Portuguese newspapers (1900-1926) and the instrument and collection based history of science.

Finally the unit members continue to develop their research within the framework of projects funded by the FCT/MCTES. During 2009 a new project has been funded and 2 projects have ended, both with excellent final evaluations.

Group Productivity

Publications in peer review Journals

DAVIDE SCARSO, “Dialettica e ultrascevisimo: note su una frattura filosofica (1955)”, *Bollettino Studi Sartriani*, V, 2009, 77-96.

DAVIDE SCARSO, “En même temps la même et tout autre chose: Merleau-Ponty reader of Lévi-Strauss”, *Chiasmi International*, 11, 2009, 99-110.

DAVIDE SCARSO, “Entre théorie du sensible et Logos du monde naturel. Lévi-Strauss et Merleau-Ponty”, *Figures de la psychanalyse*, 17, 2009, 57-73.

DAVIDE SCARSO, “Notas sobre o selvagem”, *Interact. Revista de arte, cultura e tecnologia*, 16, 2009 (publicação on-line: <http://www.interact.com.pt/>).

Group Productivity

Á. F. Silva, MARIA LUÍSA SOUSA, « In search of the urban variable : Understanding the roots of urban planning in Portugal », *Métropoles*, 6, Des mobilités urbaines à la ville mobile. Sur les traces des circulations urbaines, [mis en ligne le 18 novembre 2009]. <http://metropoles.revues.org/document4029.html>.

J.K.Brown, G.L.Downey, MARIA PAULA DIOGO, "Engineering Education and the History of Technology", *Technology and Culture*, 50, 4 (October 2009), 737-752.

PALMIRA FONTES DA COSTA, "Secrecy, Ostentation and the Illustration of Exotic Animals in Sixteenth-Century Portugal", *Annales of Science*, 66 (2009) 59-83.

TERESA SALOMÉ MOTA, "Os olhos da Geologia, o discurso dos engenheiros e o saber dos geólogos: o início da utilização de métodos geofísicos na prospecção de recursos minerais em Portugal", *Comunicações Geológicas*, 96 (2009), 129-142.

Other publications International

BOOKS:

A. Cardoso de Matos, MARIA PAULA DIOGO, I. Gouzevitch, A. Grelon (eds.), *Jogos de Identidade Profissional: os Engenheiros entre a Formação e a Acção/ Les enjeux identitaires des ingénieurs: entre la formation et l'action/The Quest for a Professional Identity: Engineers between Training na Action*, Lisboa, Colibri, 2009

PALMIRA FONTES DA COSTA, *The Singular and the Making of Knowledge*, Cambridge: Cambridge Scholars Publishing, 2009

CHAPTERS OF BOOKS

ANA CARNEIRO, VANDA LEITÃO, 'Engineers, the Geological Survey of Portugal (1857-1908), and the Professionalization of Geologists,' in A. Cardoso de Matos M. P. Diogo; I. Gouzevitch; A. Grelon, eds., *Jogos de Identidade Profissional: os Engenheiros entre a Formação e a Acção/The Quest for a Professional Identity: Engineers between Training na Action*, Lisbon, Colibri, 2009, pp. 277-310.

JOSÉ LUÍS CÂMARA LEME, "Foucault e o Cinismo de Manet", in *Para Uma Vida Não- Fascista, Estudos Foucaultianos*, Margareth Rago e Alfredo Belo Veiga-Neto (eds.), Horizonte, Editora Autêntica, pp. 186-199.

Group Productivity

MARIA PAULA DIOGO, “Domesticating the wilderness: Portuguese engineering and the occupation of Africa”, in Cardoso de Matos, A., Diogo, M.P., Gouzévith, I., Grelon, A., *Jogos de Identidade: os engenheiros entre a formação e a acção* (Les enjeux identitaires des ingénieurs: entre la formation et l’action), Lisboa, Colibri, 2009, pp. 471-482.

MARIA PAULA DIOGO, Entrada “Engineers”, *The Dictionary of Transnational History*, Akira Iriye & Pierre-Yves Saunier (eds), Palgrave Macmillan, 2009, p.330-333 (2007, <http://www.palgrave.com/history/transnational/index.asp>).

PALMIRA FONTES DA COSTA, “Women and the Popularisation of Botany in Early Nineteenth-Century Portugal: The Marquesa de Alorna’s Botanical Recreations”, in Faidra Papanelopoulou, Agustí Nieto-Galan and Enrique Perdiguero (eds.), *Popularisation of Science and Technology in the European Periphery*, Ashgate: 2009.

OTHERS

ANA SIMÕES; ANA CARNEIRO; MARIA PAULA DIOGO, “What can news about earthquakes, volcanoes and eclipses tell us? Science in the Portuguese press at the beginning of the 20th century,” in Arne Schirrmacher (ed.), *Communicating Science in 20th Century Europe. A Survey on Research and Comparative Perspectives*, Preprints Collection (Preprint 385), Berlin, Max-Planck-Institut für Wissenschaftsgeschichte, 2009, pp. 27-45.

ANA CARNEIRO, ‘Nery Delgado (1835-1908): Diplomacia e Geologia,’ in *Actas do Congresso Scientiarum Historia II / Encontro Luso-Brasileiro de História da Ciência*, Rio de Janeiro, Universidade Federal do Rio de Janeiro, 2009, pp. 337-343.

ANA PAULA SILVA, “Portugal, os cabos submarinos e a globalização: 1869-1939” (“Portugal, the Submarine Cables and Globalization: 1869-1939”), *Proceedings of Scientiarum Historia II - Luso-Brazilian Meeting of History of Science*, Rio de Janeiro, 28-30 October, 2009.

CÂNDIDO MARCIANO DA SILVA, “Bianchini’s Patron: El Rei D. João V de Portugal”, *Cosmology Across Cultures*, J.A.Rubiño-Martín, J.A.Belmonte, F. Prada, A.Alberdi, (eds.), APS Conference Series, Vol. 409, 2009, pp.203-208.

ISABEL AMARAL, ‘A emergência da medicina tropical em Portugal no século XX: a influência dos modelos inglês e francesa,’ in *Actas do Congresso Scientiarum Historia II / Encontro Luso-Brasileiro de História da Ciência*, Rio de Janeiro, Universidade Federal do Rio de Janeiro, 2009, pp. 659-661.

Group Productivity

ISABEL AMARAL, 'Os pasteurianos e a história da medicina portuguesa: Ricardo Jorge e a peste bubónica na cidade do Porto (1899-1900)' in Actas do Congresso Scientiarum Historia II / Encontro Luso-Brasileiro de História da Ciência, Rio de Janeiro, Universidade Federal do Rio de Janeiro, 2009, pp. 663-666.

A.Cardoso de Matos, MARIA PAULA DIOGO, "From the École des Ponts et Chaussées to Portuguese railways: the transfer of Technological Knowledge and Practices", in Magda Pinheiro (ed.), Railway Modernization: an Historical Perspective (19th-20th centuries), Lisboa, CEHCP-ISCTE-IUL, 2009, pp. 77-90.

Other publications National

ANTÓNIO MANUEL NUNES DOS SANTOS, "Consciência do Cidadão, consciência do cientista - Impacte na Justiça" in Justiça e Sociedade, Rui Rangel e José Eduardo Sapateiro (coords), Almedina, 2009

CÂNDIDO MARCIANO DA SILVA, "D. João V, patrono do astrónomo Bianchini", in Estrelas de papel. Livros de astronomia dos séculos XIV a XVIII (catalogue of the exhibition), BNP, Lisboa, 2009, pp. 49-65.

CHRISTOPHER AURETTA, "Pleito, Pedagogia e Parábola em 'À porta da lei' de Franz Kafka (1883-1924)", in Justiça e Sociedade, Rui Rangel e José Eduardo Sapateiro (coords.), Coimbra: Almedina, 2009, pp. 205-221.

TERESA SALOMÉ MOTA, "Afinal, quem fez rebentar os limites do tempo? Reflexões à volta do papel da História das Ciências no ensino da Geologia" in Almeida, A. e Strecht-Ribeiro, O., Livro de Actas do XXIX Curso de Actualização de Professores em Geociências, (Escola Superior de Educação de Lisboa, 2009).

L. Carolino, TERESA SALOMÉ MOTA (eds.), Catálogo da exposição "Medir os Céus para Dominar a Terra", (Lisboa, Museu da Ciência da Universidade de Lisboa).

L. Carolino, TERESA SALOMÉ MOTA, "O Ensino da Astronomia na Escola Politécnica de Lisboa, 1837-1911" in Catálogo da exposição "Medir os Céus para Dominar a Terra. O Ensino da Astronomia na Escola Politécnica de Lisboa (1837-1911)", (Lisboa, Museu da Ciência da Universidade de Lisboa).

VANDA LEITÃO, "Filipe Folque (1800-1874): breve biografia", Medir os Céus para Dominar a Terra: A Astronomia na Escola Politécnica de Lisboa (1837-1911) – Medir o Tempo, Medir o Mundo, Medir o Mar (catálogo da exposição Museu de Ciência da Universidade de Lisboa, Outubro 2009 a Abril 2010), 12-15

Master and Ph.D. thesis completed

Paulo Nuno Torrão Pinto Martins, "A Mecânica Quântica e o pensamento de Amit Goswami" (PhD. Thesis), Faculdade de Ciências e Tecnologia da Universidade Nova de Lisboa, 31.03.09, supervisors: A.M. NUNES DOS SANTOS; João Resina Rodrigues.

Group Productivity

DAVIDE SCARSO, “Merleau-Ponty e Lévi-Strauss. Reconstrução de um diálogo entre Filosofia e Ciências Humanas” (Phd. Thesis), Faculdade de Letras da Universidade de Lisboa, 21.05.09, supervisor: José Adriano Rodrigues Barata Moura.

Organization of conferences

ANA CARNEIRO (member of the Scientific Committee) Scientiarum Historia II / Encontro Luso-Brasileiro de História da Ciência, Rio de Janeiro, 28-30 de October 2009.

ANA CARNEIRO (Chairperson and coordinator) session ‘Filosofia, Historiografia, Epistemologia e Literatura’ Scientiarum Historia II Encontro Luso-Brasileiro de História da Ciência, Rio de Janeiro, 28-30 de October 2009

ANA CARNEIRO (co-organizer), Symposium INHIGEO, Seeing and Measuring, Constructing and Judging: Instruments in the History of the Earth Sciences, in the context of the XXIII International Congress of History of Science and Technology, Ideas and Instruments in Social Context, Budapest (Hungria), 28 July-2 August, 2009. <http://www.conferences.hu/ichs09/index.htm>

ANA PAULA SILVA (co-organizer), session “The Transnational Geopolitics of Energy Supply”, 51st SHOT Annual Meeting, Pittsburgh (USA), 15-18 October, 2009.

FERNANDO EGÍDIO REIS (co-organizer), Symposia S42, “The Emergence of the Periodical Form (17th-18th Centuries) as an Instrument of Scientific Change”, Budapest, 29-31 July, XXIII International Congress of History of Science and Technology

ISABEL AMARAL, ANA CARNEIRO, TERESA SALOMÉ MOTA, Medicina, Laboratório e Sociedade: Trajectos e expressões da História da Medicina e da Saúde Pública em Portugal - em Homenagem a Ricardo Jorge (1858-1939), Lisboa, 25-27 May 2009

<http://www.medicinaeimperio.net/>

JOSÉ LUÍS CÂMARA LEME, Instintos e Instituições - Colóquio Internacional de Filosofia e Ciências do Homem, Biblioteca Nacional e Faculdade de Ciências e Tecnologia da Universidade Nova de Lisboa, 26-28 November 2009.

MARIA PAULA DIOGO, III Jornada de Trabalho da Acções Integradas Luso-Espanhola Manuais de engenharia na Península Inércia (secs. XVII-XVIII): um estudo comparativo, Monte de Caparica, 10-11 December 2009

Group Productivity

Tiago Saraiva, ANA SIMÕES, Ana Matos, ANA CARNEIRO, HoST 4th Annual Workshop Places of Modern Science: situated laboratories, dispersed artifact, Instituto de Ciências Sociais, Lisboa, 14-15 December de 2009.

Tiago saraiva, MARIA PAULA DIOGO, Internacional Workshop Transnational Commons in Europe, Lisboa, 8-9 May 2009

Internationalization

Besides membership in international societies (functions in scientific and executive committees), refereeing for scholarly journals, editorial boards of international journals, talks in international conferences (41), and organization of sessions in international conferences (10) we highlight :

PROJECTS

- * M. P. DIOGO, * Manuais de Engenharia na Península Ibérica
- * Ingeniería y Cultura científica en Cataluña y España (1720-2000)
- * Making Europe: Technologies and Transformations, 1850-2000

PUBLICATIONS

- * A. Cardoso de Matos, M. P. DIOGO, I. Gouzevitch, A. Grelon (eds.), Jogos de Identidade Profissional: os Engenheiros entre a Formação e a Acção/ Les enjeux identitaires des ingénieurs: entre la formation et l'action/The Quest for a Professional Identity: Engineers between Training and Action, Lisboa, Colibri, 2009
- * J.K.Brown, G.L.Downey, M. P. DIOGO, "Engineering Education and the History of Technology", Technology and Culture, 50, 4 (October 2009), 737-752.
- * P.F. COSTA authored a book published in an international publisher.

CONSULTANCY

- * M. P. DIOGO, * Member of the Melvin Kranzberg Prize Committee (SHOT)
- * Referee of the ESF (Committee for Humanities), as expert in STS (Science, Technology and Society)

Group Productivity

* Contribution with data to the research on attitudes towards entrepreneurship and innovation in Portugal during the Industrial Revolution (Research Department Group at the World Bank, Washington)

* P. F.COSTA, Referee of the NSF (USA)

GRADUATE TRAINING NETWORKS:

* University Nouvelle Sorbonne/Paris 3: 1 PhD. Student

* Royal Institute of Technology (Sweden), Imperial College (UK): 1 post-doc student

* First meeting of ToE aiming at developing an informal teaching network within the Erasmus framework that will allow MSc and PHd students to profit from different expertise in European universities,

RESEARCH NETWORKS;

* Science and Technology in the European Periphery-STEP (several members of the Unit (sénior(founding members) and students)

* Technology in the Making of 20th century Europe: ToE (M. P. Diogo, A. P. Silva, L. Sousa)

* International Network of Engineering Studies (M. P. Diogo, founding member)

* Circulating Knowledge in Early Modern Science (F. E. Reis)

OTHERS:

* M. P. DIOGO, Associate Editor of Journal of Engineering Studies

* A. CARNEIRO, M. P. DIOGO, Editorial Board of HoST

* A. CARNEIRO Book Review Editor of HoST

Group Productivity

* P.F.COSTA, Sociedade Brasileira de Filosofia e História da Biologia: Membro fundador.

* Refereeing in International Journals (several senior members of the Unit)

Government/Organization contract research

MARIA PAULA DIOGO, Referee of the European Science Foundation (Committee for Humanities), as expert in STS (Science, Technology and Society)

MARIA PAULA DIOGO, Referee of Post-Doctoral and PhD Grants, FCT/MCTES (panel of History of Science and Technology)

PALMIRA FONTES DA COSTA, Referee of the National Science Foundation (USA)

Future Research

Objectives

From the structural and organizational point of view, CIUHCT will continue to foster internationalization.

From the point of view of our research agenda we will encourage collective projects, both involving the two research lines of this Unit as well as other international groups or networks, dealing with the main topics: 1) circulation of scientific and technological knowledge; 2) local embedding of scientific and technological practices; 3) history of science and technology based on crossing cultures: printed, manuscript, oral, and material sources; 4) history of science and technology in an interdisciplinary context – art, architecture, literature, cinema, ethics, philosophy; 5) database construction of Portuguese scientists and engineers.

Methodologically comparative studies will be encouraged in order to better assess the contributions of Portuguese scientists, engineers, and institutions in the construction of an evolving European identity.

Besides collective projects this research line will pursue ongoing research topics, namely by presenting new research projects to the FCT/MCTES, by participating in international projects, and by delivering outputs such as books and articles as the result of our present research. Our main topics will be:

* Popularization of Science and Technology in Portugal: the ways in which science and technology were disseminated among non-specialised audiences and the perceptions of these audiences about the role and importance of science and technology in modernizing Portugal.

Future Research

* History of Geology: institutionalization and role of geology in Portugal in the context of the various incarnations of the Geological Survey, 1857-1974. Preservation of the associated scientific heritage.

* History of Life Sciences: natural history in 16th century Portugal; history of medicine in 18th century Portugal; history of the understanding of singular phenomena of nature in 18th century Europe.

* History of Astronomy: the concept of Equinox in megalithic times and the analysis of orientation data in the archaeological record.

* History of Medicine: Emergence of medical specialities; construction of narratives in the history of contemporary medicine; contributions to the Portuguese health museum; History of Biomedicine (crossing the laboratory and the clinic) in XXth century Portugal

* Engineering and Medicine in the Portuguese Empire: the “domestication” of the Portuguese colonies through the use of engineering (roads, railways, harbours, electricity, sewage) and medicine.

* Engineering in Portugal: Portuguese engineers and the metrics of progress; training of engineers: textbooks and circulation of knowledge.

* Intersections of science, art, literature, ethics, philosophy and society

**Science, theatre and social responsibility; bioart, ethics and society; art and the changing environment;

** The interplay of science, Enlightenment culture and drama, as seen in the works of Fernando Pessoa; the presence of Darwin’s publications and Darwinism as seen in Portuguese writing (19th-20th century); narrative and multi-media artwork as vehicle of diffusion and mediator of tensions created by technoscientific innovation

**The animal condition: assessing how contemporary philosophy considers the simultaneous articulation between man’s relation to non-human animals and to himself as an animal.

In what follows we highlight the following specific 2010 activities:

Sources

*Database with transcription of news on science and technology appearing in three Portuguese newspapers (1900-1926);

Future Research

*Cataloguing of the archive of the ex- Institute of Geology and Mining, today INETI (National Institute of Engineering, Technology and Innovation), its preventive conservation and the beginning of its digitization;

* Database with information on the building of infrastructures in Angola and Mozambique (19th-20th centuries) (Arquivo Nacional Ultramarino/National Overseas Archive)

Publications

*A book on the history of the Portuguese Geological, whose provisional title is The Ground Beneath our Feet: the History of the Portuguese Geological Survey (1848-1974).

* A book on Portuguese colonial science, technology and medicine, whose provisional title is The Other Face of the Empire: Science, Technology and Medicine in the Portuguese colonies (19th-20th centuries).

*The translation into English of the scientific biography of the Abbé Correia da Serra is expected to be complete and to be published in the series of the Institute for Governmental Studies of the University of Berkeley, USA.

* Writing of the co-authored book Europe in the Global World, volume 1 of the book series Making Europe: Technology and Transformations, 1850-2000 (Palgrave/MacMillan Publishers; Johan Schot, Philip Scranton editors) (expected to be published in 2011)

Funding, source, dates

ONGOING PROJECTS

NOTE: Only projects led by members of Research Line (i) are listed.

ANA CARNEIRO, PI, Das Comissões Geológicas aos Serviços Geológicos (1848-1970): História e Herança Científica, PTDC/HCT/65345/2006, (2007-2011). 2010 Budget: 6.556,01€

ANA PAULA SILVA, PI, "The Electrification of African Portuguese Colonies"/"A Electrificação das Colónias Africanas" FCT/MCTES, SFRH/BPD/44257/2008 (2009-2012). Budget 3 000,00 €/year (partial time)

MARIA PAULA DIOGO, PI, Manuais de Engenharia na Península Ibérica, nos séculos XVII e XVIII: um estudo comparativo. Acção Integrada Luso-Espanhola E75-09.

Future Research

2010 Budget: 2 000,00 €

MARIA PAULA DIOGO, PI, The Popularization of Science and Technology, C2007/FCT 453 (2007-2012). Total Budget: Post-doc position during 5 years (Researcher: Maria Antónia Pires)

MARIA PAULA DIOGO (co-author), Europe in the Global World, vol. 1 of the Making Europe. Technology and Transformations 1850-2000 book series. Foundation for the History of Technology, c/o Eindhoven University of Technology. Budget: 6500 € for to years (2010-2011).

PENDING PROJECTS

MARIA ANTÓNIA ALMEIDA, PI, Science and technology in the Portuguese press, from the First Republic to Democracy (1910-1976)

PTDC/HIS-HCT/110164/2009

Requested funding: 144.759,00€.

MARIA PAULA DIOGO, PI, Domesticating the Wilderness: European engineering and (re)creation of the modern African landscape (19th-20th centuries).

PTDC/HIS-HCT/111819/2009

Requested funding: 73 840 €.

Group Description	
Title of Research Group:	(RG-LVT-286-1600) Ciência e Tecnologia (ii): estudos históricos e cultura material
Principal Investigator:	Ana Isabel da Silva Araújo Simões
Main Scientific Domain:	História
Group Host Institution:	Faculdade de Ciências - Universidade de Lisboa
Funding, source, dates	
Funding, source, dates	
<p>1. I&D Unit: 30230 euros</p> <p>2. FCT projects:</p> <p>"Paving the way for integrated archival and collection-based research in the history of science: Preservation, access and case-studies of the collections of the Museum of Science (University of Lisbon)". PTDC/HCT/64181/2006. PI: Marta Lourenço (2008-2011). Funding 2009: 43368 euros.</p> <p>"Reading newspapers: an open window to representations of science and technology in the Portuguese press (1900-1926)". PTDC/HCT/68210/2006). PI: Ana Simões (2008-2011). Funding 2009: 28,966 euros.</p> <p>"História dos Jogos em Portugal," PTDC/HCT/708232/2006. PI: Jorge Nuno Silva, (Jan 2009-Jan 2012). Funding 2009: 26, 632 euros.</p> <p>"Thesaurus of scientific instruments in Portuguese" (with Marcus Granato, Museum of Astronomy of Rio de Janeiro) (financed by FCT/CNPq). HC/0099/2009. PI Portuguese Part: Marta Lourenço (2006-2011). Funding 2009: 4500 euros</p> <p>3. Other sources of funding:</p> <p>Institutional Histories of Polytechnic School and Faculty of Sciences, Contract Compromisso Ciência nº17/Ciência2007/2007 (C2007-UL-58-MP); Total Budget: Post-doc position during 5 years (Luís Miguel Carolino)</p>	

Objectives & Achievements

Objectives

This research group shares a common agenda with *Ciência e Tecnologia* (i) made visible by the scientific organization of this Unit. Participation in collective projects aims at building a common identity for the Unit and includes a common web-site; database of Portuguese scientists and engineers; bibliographic guide; HoST workshops and conferences; collection CIUHCT; pre-print series; and finally accessibility of primary sources.

Beyond former collective ventures, the implementation of projects including members of the 2 research groups is deemed crucial. Such is the case of the two projects (popularization of science and institutional histories) associated with two Post-Docs under *Compromisso com a Ciência 2007* and two projects (popularization, collection-based history of science).

Specific to this research group, and bearing continuity with former research activities, the following research topics will be under scrutiny:

- History of physical sciences, 15th-20th centuries: completion of the Complete Works of Pedro Nunes; role of mathematical instruments and question of mathematical certainty in the emergence of modern science; institutional histories of Polytechnic School, Faculty of Sciences of University Lisbon and Astronomical Observatory of Lisbon, emergence and development of scientific disciplines (physics, chemistry, astronomy, meteorology etc); popularization of science and technology; historiographical considerations on science in the European Periphery; history of quantum chemistry.
- Material culture and collection based history of science – case studies involving collections held at Museum of Science and the disassembled collection of the Cabinet of Physics of Ajuda. Special emphasis will be given to the organization of working tools, namely the production of an inventory of national scientific heritage, and the participation in the production of a Thesaurus of Scientific Instruments in Portuguese;
- History of mathematical games – Study of differential evolution of games migrating from Africa to the Madeira island and the Portuguese mainland.
- History of technology - plastics and PVC.

Obviously, former topics will integrate research by graduate students.

Main Achievements

The number of international (peer review journals and others) (12+4) and national publications (40) (with several publications in press), together with papers presented at international (47), and national conferences (44), including invited talks, and the organization of sessions and/or conferences both nationally and abroad (13) testify to the productivity of the group and its growing internationalization.

Objectives & Achievements

In fact, a steady increase in publications has occurred since the Unit's creation (2007: 34; 2008: 46; 2009: 56). This year 3 MSc dissertations were upgraded to be published as books. Two catalogues (associated with two exhibitions we prepared) were published.

If publications are good pointers to the productivity of our research group, some of our main 2009 activities were not made visible through our publication output. Therefore, we consider crucial to emphasize the following projects:

--Publications

- *Preparation of volumes V and VII of Complete Works of Pedro Nunes.

- *Translation and preparation for publication of the Optics and Catoptrics of Euclid

- *First steps in the translation of the Sphaerica of Theodosius.

- *Revision of translation of the Scientific Biography of Correia da Serra into English to be published by a USA publisher.

- *Building on the output of the FCT project on Scientific Manuscripts held at the National Library of Portugal (classified as excellent), preparation of a Catalogue of the BNP Scientific Manuscripts has started.

--Archives accessibility and scientific heritage:

- *Organization, preservation and cataloguing of one of the most important Portuguese historical archives for science located at the Museum of Science of the University of Lisbon. This archive holds printed and manuscript sources from the Polytechnic School of Lisbon (1837-1911) and the Faculty of Sciences of the University of Lisbon (1911-1980s). It also includes the organization and cataloguing of the Historical Archive of the Observatory of the Polytechnic School.

- * Preparation of an on-line Catalogue of the documents held at MCUL.

- *First steps into the organization of an oral history archive associated with the Faculty of Sciences of Lisbon.

Objectives & Achievements

*Collaboration of members of CIUHCT, mediated by MCUL, in the organization, preservation and accessibility of the scientific heritage and collections of the following institutions: Academia das Ciências de Lisboa; Escola Secundária de Passos Manuel; Escola Secundária de Camões; Instituto Superior Técnico; Hospitais Cívicos de Lisboa Central; Palácio Nacional da Ajuda; Palácio Nacional de Sintra.

* Construction of a database including transcription of news on science and technology appearing in three Portuguese newspapers (1900-1926)

All former activities should be viewed in the context of an emphasis on the importance of internationalization, aiming at making known Portuguese case studies to the international community of historians of science and technology. Our strategy to rewrite the role of Portugal in the international context has been anchored in: (i) publications in international volumes, edited volumes and peer-reviewed journals; (ii) presentation of papers in international conferences; (iii) organization of sessions and conferences on topics related to the Portuguese case; (iv): editorial activity, including the edition of Complete Works of Pedro Nunes; Collection History and Philosophy of Science; Collection Science and Enlightenment and Collection CIUHCT; (v) active participation in international research projects (3) and networks (2). (For internationalization of CIUHCT- University of Lisbon Group see Internationalization). We also engaged in conceptual and methodological international debates, namely concerning issues such as the relationship between centre(s) and periphery(ies), and the meaning of being a scientist in the periphery of Europe.

Lectures and the organization of 3 Exhibitions to the general public were at the heart of our outreaching activities. Many were delivered in the context of the Year of Astronomy and included talks on Galileo, the role of the telescope and its diffusion in Portugal; Einstein, Eddington and the expedition to Principe. Furthermore many talks on Gago Coutinho and his role navigational astronomy; the history of mathematical games, and scientific heritage were also delivered by the Group.

Finally we contributed to enlarge the national community of historians of science and technology, by encouraging new scholars to participate in our research projects, notably within our MSc and the PhD programs. Besides on-going theses (9 PhDs, 5 MSc, 1 Post-Doc), 2 MSc students defended successfully their dissertations. We also participated in PhD and MSc defence committees in Portugal, as well as in various national graduate programs by delivering lectures or groups of lectures.

Group Productivity

Publications in peer review Journals

JÚLIA GASPAR, MARIA DO MAR GAGO, ANA SIMÕES, “Scientific life under the Portuguese dictatorial regime (1929-1954): the communities of geneticists and physicists,” HoST 3 (2009).

ANA SIMÕES, book review of Nestor Herran et al, Beyond Borders, ISIS 100 (4), (2009), 891-2.

ANA SIMÕES, book review Kostas Gavroglu, O Passado das Ciências como História, HoST 3 (2009).

Group Productivity

ANA SIMÕES, “Relaciones Peligrosas o asociaciones inevitables: la química cuántica en la encrucijada de la química, la física y las matemáticas”, *Anales de la Real Sociedad Española de Química* 105, (2009), 319-327.

ANA SIMÕES, ELSA MOTA, Paulo Crawford, “Einstein in Portugal. Eddington’s 1919 expedition to Principe and the reactions of Portuguese astronomers (1917-1925)”, *British Journal for the History of Science*, 42 (2) 2009, 245-73.

HENRIQUE LEITÃO, “Hidden grandeur in the Shadow of an Emperor” [com tradução em chinês], *Chinese Cross Currents*, 6 (2009) 142-149.

LUÍS MIGUEL CAROLINO, “Cristoforo Borri e o impacto da nova astronomia em Portugal no século XVII”, *Revista Brasileira de História da Ciência* (2009), 2:2, 160-185.

LUÍS MIGUEL CAROLINO, “O Paraíso do Astrónomo: o Céu Empíreo segundo Cristoforo Borri (1583-1632)”, *Clio – Revista de Pesquisa Histórica, Universidade Federal de Pernambuco - Recife*, 27:1 (Dossiê Estudos Jesuíticos) (2009), 257-278.

M.C. LOURENÇO, 2009. O patrimônio da ciência: importância para a pesquisa. *Museologia e Patrimônio* [Rio de Janeiro] 2 (1): 47-53.

S. Soubiran, M.C. LOURENÇO, R. Wittje, S. Talas & T. Bremer, 2009. Initiatives européennes et patrimoine universitaire. *La Lettre de l’OCIM* [Université de Bourgogne], 123: 5-14.

PEDRO RAPOSO, book review of Anita McConnel, *Jesse Ramsden (1735-1800): London’s Leading Instrument Maker* (Ashgate, 2008), *Isis*, 100 (3) (2009), 659-60.

PEDRO RAPOSO, book review of de Richard Dunn, *The Telescope - A Short History* National Maritime Museum; 2009), *Viewpoint - Newsletter of the British Society for the History of Science*.

Other publications International

ANA SIMÕES, Ana Carneiro, Paula Diogo, “What can news about earthquakes, volcanoes and eclipses tell us? Science in the Portuguese press at the beginning of the 20th century,” in Arne Schirmacher, ed., *Communicating Science in the 20th century Europe. A survey on research and comparative perspectives*. MPIWG - Max Planck Institute for the History of Science. Preprint 385 (2009), 27-43.

HENRIQUE LEITÃO, “Pedro Nunes against Oronce Fine: Content and context of a refutation”, in Alexander Marr, ed., *The Worlds of Oronce Fine: Mathematics, Instruments, and Print in Renaissance France* (Donington: Shaun Tyas, 2009), pp. 156-171.

Group Productivity

M.C. LOURENÇO, A. Carneiro (eds), Spaces, Collections and Archives in the History of Science: The Laboratorio Chimico Ouverture (Museu de Ciência da Universidade de Lisboa, 2009).

M.C. LOURENÇO, 2009. Est-ce qu'elles le méritent? Les collections d'instruments scientifiques dans les universités européennes. In A. Rasmussen, S. Boudia & S. Soubiran (eds). Patrimoine et communautés savants, pp. 113-122. Presses Universitaires de Rennes.

Other publications National

Paulo Crawford, ANA SIMÕES, “O eclipse de 29 de Maio de 1919. A.S. Eddington e os astrónomos do Observatório da Tapada,” *Gazeta de Física*, 32 (2009), 22-28.

CONCEIÇÃO TAVARES, Ana Carneiro, Maria Paula Diogo, ANA SIMÕES, “A Imagem Pública da Ciência na Imprensa Portuguesa (1900-1901)”, in Carlos Cordeiro, Susana Serpa Silva (coord.), *A História da Imprensa e a Imprensa na História. O contributo dos Açores*, Ponta Delgada: Centro de Estudos Gaspar Frutuoso, CEIS 20, 2009, pp. 519-536.

ANTÓNIO COSTA CANAS, *Os Submarinos em Portugal* (Lisboa: Prefácio, 2009).

ANTÓNIO COSTA CANAS, Maria Eugénia Ferrão (eds.), *A Matemática no tempo de Mestre José Vizinho* (Lisboa: Gradiva, 2009).

ANTÓNIO COSTA CANAS, “Tiphys Lusitano do Padre Valentim Estancel”, *Boletim da SPM*, 61 (Outubro 2009), 47-79.

ANTÓNIO COSTA CANAS, “Contributos de Gauss para a Geodesia”, *Boletim da SPM*, 60 (Maio 2009), 67-86.

António Costa Canas, “Gago Coutinho — Geógrafo”, *Anais do Clube Militar Naval*, CXXXIX, (Jan-Mar 2009), 29-44.

ANTÓNIO COSTA CANAS, “Gago Coutinho — Criador da Navegação Aérea Astronómica”, *Anais do Clube Militar Naval*, CXXXIX, (April-June 2009), 149-170.

BRUNO ALMEIDA, “Pedro Nunes e Edward Wright: o programa noniano na construção do império britânico”, *Actas do Colóquio Jornadas do Mar 2008 – O Oceano. Riqueza da humanidade* (Lisboa: Escola Naval, 2009), pp. 232-239.

CONCEIÇÃO TAVARES, Albert I do Mónaco, Afonso Chaves e a Meteorologia nos Açores, Ponta Delgada: Sociedade Afonso Chaves, Centro Interuniversitário de História das Ciências e da Tecnologia, 2009.

Group Productivity

CONCEIÇÃO TAVARES, “Francisco de Arruda Furtado: Em busca de nome próprio”, in Francisco de Arruda Furtado na Biblioteca Pública e Arquivo Regional de Ponta Delgada, Ponta Delgada: BPARPD, 2009, pp. 13-21.

HENRIQUE LEITÃO, Os Descobrimentos Portugueses e a Ciência Europeia (Lisboa: Alêtheia, Fundação Champallimaud, 2009). English version: The Portuguese Discoveries and the Science in Europe, trad. por William Gallagher (Lisboa: Alêtheia, Champallimaud Foundation, 2009).

HENRIQUE LEITÃO, Lúcia Martins, eds., Estrelas de Papel. Livros de Astronomia dos séculos XIV a XVIII. (Lisboa: Biblioteca Nacional de Portugal, 2009).

HENRIQUE LEITÃO, ed., Manuel Bocarro, Tratado dos Cometas que apareceram em Novembro passado de 1618. Fac-simile Edition (Lisboa: Biblioteca Nacional, 2009).

HENRIQUE LEITÃO, “Estrelas de papel: livros de astronomia dos séculos XIV a XVIII”, in: Henrique Leitão, Lúcia Martins, eds., Estrelas de Papel. Livros de Astronomia dos séculos XIV a XVIII (Lisboa: Biblioteca Nacional de Portugal, 2009), pp. 19-42.

HENRIQUE LEITÃO, “Manuel Bocarro Francês e o Tratado dos Cometas de 1618”, in Henrique Leitão, ed., Manuel Bocarro, Tratado dos Cometas que apareceram em Novembro passado de 1618. Fac-simile edition. (Lisboa: Biblioteca Nacional, 2009).

HENRIQUE LEITÃO, “Apresentação”, in Maria Teresa Lopes Pereira, Pedro Nunes. Em Busca das Suas Origens (Lisboa: Colibri, 2009), pp. 11-13.

JORGE NUNO SILVA, Maria Augusta Neves, Jogos e Matemática, Porto Editora 2009.

JORGE NUNO SILVA (Ed.), Proceedings of the Board Game Studies Colloquium XI, Ludus 2009.

JORGE NUNO SILVA, Alda Carvalho, CARLOS PEREIRA DOS SANTOS, João Pedro Neto. “Jogos matemáticos, a Portuguese project”, in Proceedings of the Board Game Studies Colloquium XI, Jorge Nuno Silva (Ed.), Ludus 2009, pp. 19–25.

JORGE NUNO SILVA, “Jogos de outros tempos”, in A matemática no tempo do mestre José Vizinho, A. C. Canas & M. E. Ferrão (coords.), Gradiva 2009, ISBN 978-989-616-348-8, pp. 177–203.

Group Productivity

JORGE NUNO SILVA, “Notas sobre o problema anterior e Frações Egípcias”, Boletim da SPM 60 (Maio 2009), 87–89.

JORGE NUNO SILVA, “Polinómios”, Gazeta de Matemática 157 (Abril 2009), 5–6.

JORGE NUNO SILVA, “Entrevista com Ron Aharoni”, Gazeta de Matemática 157, (Abril 2009), 32–33.

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JOSÉ ALBERTO SILVA, A apropriação da filosofia natural em Teodoro de Almeida (1722-1804), (Braga: CIUHCT, 2009).

JOSÉ MANUEL MALHÃO PEREIRA, “O Padre Fernando Oliveira. Um Marinheiro Português do Século XVI”, in Fernando Oliveira. Um Humanista Genial, Aveiro, Universidade de Aveiro, 2009.

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LUÍS MIGUEL CAROLINO, Teresa S. Mota, “O ensino de Astronomia na Escola Politécnica de Lisboa, 1837-1911”, in L.M. Carolino e T.S. Mota, eds., Medir os Céus para dominar a Terra. A Astronomia na Escola Politécnica de Lisboa, 1837-1911. Medir o Tempo, Medir o Mundo, Medir o Mar, Lisboa, Museu de Ciência da Universidade de Lisboa, 2009, pp. 6-9.

LUÍS TIRAPICOS, “Tycho Brahe e os instrumentos que reformaram a astronomia”, in Henrique Leitão, Estrelas de Papel. Livros de astronomia dos séculos XIV a XVIII (Lisboa: Biblioteca Nacional de Portugal, 2009), pp. 43-48.

Group Productivity

LUÍS TIRAPICOS, "O Almanach perpetuum e o impacto da imprensa na astronomia e na náutica dos séculos XV e XVI", in António Costa Canas, Maria Eugénia Ferrão (ed.s), *A matemática no tempo do mestre José Vizinho* (Lisboa: Gradiva, 2009), pp. 143-154.

MARIA DO MAR GAGO, "A História da Biologia em Portugal (1700-1946): a tradição naturalista, as ciências biomédicas e a emergência da genética em Portugal", *Biologia e Biólogos. Ensino, Emprego e Sociedade* (Lisboa: Esfera do Caos, 2009).

MARIA DO MAR GAGO, Ricardo Mendes, "O que caracteriza um curso de Biologia?", *Biologia e Biólogos. Ensino, Emprego e Sociedade* (Lisboa: Esfera do Caos, 2009).

MARIA DO MAR GAGO, *Guia para Professores da Exposição "A Evolução de Darwin"* (Lisboa: Serviço de Ciência da Fundação Calouste Gulbenkian, 2009).

M.C. LOURENÇO, 2009. E se elas nunca tivessem existido? Reflexões sobre a importância das colecções de ensino e investigação das universidades. In P.F. Costa (coord) *Museus e Património imaterial: Agentes, fronteiras, identidades*, pp. 225-233. Ministério da Cultura, Instituto dos Museus e Conservação, Lisboa.

TERESA NOBRE CARVALHO, "No rasto da árvore triste (*Nyctantes arbor-tristis* L.) nos textos botânicos do século XVI e XVII." Workshop Plantas Medicinais e Práticas Fitoterapêuticas nos Trópicos, IICT, 2008. On-line 2009 www2.iict.pt/archive/doc/T_Carvalho_wrkshp_plts_medic.pdf

Master and Ph.D. thesis completed

Maria do Mar Gago, "The Emergence of Genetics in Portugal: J. A. Serra at the Crossroads of Politics and Biological Communities (1936-1952), MSc in History and Philosophy of Science, FCUL (2009). Supervision of Ana Simões.

Helena Nunes, "As múmias oitocentistas da Igreja do Santíssimo Sacramento, Lisboa: Contributo para o estudo e musealização" MSc in Human Evolution, University of Coimbra (2009) (Supervision: Marta C. Lourenço and Eugénia Cunha).

Organization of conferences

4th HoST meeting Places of modern science: situated laboratories, dispersed artifacts, Instituto de Ciências Sociais, Lisboa, 14-15 December. (Ana Simões, Henrique Leitão, Organizing Committee).

Group Productivity

Congrés Internacional: L'Àlgebra a la Península Ibèrica en el segle XVI. Pedro Núñez (1502-1578). Universitat Politècnica de Catalunya and Centre d'Études Supérieures de la Renaissance (Tours), Barcelona, January. (Henrique Leitão, Member of scientific committee).

Symposium Ideas and Instruments in the Iberian World in Early Modern Times (15th to 17th centuries), XXIII International Congress of History of Science and Technology, Budapest, Hungary, July. (Henrique Leitão, Organizer together with Victor Navarro Brotons).

International Workshop Alvarus Thomas: reopening the Liber de triplici motu (1509), Faculdade de Ciências, Lisboa, September. (Henrique Leitão, Samuel Gessner, Organizers).

Workshop Iberian-Netherlandish Knowledge Exchanges, Barcelona, Spain, November. (Henrique Leitão, Member of the Organizing Committee)

Meeting History of Astronomy in Portugal: Theories Institutions and Practices, Lisboa, MCUL, 24-26 November. (Luís Miguel Carolino, Samuel Gessner, organizers together with Luís Saraiva)

Thesaurus de Instrumentos Científicos em Língua Portuguesa: Workshop Rede Portugal-Brasil, 16-20 November, MCUL. (Marta C. Lourenço, scientific organizer and chairperson)

UNIVERSEUM 2009, Université de Toulouse Paul Sabatier, 11-13 June. (Marta C. Lourenço, Organising and Review Committee)

Workshop 29 de Maio de 1919. Eddington e Einstein em Portugal, OAL, 28 May. (Ana Simões, Co-organizer)

Jornadas História da Astronomia em Portugal, BNP, Lisboa, May. (Henrique Leitão, Organizer)

Novos olhares sobre a Ciência em Portugal: I. As Ciências Matemáticas, ACL, Lisboa, December. (Henrique Leitão, Member of Organizing Committee).

5º Campeonato Nacional de Jogos Matemáticos, final 13 March, Universidade da Beira Interior, Covilhã. (Jorge Nuno Silva, Member of Organizing Committee)

Recreational Mathematics Colloquium I, Évora, 29 Abril - 2 Maio (Jorge Nuno Silva, Member of Organizing and Scientific Committees).

Group Productivity

Internationalization

Besides membership in international societies in which members hold specific functions, refereeing for scholarly journals, editorial boards of journals, talks in international conferences (47), and organization of sessions in international conferences (8) we highlight:

--Research Projects

Henrique Leitão, National representative of “Circulating Knowledge in Early Modern Science” (2006-); Correspondant International “La Mathématisation comme Problème...”, Université P. Mendès France (2006-); National Representative of “Aristoteles Sinicus: The Conimbricenses in Seventeenth-Century China”. Participating Institutions: MPIWG (Berlin, Germany), Emory Univ (Atlanta, USA) and CIUHCT- University of Lisbon Group.

--Publications

During 2009 a paper written jointly by Henrique Leitão and Walter Alvarez on the geological implications of Copernicus’ system of the world was completed and accepted for publication.

A joint book by Ana Simões and Kostas Gavroglu on the history of quantum chemistry was completed and is to be published by MIT Press (contract signed 22 March 2010). It builds on their joint work of nearly two decades.

Besides several international publications, 1 publication with foreign colleagues should be highlighted:

*S. Soubiran, M.C. Lourenço, R. Wittje, S. Talas & T. Bremer, 2009. Initiatives européennes et patrimoine universitaire. La Lettre de l’OCIM [Université de Bourgogne], 123: 5-14.

--International research networks

Several members of the Unit (senior and students) are members of the International Science and Technology in the European Periphery-STEP (<http://www.cc.uoa.gr/step/>)

--Consultancy

Marta C. Lourenço,

Group Productivity

*Permanent Advisor to the Centre for the History of Science, Royal Swedish Academy of Sciences, Stockholm, 2008-present.

*Scientific Consultant to Paulo David Architects (Funchal) for the Renovation of the Natural History Museum of Funchal, October.

*Scientific Consultant to ARX Architects (Lisbon) for the Second Phase of the Renovation of the Science Museum of the University of Coimbra, June.

*Evaluator of Unimi per il future: 5 per mille, Università degli Studi di Milano [Scienze Fisiche], October.

Government/Organization contract research

HENRIQUE LEITÃO, Referee of Post-Doctoral and PhD Grants, FCT/MCTES (panel of History of Science and Technology)

Future Research

Objectives

From the structural and organizational point of view, CIUHCT will continue to foster internationalization.

From the point of view of our research agenda we will encourage collective projects, both involving the two research lines of this Unit as well as other international groups or networks, dealing with the main topics: 1) circulation of scientific and technological knowledge; 2) local embedding of scientific and technological practices; 3) history of science and technology based on crossing cultures: printed, manuscript, oral, and material sources; 4) database construction of Portuguese scientists and engineers.

Methodologically comparative studies will be encouraged in order to better assess the contributions of Portuguese scientists, engineers, and institutions in the construction of an evolving European identity.

Besides collective projects Research Line (ii) continues to participate in activities of collaboration with the Museum of Science for purposes of organization and accessibility of its scientific archives, material culture studies in the history of science, history of collections, history of scientific instruments and scientific heritage. In what relates to history of board games in Portugal, we will pursue the study of the appropriation of game practices on a multi-national and/or national level. Survey of extant vestiges of games throughout Portugal and collaboration with historians from museums will continue to take place.

We will pursue translations from Chinese, Persian, Greek and Latin.

We will pursue the edition of the Complete Works of Pedro Nunes.

Future Research

We will be members of the Scientific Committee for the Centenary Celebrations of the University of Lisbon and the Centenary Celebrations of the Faculty of Sciences of the University of Lisbon.

In what follows we highlight the following specific 2010 activities:

Sources

*The translation with extensive notes of Galileo's Sidereus Nuncius was completed and published in March 2010. Its public presentation was selected as one of the events signaling the final day of the Year of Astronomy, which took place at the Gulbenkian Foundation, and gave way to many newspaper articles, radio and TV interviews.

*Completion of the Catalogue of Scientific Manuscripts held at the BNP.

*Database with transcription of news on science and technology appearing in three Portuguese newspapers (1900-1926)

Publications

*A book on the history of quantum chemistry Neither Physics nor chemistry, written jointly with a Greek scholar, and building on an two decades collaboration was completed, and will be published by MIT Press (probably 2010).

*The translation into English of the scientific biography of the Abbé Correia da Serra is expected to be complete and to be published in the series of the Institute for Governmental Studies of the University of Berkeley, USA.

Training

*Preparation of the summer school - Reading Artifacts Summer School - 13-17 Setembro 2010, MCUL, which will involve senior foreign scholars and will host students from all over Europe.

Funding, source, dates

On-going Projects:

Future Research

Marta Lourenço. PI. "Paving the way for integrated archival and collection-based research in the history of science: Preservation, access and case-studies of the collections of the Museum of Science (University of Lisbon)". PTDC/HAH/64181/2006. Funding 2010: 2302 euros

Marta Lourenço "Thesaurus of scientific instruments in Portuguese" (with Marcus Granato, Museum of Astronomy of Rio de Janeiro) (financed by FCT/CNPq). HC/0099/2009 (2006-2011). Funding 2010: 4500 euros

Ana Simões. PI. "Reading newspapers: an open window to representations of science and technology in the Portuguese press (1900-1926)". PTDC/HCT/68210/2006). Funding 2010: 6767 euros

Jorge Nuno Silva. PI. História dos Jogos em Portugal. PTDC/HCT/70823/2006. Funding 2010: 23 333 euros

Samuel Gessner "The role of mathematical instruments in the emergence of modern science" Cogito Foundation, Switzerland (2007-2009), 1380 euros

Projects starting in 2010

Marta Lourenço. PI. On the instruments' trail: Exploring Royal Cabinets of Natural Philosophy in Portugal (18th-19th century). PTDC/HIS_HCT/098970/2008. Funding 2010: 44594 euros

Luís Miguel Carolino, PI. Science, technical training and the making of Portuguese Liberalism: the case of Escola Politécnica de Lisboa (1837-1911). PTDC/HIS-HCT/108362/2008. Funding 2010: 47594 euros

Luís Miguel Carolino. Valorização dos Acervos do Museu de Ciência da Universidade de Lisboa: A Memória das Ciências Online (Processo 102319). Fundação Calouste Gulbenkian. Funding 2010: 15000 euros