



## Annual BSHS Postgraduate Conference

held at the European University Institute (Florence) in collaboration with the Centre Alexandre-Koyré (Paris)

5-7 April 2017

### Venue:

Villa Salviati: <http://www.eui.eu/ServicesAndAdmin/LogisticsService/EUICampus/VillaSalviati.aspx>

### Programme

#### Day 1                      Wednesday, 5 April

- 12.00-13.45      Lunch registration in the Cortile
- 13.50-14.15      Welcome: Regina Grafe, professor of early modern history at the EUI
- 14.30-16.00      Concurrent session 1
- 16.00-16.30      Coffee break in the Cortile
- 16.30-18.00      Concurrent session 2
- 18.00-20.00      Wine reception in the 'Grotte'

#### Day 2                      Thursday, 6 April

- 09.00-10.30      Concurrent session 3
- 10.30-11.00      Coffee break in the Cortile
- 11.00-12.30      Workshops
- 12.30-13.45      Lunch
- 13.15-13.45      BSHS Ambassadors Meet and Greet
- 13.45-15.15      Concurrent Session 4
- 16.30-18.00      Visit to the Museo Galileo
- 18.00-19.30      Evening walk and gelato

#### Day 3                      Friday, 7 April

- 09.00-10.30      Concurrent session 5
- 10.30-11.00      Coffee break in the Cortile
- 11.00-12.30      Concurrent Session 6
- 12.30-13.45      Lunch
- 13.45-15.00      Closing keynote  
Professor Stéphane Van Damme: 'Between the Colonial Machine and the French Global: Revisiting an anti-globalist narrative of the French Empire of Science (1660-1780)'



## Scheme of the Parallel Sessions

Date/Time/Room			
<b>Day 1</b>	<b>Sala degli Anelli</b>	<b>Sala del Camino</b>	<b>Sala del Consiglio</b>
14.30-16.00 Parallel session 1	1A Brain and psyche	1B Botany	1C Knowledge transmission in the Renaissance
16.30-18.00 Parallel session 2	2A Colonial knowledge on the move	2B Knowledge on display	2C Gender theories and women in science
<b>Day 2</b>	<b>Sala del Torrino</b>	<b>Sala del Camino</b>	<b>Sala del Consiglio</b>
9.00-10.30 Parallel session 3	3A Practices of knowledge compilation	3B Oral histories and their aftermath	3C Early modern medical practices
11.00-12.30 Workshops	Workshop I: Archives	Workshop II: Publication strategies	Workshop III: Institutions and funding
13.45-15.15 Parallel session 4	4A Visualising knowledge across the ages		4B C19/20 British Empire
<b>Day 3</b>	<b>Sala del Torrino</b>	<b>Sala del Camino</b>	<b>Sala del Consiglio</b>
9.00-10.30 Parallel Session 5	5A Science, power and politics		5B Science and education
11.00-12.30 Parallel Session 6	6A Between amateurship and professionalisation	6B Journals and periodicals	6C C20 Biomedicine



## Concurrent sessions

### Concurrent session 1

#### **1A Brain and psyche**

Chair: Adam Mezes, Central European University

Axelle Champion, University of Edinburgh: 'Child and Adolescent Psychiatry in Scotland, c.1870-1914'

Steven Server, University of Chicago: 'Working through the "Dialectics of Liberation": decolonization, freedom, and anti-psychiatry during the Cold War'

#### **1B Botany**

Chair: Aditya Ramesh, SOAS

Marine Bellégo, Centre Alexandre-Koyré: 'The Calcutta garden as a botanical post-office'

Elena Romero-Passerin D'Entreves, University of St Andrews: "'We have been absolutely inattentive to the natural productions of our native Country": The Royal Botanic Garden of Edinburgh as a Centre for the study of Scotland'

Anna Svensson, KTH Stockholm: 'Continuity and Change in the History of Botanical Collecting'

#### **1C Knowledge transmission in the Renaissance**

Chair: Leonardo Ariel Carrio Cataldi, Centre Alexandre-Koyré-haStec

Eleanor Coulter, McGill University: 'Between Space and Time: History, Geography and Empiricism in d'Anville's Maps of Gaul'

Oury Golman, EHESS Paris: 'Transmitting and exhibiting astronomical and geographical knowledge at the royal Court in Renaissance France.'

Mattia Brancato, University of Milan: 'Galileo's Impact on Early Modern German Universities'

Sergio Orozco-Echeverri, University of Edinburgh: 'Laws of nature, between mechanics and magic: Disciplinary taxonomies in the emergence of seventeenth-century mechanical philosophies'

## **Concurrent session 2**

### **2A Colonial knowledge on the move**

Chair: Dorit Brixius, EUI

Dayana Ariffin, University of Edinburgh: 'Racial Taxonomy in a Colonial Multi-Institutional Network: A Narrative from American Occupied Philippines from 1898 to 1946'

Matheus Duarte Da Silva, Centre Alexandre-Koyré: 'Knowledge production in the tropics: the antiplague vaccine circulation between India and Brazil (1896-1901)'

Catarina Madruga, University of Lisbon: 'A Zoologist's Political Agenda: Research on African Fauna in the late 19th century'

### **2B Knowledge on display**

Chair: Déborah Dubald, EUI

Dorothee Rusque, University of Strasbourg: 'Natural history collections and observation in the 18th century. The dialogue of objects in Jean Hermann's cabinet'

Leander Diener, University of Zurich: 'Making the Brain Visible. The Peculiar History of Cinematic Knowledge in Brain Research, 1927-1949'

Benjamin Botherau, Centre Alexandre-Koyré: 'The Imaginary and Technology: Public Lighting Representations in 18th Century Paris.'

### **2C Gender theories and women in science**

Chair: Katalin Straner, EUI

Alona Bach, University of Cambridge: '"A Lady or an Engineer?" Women, Electricity, and the Hierarchies of Expertise in Interwar Britain'

Mary Chapman, University of Leeds: 'The Case of the Madwoman: Deconstructing Gendered Theories about Female Mental Illness within Nineteenth-Century Psycho-Medical Writing'

Josef Řídký, Charles University, Prague: 'Epistemology of Sexology: The Scientific Narration and the Moral Uses of Science'

## **Concurrent session 3**

### **3A Practices of knowledge compilation**

Chair: Eleanor Coulter, McGill

Simon Dumas, European University Institute: 'Soothing Knowledge. Mechanics Against Melancholy in the Notebooks of Roger North (1651-1734)'

Hannah Wills, UCL: 'From Case Notes to Commonplace Books: Information Management and Charles Blagden's Diary'

Alexander Aylward, University of Leeds: 'H. G. Wells and the identity of the "scientist", 1895-1925: Negotiations in Nature and the novel'

### **3B Oral histories and their aftermath**

Chair: Nicholas Mithen, EUI

Emmeline Ledgerwood, University of Leicester: 'MPs who speak for science: using oral history as evidence'

Tom Ritchie, University of Kent: 'Like a lot of little boys: Oral Histories of Science and Engineering from Meccano clubs'

Aline Waltzing, Centre Alexandre-Koyré: 'The evaluation of universities: why a historical approach?'

### **3C Early modern medical practices**

Chair: Katalin Pataki, CEU Budapest

Sebastián Molina Betancur, University of Turin: 'José Celestino Mutis and the diffusion of Newtonianism in New Granada in the eighteenth century'

Teresa Hollerbach, MPIWG Berlin: 'Quantitative Physiological Reasoning at the Turn of the Seventeenth Century: The Work of Sanctorius Sanctorius'

Adam Mezes, Central European University, '“Seen and discovered” – the diagnosis of vampirism in 1730-1750's Habsburg Empire'

## **Concurrent session 4**

### **4A Visualising knowledge across the ages**

Chair: Simon Dumas Primbault, EUI

Alicia Hughes, University of Glasgow: 'James Douglas and William Hunter: Representing reproductive anatomy in the eighteenth century'

Naïs Virenque, University of Tours: 'From vertical to horizontal mnemotechnic trees: learning and visualizing knowledge from the Middle Ages to the Early Modern Times'

### **4B C19/20 British Empire**

Chair: Oury Goldman, EHES

Felix Goodbody, University of Liverpool: '“The Beauty and Power of Such Scenes as These” Photographing Truth and Fantasy at the Imperial Frontier in India 1857-1900'

Hana Oh, University of Oxford: 'Naval surgeons: mid-nineteenth century men of science in the British Pacific empire'

Aditya Ramesh, SOAS: 'Damming the Cauvery: Technology and Hydro-politics in Colonial South India'

## **Concurrent session 5**

### **5A Science, power and politics**

Chair: Steven Server, University of Chicago

Ayushi Dhawan, University of Leiden: 'Segregation, Stigma, Isolation: a cure for leprosy? Understanding leprosy in the Netherlands West Indies c. 1600-1750'

Katalin Pataki, Central European University: 'Medical Expertise in Service of Joseph II's Monastic Reforms'

Paul-Arthur Tortosa, European University Institute: 'Surveiller et guérir. The development of arithmetic practices in the medical reports of French military hospitals, 1792-1800'

Emily Herring, University of Leeds: 'Lamarckian Power Politics: the Case of Pierre-Paul Grassé (1895-1985)'

## **5B Science and education**

Chair: Leonardo Ariel Carrio Cataldi, Centre Alexandre-Koyré-haStec

Marcus Lee Naldal, Aarhus University: 'Introducing atomic theory in the Danish high school curriculum - Textbooks and the history of science'

Alina Novik, European University at St. Petersburg: 'Optical Spectacles in the 19th-Century's Russian Capitals and their Influence on Public Education'

Mikkel Munthe Jensen, European University Institute: 'From Peasantry to Academic Citizenship An Exploration of Eighteenth-Century Social Ascent of Nordic Academics'

## **Concurrent session 6**

### **6A Between amateurship and professionalisation**

Chair: Dorit Brixius, EUI

Stuart Mathieson, Queen's University Belfast: "'Science, falsely so called' – the extinction of the gentleman amateur, anti-Darwinism, and pseudoscience at the Victoria Institute, 1865-1903'

Ekaterina Rybkina, European University Institute: 'Soviet radio enthusiasm as an amateur practice and scientific endeavor'

Richard Fallon, University of Leicester: "'A Work of Literature Rather than Science': Henry Neville Hutchinson (1856-1927) and Literary Controversy in Science Popularisation'

### **6B Journals and periodicals**

Chair: Catarina Madruga, University of Lisbon

Julia Ostmann, University of Cambridge: "'Think Them Together": Philosophy, Experimental Psychology, and Consciousness in the Journal *Mind*, 1876-1887'

Matthew Wale, University of Leicester: 'Caterpillars in the Penny Post: Nineteenth-Century Natural History Periodicals and the Practice of Specimen Exchange'

Francisco Malta Romeiras, University of Lisbon: 'Missions, Networks and Taxonomy: The Jesuit Journal *Brotéria*'

### **6C C20 Biomedicine**

Chair: Emily Herring, University of Leeds

Matthew Holmes, University of Leeds: 'Graft hybrids, heredity and biotechnology: the politicisation of biology and its history'

Rachel Meach, University of Strathclyde: 'Framing Type 2 Diabetes: The Pursuit of Anti-Diabetic Drugs in the Mid-Twentieth Century'

Simon Walker, University of Strathclyde: "'Like Nothing on Earth' Typhoid and British Soldiers: Resisting Disease Prevention in the First World War.'

## **Workshops, 6 April, 11.00-12.30**

### Workshop 1: 'Archives and sources of the history of science'

#### Sala del Torrino

##### Speakers:

- Alessandra Lenzi - Director of the Museo Galileo library, Florence
- Katalin Straner - Max Weber Fellow, EUI, Florence
- Deborah Dubald - PhD candidate, EUI, Florence

### Workshop 2: Publication strategies

#### Sala del Camino

##### Speakers:

- Leonardo Ariel Carrio Cataldi, Postdoctoral Fellow Labex HASTEC - Centre Alexandre Koyré, Paris
- Maria Conforti, La Sapienza, Rome & editor-in-chief of *Nuncius, Journal of the Material and Visual History of Science*.
- Lotta Svensson, CADMUS Repository Manager / EUI, Florence

### Workshop 3: 'Institutions and funding across Europe and beyond'

#### Sala del Consiglio

##### Speakers:

- Katalin Straner - Max Weber Fellow, EUI, Florence
- Catarina Madruga, PhD candidate, Faculty of Sciences, University of Lisbon & CIUHCT, Lisbon
- Karin Tilmans - Coordinator of Max Weber Postdoctoral Programme, EUI, Florence
- Teresa Hollerbach - PhD candidate, Max-Planck Institut für Wissenschaftsgeschichte, Berlin

## **Abstracts**

### **1A Brain and psyche**

Axelle Champion, University of Edinburgh: ‘Child and Adolescent Psychiatry in Scotland, c.1870-1914’

This paper focuses on the admission, treatment and care of young people within Scottish asylums during the late nineteenth and early twentieth centuries. Historians of psychiatry have already successfully described the importance of Scottish psychiatric institutions within a broader European medical landscape: Jonathan Andrews and Iain Smith, Gayle Davis and Allan Beveridge are notorious historians of medicine who have based their research on Scottish asylums, especially on the Glasgow Royal Asylum and the Royal Edinburgh Asylum. However, their research considers either a specific institution or medical condition, and the age of the patients was only an incidental factor. One of the first historians to tackle the question of children within the Scottish psychiatric context is Iain Hutchison who has notably worked on the Scottish National Institution at Larbert near Glasgow, and Baldovan Institution near Dundee. Nevertheless, Hutchison adopts a specific angle that of disability and learning disability in children, leaving thus the question of mental illness in both children and adolescents still open. This paper aims at broadening the question of child and adolescent psychiatry by considering their admission, care and treatment within special institutions as well as general asylums in order to inscribe this population within a larger medical and social context. It intends to demonstrate how medical perceptions of insanity, age but also gender and social background evolved throughout the late nineteenth and early nineteenth centuries, and were intrinsically influenced and influencing a social and cultural context around the question of youth in Scotland.

Steven Server, University of Chicago: ‘Working through the “Dialectics of Liberation”’: decolonization, freedom, and anti-psychiatry during the Cold War’

In 1967, psychiatrist David Cooper organized a conference known as “The Congress on the Dialectics of Liberation.” The conference had been “very much concerned with radical innovation in their own field—to the extent that their counter-labeling their discipline as antipsychiatry.” The participants had observed an uncomfortable relationship between their field and to “certain political facts”: in places like Cuba and Vietnam and Algeria, authorities had pathologized rebellious subjects, and used these self-serving diagnoses to subjugate them. Consequently, the conference was aimed to create an alliance of psychiatrists, social theorists, and real activists, to “think these things out together.” Their goal was to bring about the ultimate liberation of the oppressed masses, colonial and mad alike.

Cooper’s term for this ideological commitment—anti-psychiatry—had clearly been born in an intellectual crucible which fused clinical practice with larger questions of decolonization and personal liberation. But over time, it became a term which described discussions between various social scientists and clinicians about psychiatric practice tout court. In this paper, I hope to return to the term’s radical, political roots. By revisiting some prominent critics of psychiatry from the 1960s, I demonstrate that anti-psychiatry represented not merely a Kuhnian debate about the internal disciplinary contours of psychiatry—as most accounts go—but were inextricably related to larger political concerns of the Cold War period. Various anti-psychiatric thinkers advocated for the end to the inappropriate political power exercised by clinicians. Theirs was a battlefield not of rice paddies or barbed-wired checkpoints, but of minds.

### **1B Botany**

Chair: Aditya Ramesh, SOAS

Marine Bellégo, Centre Alexandre-Koyré: ‘The Calcutta garden as a botanical post-office’

The Calcutta botanic garden had many roles to play in the 19th century British imperial economy. It began in the late 18th century as a nursery where to grow profitable plants, was turned into a centre of botanical taxonomy under the direction of William Roxburgh, and had become a celebrated pleasure



ground at the beginning of the 20th century. The garden was a contact zone where a foreign administrative elite and an important number of Indian workers constantly interacted. It was also a place of intense circulation: a close examination of the Garden's archives reveal that most activities of the garden revolved around the packaging, sending, receiving and accommodating of various living and non-living items. Letters, papers, plants (alive or dry), seeds, even people kept transiting through the garden. An important issue was then to preserve things and people, to condition them properly so that they do not spoil, and to keep room for the items to come. In this paper, I would like to focus on the ways in which this imperial institution organized and kept traces of the transfer of an enormous number of entities. I intend to contribute to an approach of "place" as something defined not only by its borders but also by what transcends and go through them.

Elena Romero-Passerin D'Entreves, University of St Andrews: "We have been absolutely inattentive to the natural productions of our native Country": The Royal Botanic Garden of Edinburgh as a Centre for the study of Scotland'

In his 2013 book, *Enlightenment's Frontier*, F. Albritton Jonsson argues that in the eighteenth century, the Scottish Highlands went through a form of internal colonisation from the national authorities. This paper will develop this argument further by examining the involvement of the Royal Botanic Garden of Edinburgh in this process. The Royal Botanic Garden sent James Robertson, one of its gardeners, on a three-year mission to the Scottish Highlands between 1767 and 1771. The idea for this program originated both from European scholars' dismay at the support given to world exploration when the knowledge of their own countries was still very underdeveloped, and from the concerns about Europe's increasing dependency on resources from the rest of the world. Following Linnaeus's Cameralist theories on the matter, John Hope, Regius Keeper of the garden in Edinburgh, managed to secure funding from authorities and sent Robertson to collect information and specimens from all over Scotland. Drawing on original archival research, this paper will investigate the arrangements for Robertson's mission and will show how the botanic garden tried to institutionalise a program mirroring in some aspects the contemporary voyages of exploration (such as those of Captain James Cook) and in this, participated in reinforcing the capital's domination on the remote areas of the country; treating those areas like spaces to be colonised.

Anna Svensson, KTH Stockholm: 'Continuity and Change in the History of Botanical Collecting'

This paper explores the theoretical and methodological challenges posed by the central role of collections in the history of botany. Taxonomic systems have replaced each other following changing conceptualisations of species and cosmographies, as well as ever-more sophisticated technologies for preserving, analysing and ordering plants. A careful synchronic approach is essential to understand these shifts and avoid an anachronistic imposition of today's categories onto apparently similar activities and language. However, there is a remarkable continuity in the practices and collections through which botany has grown as a cumulative science, particularly the botanic garden, the herbarium and classification. Taken together, these spaces, collections and practices present an integrated set of "conservation technologies" which confine, order and preserve in order to render the diverse and changeable world of plants knowable.

While STS presents useful models for analysing scientific spaces and practices, these at best fit certain historical moments better than others, and are at times distinctly ahistorical. As the first herbaria and botanic gardens precede the emergence of science as a distinct field, questions about anachronism and whether to use today's terminology or actors' categories are not easily resolved. However, the tension between constancy and flux is characteristic of these collections, as Stephen J. Forbes has claimed of the botanic garden. I argue that the difficulties of accounting for the continuity and change in the history of botanical collecting can be addressed through the underlying functions of confinement, preservation and ordering – functions which are both historically specific and span nearly five centuries.

## **1C Knowledge transmission in the Renaissance**

Chair: Leonardo Ariel Carrio Cataldi, Centre Alexandre-Koyré-haStec

Eleanor Coulter, McGill University: 'Between Space and Time: History, Geography and Empiricism in d'Anville's Maps of Gaul'

In 1782, Jean Baptiste-Bourguignon d'Anville was eulogized as "celui que toutes les Nations s'accordoient à regarder comme le premier Géographe de l'Europe" ("the man every nation agrees is Europe's best geographer"), a reputation that has endured to this day. However, d'Anville was also an accomplished linguist and historian: more than half his publications deal with historical subjects and spaces, and he devoted much of his career to collaborations with historians in the Académie des Inscriptions et Belles-Lettres, who sought the cachet of accurate and up-to-date maps.

What that meant for a historical map was a constant source of tension. Although d'Anville was known for banishing speculation and mythology from his work, for historical maps, fiction and educated guesses were the data. This paper will use d'Anville's maps of Gaul to examine how he modified the latest scientific mapping techniques for fundamentally unempirical subjects – territories whose physical and political features could not be measured or confirmed, for which there were often no more than one or two sources. These maps pushed d'Anville to confront the quintessential problems of the enlightenment armchair geographer: distance from the subject matter, both temporal and spatial, unreliable data, and hypotheses that were almost impossible to verify. They also reflect his resistance to the scientific principles he is said to represent, disrupting the narrative of his cultural impact. Although his talent for scientific geography reinvigorated – and sometimes reformed – historical studies, it was complicated by his essential conservatism and a longing for the traditional trappings of academic success.

Oury Golman, EHESS Paris: 'Transmitting and exhibiting astronomical and geographical knowledge at the royal Court in Renaissance France.'

For many decades, historians of science have explored the diversity of places where scientific knowledge was created and spread. During the early modern period, beyond academies, laboratories and such institutional places devoted specifically to scientific inquiry, Courts had also served as an important social site for introducing, disseminating and exhibiting knowledge. Our aim is to examine how astronomical and geographical knowledge was displayed at the Court of the Valois kings in Renaissance France. Indeed, if the Court of Francis I (1494-1547) and Henry II (1519-1559) has been described as a place where knowledge linked with the Humanist movement was discussed - via public lectures given by scholars such as the newly created *lecteurs royaux* - the place of astronomical and geographical knowledge has often been neglected. During that era, various scholars performed scientific demonstrations in the various castles of the monarchy (Blois, Fontainebleau, etc.) where they used astronomical and terrestrial maps, globes or clocks and other scientific instruments. By doing so, they gained social and intellectual prestige and ensured their position at Court under the protection of its aristocratic elites. Since the overseas expansion of the Iberian empires also deeply transformed geographical and astronomical knowledge, these scholars presented themselves as brokers and agents of cultural exchange willing to offer French audience fresh and hitherto unseen accounts of the regions of the world explored and conquered by Europeans at that time.

Mattia Brancato, University of Milan: 'Galileo's Impact on Early Modern German Universities'

The extent of Galileo's influence in early modern Europe is still widely unknown and it relies mostly on the idea of an indirect and negligible diffusion through Mersenne, Gassendi, Wallis and few others, overshadowed by the rise of Descartes' philosophy of nature. However, during the second part of the seventeenth century, some dissertations published at the university of Jena show that Galileo's achievements were known in Germany not only by relying on indirect sources, but also by directly mastering the original texts. A part from the famous observations on the motion of falling bodies, Galileo was known and praised for his reflections on the concept of an infinite number and for the use of thought experiments. I will argue that these dissertations had a significant impact on some of Leibniz's scientific achievements, such as the development of his calculus, the discovery of binary

arithmetic and the beginning of the *vis viva* controversy. I will ultimately show that Leibniz's thought has to be interpreted in the wider context of the German complex and syncretistic milieu, where Kepler granted the access to Galileo's writings and a great effort was made in order to make them understandable for non-Italian speakers.

Sergio Orozco-Echeverri, University of Edinburgh: 'Laws of nature, between mechanics and magic: Disciplinary taxonomies in the emergence of seventeenth-century mechanical philosophies'

The connection between developments in mechanics during the 16th century and the emergence of mechanical philosophies as alternatives to the fading Aristotelian physics is usually taken for granted. In fact, current versions of this connection hold that, in view of the crisis of the Aristotelian natural philosophy, a new generation of philosophers drew upon mechanics to provide a new conception of nature as a machine. According to this view, the nature-machine made possible to address questions in natural philosophy in terms of quantitative laws of nature and motion, as opposed to the qualitative explanations of the Aristotelians. However, this story omits an important aspect, i.e., that mechanics entirely relied on the opposition between the natural and the artificial, between the laws of nature and the rules of mechanics and, in consequence, between natural philosophy and mechanics. If the main task of mechanics was to provide rules to act *against* the laws of nature, how is it that the rules of mechanics became the laws of nature? How is that the *operative* rules to act against nature became *explicative* laws to account for it? One important background to tackle this question comes from the revitalisation of magic and particularly of the natural magic during the Renaissance. In the traditions of natural magic, the knowledge and actions of the *magus* were seen as aligned or complementary to the works of nature, including the use of machines. The redrawing of the disciplinary boundaries during the early modern period exhibits a complex interplay between mechanics, mathematics, magic and natural philosophy to which I will approach to shed light on the question of laws of nature previously formulated, from Ubaldo's *Mechanicorum Liber* (1577) to *Descartes' Principia Philosophiae* (1644).

## **Concurrent session 2**

### **2A Colonial knowledge on the move**

Chair: Dorit Brixius, EUI

Dayana Ariffin, University of Edinburgh: 'Racial Taxonomy in a Colonial Multi-Institutional Network: A Narrative from American Occupied Philippines from 1898 to 1946'

The American occupied Philippines from 1898 to 1946 was represented by institutions, both political and scientific in nature. The construction of the racial groups of the Filipinos were created from the heterogeneous undertakings of these different institutions. By institutions I refer to bureaus formed by the Philippine Commission as the main representative of the colonial metropole in the Philippines. These institutions were arenas for interactions- dissemination of knowledge, negotiations and debates, in which racial taxonomy acts as the catalyst to as well as the outcome of research and policy-making. I attempt to map out the interactions between institutions in lieu of scientific understanding of race in the Philippines through an ecological narrative focusing on a multi-institutional colonial network.

Matheus Duarte Da Silva, Centre Alexandre-Koyré: 'Knowledge production in the tropics: the antiplague vaccine circulation between India and Brazil (1896-1901)'

The historiography of scientific circulations, specially the one focused on the end of the 19th century, is centered, on one side, in the imperial contexts, as in the African and Asian case, or, on the other side, in relation to Latin America, in the exchanges between former colonies and their old or "new" European metropolis. However, it is possible to talk about another configuration of knowledge circulation, focusing not in the exchanges between Northern and Southern countries, but in a South-South relationship, such as between colonial India (1858-1947) and the Brazil of the First Republic (1889-1930). Both countries were stroke by the third bubonic plague pandemic: India, from 1896 onwards, and Brazil, three years later. Part of the answer found in these two locations for facing the

problem was the creation of laboratories that produced antiplague serums and vaccines, such as the Plague Research Laboratory, in Bombay, and the *Instituto Soroterápico Federal*, in Rio de Janeiro. In this communication, we would like to analyze the circulation of an specific object, the antiplague vaccine, created in Bombay, in 1896, by Waldemar Haffkine, director of the Plague Research Laboratory, and modified in Rio de Janeiro, in 1901, by the researchers of the *Instituto Soroterápico Federal*. By the examination of the trajectory of this circulation between Bombay and Rio de Janeiro, as well as the characters, the techniques and the objects involved in it, we aim to demonstrate the social, political, technical and geographical boundaries, but also the possibilities found by the historic actors during such circulations.

Catarina Madruga, University of Lisbon: 'A Zoologist's Political Agenda: Research on African Fauna in the late 19th century'

In the 1870's Europe turned its colonial gaze towards the hinterland of the African continent. Geographical challenges and natural riches were to be explored under the myth of the «civilizing mission». Within this context of political dominance, scientific agendas were developed in order to sustain political arguments. In this paper I will discuss the project of the «Fauna of the Western Africa possessions» conducted by the Portuguese zoologist José Vicente Barbosa du Bocage (1823-1907), contextualising it in the framework of the co-construction of scientific discourse and political agendas. Regarding its African empire Portugal had historically been present in the coasts of both Angola and Mozambique, however its claim for effective presence in the hinterland was disputed by other colonial powers. Barbosa du Bocage, the director of the Zoological Section of the National Museum of Lisbon, published almost 200 titles in scientific periodicals, many of them in French, and the most of them on African fauna from the geographical territories under Portuguese sovereignty. In order to reach a larger readership for his nationalistic agenda, in the early 1870's he planned the «Fauna...», a three volume project on African fauna. He published Ornithologie d'Angola in 1877, and Herpétologie d'Angola et Congo in 1895, but died before he finished the third volume on Mammals. These publications, when seen as a whole, represent strategies of empire-building, and worked in the defence of the Portuguese presence in Africa. This paper aims to show how Bocage's scientific project functioned as political and diplomatic legitimation.

## **2B Knowledge on display**

Chair: Déborah Dubald, EUI

Dorothee Rusque, University of Strasbourg: 'Natural history collections and observation in the 18th century. The dialogue of objects in Jean Hermann's cabinet'

According to the naturalist Jean Hermann (1738-1800), collections are indispensable tools in the practice of observation. Created in 1762, its rich cabinet, composed of objects from the three kingdoms of nature, was used as his equipment for research and teaching. It was associated with two other forms of collections: a library of nearly 12 000 books and a botanical garden. In its normative discourse, the cabinet appeared as a material and visual device. The knowledge is based on three types of collections gathered in the cabinet: specimens, images and books. All contributed to the visibility setting process but Hermann also highlighted the relationships between things, words and images.

He established a two-level hierarchy between them. The superiority of the natural specimens over all other objects is undeniable. The images and the descriptions were only considered as “substitute specimens” yet they seemed to be essential in the daily research work. The “Catalog of Natural History Drawings”, which served as an teaching tool for natural history demonstrations, proved that Hermann attached particular importance to images. It functioned as a “paper museum” that replaces the missing specimens and the figures from reference books. These hierarchical relationships are counterbalanced by “a dialogue of objects”, at different scales: between objects in each category, between natural specimens and a substitute, or between two substitutes. The most complex dialogue operated between words, things and images, leading to defines different strategies of visualization. The confrontation of these different medias gave rise to a new visual episteme.

Leander Diener, University of Zurich: 'Making the Brain Visible. The Peculiar History of Cinematic Knowledge in Brain Research, 1927-1949'

Visual knowledge is at the core of modern medicine. In nineteenth century brain research like in other branches of medicine, visual knowledge appeared as a complex interplay between illustrations, models, and anatomicopathological findings. Initially, these visualization techniques did not change substantially with the advent of new techniques for capturing movement such as cinematography – mostly for practical reasons. Researchers had to come up with a whole new experimental system that could circumvent the hurdles of the available methods in order to cinematically materialize and stabilize the living brain long before PET- and fMRI-technologies.

In 1927, Walter Rudolf Hess, professor of physiology at the University of Zurich, Switzerland, and Nobel Prize laureate for Physiology and Medicine in 1949, presented first results of a larger research project that he had started with his team two years earlier. Aiming at understanding the cerebral structure of the vegetative nervous system, Hess succeeded in constructing an experimental array that allowed him to combine deep brain stimulation experiments, film, and histological examinations. Looking at the scientific work of Walter Rudolf Hess from 1927 to 1949, we gain insight into the scientific, technological, and societal aspects of the production of a specific modern cinematic knowledge of the brain and of the experimental use of film in medicine. This account challenges innovation-centric narratives that focus on the early years of film and overestimate the use of early medical cinematography.

Benjamin Botherau, Centre Alexandre-Koyré: 'The Imaginary and Technology: Public Lighting Representations in 18th Century Paris.'

This paper examines the ways in which lighting technology was represented in popular imagery in eighteenth century Paris, and how it performed important symbolic functions as political propaganda for both the monarchy and the revolutionary government. More broadly, it is intended to contribute and highlight our understanding of the mechanisms and the stages that follow the invention of technical objects in an urban habitat: judgment, agreement, acclimatization and social integration. I reflect on the evolution of the lighting objects' representations. My corpus consists of political caricatures – revolutionary and counterrevolutionary – and engravings. The lantern integrates popular imagery by becoming a visual and semantic code. First of all, the technical object seems an appropriate tool for the caricature: even though public lighting is relatively “young”, the street lantern is a well represented object in the urban space, but also in trade cards, patents and manufacturers' catalogues, and therefore becomes a significant stereotype to be remembered and used in the most popular imageries as well as top classic engravings. Secondly, the street lamp is connected with the birth of Paris public lighting together with the Police institution imposed by Louis XIV: its representation is linked with absolute monarchy and order. However, the technical object becomes a symbol of popular justice and figurative violence (mobs and chaos). I therefore notice a clear shift in meaning and an appropriation of the symbol. The lantern eventually symbolizes revolutionary justice through the propaganda of the Comité de Salut Public: it evolves into a much more complex emblem by embodying the three functions of revolutionary power: enlightening the world, unmasking traitors and punishing them.

## **2C Gender theories and women in science**

Chair: Katalin Straner, EUI

Alona Bach, University of Cambridge: “‘A Lady or an Engineer?’ Women, Electricity, and the Hierarchies of Expertise in Interwar Britain’

Correspondence (1925-1927) between Margaret Partridge, an electrical engineer, and Caroline Haslett, an advocate for women in engineering, highlights their shared conceptions of how the categories of “expert” engineers and “amateurs” were gendered in interwar Britain. Both women were conscious of social expectations which coded engineering as a masculine activity and elided femininity with amateur status. By focusing on several opposing categories which emerged in their private

correspondence, this paper examines how the two women used their letters to both navigate and complicate binaries between electrical experts and amateurs, engineers and ladies, and urban and rural environments. The epistolary discussions of hiring and training apprentices, appearing at conferences, and electrifying rural villages reveal the boundaries of each of these binary categories, as well as how Partridge and Haslett consciously challenged them. The letters also suggest that emphasising one binary over another could be a way of claiming authority: Partridge, for example, focused on her urban expertise in her encounters with rural populations, rather than the binary of engineer/lady which would associate her with a less authoritative identity. By understanding the intentionality behind utilizing these categorical designations, not merely how the categories were assigned and perceived in the public sphere, this paper reveals the complicated social forces which shaped the intersection of gender and technology in interwar Britain.

Mary Chapman, University of Leeds: 'The Case of the Madwoman: Deconstructing Gendered Theories about Female Mental Illness within Nineteenth-Century Psycho-Medical Writing'

Looking at medical literature, this paper will investigate gendered theories about women's mental pathologies produced within the Victorian psycho-medical professions. Ideas about female madness circulated in, and were formed by, nineteenth-century culture. In particular, feminine sex roles and the female body were perceived to be crucially important to women's mental life. The paper will therefore consider how female insanity was constructed within an ideological matrix of gender norms, and a biological, dualistic approach to the mind within medicine. It will seek to site these theories within a discussion about the impact of the specific textual form of the clinical case study, looking at how writing within a self-consciously medical and professional discourse shapes both the communication of science and expectations of femininity.

Much of the historiography of the mind sciences prioritises the role of asylums and their growth in the development of psychiatry. Whilst recognising the centrality of this phenomenon to the practice of nineteenth-century psychological medicine, it is important to consider other arenas for the production and transformation of knowledge within this field. Through exploring the medical writing of controversial British doctor, Isaac Baker Brown, this paper will combine research into the history of mental illness with a literary studies methodology in order to approach the Victorian mind sciences from a novel perspective.

Josef Řídký, Charles University, Prague: 'Epistemology of Sexology: The Scientific Narration and the Moral Uses of Science'

According to Michel Foucault's *History of sexuality*, the sexuality is not an empiric fact that could be simply found among the other natural objects, independent of any view or interpretation. On the contrary, it cannot be perceived but through interpretations, through work of discourses, because sexuality is nothing but the verbal sum of everything that was said about it. Foucault called this phenomenon a *dispositive*. What shape would take a science that would establish itself on such a liquid conception? In my paper, I will follow the emergence and development of such science – the sexology. Focusing on Czechoslovak context from late 19<sup>th</sup> century to late 20<sup>th</sup> century, I will concentrate on sexological popularizing textbooks and observe their methodological shifts all over the period of one century. Aspiring to become an exact science, sexology is adopting the latest methods of research, shifting from a mere ethics to Darwinism or anthropological surveys and offering different narratives on human sexuality, while its outcomes remain rather stable: it persist on the sexually active and dominant men on one hand and on sexually passive and submissive women on the other, while the only purpose of coition should be procreation and its only source and excuse should be love. These 19<sup>th</sup> century stereotypes are revived with every newly published sexological textbook, disguised in always more contemporary method. My paper will follow these changes and trace how science was used for the sake of moral prejudices.

### **Concurrent session 3**

#### **3A Practices of knowledge compilation**

Chair: Eleanor Coulter, McGill

Simon Dumas, European University Institute: ‘Soothing Knowledge. Mechanics Against Melancholy in the Notebooks of Roger North (1651-1734)’

“It is in all cases and circumstances, better to dy then to live, [for] life it self is actuall paine,” wrote Roger North in his *Notes of Me* of the mid-1690s. Yet, in the silence and solitude of his intellectual retreat, North will find the strength to live until his death of natural causes at the age of eighty-three. Spending half of his life reading and writing about law, mathematics, or natural philosophy, North was also obsessed with the idea of “writing [his] sentiments, such as they are, upon all occasions.” Beyond the façade of melancholy and solitude, North’s manuscripts hint at a pursuit of knowledge construed as an *utile dulci*. In other words, a soothing knowledge: “While I write, methinks I play [for] writing is not uneasy but a pleasure”. Therefore, conceiving of his solitary work as the cure for his pain, Roger North would rather live than die.

Knowing though is not so simple a matter of soothing: there is many a trap and many a temptation lying in wait for the thinker. Hubris, “fals pleasures,” or the “fear of discovery” might lead to the “discouragement of philosophy.” North’s passions survive in the numerous graphic traces scattered across his private notes that will then reveal the desires and pleasures but also the fears and hesitations of the solitary philosopher at work against melancholy. By focusing on North’s papers on mechanical philosophy, I propose to shed light on the riveting *pas de deux* between *pathos* and *logos*.

Hannah Wills, UCL: ‘From Case Notes to Commonplace Books: Information Management and Charles Blagden's Diary’

Charles Blagden (1748-1820) was secretary of the Royal Society from 1784 to 1797, under the presidency of Joseph Banks. During this time, and for much of his adult life, Blagden kept an extensive diary. Unlike more descriptive diaries, featuring personal reflections and a wealth of autobiographical detail, Blagden’s diary is best described as a simple record of events, people and weather, recorded in terse and formulaic daily entries. Often construed as a puzzle or inconvenience to the historian of science, this paper will argue that the form of Blagden’s diary is best understood as part of an extensive system for information management on paper, devised over Blagden’s early career and in relation to other information management practices. The form and content of Blagden’s diary developed in relation to the written outputs he produced whilst studying for a medical degree at Edinburgh University, as well as the medical case notes and commonplace book he kept after he graduated. An examination of Blagden’s diary intersects with recent developments in the historiography of early modern information management. I will argue that Blagden’s diary is best understood in light of a number of information storage practices he developed during his earlier life and career as a physician, and in relation to the various uses he made of the diary.

Alexander Aylward, University of Leeds: ‘H. G. Wells and the identity of the “scientist”, 1895-1925: Negotiations in Nature and the novel’

This paper seeks to place British literary fiction, 1895-1925, in the context of the ongoing public formation of the identity of the “scientist”. Coined by William Whewell in 1834, the label’s status in Britain “remained controversial well into the twentieth century” (Secord 2014, 106). This is well evidenced by a call for opinions by *Nature* editor Richard Gregory, on the suitability of the word in describing the general scientific practitioner, as late as December 1924. Replies from eminent men of science and letters were published in subsequent issues; they show us that at this time, amongst the British intellectual elite, the identity of the “scientist” was still being fiercely contested and negotiated.

I contextualise the literary fiction of H.G. Wells within this milieu of identity formation. I argue that reading Wells’ fictional depictions of scientific practitioners through the lens of these public, discursive processes of negotiation, underpins a more nuanced understanding of his characters, and the purposes towards which they were mobilised. In particular, I offer a re-evaluation of Rosslyn

Haynes' claim that Wells was "the most influential and systematic critic of scientists in the last decades of the century" (1994, 150). I maintain that a careful focus upon the vocabulary Wells utilised in describing his scientific characters (his use of "scientist" was rare, and as I show, pointed), showcases a complex attitude concerning the role of the scientific practitioner in society; an attitude deeply influenced by the scientific naturalists of the nineteenth-century, including Wells' intellectual idol T.H. Huxley.

### **3B Oral histories and their aftermath**

Chair: Nicholas Mithen, EUI

Emmeline Ledgerwood, University of Leicester: 'MPs who speak for science: using oral history as evidence'

Historically, scientists, engineers and technical experts have been in the minority in the House of Commons. This persistent feature has frequently been regarded as undermining the ability of Parliament to use scientific evidence effectively in policy making and to accusations that it lacks scientific competence. Little has been written about the factors that have encouraged or dissuaded scientists from entering national politics, nor about whether a scientific background determines an MP's activities once elected. Drawing on the British Library's collection of oral history interviews with former MPs, my paper will use their testimony to assess the extent to which science featured in their lives inside and outside Parliament. Taking 1955 as a starting point, the paper will consider how these archived recordings inform us about scientists' routes into Parliament, and the role played in scientific affairs by those who did not have a scientific background. I will then relate my findings to the debate around the need for more scientists in Parliament. The paper will include audio clips, showcasing the potential for the spoken word to inform and engage historians. I will also discuss the challenges and rewards involved in using this type of source material. By examining MPs' connections with science, this paper aims to contribute to an understanding of how science has been represented in Parliament since the 1950s.

Tom Ritchie, University of Kent: 'Like a lot of little boys: Oral Histories of Science and Engineering from Meccano clubs'

With much written about declinism in British science and engineering; from the Wiener-Barnett hypothesis to Edgerton's 'Decline of Declinism', many voices and perspectives have been heard and considered, including both scientists and technologists. Yet too many of these voices have been from politicians and historians, with too few from those who can offer a more direct, personal perspective, especially amateur engineers and scientists. The methodology of this paper will be to analyse and identify patterns from the oral testimonies of those members of Meccano clubs in England, especially the perspectives they can offer on the 'good old days' of British science and engineering.

Through discussing the demographics of the members and their correlation with national patterns, this paper will open with a broad sociological overview of the characteristics of the membership of these groups, focusing on their age, education level and profession. Using this context, this paper will then revisit the declinism debate within the history of science and introduce the voices of members of the various Meccano clubs, from all around England. Through collating member's individual perspectives on the 'good old days', and drawing on their experiences with Meccano today, this paper will show how the nostalgic and contemporary views of Meccano as an educational toy significantly overlap; and how these types of user-centred histories should be used more to reframe aspects of the declinism debate.

Aline Waltzing, Centre Alexandre-Koyré: 'The evaluation of universities: why a historical approach?'

Evaluation in science, research and higher education is hardly something new. However, a broad literature, mostly in sociology and political science, analyses present day evaluation schemes that assess European universities as the advent of New Public Management (NPM), markets and neoliberal agendas in research and higher education – all situated around the 1980s.



While these studies give insights in the effects of such reforms on higher education and research practices, we suggest interrogating the genealogies of this type of evaluation. In the 1980s has indeed emerged something “new” in the area of evaluation in science: institutionalised evaluation systems that assessed universities, their higher education and their research, by entities situated in between universities and governments. This paper draws on three case studies of such evaluation systems that were put into place in the 1980s and 1990s in France, the Netherlands and Germany. Studying their archives has allowed us to investigate what evaluation was meant to be for, who were the actors involved, and how evaluation concretely worked in its procedures. This in turn sheds light on the novelty of these types of evaluation. We will show how, in accordance with the abovementioned literature, this evaluation was indeed the vector of certain managerial practices in universities. However, a historical approach to these case studies permits a more nuanced reading of what “managerial” evaluation meant in each case, especially before the category of NPM became common in research and higher education politics

### **3C Early modern medical practices**

Chair: Katalin Pataki, CEU Budapest

Sebastián Molina Betancur, University of Turin: ‘José Celestino Mutis and the diffusion of Newtonianism in New Granada in the eighteenth century’

José Celestino Mutis (1732-1808) is known as the director of the Royal Botanical Expedition to the New Kingdom of Granada (1783-1816), in which he focused on the production of a natural history of the *flora* and *fauna* of the viceroyalty. What is less known is Mutis’ role in introducing Newton’s theories in New Granada during the period he lived there (1761-1808). In this presentation, I discuss the diffusion and reception of Newtonianism in New Granada promoted by Mutis in the late eighteenth century by considering three different stages of it. First, the lectures on physics and mathematics Mutis delivered in between 1762 and 1766, in which he presented, for the very first time in New Granada, Newton’s ideas illustrated in his defence of the Copernican system. Second, the Botanical expedition, which Mutis himself characterized as a ‘Newtonian’ expedition. And, third, the *General plan for the medical study*, Mutis structured by using Boerhaave’s works as a theoretical foundation. Thus, I conclude that the introduction of the Newtonianism in New Granada was a complex enterprise, encompassing not only mathematical and physical elements as they are applied to the natural philosophy, but also to botany and medicine.

Teresa Hollerbach, MPIWG Berlin: ‘Quantitative Physiological Reasoning at the Turn of the Seventeenth Century: The Work of Sanctorius Sanctorius’

At the turn of the seventeenth century, the Istrian physician Sanctorius Sanctorius (1561-1636) developed instruments to measure and quantify physiological change. He combined his activity as a university teacher of theoretical medicine in Padua with the practice of medicine in Venice, where he belonged to the circle of intellectual Venetian aristocrats around Paolo Sarpi. According to Galen, the traditional medical authority, the deviation from the normal, healthy state of a body could not be determined quantitatively, which accounts for the conjectural character of medicine. Sanctorius tried to supply exactness to the conjectures, and a thermoscope to measure body temperature in health and disease was one of his answers. Thus, by providing the possibility to measure, i.e. to quantify states of morbidity, Sanctorius introduced empirical research into physiology. The historical reconstructions of Sanctorius and his work tend to present Sanctorius as a genial outsider, who, almost out of the blue, invented a new medical science that profoundly changed modernity. Contrary to this perception, I argue in this paper that there was a mathematical tradition of Galenic medicine, especially in pharmacology, which provided the intellectual framework in which Sanctorius was elaborating his theories. In my opinion, Sanctorius’ innovative approach to medical research has to be conceived as a complement to Galenic medicine and therefore made it all the more potent. Moreover, this paper refers to the intensive activity of the “marketplace Venice” in promoting technological innovations in order to contextualise Sanctorius’ development of measuring instruments, which finally allowed him to implement quantification methods to his research.

Adam Mezes, Central European University, ‘‘Seen and discovered’ – the diagnosis of vampirism in 1730-1750’s Habsburg Empire’

In the 18th century, various levels of the Habsburg medical establishment had to face the problem of the retuning dead. From low-ranking surgeons to the head of the empire’s medical system, Gerard van Swieten, several medical experts assessed the fatal affliction that according to local communities was caused by the dead, who return to plague the living. The sources generated in relation to this ‘vampire disease’ offer a glimpse into the socially constructed nature of illness. Though all texts aim at diagnosing the vampire disease and explaining the uncorrupted state of the vampire’s corpse, they are products of differing power relations and belong to different discourses: witchcraft-prosecution, epidemic control or natural philosophical discussions on death. The resulting differences in the formulation of the problem and in the kinds of evidence taken into consideration filtered into the assessment of the natural or supernatural aetiology of the disease.

The present talk is an answer to recent calls in scholarship for a more precise investigation of the role medical practitioners played in attitudes towards supernatural diseases. More specifically, the talk proposes to challenge the usual presentation of medical officials as standard-bearers in the enlightening project by pointing out the discrepancies between the needs of the local communities and the answers the said medical experts offered. The source-basis includes autopsy reports, trial records, and empirically and not-so-empirically based surgical and doctoral treatises. The time frame of the investigation is the 1730’s – 1750’s, while the location is various parts of the Habsburg Empire.

#### **Concurrent session 4**

##### **4A Visualising knowledge across the ages**

Chair: Simon Dumas Primbault, EUI

Alicia Hughes, University of Glasgow: ‘James Douglas and William Hunter: Representing reproductive anatomy in the eighteenth century’

‘The Anatomy of the Human Gravid Uterus’, published by William Hunter in 1774, revolutionised practices and representations of obstetrical and anatomical art. The book contained images of the pregnant uterus with a high level of detail and accuracy that had not been seen previously and the text was Hunter’s lasting legacy to anatomy and to art. Scholarship to date has generally accepted that the text, and its illustrations, were the sole result Hunter’s life’s work as an anatomist and man-wife, and his role as the first Professor of Anatomy at the Royal Academy of Art in London. However, this understanding excludes any interrogation of the Hunter’s earlier influences and teachings.

My paper will seek to establish a direct link between Hunter’s text and the unpublished manuscripts of his mentor, Dr. James Douglas, that Hunter inherited after his death in 1742. In 1725, King George I gave Douglas £500 to work on a volume on the ‘Knowledge and cure of the diseases incident to women and the improvement of ye practice of midwifery.’ Whilst Hunter did not begin work on his text until 1750, inspiration for the project can be found within Douglas’s unpublished text and its specific chapter on the positions of the foetus in utero. Douglas’s insistence that the drawings be ‘life-size’ undoubtedly influenced Hunter’s own strategy of visualisation for the illustrations that remain iconic to this day. I argue that this collection had a formative impact on Hunter’s own work, his practice of collecting and commissioning drawings of anatomical subjects and most particularly, his approach to anatomical illustration.

Naïs Virenque, University of Tours: ‘From vertical to horizontal mnemotechnic trees : learning and visualizing knowledge from the Middle Ages to the Early Modern Times’

In the Middle Ages and in the Renaissance, the image of the tree and the tree diagram are used as taxinomic and propaedeutic tools so as to organize and classify arts and sciences by their mnemotechnic qualities. As a material and mind map, the tree structure ensures the visual and mental trailability of knowledge.

In the early 16th century, in parallel with the development of humanistic rhetoric, philosophy

and philology, some arborescent diagram change their form. Indeed, by studying a large corpus, one can realize that, from vertical structures that lead the spectator/reader from human knowledge to God, they become horizontal structures, that incite the spectator/reader to browse them from left to right, as if they were reading a text. The presentation suggests a study of this change of orientation. Which fields of knowledge and sciences are concerned? To what purpose? By whom, in which context? Is this change linked to the humanistic process of vulgarisation? Could one understand it through the premises of a culture of progress that no longer seeks truth in God but in science and experimentation?

#### **4B C19/20 British Empire**

Chair: Oury Goldman, EHESS

Felix Goodbody, University of Liverpool: “The Beauty and Power of Such Scenes as These”  
Photographing Truth and Fantasy at the Imperial Frontier in India 1857-1900’

This paper explores how the emergent technology of photography was recruited by colonial actors in India to communicate the territory to European audiences. I argue that the camera in India constituted an essential tool in the colonial knowledge project. Photographs assumed the status of scientific objects, and there was no discomfort at the mixing of amateur and professional cameramen on official photographic missions. Such missions aimed to create encyclopedic records of the people and places of they encountered. This analysis is unpacked through a case study that explores the straddling artistic and “scientific” inclinations and output of the most prominent photographer of the period, Samuel Bourne. Bourne’s travels across India, and his particular fascination with the Himalayas, render him an essential focus for discussion of the photographer’s ill-defined status. Using primary sources including diaries and photographs, this paper uses a history of technology approach to revisit established literatures on colonial travel, reportage, and art in nineteenth century India.

Hana Oh, University of Oxford: ‘Naval surgeons: mid-nineteenth century men of science in the British Pacific empire’

This paper looks at scientific contributions of naval surgeons in the mid-nineteenth century Britain, and locates them in the context of scientific learned societies. The model of naval surgeons as naturalists and well-versed in both science and culture is represented in Patrick O’Brian’s historical novel *The Surgeon’s Mate* (1980). The image of a ship’s surgeon Maturin reminds Darwin or Huxley, both of whom accompanied the naval Pacific voyages and published influential works on science, slightly after the period of the novel. Naval medical officers were encouraged to make natural historical observations. Their role was particularly important in the Pacific, where the British Navy conducted colonial surveys on the “far” and “little known” foreign lands. As members of the Navy, naval surgeons were not only natural historians, but also explorers and colonial officials. Most of their observations were relevant to different colonial locales specific duties. Existing biographical works on naval medical officers consider little about British empire at the backdrop of their activities. By drawing on medical journals, publications in learned societies, and correspondences, this paper shows how much naval surgeons were engaged in scientific research in the Pacific, and how their works were transmitted to the scientific societies in Britain. To the surgeons in foreign lands, doing science was a medium of maintaining the bonds with the mother country.

Aditya Ramesh, SOAS: ‘Damming the Cauvery: Technology and Hydro-politics in Colonial South India’

In 1934, the Government of Madras, a large province located in Southern British India, completed the construction of the largest dam in the world, the Mettur Dam on the River Cauvery. Spanning over five hundred kilometers in length, the Cauvery is a crucial source of water supply for the Southern parts of India. The Mettur Dam was also the first serious attempt at building a multi-purpose project in colonial India. In short, this paper asks what a description of dam building might reveal about nature and technology. In doing so, it advances two arguments. First, I argue that non-human agency or the agentive properties of the river and landscape as moving, shifting, and tempestuous entities foregrounds a skirmish between technology and nature, mediated by colonial engineers. Second, a

layered notion of politics is also brought forth, wherein I argue that new technologies water storage and division are rarely divorced from multi-scalar politics, whether between states, districts, or landholders and cultivators at different ends of the river. Taken together, the two aspects i.e., life of material things and politics, allow us to address histories of water in the minor, or those histories often cast as invisible by technological advancement. Water storage as technological invention thus found its limits and possibilities in finance, nature, and the colonial project of governance itself. In sum, I argue for a technological double movement. That is, while colonial application of technology on the Cauvery sought to alienate water from the flowing life force that was the river, it was ironically technology which made visible this tussle.

## **Concurrent session 5**

### **5A Science, power and politics**

Chair: Steven Server, University of Chicago

Ayushi Dhawan, University of Leiden: ‘Segregation, Stigma, Isolation: a cure for leprosy? Understanding leprosy in the Netherlands West Indies c. 1600-1750’

Leprosy, an endemic skin disease, was a major health problem, increasing in importance in the Netherlands East Indies between c. 1660-1750, until the Norwegian physician, G.H.A Hansen discovered the culpable bacteria *Mycobacterium leprae* in 1873. VOC (Verenigde Oost Indische Compagnie) physicians in Batavia (now Jakarta) grappled with the disease, traced its similarities with the so-called prevalent ‘biblical’ disease, Lazarus between the sixth-fourteenth centuries in Europe.

The social history of this ‘imperial’ disease in the Dutch Indies has, however, received scant attention in the scholarly studies. In this context, the paper raises questions about the perceptions of the disease (both indigenous and western), institutional care, and the responses of sufferers to the proposed isolation and confinement in Lazarus huizen (leper houses) formed specifically for this purpose. These questions help to reflect on the understandings of this dreaded disease, how it’s occurrence was often infected with cultural, racial and moral overtones, colonial medical responses to control the spread of leprosy, and how the trajectory of leprosy health policy developed over time. This research will be based on the analysis of a host of printed and manuscript sources in the Netherlands, such as propaganda leaflets, medical treatises of physicians, and lastly, on the native perceptions of leprosy from the early seventeenth-mid to the eighteenth century.

This paper by taking leprosy as a vantage point, thus, discusses the entanglement of disease not only with medicine and public health but also with the colonial policies, power, overseas expansion, and disciplinary organization with subsequent social (re)-ordering that occurred in leper asylums. In addition, it also discusses how an increase in the number of leprosy patients in the Dutch Indies, which was primarily linked to manumission and import of slaves from India and elsewhere, subsequently created a changed disease- environment and prompted immediate colonial inquiries, as this ‘contagious’ disease threatened the lives of both Europeans and natives alike.

Katalin Pataki, Central European University: ‘ Medical Expertise in Service of Joseph II’s Monastic Reforms’

My study provides a case study for the integration of medical expertise into the thickening bureaucratic network of the Hungarian Kingdom in the second half of the 1780s. I investigate the role of state-employed physicians and surgeons in the implementation of Joseph II’s church reforms with a special emphasis on the monastic policies.

Considering that Joseph II intended to dissolve all the monasteries that did not fulfill a socially useful function - by which he meant education, medical provision and pastoral work - the development of information channels through which the utility and efficiency of the individual houses became cognizable and measurable by the state authorities played a crucial role in the process. While the utility of the teaching and healing religious orders could be easily acknowledged, the monks’ capacities to contribute to parish service could be revealed only with the help of detailed inquiries (questionnaires) that included the demand for medical information, too. The reliability of the answers provided by the leaders of the religious orders had to be supported by examinations and testimonies of

two kind of experts: the bishops and county physicians/surgeons.

Contrasting the ways in which these two kind of authorities reported about the physical condition (i.e. working capacities) of each monk enables a more sophisticated analysis of the questions how medical opinion completed a broader discourse on the body and how it connects to and dissociates from other fields of competence.

Paul-Arthur Tortosa, European University Institute: ‘Surveiller et guérir. The development of arithmetic practices in the medical reports of French military hospitals, 1792-1800’

In a recent article published in *Dix-Huitième Siècle*, Erica Charters described the spread of arithmetic practices in the French and British armies in the eighteenth century. Against the Foucauldian thesis of a French medical revolution, she argues that the British military hospitals introduced clinical practices before their French counterparts. What is left to understand is why and how arithmetic practices, considered to be one of the key features of “modern” medicine, were introduced in French military hospitals.

The aim of this presentation is to underline the link between the revolutionary administrative culture and the renewal of medical theories and practices. Drawing on medical reports produced during three successive campaigns – the defence of the eastern border in 1792-1793, the Italian campaign of 1796-1797 and the Egyptian expedition of 1798 – I will study the writing practices of rank-and-file French military doctors. Highlighting their connection with broader changes affecting what John Picktone called the “ways of knowing”, I will describe the transformation of medicine as influenced by the development of bureaucratic practices.

First, I will show how medical reports indicate a slow but steady growth of arithmetic practices in French military hospitals. Then, I will argue that this evolution is the outcome of the political and administrative control over revolutionary warfare. Finally, I will try to assess the political and philosophical conceptions of medicine that arise from these renewed medical theories and practices.

Emily Herring, University of Leeds: ‘Lamarckian Power Politics: the Case of Pierre-Paul Grassé (1895-1985)’

Twentieth century evolutionism in France is seen as something of an oddity in the history of biology. Indeed, while British, American and German Darwinians were developing the Modern Evolutionary Synthesis, one of the leading zoologists in France, the radically anti-Darwinian Pierre-Paul Grassé, held the chair for Evolution in Paris from 1940 to 1967. He defended a certain form of neo-Lamarckism which echoed his spiritualistic philosophy (inspired by Henri Bergson and Pierre Teilhard de Chardin), his Christian faith and his conservative (often reactionary) political views.

Grassé’s rejection of Darwinism rested upon certain political and religious views, and the stakes were high: he believed that evolution was progressive, creative and directional and that, with the advent of mankind, it no longer concerned the transformation of organic structures but took place on a spiritual level. Humans were responsible for their own spiritual evolution. Therefore, policies regarding education and ideologies integrating moral values were the key to the progress of the human species. This is particularly apparent in Grassé’s notebooks in his personal archive, which I recently had the opportunity to study.

Grassé pushed his anti-Darwinian, religious and political agenda in his lectures, the conferences he organised, the research programmes he led and the job appointments he was responsible for. Therefore, attention to Grassé’s considerable institutional power will offer valuable insight into a little studied case of institutionalised Lamarckism, in mid twentieth century Europe, distinct from the better-known case of Lysenkoism.

## 5B Science and education

Chair: Leonardo Ariel Carrio Cataldi, Centre Alexandre-Koyré-haStec

Marcus Lee Naldal, Aarhus University: 'Introducing atomic theory in the Danish high school curriculum - Textbooks and the history of science'

My presentation will be based on my BA project, which examines the introduction of atomic theory in the Danish high school curriculum. The idea of the project is that textbooks are to convey certain knowledge to the coming generations of scientists - but how is this done in a period of rapid theoretical development as in the beginning of the 20th century? I will outline changes in the curriculum presented in successive editions of a Danish high school textbook, i.e. different theories of atomic structure and the organizational classification of 'electron theory' as belonging to electrical studies. The theoretical framework is the characteristics and possible uses of science text-books from T.S. Kuhn, H. Kragh and D. Knight. I will present and discuss certain aspects of Kuhn's characteristic of textbooks as presented in *The Structures of Scientific Revolutions*, though not adhering to his idea of *necessity* in the 'phase model' of science development. Lastly, considering my study as a case, I will discuss the possibilities and restrictions of textbooks and what they can offer as sources in the history of science.

Alina Novik, European University at St. Petersburg: 'Optical Spectacles in the 19th-Century's Russian Capitals and their Influence on Public Education'

In the 1900s, Timiryazev (1843-1920), a well-known Russian botanist and physiologist, reflected on the development of natural science in the 1860s in Russia. Besides the obvious reasons, such as the change of the governor in 1855, he specified a quite unexpected point. Timiryazev claimed that "awakening of our taste of natural science" might be rooted in "a number of prominent public lectures in the hall of St.-Petersburg Passage" organized by the "Public Benefit" Partnership in 1858. The mission of this organization was "to respond to the public's need for a natural science education" by organizing public courses in "probably, the first hall that was appropriate for lectures <...> with the use of a magic lantern". Nevertheless, even before 1858 public spectacles on scientific topics with the use of optical apparatuses, like a polyorama or a solar microscope, experienced great popularity.

Representations of outer space, sectional views of the Earth's crust, and moving images of microorganisms attracted the public's attention at least as much as a cosmorama and phantasmagoria. Starting in the late 1850s, optical entertainment arrived at Russian universities and schools. Gradually it became common to present lectures with optical projections and explain the basic principles of optics using self-made camera obscura. Therefore, Timiryazev's argument seems credible. Moreover, the idea of such lectures itself may be the outcome of earlier amateurish optical spectacles. Basing on these data, I attempt to retrace the connection between public optical entertainments in the 19th-century's Russian cities and the development of public education from the 1860s.

Mikkel Munthe Jensen, European University Institute: 'From Peasantry to Academic Citizenship An Exploration of Eighteenth-Century Social Ascent of Nordic Academics'

Social mobility in the early modern period has often been understood as very static in nature. Each individual was born and lived their entire life within a certain estate, only to pass this social status and rank further to the next generation. By and large this was indeed the case, but, as I will argue in this paper, the eighteenth century Nordic societies gave also possibilities for a social ascent.

In this paper, I will demonstrate how a notable large number of Nordic university professors rose from the lower classes to become well-esteemed academics, belonging to the ranked upper classes of society. By following these professors from birth till academic inauguration, I wish to show that both within academia as well as outside there existed an academic meritocratic culture which had the main purpose to support, nurse and cultivate academic talent, no matter when and where it was found and with no regard to original social class, rank, status and economic dispositions. Through this explorative analysis of eighteenth century professors and their rise to academic citizenship and professorship, I finally argue, that the intellectual academic elite to a considerable extent were supplied by promising students from other and also lower strata of the early modern society.

## **Concurrent session 6**

### **6A Between amateurship and professionalisation**

Chair: Dorit Brixius, EUI

Stuart Mathieson, Queen's University Belfast: "Science, falsely so called" – the extinction of the gentleman amateur, anti-Darwinism, and pseudoscience at the Victoria Institute, 1865-1903'

By the mid-nineteenth century, works by scientists such as Charles Lyell, Alfred Russel Wallace, and Charles Darwin had threatened traditional conceptions of the natural world, drawn heavily from scripture and from the natural theology of William Paley. Much attention has been paid to debates with the scientific community about evolution, human origins, and the age of the earth. Yet much of this has focussed on the rapidly professionalising area of the natural sciences in academia. Debates within other fields, particularly those of well educated amateurs, have received rather less attention. This paper attempts to remedy that situation, by examining the nineteenth century's leading anti-evolutionary organisation. Established in 1865, the Victoria Institute had as its prime objective the defence of 'the great truths revealed in Holy Scripture' from 'the opposition of science, falsely so called.' Bringing together professional scientists, clergymen, and gentlemen amateurs, the Victoria Institute aimed to investigate the latest developments in science from a religious perspective. Initially, this resulted in attempts to buttress religious belief against scientific discoveries; later, it developed into an opportunity for scientists of faith to discuss their beliefs with a sympathetic audience. Drawing on lectures delivered at the Victoria Institute, correspondence, and proceedings, this paper charts the relationship between religious belief, anti-Darwinism, and pseudoscience in Victorian Britain, and offers a perspective on scientific developments from an underexplored viewpoint.

Ekaterina Rybkina, European University Institute: 'Soviet radio enthusiasm as an amateur practice and scientific endeavor'

This paper deals with the history of radio and, more precisely, the proliferation of radio knowledge and infrastructure in certain historical and national settings. It concerns the reciprocal influence between radio enthusiasm and the production and distribution of manufactured radio goods in Russia in the 1920-30s. While focusing on the material objects, such as radio goods, this study reveals the interplay of various human and non-human elements participating in the dissemination of the new technology and citizen science. It examines the network of individuals engaged in radio production and its cooperation with the research and development institutions. Despite their limited access to the manufactured radio equipment, radio enthusiasts made their devices of improvised materials using the manuals published regularly in radio magazines and radio handbooks. The involvement of non-professional groups in scientific research had not only utilitarian value for the Soviet state, but also educational one. The radio officially escaped the laboratory and discovered its own path towards the Soviet radio enthusiasts. The main objective of the paper is to show contradictions between symbolic and scientific, amateurish and professional, mythical and real.

Richard Fallon, University of Leicester: "A Work of Literature Rather than Science": Henry Neville Hutchinson (1856-1927) and Literary Controversy in Science Popularisation'

For the popular science writer Henry Neville Hutchinson, science was almost inexplicable without literature. His fin-de-siècle books on geology, palaeontology, and archaeology overflowed with quotations from, and allusions to, his favourite poets and novelists. Many critics, too, felt that Hutchinson's writing made science as exciting as romance. As well as being highly readable, Hutchinson aimed to make these books cutting-edge, and to this end cultivated strong relationships with leading specialists. For a man whose intention was not only to popularise science, but actually to contribute to it, however, this connection with literature and fiction could be a serious problem.

This paper builds upon current work on the shifting territory of who was included in, and excluded from, the scientific elite around the turn of the twentieth century. It uses the case study of H. N. Hutchinson to explore how new boundaries were being set up in the epistemology of science which

were not understood or agreed upon by all. Scathing criticism in leading periodicals revealed that, for some figures, Hutchinson had no right to scientific authority. They objected to Hutchinson's evaluations of competing theories based almost solely on his own wide reading, and criticised his literary stylings. Explicitly dividing primary from secondary research, and science from mere literature, these savants attempted to shut down Hutchinson's interdisciplinary presumptions. Facing these barriers, Hutchinson rejected what he saw as the cold modern compartmentalisation of scientific fields, and argued for a world where scientists could still learn from poets.

## **6B Journals and periodicals**

Chair: Catarina Madruga, University of Lisbon

Francisco Malta Romeiras, University of Lisbon: 'Missions, Networks and Taxonomy: The Jesuit Journal *Brotéria*'

One of the most relevant initiatives of the Portuguese Jesuits in the early twentieth century was the foundation of *Brotéria* (1902–2002), a scientific journal devoted to animal and plant taxonomy. Borrowing its name from the celebrated Portuguese naturalist Félix Avelar Brotero (1744–1828), *Brotéria* was founded in 1902 at the premises of a pre-university Jesuit college, the Colégio de São Fiel (Louriçal do Campo, 1863–1910). With more than 1300 original research articles on botany, zoology, plant breeding, biochemistry, and spanning a century of history, *Brotéria* was the first periodical of the Society of Jesus entirely devoted to science and one of the most significant scientific journals ever published in Portugal. During its centennial existence, it described more than two thousand new species of animals and plants, pertaining in most cases to the Portuguese, Spanish, Brazilian, Austrian and German fauna and flora. For the characterization of the colonial fauna and flora, the existence of Jesuit missions was crucial, since the missionaries were often instructed to collect new specimens of animals and plants and send them to Portugal to be described on the pages of *Brotéria*. In a period characterized by an immense scientific correspondence, the networks established by the Jesuits were especially relevant for the identification, description, classification and circulation of novel species of animals and plants, namely in Angola, Mozambique and Timor. In this communication, I will focus on the establishment and maintenance of these scientific networks, which included Jesuit missionaries, amateur naturalists and expert botanists and zoologists and largely contributed to the national and international prestige of *Brotéria* as an important journal of animal and plant taxonomy.

Julia Ostmann, University of Cambridge: “‘Think Them Together’: Philosophy, Experimental Psychology, and Consciousness in the Journal *Mind*, 1876-1887”

In the face of new and competing methods for making sense of the world, how do we build knowledge about a single idea, such as the human mind? The founders of the journal *Mind* were not content to passively observe the advent of German psychological experimentalism while British mental philosophy chugged along in its old insular and combative ways, losing public support to fashionable science all the while. Between 1876 and 1887, *Mind* carved out a unique space in the late-Victorian periodical and intellectual scene by encouraging communication across the boundaries of introspective philosophy and experimental psychology, attempting to establish a more relevant British philosophy. As a case study, I examine William James's 1884 article 'On Some Omissions of Introspective Psychology', published in *Mind*'s pluralistic early years, in particular the integrative method of inclusivity James employed when discussing consciousness. In sum, *Mind*'s special atmosphere, I argue, permitted historical actors to debate and define concepts like consciousness in collaborative ways, producing knowledge about the mind in a new integrative framework between philosophy and psychology.

Matthew Wale, University of Leicester: 'Caterpillars in the Penny Post: Nineteenth-Century Natural History Periodicals and the Practice of Specimen Exchange'

The introduction of the Uniform Penny Post in 1840 had many implications for nineteenth-century society. To those who pursued natural history, it brought a number of benefits, as correspondence was



vital to the creation and circulation of scientific knowledge. Furthermore, the exchange of specimens via post had been an established practice for centuries, but a more efficient and less costly mail network permitted it to occur on a much larger scale. Almost concurrent with this significant development, there occurred a rapid expansion of the periodical print market, due to advances in technology and the abolition of Stamp Tax and paper duties. A growing number of periodicals dedicated to natural history impacted on how this science was carried out. The *Entomologists Weekly Intelligencer*, edited by Henry Tibbats Stainton, is perhaps the best example of how a periodical could transform the practices of a science, as it provided a new and markedly different way in which entomologists interacted with one another. Through an in-depth case study of the *Intelligencer*, alongside the personal correspondence of H. T. Stainton, this paper will examine how the exchange of specimens, as mediated through the periodical, allowed for a wider engagement in the production of scientific knowledge. Additionally, it will demonstrate how the practice of exchange was also contested within the periodical, revealing the ways in which a scientific community was created and how its boundaries were drawn.

## **6C C20 Biomedicine**

Chair: Emily Herring, University of Leeds

Matthew Holmes, University of Leeds: 'Graft hybrids, heredity and biotechnology: the politicisation of biology and its history'

Grafting – the physical joining of one plant's tissue to that of another – is an age-old technique practiced by gardeners and horticulturalists. For centuries it was believed that grafting allowed plants to exchange heritable information and bypass conventional sexual barriers. This process could potentially result in an entirely new organism: a graft hybrid. Endorsed by such luminaries as Charles Darwin, graft hybrids overturned traditional limitations on heredity as the passage of characteristics from parent to offspring. Graft hybrids promised a new means of creating novel varieties within the plant – and possibly even animal – kingdom. Yet by the mid-twentieth century, three factors had caused scientific belief in graft hybrids to enter a terminal decline. Firstly, plants once branded as graft hybrids were increasingly reclassified as chimeras: organisms comprising of distinct collections of different cells. Secondly, promising experimental results regarding graft animal hybrids were disregarded; explained away as aberrations triggered by environmental factors. Finally, the graft hybrid became tainted by association with Lysenko's biology. Yet the twenty-first century has seen the graft hybrid revived. Scientists have discovered that cellular and even nuclear fusion can occur at graft junctions. For some, these findings suggest that transgenic plants have long inhabited our gardens and orchards: a major rethink is therefore required on what we define as a genetically modified organism (GMO). For others, the graft hybrid presents an opportunity to reinvent biology and its history within a Marxist framework: casting aside Mendelian genetics and placing graft hybridisation at the centre of modern plant breeding programmes.

Rachel Meach, University of Strathclyde: 'Framing Type 2 Diabetes: The Pursuit of Anti-Diabetic Drugs in the Mid-Twentieth Century'

Beginning with Emerson and Larimore's U.S study in the nineteenth century to the most recent Newcastle Diet study carried out in England in 2015, social and environmental factors, particularly diet, has been pinpointed as both the cause and solution to the epidemic of Type 2 diabetes. Yet despite a sustained trajectory of research confirming this idea, Western medicine has predominantly focused on the development of pharmaceutical responses to the disease. Towards the end of the 1950s diabetics were confronted with an extensive array of new 'wonder drugs' in addition to dietary advice and insulin. This paper focuses on the case studies of two of the new antidiabetic drugs developed in the 1950s, Phenformin and Orinase, tracing their development and subsequent withdrawal from the market in the 1970s due to their fatal side effects. The debates surrounding these drugs ultimately led to two landmark studies, the University Group Diabetes Program study in the United States, and the later United Kingdom Diabetes Prospective study which ran from 1977 to 1997. This paper explores both of these studies and their outcomes in addition to a range of sources from the period of the 1950s to 1970s to ascertain how the new drugs influenced theories of aetiology. Ultimately this paper

highlights the consequences of the determined pursuit to frame diabetes as a disease most amenable to pharmaceutical treatment in order to understand how diet came to play such a minor role in a disease understood to be caused significantly by lifestyle.

Simon Walker, University of Strathclyde: ‘‘Like Nothing on Earth’ Typhoid and British Soldiers: Resisting Disease Prevention in the First World War.’

As men across the world took to the field of battle between 1914-18 it was not simply bombs, bullets and bayonets they had to fear but also disease. Typhoid was one such disease which garnered much attention from the British military as it had caused catastrophic losses in the last South African War little over a decade before. Yet despite the values of inoculation and the fact that over 97% of soldiers were inoculated by the close of the war in 1918, there are questions regarding the responses of men towards the inoculation which potentially saved their lives. Objections arose because inoculation could not only save lives but also endanger them through unpleasant and potentially deadly side effects. Private Jack Masfield in 1917 claimed his inoculation gave him hell afterwards ‘...like nothing on earth’. This paper therefore considers the place of this medical innovation within the First World War from the perspective of the men who experienced it. It will consider the ramifications of the lifesaving procedure as men were literally forced from duty by a process paradoxically designed to make them better, more effective, soldiers. Focus will also be given to notions of agency and control as the rhetoric of inoculation as a choice can be challenged by the reality of the consequences of noncompliance. Ultimately, this paper seeks not to challenge the effectiveness of the typhoid vaccine but to attempt to explore the experiences of the men who took it within the narrative of medical improvement between 1914-18.

## Keynote lecture

Professor Stéphane Van Damme, EUI:

‘Between the Colonial Machine and the French Global: Revisiting an anti-globalist narrative of the French Empire of Science (1660-1780)’

For about fifteen years, historians of science of the early modern period, and particularly of the eighteenth century, have made their global turn, broadening the horizon of the preoccupations of the discipline. In the framework of French historical studies, two recent books have thus come to revisit the approaches of the French empire of sciences. The first published in 2011 by James McClellan and François Regourd, *The Colonial Machine* intended to map the institutional structures of the circulation of knowledge between the colonial peripheries and the metropolis and showed the centrality of the sciences in the apparatus of the royal State of the Old Regime. The second, *The French Global* (2010), edited by Susan Rubien Suleiman and Christie McDonald, anchored in an approach to literary history and linked to the debate on World Literature, drew a broader ambition by going beyond the French empire and by questioning the view on French cultural production (including sciences) from a radically global and multiple point of view.

To paraphrase Susan Rubien Suleiman and Christie McDonald in their introduction, historians of science should propose an approach to the French history of science, as defined by the multiple implications and resonances of the ‘global’ and to read these scientific works in relations to the globe: ‘as world, as sphere, as a space of encounter with others and with the very idea of otherness’. Resulting histories are therefore both in and out of the French Empire. Starting with the premises that Early Modern French scientific authority and credit were made also by conflicts and controversies in Europe, the paper aims at exploring the tensions within the French Empire of science by paying attention to skeptical travelers and their alternative epistemology of science in this period. Far from being neutral, these scholars paved the way for an anti-globalist vision challenging the new order of informations both catholic and absolutist. From Nouvelle-France to South-India, from Egypt to Italy, passing by the Levant, the multi-sited approach will help to make sense of this minority culture of science.